CHAPTER – I

INTRODUCTION

This chapter concentrates primarily on the general background of corporate income tax and debt financing of the manufacturing companies. It also postulates statement of the problem, theoretical framework, objectives of the study, and organization of the study.

1. General Background

Income tax was first introduced by Britain in 1799, as a measure to generate revenue required to meet war expenses. In the later years, other countries adapted this tax because of its revenue potentiality. In India it was introduced in 1860, USA in 1862, Japan in 1887, Australia in 1895, France in 1909, South Korea in 1948, and Nepal in 1959 despite strong opposition at the initial stage of its implementation. At present, it appears as a vital source of government revenue in developed countries and has been contributing major share to the government revenue in developing countries (Khadka, 2001:10).

Income tax has been divided into four main groups: individual income tax, corporate income tax, interest tax and house rent tax. Income tax on business houses is known as corporate income tax (Bhatia, 1992: 262). Corporate income tax system includes a variety of special provisions like: accelerated depreciation,

investment tax credits, depreciation allowance, interest deduction and preferential tax treatment to specific industries. The traditional argument favoring the corporate taxation is that it is a system of progressive tax that primarily covers the high-income owners of capital (John, et al., 1996: 600). Whereas the modern argument favoring corporate taxation is that it is a flat rate system and covers all corporations equally. In business practice, corporation is a word used to cover a variety of enterprises having a legal personality and distinctive ownership. Therefore, the identity of the corporations is separate and independent as compared to their shareholders or owners. Thus, the role of the corporate income tax, in a good income tax system, is always important and requires a careful examination.

Corporate income tax is potentially an important consideration in a firm's financing decision (Fama and French, 1998: 819). It has an effect on the ways of project financing. If it is financed with the debt capital, tax relief is available on the interest payment (Hutchinson, et al., 1994:296). Therefore, financial managers remain constantly aware of tax consideration in their day-to-day decisions and spend a considerable part of their managerial effort to reduce the incidence of income tax through an appropriate financing mix. Thus, corporate income tax is an influential factor in the choice of sources to raise required funds.

Funds to finance an investment proposal can be obtained either by borrowing from banks, by selling marketable securities, by selling non-business assets or parts of its business assets, by issuing additional securities or by utilizing the savings generated from business operations. Hence, an investment proposal is either financed by a composite capital mix or by any one of the sources of funds. Composite capital mix depends on various factors and no uniform standard can be laid down for all investments of a corporation (Saynyal, 1971: 817). When the corporation uses debt, it must pay interest, on the other hand when it uses equity; it is expected to distribute dividends to the equity

investors. In case the debt is used, the interest expenses paid by a corporation on it are allowed to deduct from operating income to obtain its taxable income. But the dividends paid to equity holders are not deductible. For this reason, corporate tax system favors debt financing over equity financing. However, it is not always possible to finance an investment exclusively with debt capital, and the risk of doing so setbacks the benefits of the higher expected income (Brigham, et al., 1999: 56-57). Thus, the problem of financial manager is to choose proper level of debt to arrive at appropriate financing mix that results into tax benefits.

The major issue in corporate financing is to determine the appropriate mix between debt and equity. Extensive controversial views have come up on this issue. Regardless of the controversial views, the tax law has given debt financing a definite cost advantage over preferred stock and common stock (Martin, et. al. 1991: 48). Taxes tend to place a premium on one form of financing as compared to the other. For instance, income tax law allows deduction of all interests paid before arriving at taxable income. This deductible interest makes debt capital cheaper for corporations to use it for financing the investments (Keown, et al., 2001: 425). Thus, the financial managers need to know how taxes influence financing decision of the firms.

The debt component of financing mix provides a tax shield (as interest on debt is a deductible expense to arrive at taxable income) to the company. This tax shield does not exist for the equity financing, as dividends are not allowed for deduction from taxable income (Enrhardt and Brigham, 2002: 57). In more precise terms, interest payments to bond holders are charges against the pre-tax profits while dividend payments to equity shareholders are flow-out of after-tax profits (Rao and Rao, 1971: 239). For these reasons, a prosperous firm raises necessary funds by issuing debt capital rather than equity share capital. The corporate income tax system therefore is biased in favor of debt financing

resulting debt equity ratios to be higher when tax rates increase (Pike and Neale, 1999: 51). Consequently, it induces corporate managers in their desperate attempt to minimize the tax burden with higher level of debt in the financing mix, especially when corporate income tax rate is rising.

On the other hand, the corporate income tax plays a negative role in promoting equity capital formation as income tax system discriminates equity financing of corporations. As a result, the equity base of the corporate sector gets narrowed down and increases debt financing. Thus, corporate income tax renders equity capital an unpopular source of finance to corporate organizations (Kotrappa, 1995: 17, 20). This means, inherently, that the corporate income tax plays a positive role in promoting debt capital and debt financing is positively related to corporate income tax.

Due to the attractiveness of debt, there would be a tendency for additional investment to be debt financed (Arditti and Pinkerton, 1978: 65). To the contrary, Fama and Miller (1972), Jensen and Meckling (1976) suggested that debt is not much attractive to maximize the combined wealth of security holders because it has a tendency to make risky investments. Similarly, Myers (1977) suggested that use of debt in financing mix causes firms to make less investment of funds because the returns are to be shared with debt holders.

Major factors affecting the firm's debt and equity choices are: tax shield, industry classification, size, and profitability (Titman and Wessels 1988: 2). Similarly, other factors affecting the firm's debt equity choice are: taxes, bankruptcy costs, and capital costs (Ross, et al., 2001: 381-84). The unbiased assertions of both indicate that taxes have been recognized as one of the important factors affecting financing choice. If a firm has a taxable income, an increased reliance on debt will reduce income tax paid by the firm because of debt tax shield. Thus, the use of debt is valuable when corporate tax rate is high.

However, the proportion of debt in financing mix may vary firm to firm having higher taxable income and lower taxable income. This is why; a positive relationship exists between corporate income tax and debt financing of the manufacturing firms.

The total amount of payments available for both debt holders and equity holders is greater if debt is employed (Van Horne, 2000: 295). Furthermore, finance theory indicates that a change in the tax law induces changes in debt to equity ratio of the corporations. The tax shield provided by interest payment makes debt-financing more attractive to the corporations (Clark, 1993: 23). On such theoretical grounds, economists have justified that corporate income tax favors debt financing; however, they have the conflicting views about the tax advantage of debt financing.

One of the conflicting views on tax advantage of debt financing is that the nondebt tax shield substitutes debt tax shield. This is called substitution effect. Considering this effect, the firms with large nondebt tax shield include less debt in their financing mix. Tax policy, which changes nondebt tax shield, might induce changes in corporate debt to equity ratios (DeAngelo and Masulis, 1980: 3). When this occurs, changes in financing mix are sensible to the changes in corporate taxation.

The substitution effect is more applicable to the firms with a substantial probability of losing the deductibility of their debt tax shield. It is common practice of the corporations to use fixed assets as collateral for institutional loans. Considering the debt securability effect, both debt tax shield and nondebt tax shield should increase when new assets are purchased (Titman and Wessels, 1988: 1-19). On these theoretical grounds, it can be stated that debt tax shield and nondebt tax shield are directly related to each other.

There is a negative relationship between changes in nondebt tax shield and changes in debt tax shield. Increase of nondebt tax shield, offered by the income tax act, increases the probability of losing the immediate deductibility of high debt tax shield (Trezevant, 1992: 1568). Moreover, the supporters of corporate tax relevancy theory provoke that tax advantage induces to increase the proportion of debt in firm's financing mix because nondebt tax shield does not substitute debt tax shield. Whereas, opponents of this relevancy theory suggest that tax advantage of debt escapes the propensity to use debt because of substitution effect of nondebt tax shield over debt tax shield. Therefore, diverse views regarding the substitution effect on debt tax shield are noticeable.

Another conflicting view in this respect is that the financial managers relate each financial decision to its effect on the value of the firms (Lyon, 1995: 195). The financial decision determines the financial risk that encompasses the variability in operating income (Van Horne, 2000). The use of debt can potentially increase income of the firms so long as the deduction of interest for tax purposes is permitted. The after-tax income increases when the proportion of debt in financing mix rises. As a result, higher the proportion of debt, higher is the value of the firms (Sarnat and Levy, 1990: 369-70).

The value of the firms is proportional to the value of debt tax shield. Thus, debt tax shield that depends on the corporate income tax rate and on the ability to earn more to cover interest payments can be a valuable asset. Of course, the value of debt tax shield is lower if the firm does not borrow permanently, or if it is unable to use the tax shield in future (Myers and Brealey, 2000: 500).

On comparing two firms with equivalent productive capacity, the one with the higher debt-equity mix should be associated with higher firm value, and the next with lower debt-equity mix should be associated with lower firm value. Thus, increase of the debt level in the firms is a positive signal to market participants

(Clark, 1993: 23). Moreover, firms with high levels of debt could be mature, capital intensive with lower earnings growth than firms with low levels of debt. In addition, profit-making firms could use less debt than loss-making firms. Debts could signal information about expected future profitability. This is why; debt tax shield has a significant positive relationship with market value of the firms (Kemsley and Nissim, 2002: 2046).

Modigliani and Miller (1963) first hypothesized that the tax benefits of debt increase firm's value. Miller (1977) contradictated that the personal tax disadvantages of debt setback tax benefits of debt. In later years, others have found that the financial distress costs balance the tax benefits of debts. In contrast, many studies focus on incremental financing decisions and find empirical evidence that high marginal tax rates promote the use of debt. In addition to the above, many studies also find direct market evidence for the debt tax shield. Still, debt financing and its association with firm's market value attributable to debt tax shield is a doubtful issue requiring empirical investigation.

In Nepalese context, the idea of introducing income tax was originated in 1950, when a multiparty democratic political system had been introduced. Then Finance Minister, in the first Budget Speech of Nepal 1951, proposed to levy income tax including tax on agricultural income (MOF, Budget Speech, 1951). Subsequently, the elected government in 1959 introduced a system of income tax. The underlying reasons for the introduction were to generate more revenue in order to finance development activities and to help establish social justice in the Nation.

The income tax system was initially adopted by the Finance Act, 1959 and later on it was implemented under the Business Profits and Salaries Tax Ordinance, 1959. Again, the Business Profits and Salaries Tax Act, 1960 repealed the aforesaid ordinance. Initially, the tax was levied on business income

and salaries. The Income Tax Act, 1962 repealed the Business Profits and Salaries Tax Act, 1960 in 1962. This Act covered almost all sources of income. The Income Tax Act, 1962 was also repealed by the Income Tax Act, 1974. The Income Tax Act, 1974 was amended in 1977, 1979, 1980, 1984, 1985, 1986, 1989 and in 1993 (Khadka, 2000: 102).

Again, with the objectives for bringing all the income generating activities within tax net and reducing the scope of discretionary interpretation of the tax administration, the Income Tax Act, 2001 was introduced in 2002. This act simplifies and specifies several income tax related substances including tax rate structure, deductions of interest, and deductions of depreciation (Kandel, 2003:11).

Nepalese income tax system early in its initial stage had combined corporate income tax with individual income tax. It had designed and followed the same progressive income tax rate structure both for corporations and individuals. Due to the increase in the number of public and private limited companies, progressive rate structure for corporate tax became redundant. Consequently, in the year 1986/87, the progressive tax rate structure applicable to government corporation and public limited company was abolished and, in its place, flat rate system was introduced. This flat rate was applied to private limited companies also in 1993-94. For many years, corporations also were allowed exemption limits like individuals from 1959/60 to 1964/65. The exemption limit was withdrawn for corporate taxpayers from the fiscal year 1965/66 (Poudyal, 1998:20).

Current Nepalese tax system has provided favoritism to debt capital over the equity capital of the companies, which is reflected in cost of debt and equity capital. The reason is that the interest paid on debt capital is a deductible expense whereas dividend paid for equity capital is not deductible for income tax

purpose. It means, interest paid on debt reduces the amount of tax to be paid to the government. In contrast, the dividend is not the deductible expense and it does not save corporate tax. The corporate taxpayers using equity as the source of capital should pay more tax than those using debt as the source of capital. Because of such discrimination between the debt and equity capitals, there is a scope of favoring the debt financing by the manufacturing companies in the context of Nepal (Kandel, 2003:165).

A company may reduce its tax liability substantially if it finances its capital requirement through loans due to the deductibility of interest that results into lower tax burden. This is the reason why debt financing is more attractive than equity financing and Nepalese companies may be thinly capitalized in order to reduce income tax liability (Khadka, 2001: 46). In this context, the influence of corporate income tax on debt financing is emerging as an important aspect to investigate empirically.

2. Theoretical Framework

Since a corporation has a separate entity, the profit earned by it is different from the income of its shareholders. In corporations, ownership and control rest on different persons, where the management occupies independent status. In such situation, it is politically easy to collect income tax from these corporations (Carl, 1959: 116). Furthermore, government corporations, public and private limited companies, and partnership firms pay income tax with the same statutory rate (Khadka, 2000: 100). The numbers of these bodies have been increasing gradually over the years; therefore the importance and contribution of corporate income tax in respect to revenue generation is greater than other income taxes like: income tax from individuals and income tax from remuneration.

In view of above concepts, the first theoretical statement of this study is that the corporate income tax revenue occupies higher percentage share of total tax revenue as compared to income tax revenues from individuals and remuneration.

A firm seeking to maximize the welfare of its shareholders should take tax factors into account while making financing decisions. It is because; the tax on corporate profit reduces the amount of income available for distribution to the shareholders (Altman and Subrahmanyam, 1985: 181). For tax purpose, the payments of interest to the company's creditors are allowed as a deduction, but payments of dividend to the shareholders are not allowed as a deduction. Deduction of interest from income is good for the firms as it adds benefit to generate valuable tax shield. Debt financing helps increase firm's cash flow to the shareholders through its tax shield (Pringle and Harris, 1987: 495). Hence, a sound proportion of debt in financing mix also increases the market value of the manufacturing firms (Ross, et al., 2001:368). As a result, interest-bearing debts are attractive to the manufacturing firms for financing their investments (King, 1995: 158). Therefore, the difference in tax treatment of interest and dividend affect financing choice between debt and equity (Chua, 1995).

It is true that the tax factors add to the effectiveness of debt in generating positive leverage to the firms (Garrison and Noreen, 2003: 775). Corporate income tax is an important factor affecting level of debt, particularly when other factors remain constant. Thus, debt financing is a function of corporate income tax (Trezevant, 1992:1569). In these contexts, the decision pertaining to raise funds either through equity shares or preference shares or debentures depends on the corporate income tax structure (Mittal, 1989: 153). However, the dependency of such financing choice on corporate income taxes differs across the size of the firms because big firms are more alert and responsive to tax advantages than medium or small firms (Alam, 1994: 121). Similarly, the

dependency of debt financing on corporate income taxes differs across the profitability status of the firms (Fischer, et al., 1989: 20).

In view of above concepts, the second theoretical statement of this study is that the corporate income tax favors the use of debt in financing mix and there exists a positive relationship between corporate income tax and debt financing of manufacturing firms.

The increase in nondebt tax shield due to change in corporate income tax is not associated with reduction in debt at the individual firm level. It implies that firms with higher non-debt tax shield need not have lower debt tax shield (Dammon and Senbet, 1988: 357). Tax policy, which changes nondebt tax shield, induces a change in debt to equity ratios of the manufacturing firms (DeAngelo and Masulis, 1980). The manufacturing firms prefer depreciation rather than interest as a mean to get tax benefits. Thus, when amount of nondebt tax shield increases, debt tax shield decreases (Requejo, 1996: 44). Consequently, nondebt tax shield is related negatively to the debt tax shield of the firms (Dotan and Ravid, 1985: 517). In contrast, nondebt tax shield does not substitute debt tax shield and both have a positive relationship with each other (Long and Malitz, 1985: 325). In addition, a positive relation exists between corporate income tax rate and debt-equity mix, because of debt tax shield (Givoly, et al., 1992: 394). An increase in statutory corporate tax rate increases the value of debt tax shield (Kemsley and Nissim, 2002: 2071).

In view of above concepts, the third theoretical statement of this study is that nondebt tax shields substitute debt tax shield of manufacturing firms.

The traditional view asserts that debt increases market value of the firm. A firm is able to increase its market value by the use of moderate amount of debt. Only in the absence of taxes, the market value of a firm is independent of its debt (Graham, et al., 1985: 374-83). But in this modern age, the absence of taxes is

beyond the realities. An increase in the level of debt reduces the firm's tax liability and thereby increases the share of earning distributable to equity owners. Thus, choosing an appropriate level of debt is of great concern to the manufacturing firms. Obviously, the appropriate amount of debt is that, which increases the market value of the firms (Pringle and Harris, 1987: 491). In this context, where corporate income is subjected to taxation, the use of debt should result into a higher market price of outstanding securities of the firms. The importance of debt financing thus presumes that tax shield must have value in marketplace. Accordingly, the tax shield increases the market value of the firms (Martin, et al., 1991: 348). This is how; debt tax shield and market value of the firms are related positively (Graham, 2000: 1901).

Further, in view of above concepts, the fourth theoretical statement of this study is that the debt tax shield has a positive association with market value of manufacturing firms.

3. Statement of the Problem

In its endeavor to maximize owners' wealth, while making financing decision, the management should consider about the sources of funds that involve least cost. Although taxes do not have the same features as of other costs, a firm has statutory obligation to pay income tax before distributing returns to the owners. Obviously, income tax is an important factor affecting the choice of suitable sources of funds. For the determination of an appropriate debt-equity mix, the manufacturing firms depend largely on corporate income tax factors (Srivastava, 1984: 984).

Theoretical assertions suggest that there exists common discriminatory treatment of corporate income tax system towards the sources of funds in most of the countries. Corporate income tax system normally favors the debt financing and at the same time it disfavors the equity financing of the firm. This concept is

attributable to the extent interest is deductible and dividend is nondeductible in the corporate income tax system. Market imperfection characterized by the presence of taxes essentially lay down anticipation that corporate income tax exists as compatible factor determining debt-financing status of the firms.

Internationally, many studies, which endeavor to investigate corporate income tax discrimination resulting interlink to financing affairs of the firms, have been conducted. In 1963, MM demonstrated that tax deductibility on interest payments enhances the value of the firm and it results into a preference for debt over equity. Under the assumption of no bankruptcy costs and personal tax disadvantage to debtholders, they concluded that a firm always substitutes debt for common stock. Additionally, MM (1963) study supports the observations of previous studies of Smith (1952), and Owen (1960).

Subsequently, evidences of many other studies like: Alessi (1965), Baxter (1967), Farrar and Selwyan (1967), Baumal and Malkiel (1967), Hamada (1969), Oza (1971), Stonehill et al. (1973), King (1974), Rao and Rao (1975), Hite (1977), Wrightstman (1978), Kopche (1989), Flath and Knober (1980), Taggart (1980), Marsh (1982), Cordes and Sheffrin (1983), Miles (1983), Bradley et al. (1984), Long and Malitz (1985), Mittal (1989), Mackie-Mason (1990), Givoly et al. (1992), Lyon (1992), Trezevant (1992), Clark (1993), Chua (1995), Kotrappa (1995), Zingales and Rajan (1995), and Graham (1996) more or less sustained on the MM (1963) findings.

Later on, Miller (1977) documented that financing decision is irrelevant in the presence of both corporate and personal income taxes and there is no question of optimal level of debt. He concluded that there is no relationship between corporate income tax and financing mix of the manufacturing companies. Subsequently, evidences of many other studies like: Chakraborty (1977), Brennan and Schwartz (1978), Kim (1978), Titman and Wessels (1988),

Wedig et al. (1988), Fischer et al. (1989), Myers (1984), Myers and Majluf (1984), Eckbo (1986), Mayer (1990), Requejo (1996), Fama and French (1998) supported the Miller's findings.

Differently, among others, DeAngelo and Masulis (1980) observed that changes in tax law, which affect the level of available nondebt tax shield, induce a substitution effect wherein firms substitute debt tax shield for nondebt tax shield and vice versa. They argued that decrease in tax liability because of depreciation could substitute the tax advantage of debt financing. So, firms with sufficient nondebt tax shield include less debt in their financing mix. In other words, level of debt tax shield and the level of nondebt tax shield have negative relationship. These observations are sufficient to support irrelevancy theory of tax advantages of debt financing. Subsequently, other empirical studies also have supported the DeAngelo and Masulis's (1980) findings. Importantly, the other studies conducted by: Cross (1980), Dotan and Ravid (1985), Mackie- Mason (1990), Givoly et al. (1992) and Trezevant (1992) also have supported the substitution effect to debt tax shield as observed by DeAngelo and Masulis. Alternatively, Bradley et al. (1984) found a positive relationship between gearing and their proxies for nondebt tax shield. They demonstrated that nondebt tax shield does not substitute the debt tax shield. It thus implies a positive relationship between nondebt tax shield and debt tax shield. Afterward, the other studies like: Long and Malitz (1985), Dammon and Senbet (1988), Titman and Wessels (1988) and Fischer et al. (1989) have supported the observation made by Bradley on the basis of cross sectional evidences.

The tax advantages of debt (MM's first hypothesis in 1963) would increase firm's value and decrease the cost of using debt capital. Under the assumption, there are no bankruptcy costs and personal tax disadvantages, MM advocated that the firm's market value would be equal to the value of unlevered firm plus the value of tax advantages of debt. It was recognized that debt tax shield and

market value of the firm have positive relationship. Later, this recognition was supported by several other empirical studies like: Sarma and Rao (1969), Wrightsman (1978), Bierman and Oldfield (1979), Taggart (1980), Cooper and Franks (1983), Masulis (1983), Miles (1983), Lewellen and Mauer (1987), Emery and Gehar (1988), Kopche (1989), Clark (1993), Engel et al. (1999) and Graham (2000). Likewise, Kemsley and Nissim (2002) demonstrated cross- sectional evidences supporting market value additive effect of debt tax shield using MM (1963) model. In this respect, Kemsley and Nissim (2002) documented that debt tax shield and market value of the firm have positive relationship.

Alternatively, Miller (1977) observed that there is no relationship between tax advantages of debt and firm's value. Subsequently, many other studies were conducted and they have supported the conclusion of Miller (1977) study. These studies were conducted by: Myers (1977), Miller and Rock (1985), Eckbo (1986) and Fama and French (1998). In addition, these studies also supported the observation of the previous studies conducted by MM (1958) and Jensen and Meckling (1976) that the tax advantages of debt and value of the firms are related insignificantly.

These findings have created a sense of controversy that corporate income taxes have an effect on deciding financing mix of the manufacturing firms. This controversy also remains valid on the extent and directions of such effect. Similarly, there is no unanimous argument about offsetting effect of other tax and nontax dimensions that makes tax advantage of debt quite insignificant. Despite this controversy, many of the reviewed previous studies have suggested that corporate income taxes favor debt financing.

The review of literature suggested that debt financing of manufacturing firm is sensitive to corporate income taxes. Especially, debt financing has been influenced positively by discriminatory treatment of corporate income tax system.

Discrimination for deductibility of interest generally results saving outflow of cash as tax liability. Saving is reflected on the earnings of the firms adding more wealth to the owners. Thus, value maximizing firms use debt in their financing mixes. For these reasons, debt-equity mix is positively related with corporate income tax rates. On the other hand, the opponents argue that the tax advantage of debt is normalized by tax advantage obtained from investment through depreciation expenses. Depreciation is a deductible non-cash expense, which may produce more tax advantage than that of interest payment on debt. Thus, nondebt tax shield substitutes the debt tax shield. Because of this substitution effect to debt tax shield, the influence of corporate income tax is irrelevant to debt financing of the firms.

In Nepalese context, however, the influence of corporate income taxes on debt financing of manufacturing firms is a matter of study. There is absence of adequate studies especially on the relationship between corporate income taxes and debt financing of Nepalese manufacturing companies. Most of the Nepalese studies, in this regard, concentrate macro level analysis, and administrative aspect of the income taxes. It is therefore difficult to generalize specific Nepalese case by applying the findings of international studies. In other words, the applicability of the findings of previous international studies in the area of corporate income taxes and their influence to debt financing of Nepalese companies remains questionable. In the context of Nepalese manufacturing listed companies; whether corporate income tax influences debt-financing; whether nondebt tax shield substitutes debt tax shield; and whether debt tax shield has its association with market value of firm; are still unanswered. Thus, this study has dealt with the following issues:

(a) What are major provisions governing corporate income tax system in Nepal? Has corporate income tax revenue been an important component of total tax revenue?

(b) Does corporate income tax system favor the use of debt in financing mix? How are corporate income tax and debt-equity mix of selected companies related? Does the relationship between corporate income tax and debt-equity mix differ across the size, and profitability of the selected companies?

(c) How are debt tax shield and nondebt tax shield related? Does nondebt tax shield substitute debt tax shield in the selected companies? How does the relationship between debt tax shield and nondebt tax shield vary across the size, and profitability of the selected companies?

(d) How is debt tax shield associated with market value of the selected companies? How does this association vary across the size, and profitability of the selected companies?

(e) How do the opinions of two responding groups from profit-making companies and loss-making companies differ?

4. Objectives of the Study

The basic objective of this study is to analyze the influence of corporate income tax on debt financing of the manufacturing listed companies of Nepal. Following are the other specific objectives:

1. To examine corporate income tax from legal and revenue perspectives.

2. To analyze relationship between corporate income tax and debt-equity mix of selected companies.

3. To estimate relationship between debt tax shield and nondebt tax shield of selected companies.

4. To assess the association of debt tax shield with market value of selected companies.

5. To analyze opinions of officials of selected companies in respect to corporate income tax and debt financing.

6. To suggest recommendations for the improvement of corporate income tax system in Nepal.

5. Limitations of the Study

The scope of present study has been limited in terms of units covered as well as the period of study. The study has covered only the manufacturing listed companies, which were in operation at least for five years. Selection of these companies was made to represent types of industries subject to the availability of data. It has been assumed that each selected company does not represent the entire industry. However, the sample so selected has been considered a good representation of all manufacturing listed companies of Nepal.

The financial accounting data of the sample companies could be obtained upto the fiscal year 2002/03. Because of political instability in the country, the companies were unable to make their latest financial reports available to the public. Thus, this study covers the period of 13 years, which spans over 1990/91 to 2002/03.

This study has considered only the corporate income tax. Other taxes, namely dividend tax, interest tax, value added tax, local tax, customs etc have not been taken into account.

The information collected from both primary and secondary sources were assumed to be reliable. The study analyzed the opinions of seventy-six officials working at officer-level of the sample companies. In this study, Financial

accounting data reported by the respective companies and Security Exchange Center were employed for analysis.

The study analyzes relationship between corporate income tax and debt financing without considering any specific life cycle stage of the business firms. Likewise, this study accounted for the debt of the selected companies in totality and it excluded the relationship of corporate income tax with each type of debt specifically. Debt-equity mix has been taken as the measure for debt financing. For specific analysis, the information was taken from only the fiscal years in which sample companies had made an expense of income tax.

6. Organization of the Study

The study report has been compiled into nine chapters. The first chapter presents an introduction including general background, theoretical framework, statement of the problem, and objectives of the study. The second chapter comprises review of pertinent concepts and previous empirical works. The third chapter pertains to methodological aspects of the study. Likewise, chapter fourth examines corporate income tax from legal perspectives and revenue perspectives. The chapter five focuses on influence of corporate income tax rates on debt-equity mix. An analysis of debt tax shield in relation to nondebt tax shield constitutes sixth chapter. Similarly, an analysis of debt tax shield in relation to market value of the firm constitutes seventh chapter. The chapter eight deals with the opinions of the officials of selected companies on corporate income tax and debt financing. Ultimately, chapter nine concentrates on summary, conclusion, and suggestions.

CHAPTER - II

PERTINENT CONCEPTS AND LITERATURE REVIEW

This chapter deals with certain concepts of corporate taxation and debt financing, and reviews relevant previous studies.

1. Pertinent Concepts:

This part mainly deals with the concepts of different aspects of corporate income taxation and debt financing that are relevant to this study. It therefore includes the concept of corporate taxation, rationales for separate corporate tax, corporate income tax system, corporate income tax rate, effective income tax rate, tax shield, firm's value, debt-equity mix, and effective interest rate.

a. Concept of Corporate Taxation

In modern economics, taxes are the most important sources of government revenue. Government uses tax revenues for fiscal purposes, such as altering the distribution of wealth in a country, and stabilizing the country's economy. In most countries, a number of taxes are levied by the central government, and also by local government such as state, country, city or town governments (The World Book, 1966: 38). As taxes are presumably collected for the sake of the welfare of taxpayers as a whole, the liability of the individual taxpayer is independent of any benefits received. People pay taxes to the

government for all kinds of services that they enjoy as a community pertaining to defense, education, roads and sewage disposal etc. (Britannica, 1990: 408).

There are two main categories of taxes. Taxes on income and wealth are normally direct taxes and their burden falls directly on the person or business firm to whom it is imposed. Some of the important examples of direct taxes are income tax, profits tax, excess profits tax, capital gain tax, property tax, payroll tax and various local taxes. Taxes on goods and services are normally indirect taxes and their burden can be shifted to someone else. Indirect taxes include sales taxes, and custom duties imposed on goods imported from other countries (The World Book, 1966:39).

Individual as well as corporation are subjected to income tax. The income tax levied on individuals is called personal income tax. Whereas the income tax levied on corporations is known as corporate income tax (Bhatia, 1992: 262). Corporation is the most important form of business organization. A corporation is a legal person and it accomplishes many of the rights, duties and privileges of an actual person. Corporations can borrow money and own stock in another corporation. The corporate form has many variations around the world. These firms are often called joint stock companies, public limited companies, or private limited companies etc (Ross, et al., 2001: 10). Hence, the way of levying and collecting income taxes from different companies is corporate taxation.

b. Rationales for Separate Corporate Tax

One of the administrative arguments rests on the assertion that retained corporate profits would completely escape income taxation if there were no corporate taxes. Indeed, this is the case when two income taxes are not integrated into a single income tax because personal income can be avoided from taxation by accumulating it in corporations. Another argument favoring separate corporate tax points out that the corporations require a separate form

of income taxation since they receive unique benefits or privileges from government. The most important of these benefits is the limited liability of shareholders: they are not liable for the corporate debts beyond their investments. Still, another argument to justify corporate income taxation asserts that the corporation constitutes a separate taxable entity apart from its shareholders (Herper, 1996:188).

Taxation of corporate profits has been justified on the following grounds: (Sheth, 1982:24).

(1) Corporate profits are important sources of large incomes. If they are not taxed, they will intensify inequality of incomes and wealth.

(2) They are important source of unused savings.

(3) Taxation on corporate profits can bring large revenue to the exchequer. The case for such taxation is particularly strong when the corporations are foreign-owned and operate in enclaves contributing little to the development of the country.

(4) Corporate taxation offers possibilities for directing investment towards the most desirable sectors for economic development.

c. Corporate Income Tax System

There are three basic categories of corporate income tax system namely classical, imputation and split rate. Under classical system, company's profits are taxed before the dividends are paid; and dividends are taxed as investment income of the shareholders. The USA, the Netherlands and Australia still follow this system. The classical system has been criticized because of the double taxation on dividends. In order to mitigate the effects of double taxation on dividends, imputation system has been followed in EEC countries as well as in

Canada. Under this system, some of the tax paid by a corporation on its income is considered as the taxes paid by the recipients of such dividends.

Under split-rate system, both distributed income and retained profits are subjected to taxation however a lower rate of tax is levied on distributed income than that on retained profits. Until the end of 1976, West Germany used this system and Australia is still continuing this system (Sing, 2001: 299).

The issues over the corporate income tax system and its design have centered over its potential effects upon investment. The major issue that affects all corporations involves the double taxation of corporate dividends (Musgrave and Musgrave, 1984: 380). Further, three distinguished issues in deciding appropriate base for the taxation of corporate income are measurement of depreciation, measurement of inventory profits, and treatment of capital gains or losses (Prest and Barr, 1985: 412). These emerging issues of corporate income tax system would not be reconciled unless reforming the systems by moving to more neutral system that eliminates some discriminatory deductions. The resolution of these issues appears essential to determine suitable income tax policy (John, et al., 1996: 600).

d. Corporate Income Tax Rate

Corporate income tax is levied normally at a flat rate, whereas the progressive rates are levied on individual income. Such a flat rate is desirable for many reasons. Firstly, the flat rate structure, under a corporate income tax system, could be justified since the size of the company is irrelevant to taxable capacity. This is because; the taxable capacity of shareholders in both smaller and bigger companies may be similar irrespective of the number of shareholders they have (George, 1977: 737). Secondly, flat rate does not discourage the efficient company that generates more profits. Thirdly, flat rate structure does not stimulate evasion through reorganizations of corporate firms that may take place

only on paper (Richard, 1970: 82). Because of flat rate structure, companies are subjected to tax on every rupee of their adjusted net income.

e. Effective Income Tax Rate

Effective tax rate is the ratio of tax provisions to profits before tax (Rao and Rao, 1975: 15). From this point of view, income tax rate may be taken as effective tax rate, since it measures the ratio of tax paid to tax profits. In the absence of required data the ratio of tax provisions to profits before tax represents the effective tax rate adequately (Gandhi, 1968: 39). However, effective tax rate based on reported tax expense and pretax income may not reflect true economic differences between companies. Both reported tax expense and pretax income are affected by the income and expenditure recording method applied in the companies (Zimmerman, 1983: 119). In spite of this, the differences in timing of recognition for revenues and expenses between taxable income and accrual income should not influence the effective tax rate. Thus, the relation between the tax provisions and the pre tax income is referred to as the effective tax rate or tax ratio (Bernstein, et al., 1997: 587).

f. Concept of Tax Shield

Debt financing has one important advantage under the corporate income tax system. The interest that the company pays is a tax deductible expense; hence the return to bondholders escapes taxation at the corporate level. This is the tax shield provided by the debt as it increases the total income that can be paid out to bondholders and stockholders (Myers and Brealey, 2000: 500). The tax savings of a company from the tax deductibility of interest expense is interest tax shield (Ross et al., 2001: 377). It is the reduction in taxes that results from the tax deductibility of interest. Because of the interest tax shield the company's cash flows to owners increase with use of debt (Pringle and Harris, 1987: 495).

The tax shield of debt is the outcome of deductible interest. Thus, debt tax shield and interest tax shield are of same value.

The debt tax shield is the difference between income tax that would be paid if the company had no debt and the income tax that is paid when the company has debt (Wrightsman, 1978: 651). With taxes as the only imperfection, no corporation pays income tax if it uses sufficient debt to make interest charges always equal to taxable income. Interest charges provide a costless alternative mechanism for sheltering taxable income (Cooper and Franks, 1983: 572).

Further, depreciation on the assets reduces amount of taxes levied on the company's income. As a result, it saves cash flowing-out through taxes. This saving is called the tax shield or tax effect of depreciation (Louderback and Dominiak, 1982: 272). The depreciation deductions involve no outflows of cash; however, they are fully deductible in arriving at taxable income. In effect, deduction of depreciation shields revenues from taxation and thereby lowers the amount of income tax for the period. As depreciation deductions shield revenues from taxation, they are generally referred to as a depreciation tax shield (Garrison, 1988: 698). The depreciation tax shield is also called nondebt tax shield (Wedig, et al., 1988: 33).

g. Concept of Firm's Value

The term value is often used in different contexts, depending on the nature of its application. The different uses of this term include book value, liquidation value, intrinsic value and market value. Book value is the value of financial asset as shown by a company's balance sheet. Liquidation value is the total sum that could be realized when the business assets were sold individually. The intrinsic value of an asset is the present value of the cash flows expected to receive in future. This value is also called the fair value.

The market value is the observed value of financial asset in the marketplace, where buyers and sellers negotiate and fix a mutually acceptable price for the asset. In theory, a market price exists for all assets. However, many assets have no readily observable market price because trading seldom occurs (Martin, et al., 1991: 93). Market value of the company is equal to the market value of the financial assets of levered company plus tax advantage on debt. Hence, the value of the levered company exceeds the value of the equivalent unlevered company by an amount of tax advantage on debt. The greater the amount of debt, the greater will be the difference between market values of levered and unlevered companies because of tax advantage on debt (Graham, et al., 1985: 380).

h. Concept of Debt-Equity Mix

Debt-equity mix appears when there is financing mix. It may be defined as the proportion of debt and equity used in financing investments (Pringle and Harris, 1987: 477). It has long been argued that the corporate income tax favors the use of debt in the financing mix of corporations. Theoretically, a financing mix that results into more tax benefits and pays the cost of raising capital to a lower level is to be accepted. Companies should aim at raising the required funds as cheaply as possible (Durand, 1952: 214).

The manufacturing company can enhance its market value by restructuring its amounts of debt financing with reasonable degree when the impact of tax is taken into account. In effect, debt financing enhances the value of the company because of its tax advantage (Mao, 1969). A rise in the tax rate therefore stimulates the companies towards debt financing. Thus, there exists a positive relationship between corporate income tax rate and debt-equity mix (Rao and Rao, 1971: 240-41).

When the tax discrimination is operating in practice, it is reflected in the financing mix of company. Further, changes in financing mix usually occur gradually and these are reflected in the new market issues. Therefore, an increase in the tax rate affects the financing mix of a company in a lagged fashion rather than instantaneously (Alessi, 1965: 195).

i. Concept of Effective Interest Rate

As regards the influence of the cost of borrowing on the pattern of financing, there is a distinct view in the literature that the lower the rate of interest relative to the cost of equity capital, the greater is the incentive for corporations to use debt in their financing mix. Thus, there is an inverse relationship between effective interest rate and debt-equity mix. Both the level and structure of interest rates are important determinants of the level of debt issues (Solnik and Grall, 1975).

Effective interest rate may be taken as a measure of cost of debt capital for analytical purposes. This measure depends on the actual interest expenses made by the companies. Thus, an effective interest rate is the ratio of interest expenses as reported in the financial statement to interest-bearing debt (Rao and Rao, 1975: 13-14).

2. Literature Review:

The study, in this section, reviews significant empirical works. Both the literatures relating to Non-Nepalese empirical works and Nepalese empirical works have been reviewed and the relevant findings are noted down:

a. Review of Non-Nepalese Empirical Works

A study by Smith (1952) on "Effects of Taxation on Corporate Financial Policy" observed that the financial structure of the company is clearly dominated by tax considerations. This study was based mostly on primary information

collected during field survey of American manufacturing and non-manufacturing companies for the period from 1948 to 1951. Respondents, active in finance, accounting and law, were interviewed individually or in small groups during the study. For the comparative appraisal of the effects of taxation on corporate financial policy, sample companies were grouped into closely controlled and widely owned companies. The specifically generalized observations of the study were: tax factors tend to produce more complex capital structures in newly organized closely controlled corporations; complex capital structures can be used to create tax advantages in closely controlled corporations. The other observations were: an increase in the corporate income tax depresses the price of the stock; the stock price can be maintained by an increase in the rate of earnings;   the increase in the rate of earnings is less than proportionate to the increase in the tax rate.

Modigliani and Miller (1958) observed that, without taxation, assuming perfect capital markets and no bankruptcy costs, the cost of capital for a firm is independent of its capital structure. Thus, debt can be freely substituted for equity without cash flow consequences.

Owen (1960) conducted a study on "Business Financing and Taxation Policies" in the selected 438 Canadian corporations representing manufacturing and servicing sectors for the period from 1946 to 1956. He observed that corporate tax issues have an important effect on the methods of financing used by manufacturing companies. Similarly, the depreciation policy affects the financing policy of the corporations to an extent that the deduction for depreciation is allowed by the income tax act in the computation of taxable income.

Modigliani and Miller (1963) found that tax deductibility of interest payments, with ignoring bankruptcy costs, positively impacts future cash flows,

resulting in a preference for debt financing over equity financing. Other findings of this study were: debt has net tax benefits due to interest deductibility; and there is a positive relationship between debt financing and value of the firm.

Alessi (1965) employed effective tax rate as a single independent variable to investigate the effect of corporate income tax rate on debt to equity ratio of manufacturing companies. In this study, he concluded that the variations in corporate income tax rate cause the variations in debt to equity ratio of manufacturing companies. He argued that the corporate income tax rates have to be considered explicitly as a critical variable in any model that intended to explain variations in financing mix. He considered that the effect of other variables is somewhat less critical and used a simple linear equation, with effective tax rate as only the independent variable, to investigate the effect of corporate income tax rate on the debt to equity ratio.

Modigliani and Miller (1966), with reference to their former observation of 1963, have concluded that the debt has a tax advantage and the value of companies can be increased with the use of debt in their financing mix. In that study, they have concluded that the debt financing and the market value of the companies have a positive relationship. In another study, Robichek and Myers (1966) observed the tax advantage of debt as an important factor influencing financing mix of the companies.

Baxter (1967) has concluded that the tax advantage of debt is counter balanced by the costs associated with financial distress after a certain level. In another study, Farrar and Selwyn (1967) have argued that the corporate tax rate has an effect on debt equity choice of the manufacturing firms.

Baumol and Malkiel (1967) analyzed the role of corporate income tax in relation to debt-equity mix of corporations. They have pointed out that the first

effect of corporate income tax is that it reduces the expected earnings proportionately. The difference in tax treatment of debt and equity will tend to increase substantially the divergence between the company opportunity locus and the shareholder opportunity locus. The corporation, by shifting from equity to debt, can actually increase the total amount of earnings through obtaining maximal tax advantage. Further, they have concluded that tax advantage of debt financing makes it desirable for the firm to employ as much debt as it is consistent with financial prudence.

Gandhi (1968) has studied the incidence of corporate income tax in aluminum, match, and electricity generation industries of India. In that study, by using cross-sectional data, the ratio of profits after tax to net worth was regressed with effective tax rate. Effective tax rate was measured with the ratio of tax provisions to profits before tax. A significant negative relationship of effective tax rate with returns to owners' capital was reported in the study. The other findings of the study were: (i) corporate tax is borne by the company's retentions (ii) corporate tax has been partially shifted to the government in case of aluminum and match industries (iii) corporate tax has affected the prices of the products in electricity generation and supply industries.

Sarma and Rao (1969) have conducted a study to find out the relationship between tax advantage of debt and the market value of firm. The sample contained 30 companies from the Indian engineering industry for a period of three cross-section years 1962, 1964 and 1965. This study was based on the cross-sectional data. It has employed the variables like: market value, debt and tax adjusted earning. These variables were deflated by total assets. This study has found a positive relationship between tax advantage of debt and the market value of firm.

Brennan (1970) had argued that the deductions of interest payments from net income could minimize the burden of taxes on dividends. The other findings of this study were: the market value of the firm is not affected by the firm's dividend policy;   the dividend policy and market values of the firm have no significant relationship as taxation on capital gains dominates the stock price. Oza (1971) documented that interest paid on borrowed capital is deductible from the total gross income while the dividend paid on the share capital is not deductible. Interest-bearing debt is increased to the extent that the income tax benefits are ensured. In another study, Fama and Miller (1972) had observed that the use of debt in financing mix increases the wealth of stockholders and the firm makes risky investments.

Stonehill et al. (1973) concluded that all types of companies want to obtain the tax advantages from debt financing. This study had found income tax as a very important determinant of debt equity choice. In another study conducted by Kraus and Litzenberger (1973) has advocated that the financial economists hold investment decisions of the companies constant while analyzing its financing decisions.Similarly, King (1974) has observed that corporate income tax rates have positive impact on the debt financing of the companies.

Rao and Rao (1975) had examined the theoretical assertion that the corporate income tax induces debt financing in manufacturing companies. They had analyzed the data pertaining to the manufacturing sector over the period from 1950 to 1965. The study gave an emphasis to isolate corporate income tax influence from other nontax variables operating on the chosen capital mix indicator. Moreover, a multiple regression model was used to examine the relationship among the variables. One year lagged variables like effective tax rate; effective interest rate, outstanding leverage and ratio of internal funds to

the gross investment flows were confined to explain the variations in debt-equity mix of the manufacturing companies. Ratio of debt to net worth, ratio of debt to networth plus interest-bearing debt, and ratio of debt to total assets were employed in the model as dependent variables. The outcomes of the study were: a positive relationship of effective tax rate with debt-equity mix; a positive relationship of outstanding leverage with debt-equity mix;   a negative relationship of effective interest rate with debt-equity mix;   and a negative relationship of internal resources to investment flow ratio with debt-equity mix.

Jenson and Meckling (1976) had pointed out that the tax advantage of debt financing is counterbalanced by the bankruptcy costs. In another study, Chakraborty (1977) had examined the characteristics of capital structures of ten different Indian public and private companies. In that study, he found that the corporate income taxes and debt-equity ratio have a negative relationship.

Hite (1977) observed that Interest payments and corporate income tax influence firm's debt financing decisions. In another study, Myers (1977) had concluded that the debt financing could cause firms to make less investment of funds because the gains from investment are shared with the bondholders.

Miller (1977) concluded that there is no optimal debt equity ratio for any particular company. This implies that all companies have confidence that they are able to generate sufficient earnings to ensure that their taxable income is positive irrespective of the magnitude of their interest payments. Where there is uncertainty, debt is reached to a level where the company is able to achieve the maximum tax benefit associated with the interest payments. In the presence of corporate and personal taxes, financing mix is irrelevant and there would be no point of optimal level of debt. Further, this study concluded that the relative values of firms within same risk class are identical, regardless of their financing

structures. Importantly, the study found that leverage clienteles ensures the level of debt in the presence of corporate tax and there is no relationship between debt and firm's value. Firms issue debt only when they expect to use the interest for tax benefits.

Warner (1977) examined direct costs of bankruptcy for eleven U.S. companies between 1930 and 1955. He found that the average cost of bankruptcy is equal to one percent of the market value of the companies. Thus, bankruptcy costs do not have significant influence over debt financing. This study had found that there is relatively small direct cost of bankruptcy.

Miller and Scholes (1978) documented that taxes on dividends could be avoided by investing in stocks or by offsetting deductions of personal interest payments. Firm value is not affected by dividend policy because pricing is dominated by symmetric taxation of dividends and capital gains.

Wrightsman (1978) employed tax shield valuation model to reconcile traditional and modern views on the financing structure. In that study, his first argument was that, in the presence of corporate income tax the financing decision does make a difference. The value of the firm increases as debt is substituted for equity in the financing structure. This is because; corporate debt adds value to the firm in the form of a capitalized value of the tax shield on interest expense. Secondly, he argued that under conditions of risk less debt the substitution of debt for equity increases the value of the firms, since corporate tax rate is independent of leverage. The value of the tax shield increases proportionally with debt. Finally, he concluded that maximization of debt, maximizes the value of the firm due to debt tax shield on interest payment.

Bierman and Oldfield (1979) studied the effect of substituting debt for equity capital on the value of companies, in the presence of corporate income

tax. For simplicity, they ignored personal income tax. In that study, they concluded that the tax relaxation is gained on actual payments of debt. In another study, Kim and McConnell (1979) found that when personal tax rate on interest income is less than statutory corporate income tax rate, there is a possibility for the companies to obtain tax benefits from debt fully. In such situation, it may encourage company to include more debt in its financing mix.

DeAngelo and Masulis (1980) observed that the changes in tax law, which affect the level of available investment relating tax shield, induce a substitution effect wherein firms substitute interest tax shield for investment related tax shield and vice versa. They have developed a model for optimal capital structure which incorporates the impact of corporate income tax and nondebt tax shield. They also found that tax deductions for depreciation are the substitutes for the tax benefits of debt financing. So, firms with large nondebt tax shield include less debt in their capital structure. In other words, level of debt tax shield and the level of nondebt tax shield are related adversely.

Flath and Knoeber (1980) had tested the relationship of taxes with capital structure of manufacturing firms. The sample of this study includes 38 manufacturing firms and covers the period from 1957 to 1972.The major findings of this research work were: business failure leads firms to exploit the tax advantage of debt financing fully;   increase in interest payable has the relationship to the increase in tax advantages; corporate income taxes do imply financing pattern of manufacturing firms.

With the purpose of extending Miller's model, Taggart (1980) examined the basic model by introducing incomplete capital market condition and cost associated with the debt. This study found, an increase in corporate tax rate enhances the value of the interest tax shield, which encourages adding more debt in the financing mix of the companies.

Barnea, Haugen and Senbet (1981) pointed out that investors could enter into tax arbitrage schemes, where incremental transaction costs exceed the incremental tax benefits. The introduction of tax benefits increases the amount of debt issued and reduces the equilibrium interest rate.   Likewise, Marsh (1982), in his empirical study entitled "The Choice between Debt and Equity", did not include tax rate as separate explanatory variable. Rather he claimed that the tax might be an important determinant of debt ratios. At least for companies in a tax paying position, the tax deductibility of interest affects all companies in the same way at a given point of time.

Auerbach (1983) examined differences between internal and external sources of financing at the firm level. He observed that the rates of return are generally higher when financed with new issue of share than financed with retained earnings. Firms may resort to new share issues only if the projects are sufficiently profitable to cover the higher tax costs of external finance. Although debt is preferred over new equity from corporate income tax perspective, certain firms may be unable to receive debt financing.

Cordes and Sheffrin (1983) studied on tax advantages of debt financing in manufacturing companies by employing corporate income tax model. They found that the tax advantages of debt financing based on statutory corporate tax rates were higher than the tax advantages of debt financing based on effective tax rates. Further, they found that the tax advantages varied according to the industry classification of companies. Finally, they have concluded that the tax advantages of debt financing to a company could vary over time, because of which, the debt to equity ratio also varies positively over time.

Cooper and Franks (1983), in their research work entitled "Taxation and Financial Decisions" argued that the effective tax rates are lower than statutory corporate tax rates. The effective tax rates depend upon the length of time for

which the firm expects to have a tax loss carry forward. Companies take opportunities to decrease taxable income through debt financing. Such decrease in taxable income positively influences the value of the companies.

Masulis (1983) examined the impact of capital structure change on firm value of U.S. companies over the period from 1963 to1978. The major explanatory variables of this study were: changes in leverage and changes in debt tax shield. The major findings of this study were: a significant positive relationship of debt tax shield with market value;   changes in stock prices are positively related to leverage changes;   debt level and market value of the companies have a positive relationship.

Miles (1983) analyzed the interaction of taxes and inflation and found that equity financing is always inferior to debt financing because of tax advantage of debt. In another study, Bradley et al. (1984) found a positive relationship between gearing and their proxies for nondebt tax shield. They demonstrated that high marginal tax rate promotes the use of debt.

Myers (1984) observed that the management of firm normally follows a preferential order while making financing decisions. Management prefers internal financing over external financing to avoid the scrutiny process of outside capital suppliers as well as associated flotation costs. In the absence of adequate cash flows for internal financing, the external financing is a must. Normally, debt is preferred over equity capital and preference share capital because it results into less interference into the management. Preferred stock has same feature of debt because this stock bears the fixed rate of dividend like fixed rate of interest on debt. Therefore, the least desirable security is equity share. According to this financing philosophy, internal resources occupy the preference of the firm followed by debt financing, preferred stock financing, and equity share financing.

Long and Malitz (1985), in contrast to certain studies, demonstrated cross-sectional evidences supporting that the increase in corporate income tax rates increases the proportion of debt in financing mix. In their empirical studies they also found a positive relationship between gearing and nondebt tax shield.

Lewellen and Mauer (1987) examined the effect of tax feature of debt financing on firm value. This study observed that the presence of long-term debt in a corporation's capital mix gives rise to a valuable tax timing option. This tax timing option implies that leverage has a positive tax effect on total value of the firm.

Dammon and Senbet (1988) examined the effects of taxes on financial leverage. This research had attempted to know about the effects of taxes on corporate financial decisions. The result of this research has indicated that an increase in investment relating tax shield, due to change in the corporate tax code, is not necessarily associated with reduction in debt ratio at firm level. Firms with higher investment relating tax shield do not necessarily have lower debt relating tax shield.

Titman and Wessels (1988) found negative relationship between nondebt tax shield and debt tax shield. They used various forms of debt to equity ratios to test whether nondebt tax shield reduce the propensity to use debt tax shield. This study could not find significant tax effects. In another study, Emery and Gehr (1988) found that complex capital structures afford tax-timing options. These provide flexibility to manage future cash flows.

Wedig et al. (1988) conducted a study on "Capital Structure, Ownership, and Capital Payment Policy: the Case of Hospital. The study covered the sample of 1407 American hospitals of which eighty five percent were private nonprofit, three percent were proprietary, and twelve percent were government district hospitals. Specially, the study employed hospital's specific cash flows data from

the annual surveys from 1978 to 1983. The study found statistically significant negative relationship of nondebt tax shield with firms' debt to assets ratios.

Mittal (1989) studied the effects of taxation policies on financial decisions of large manufacturing companies in the private sector in India. On the basis of paid up capital, 65 companies were selected as the sample companies. Structured questionnaire (divided in to three sections) was the prime tool used to accumulate necessary information. The underlined objectives of this study were to know the degree of impact of tax factors on financing, investment and dividend decisions; and to measure the dependency of financial decisions on various tax factors. The conclusion of the study, in respect to financing decision, was that the main factor affecting financing decision of manufacturing companies is the corporate income tax. Further, the debt financing of the manufacturing companies is influenced positively by corporate income tax rates.

Fischer, Heinkel and Zechner (1989) used various forms of debt to equity ratios to test whether nondebt tax shield reduces the propensity to use debt tax shield, but they found insignificant effect of taxation on debt to equity ratio. In another study, Chang and Rhee (1990) analyzed the impact of taxes on capital structure decisions of 508 different American companies. This study found: a positive relationship of debt with nondebt tax shield, and a negative relationship of debt with shareholders' income tax rates. In another study, Mackie-Mason (1990) found that the firms which are subjected to higher corporate income tax rates have issued more debt than the firms which are subjected to lower corporate income tax rates.

In another study Mayer (1990) compared the extents to which retained earnings, debt, and new equity shares were used to finance new investment in Canada, France, Germany, United Kingdom, and United States in between 1970 and 1985. In all countries, despite varying tax treatment, the dominant source of

corporate finance was retained earnings, although their importances were varied among countries. A comparison between these countries, however, has not shown significant relationship between the income tax factors and financing choice of the companies.

Wang (1991) examined the relationship of firm's size with effective tax rate of 143 U.S. manufacturing firms that belong to petroleum refining industry, aerospace and defense industries over the period of 1978 to1983 by employing simple regression models. This study found a significant positive relationship between firm's size and effective corporate tax rate and a significant negative relationship between operating loss and effective corporate tax rate. This result depicts that the size and profitability of the firms are the major determinants affecting the extent of influence of corporate taxes to the financial decisions. In that study effective tax rates were measured on the basis of gross profit as well as profit before tax. And the results were tested in the same regression model for big, small, profit-making and loss-making firms. The researcher argued that the relationships of effective tax rate with the size and operating loss are sensitive to the nature and types of the firms included in the sample. He has suggested to use multivariate estimation model for better results.

Givoly et al. (1992) observed a positive association between changes in debt-equity ratio and changes in corporate tax rate. This study also found that nondebt tax shield substitutes debt tax shield. In another study, Lyon (1992) analyzed the effects of corporate income tax on the financing mix of the manufacturing firms. The study found that debt financing is the most important financing to obtain tax benefits followed by retained earnings financing and new equity financing.

Trezevant (1992) found that the debt financing is a function of corporate income taxes on a study entitled "Debt Financing and Tax Status". On that study,

836 U.S. manufacturing firms were taken as sample size. The study period was from 1979 to 1982 and had covered two fiscal years after and two fiscal years before the enactment of the new American Income Tax Act, 1981. Two linear models were tested in the study. The relationship between debt tax shield and nondebt tax shield was tested in first linear model, and the relationship among debt tax shield, nondebt tax shield, and debt ratios were tested in second linear model. The estimated coefficient for substitution effect was (-0.145). In overall, that study found a negative relationship between debt tax shield and nondebt tax shield.

Allen (1993) studied on "Financial Managers' Perspectives to the Factors Determining the Investment Policies of Listed Australian Companies." The sample represented 48 Australian Listed Manufacturing Companies. The basic objective of the study was to investigate financial managers' perceptions to the broad determinants of listed companies' investment and financing decisions. That study employed a field research method to analyze the linkages between companies' financing and investment decisions. The findings of this study were: the perceptions of managers are affected by the existing characteristics of capital markets; the financing practices are sensible with the increase in shareholder's wealth; and debt is preferred mean for bridging funding shortfalls.

Bennett and Donnelly (1993) studied on "Determinants of Capital Structure" to analyze the cross sectional variation in the capital structures of 433 manufacturing UK companies over the period from 1977 to 1988. On this study, they found that nondebt tax shield, assets structure, size of the company and profitability are related to capital structure. As a conclusion, the study states that nondebt tax shield is negatively related to leverage. The capital structures are significantly affected by nondebt tax shield and types of the manufacturing companies. This study employed six alternative measures of dependent variable leverage and tested multiple regression equation based on cross-sectional data.

Clark (1993) concluded that the amount of debt included in a firm's financing mix is directly related to the risk associated with debt. The debt financing affects future cash flows, which, in turn, impacts firm's market value. Therefore, debt versus equity financing of manufacturing firms is relevant. The total value of the firm is affected by the combination of alternate forms of debt financing.

Downs (1993) studied on Relationship of Corporate Leverage with Nondebt Tax Shields for ten industry groups across a seventeen-year sample period from 1969 to 1985. The study found that a negative relationship exists between corporate leverage and tax shields, because nondebt tax shields reduce the interest tax savings and decrease the tax advantage of debt financing.

Alam (1994) surveyed the views of decision makers among a large sample of firms in the New Zealand Manufacturing Industry primarily on the investment policies. In this study, he found that the investment and financial behavior of firms is responsive to corporate income tax related factors. The conclusions of the study were: the large firms are more likely to be responsive to taxation and tax related incentives; some firms are more aware and more capable of taking advantage of tax concessions and incentives; the larger firms are more responsive than smaller ones towards corporate income taxes. Moreover, the study suggested that the adoption of an imputation tax system and lowering of corporate income tax rates are more influential to alter the pattern of financial behavior of the manufacturing companies.

Chua (1995) found that differences in the tax treatment of interest and dividend do affect companies' choices between debt and equity financing, not only when retained earnings are insufficient, but also in the more general case when funds are obtained from retained earnings.

King (1995) concluded that corporate income tax systems treat interest and dividends in different ways. As a result, they affect the incentives that companies face to finance their investments using debt on the one hand, or equity on the other. Payments of interest to the company's creditors are allowed as a deduction while assessing taxable income. Therefore, corporate income tax systems normally favour the use of debt finance over equity finance.

With an objective to pinpoint the impact of corporate income tax on equity financing in India, Kotrappa (1995) executed a study based on secondary information. The study concluded that the existing corporate tax system rendered equity capital an unpopular source of finance to corporate organizations. It has an inherent bias in favor of debt financing inhibiting the growth of underdeveloped equity market. The researcher has suggested for broadening equity base by reducing cost of equity and by adjusting the tax base measurement to avoid discrimination against equity financing.

Zingales and Rajan (1995) found that the corporate income tax rates and debt financing of the manufacturing firms have a positive relationship because of tax benefits of debt. Subsequently, Graham (1996) found that firms with high marginal tax rates are likely to issue more debt than firms with low marginal tax rates. In another study, Eatwell, et al. (1996) found that the deductibility of interest favors the use of corporate debt, while the preferential taxation of capital gains favors the use of retained earnings as a source of financing. In another study, Requejo, (1996) argued that the tax deductions for depreciation are the substitutes for tax benefits of debt financing. Firms with large nondebt tax shield use less debt.

Fama and French (1998) examined tax effects on financing decisions and firm value of 28 American companies for the period from 1965 to 1992. They used cross-sectional regressions of the firm value on earnings and financing

variables to estimate tax effects. In order to estimate the profitability-wise tax effects on financing decisions the current, past, and future earnings variables were tested. The regressions were then estimated separately for the six sets of firms in the intersections of the size (large and small). They found a significant negative relationship between tax benefits of debt and firm value. In another study, Engel, Erickson and Maydew (1999) found that firms derive substantial tax benefits when they use tax-deductible trust's preferred stock.

Shevlin (1999) through his research paper, presented at the Doctoral Consortium organized by American Accounting Association, offered some areas for accounting tax research in corporate levels. In that paper, specifically suggested areas for tax research was the role of statutory as well as effective tax rates in location, financing and investment decisions of manufacturing corporations. Likewise, the financial accounting data has been suggested as the source of information to tax researchers. Influences of cross-sectional and time-series variations in corporate tax rates, which manifest different financial assets, are taxed differently, like debt and equity are taxed differently, might be concentrated on higher level studies. Finally, this paper focused on the use of models by expressing the view as "the important point to make here is that it is a mistake for doctoral candidates with a tax background to think that they do not need to take advanced econometrics classes, capital market classes or modeling classes. Without these classes the candidate is ill prepared to undertake first class tax research".

Graham (2000) had used firm level financial data to examine the effects of debt tax shield on market value of the manufacturing firms. This study found a significant positive relationship between debt tax shield and the market value of the manufacturing firms. Graham demonstrated that firms derive substantial tax benefits from debt.

Kemsley and Nissim (2002) had studied the effect of debt tax shield on the market value for 2964 American Nonfinancial Companies over the period from 1963 to 1993 by employing cross-sectional regressions. It was found that the firm's market value is a positive and strong function of debt tax shield. In addition, they found that the value of debt tax shield is positively related to statutory corporate tax rates, and it is also related positively to cross-sectional variation in firm level marginal tax rates. In that study, estimation was done by regressing firm's market value on the expected operating income, and interest-bearing debt as a proxy for debt tax shield. Alternatively, estimation was also done with interest as proxy for debt tax shield. However, for both the proxies the observed results were same.

Giudici and Paleari (2003) have analyzed the tax benefits enjoyed by Italian manufacturing companies, which were listed in the Italian Milan Stock Exchange from 1995 to 1997. The study had found that a tax rate cut-off does not reduce tax burden for newly listed companies since they report larger earnings. Such induced effect is mainly due to the improvement of operating performance in the year of listing and the reduction of the debt tax shield.

Andersen and Dogonowski (2004) documented that the income tax rates should be kept constant to minimize the distortion costs of taxation. They demonstrated that the good income tax system includes progressive tax rates. In another study, Mira (2005) tested the issue; how firm characteristics affect capital structure of small and medium firms. The study analyzed the financial data of 6482 Spanish firms for the period from 1994 to 1998. The study found that nondebt tax shields and profitability both are negatively related to the debt financing of the firms.

Dhaliwal et al. (2006) examined the effect of taxes and leverage on firm's cost of equity capital. The sample of that study covers 22,874 firm-year

observations for the period from 1982 to 2004. The study found that the cost of equity capital is the function of taxes and leverage. Corporate income taxes mitigate the leverage related risk premium, while the personal tax disadvantage of debt increases this premium. The corporate tax benefit of debt decreases equity risk premium associated with leverage.

b. Review of Nepalese Empirical Works

Income tax relating studies at firm level in Nepalese context have not been in proliferation. Most of the income tax related studies pertain to macro level economic parameters and income tax administration aspects. However, the review of studies that are based on national account income tax data as well as firms level income tax data are useful to devise a theoretical base of the empirical work. For this reason, some Nepalese studies have been reviewed.

Agrawal (1978) studied on "Resource Mobilization for Development: the Reform of Income Tax in Nepal" covering eight years from 1967/68 to 1975/76. The main objective of this study was to examine the problem of growing resource gap in Nepalese finance in the context of the role of income tax revenue. The study concluded that an additional resource from domestic sources to finance rising expenditure is the better option to fulfill resource gap. The study found that the tax revenue contributes more than eighty percent to total revenue in Nepal.

Pradhan (1984) studied on industrialization in Nepal on the basis of primary survey. This study through the opinion survey of public and private sector enterprises observed the frequent changes in tax rates and in tax policy as the problems faced by the industrial enterprises.

Sah (1992) studied on the role of fiscal policy in the economic development of Nepal covering ten years from 1980/81 to 1990/91. The main

objective of the study was to analyze the fiscal policy measures in respect with overall economic development of the nation. The study observed that the economy of Nepal suffers from anemia and there is urgency to give a big push to the dwindling rate of growth. In totality, there is need for coordinating micro and macro variables and full pledged efforts for imposing comprehensive financial discipline. In addition, this study found the contribution of tax revenue to total revenue is 80.8 percent.

In another study, Kshetry (1997) examined tax influence on managerial and financial decisions of fourteen government corporations and sixteen listed companies from manufacturing sector for the period of ten years from 1984/85 to 1993/94. The study observed that from taxation point of view, companies generally prefer debt rather than equity, as interest paid on debt is a tax-deductible item. The higher the corporate income tax rate, the greater is the tax benefit associated with debt. This study showed a high degree of positive correlation (+0.8) between tax rate and the debt-equity ratio. Nepalese companies consider tax factor as an important factor in deciding their capital structure. Corporate tax has its favorable impact on the cost of debt capital and thus on the overall cost of capital.

Foreign Investment Advisory Service, Nepal (1997) studied on tax holiday system in Nepal by collecting data from government, semi-government and private companies. According to the study, the revenue foregone through tax holiday in the fiscal year 1991/92 was 5.36 percent of total tax revenue. The study showed that Nepal sacrificed around 2.66 percent of GDP or 28.54 percent of total tax revenue during fiscal year 1991/92 to 1994/95 because of tax incentives. This figure does not include the revenue forgone due to dividend and capital gain tax exemption. The study found that 75 percent of profitable

enterprise received tax exemption and only 25 percent of enterprises pay corporate income tax.

Baral (1998) studied on capital structure and cost of capital of public sector enterprises for the period of twelve years from fiscal year 1980/81 to 1991/92. This study examined the relationship of nondebt tax shield with capital structure of manufacturing and trading enterprises. Annual depreciation was used as a proxy of nondebt tax shield in the study. That study found annual depreciation of both types of corporate enterprises is constantly increasing. The coefficients of correlation between annual depreciation and capital structure of manufacturing and trading enterprises were 0.059 and 0.218 respectively. Thus, the study concluded that the nondebt tax shield has insignificant positive relationship with capital structure.

Among the Nepalese scholars, Kandel (2000) in his doctoral research entitled "Corporate Tax System and Investment Behavior in Nepal" with reference to evaluate income tax system for the period from 1986/87 to 1997/98 at the University of Delhi has confined his work to effective tax burden and investment behavior, though he has drawn some conclusions regarding the financing patterns in relation to corporate tax system also. The major finding of this study was that the effective tax rate and statutory tax rate have high degree of relationship. Nevertheless, their relationship either positive or negative depends on the source of finance. In case of debt financing effective tax rate goes on decreasing with the increase in statutory tax rates whereas under equity financing the reverse is the case. The main reason of negative relationship between effective tax rate and statutory tax rate is the deductibility of interest in case of debt financing. Since dividend is an appropriation of profit, there lies positive relationship between effective tax rate and statutory tax rate in case of equity financing. In that study, the researcher concluded that corporate tax

burden on marginal investments of tax paying corporate bodies in Nepal is not much high or low under all financing options like debt, mix, and equity.

Choudhary (2000) studied on agricultural taxation and economical development in Nepal, during plan period. The main objective of the study was to describe agricultural taxation as a source of resource mobilization. The study observed that the mobilization of additional resources through taxes at the domestic front is the viable policy option. The Nepalese tax structure is dominated by indirect taxes. The share of direct tax revenue to the total revenue has declining trend primarily due to a decline in the share of land revenue.

Bhandari (2001) studied on tax reform in Nepal. The major findings of the study were that the performance of Nepal's resource mobilization especially tax revenue generation system is very poor in comparing with other developing countries. Nepalese tax system indicates that there has been a lack of coordinated approach and long-term strategy. Several tax measures were introduced on an adhoc basis without much consideration and their possible effects. Tax proposals were introduced over the years without any consideration and preparation. The base of tax is narrow both legally and administratively. Tax revenue does not contribute even half of the total public expenditure.

Khadka (2001) concluded that a company could be financed by a number of ways, such as equity or debt capital or a combination of both methods of financing; affect tax liability of a taxpayer in different ways. A company may reduce its income tax liability substantially if it is financed through loans instead of equity finance due to the deductibility of interest but not of dividends, resulting in higher tax burden on dividends than interest. As a result, loan finance is more attractive than equity finance and companies are thinly capitalized in order to avoid income tax.

Nepal (2002) studied on taxation of income in Nepal and analyzed the responsiveness of income tax considering secondary macro level data covering sixteen years period from 1980/81 to 1996/97. The major observations of the study were that the revenue yield from corporate income tax over the study period as percent of GDP was less than 0.3 percent during 1980s. Buoyancy coefficient of income tax for the period 1980/81 to 1996/97 was 1.11. After the restoration of multi party democracy in Nepal, buoyancy coefficient of income tax was 1.71 for the period 1990/91 to 1996/97. But buoyancy coefficient before the restoration of democracy covering the period 1980/81 to 1989/90 was 1.15. The overall elasticity of Nepalese income tax, for the period 1980/81 to 1996/97 was 0.53.

Adhikari (2003) studied on income tax management system in Nepal. The main objective of the study was to analyze income tax administration and suggest different measures of enhancing tax mobilization capacity of the Government of Nepal. That study observed that external resources are dominating the size of national budget. The tax to GDP ratio is only 8.5 percent, which is less than other South Asian countries except Bangladesh. In Nepal around 1 to 1.5 percent people are paying tax. Industrial Enterprise Act, has vast impact on income tax mobilization that limits the income tax rate for industrial sector not more than 20 percent on net profit including various tax concessions and incentives. Existing income tax system does not satisfy the business community. Nepal has done various tax reforms however these are in piece meal basis.

Pradhan (2003) surveyed financial management practices in Nepal based on structured questionnaires filled up by seventy-eight major Nepalese enterprises. The study observed that the public and private sector also have a similar opinion with respect to effect of change in tax rate on debt level. A large

percentage from both the sectors prefer to increase debt if corporate taxes were to increase by 20 percent. Importantly, this study concluded that debt decision of the traded enterprises are relatively more responsive to tax change due to the fact that nontraded enterprises frequently adopt different means to avoid taxes.

Dhakal (2004) studied on "Income Tax Administration in Nepal; Areas for Reform. That study was based on the responses received from policy makers, tax administrators and taxpayers. By using ranking method, the study observed that the responsible factors for poor tax paying habit of the Nepalese people were lack of incentives to the taxpayers, lack of tax education and complicated laws. Likewise, providing tax information desk service in tax offices, introducing tax education in school curriculum and providing incentive and recognition to taxpayers were found important measures to increase tax consciousness of Nepalese taxpayers.

3. Summing up

The tax on income of corporations is known as the corporate income tax. Since corporations receive benefits from government, they merit a separate form of income taxation. There are three types of corporate income tax system namely: classical, imputation, and split rate. The classical system is criticized as being the double taxation of dividends, and thus inequitable. This argument is not very forceful since corporations do not distribute all their profits. If there is no corporate income tax as a separate tax, retained earnings of the companies would escape income taxation altogether.

No unanimous result has been derived even from many previous studies about the effect of corporate income tax on financing choice of the firms. Most of the earlier studies have concluded that corporate income tax systems generally favor debt financing of the firms because interest is allowed for deduction for

income tax purpose but dividend is not. The deductibility of interest, which is the debt tax shield of the firms, provides tax advantage. Debt-equity mix is positively related to corporate income tax because of debt tax shield. Contrary to this, other studies have found that corporate income taxes are irrelevant to debt-equity mix of the firms because bankruptcy costs and personal tax disadvantage of interest normalizes the tax advantage of interest deductibility. Ultimately, differences are visible in respect to the financing behavior implications of debt tax shield.

Various studies have shown mixed result on the relationship of debt tax shield with nondebt tax shield and with market value of the manufacturing firms. Some studies have also found that debt tax shield decreases cost of capital employed and increase cash flow. This increased cash flow finally leads to the increase in market value of the firms. Oppositely, other studies have documented that nondebt tax shield substitutes debt tax shield and thus they are related negatively. And inefficient performance signaling effect of debt reduces market value of the firms. Likewise, some other studies found that debt-servicing capability signaling effect of debt positively impacts on the market value of the firms. Moreover, when interest tax rate is lower than statutory corporate tax rate, personal tax disadvantage of interest is negligible and bankruptcy cost limits only the maximum level of debt tax shield.

Based on earlier Non-Nepalese studies, it can be pointed out that corporate income taxes and debt financing of the firms are related significantly. But the attributes of relationship may vary across the size and profitability of the firms. Similarly, cost of capital, cash flows, market value, debt-equity mix, tax rates, and tax shield are the major variables to be considered while investigating the influence of corporate income tax on debt financing of the manufacturing firms. But it is impossible to incorporate all these variables in a single study; they

should be determined by the objectives of the study. Accordingly thus, debt-equity mix, tax rates, tax shield, and market value have been considered in the present study.

Further, many of the reviewed Non-Nepalese studies were based on financial accounting data, stock market data, and surveyed data. Linear regression models were the major tools applied to infer the inherent relationship among taxes and financing dimensions. Importantly, in this regard, professor Shevlin has suggested to use cross-sectional data and regression models for empirical works relating to taxation.

In Nepalese context, the studies till now, as they are mostly confined within macro level analysis of taxation, lack of adequate studies on taxation at firm level is noticed. Therefore, a wide gap between the Non-Nepalese empirical works and Nepalese empirical works, especially in areas covered and methodological aspects, appears.

CHAPTER - III

RESEARCH METHODOLOGY

This chapter presents research design, nature and sources of data, and data gathering procedures. In this chapter, the statistical tools and models employed to draw logical conclusions have been described briefly. Thus, this chapter essentially presents a short description about the basis of measurement of employed variables.

1. Research Design

For this study, theoretical statements testing design has been applied. An attempt has been made to assess the relationship between corporate income tax and debt financing of listed manufacturing companies. The implemented methods of data collection were survey of opinions and review of publications, bulletins, journals, financial statements and reports of the respective companies. In certain reviewed empirical studies the size of company, profitability status of company and manufactured products that confined its industrial types were found as major determinants upsetting financing preference. Likewise, some other reviewed empirical studies recognized significant effects of corporate income tax on the size and profitability status of the companies. Thus, to arrive at comparative insights, the sample companies were classified according to size and profitability. Eventually, the combined as well as state of nature wise analyzing design has also been engaged in this study.

2. Sampling

This study encompasses manufacturing companies listed in the Stock Exchange Limited, Nepal (NEPSE). There were 29 listed companies, specified under the manufacturing and processing class, in the report of NEPSE by the end of fiscal year 2002/03. Out of these, 10 companies were selected by using judgmental sampling method. Basically, size and profitability of the listed companies, and submission of financial statements to NEPSE by the end of fiscal year 2002/03 were considered in selecting sample companies. However, those companies, of which financial statements could not be obtained for the last five years have been excluded in this study. The selected 10 companies represent 34.48 percent of total number of listed manufacturing companies. A brief profile of selected listed companies has been presented in Appendix- 3.

Table 3.1

Selected Listed Manufacturing Companies

S.N.	Name of the Companies	Type	Abbreviations
1	Bottlers Nepal Limited	Manufacturing	BONL
2	Nepal Lube Oil Limited	Manufacturing	NLOL
3	Nepal Banaspati Ghee Udhyog Limited	Manufacturing	NBGL
4	Gorakhkali Rubber Udhyog Limited	Manufacturing	GRUL
5	Bottlers Nepal (Terai) Limited	Manufacturing	BNTL
6	Arun Vanaspati Udhyog Limited	Manufacturing	AVUL
7	Sayapatri Colour Lab Company Limited	Processing	SCLL
8	Nepal Lever Limited	Manufacturing	NELL
9	Khadhya Udhyog Limited	Processing	KHUL
10	Nepal Bitumen and Barrel Udhyog Limited	Manufacturing	NBBL

Sources: 1.SEBO/N, "Annual Report, fiscal year 2002/03"

2. NEPSE (2002) "Financial Statements of Listed Companies, FY 2000/01" Vol. VII.

3. NEPSE (1997 to 2004) "Trading Report" For the Fiscal Years 1995/96 to 2002/03.

This study also aims at analyzing opinions of the officials working in decision-making areas of the sample companies. Thus, the officials holding the officer-level positions, in these companies, were supposed to be decision-making officials. The total number of such officials, by the end of fiscal year 2002/03, has been taken as population to select respondents.

Altogether, 76 respondents were purposefully selected from sample companies for opinion survey. The sample respondents comprise 76 officials including at least one official from finance or accounting area and other are departmental heads, deputy departmental heads, senior officers, and officers possessing minimum educational qualification of bachelor degree. Further, out of selected 76 officials, 38 officials represent profit-making companies and equally 38 officials represent loss-making companies.

Table 3.2

Sample Respondents

S.N.	Sample Companies	Profitability	Number of Officials (working in officer level, FY. 2002/03)	Sample Respondents
1	BONL	P	54	12
2	NLOL	P	15	8
3	NBGL	L	8	6
4	GRUL	L	65	16
5	BNTL	P	12	7
6	AVUL	L	10	7
7	SCLL	P	2	2
8	NELL	P	24	9
9	KHUL	L	5	4
10	NBBL	L	7	5
Total			**202**	**76**

Source: Field Survey (P = Profit-making, L = Loss-making)

3. Nature and Sources of Data

In this study, both primary and secondary data have been used. The primary data were collected through a questionnaire-based survey. The secondary data were collected from published and unpublished reports, abstracts, and journals of various agencies. Most of the financial and accounting data were collected from the annual and periodic publications of Nepal Stock Exchange Limited (NEPSE), Securities Board, Nepal (SEBO/N) and Respective Sample Companies. The publications of NEPSE like: Financial Statements of Listed Companies, Trading Report, and Monthly Bulletin were utilized as data source. Similarly, the publications of SEBO/N like: Securities Board Nepal: Annual Report, Securities Market Review, and Securities Board Nepal: Journal, were essentially taken as the sources of secondary data. The Annual General Meeting Reports of listed manufacturing companies were also reviewed to pick out relevant financial and other data. Official records of concerned companies were also the sources of secondary data. On the other hand, for national economical data, the publications of Inland Revenue Department (IRD) and Ministry of Finance (the government of Nepal) such as Statistical Abstracts, Annual Report of Inland Revenue Department, Economic Survey, and Public Statement on Income and Expenditure were also utilized in this study. Likewise, National Accounts of Nepal published by Center Bureau of Statistics, Quarterly Economic Bulletin published by Nepal Rastra Bank, Tax Directories published by Federation of Nepalese Chamber of Commerce and Industries were also reviewed in the process of collecting the useful data. Other sources of secondary data have been mentioned under the respective data tables.

A field survey based on general questionnaire and interview was conducted. The executed questionnaire comprises twenty questions including dichotomous, open, ranking, and rating questions. The researcher visited sample companies and had approached the concerned officials with supplementary

briefings about study objectives and assurance regarding the confidentiality of data so that they could respond correctly. Personal discussions held with the executives, to supplement the information collected through questionnaire, were very effective. Thirty-eight officials of profit-making and thirty-eight officials of loss-making companies had filled up and returned the distributed questionnaire. Basically, the opinions and suggestions of respondents pertaining to corporate income tax and financing affairs of sample companies were of chief concern. The information collected, in this way, provided adequate basis to draw conclusions on various aspects examined.

4. Framework of Analysis:

After gathering, the secondary and primary data, they were scrutinized, processed and presented in descriptive paragraphs, tables, and appendices. Because of the plentyness and calculative complexities of data inputs, computer packages like Excel, SPSS (10.0) were applied to eliminate processing errors. In order to arrive at comparative insights, the sample companies were classified into big, medium, small, profit-making, and loss-making classes. Time series data distributions were adopted especially for macro level economical data. Likewise, cross-sectional data distributions were adopted for firm level secondary data to each state of nature, (classes under size and profitability) and to all sample companies collectively. Simple and multiple linear regressions were employed for inferential analysis of data individually for each state of nature and for the total sample.

a. Classification of Sample Companies:

The present study compares the results of different classes of selected companies each one to represent a separate state of nature. Creation of several states of nature, which is relevant with the objectives of this study, is based

mainly on size, and profitability of the sample companies. Thus, this study has analyzed the data according to states of nature of the sample companies.

I. Classification According to Size

Sample classification, in some studies, has been performed on the basis of size of the companies. Chakraborty (1977) found significant positive relation of debt ratio with size of the firm. Morris and Associates (1983) applied size as base to classify the sample firms. Wang (1991) found a positive relationship of effective corporate tax rate with the size of the manufacturing firm. Foster (1986) suggested fixed assets to undertake as criteria for size-wise classification of sample firms. Fama and French (1998) have examined income tax effects on financing decision and market value of the Big and Small firms.

Nepalese Industrial Enterprise Act, 1992 has classified the manufacturing firms into big, medium, and small classes on the basis of fixed assets. Thus, the present study has also classified sample companies into big, medium, and small classes according to the provisions laid down under sections 4, 5, and 6 of Industrial Enterprise Act, 1992.

Table 3.3

Size-Wise Classification Criteria

S.N.	Classes	Base	Criteria (Rs. In Million at the End of F.Y. 2002/03)
1	Big	Fixed Assets	NFA> 100
2	Medium	Fixed Assets	$30 < NFA \leq 100$
3 S	Small	Fixed Assets	$NFA \leq 30$

Source: Industrial Enterprises Act, 1992;   (NFA = Net Fixed Assets)

II. Classification According to Profitability

It has already been explained in previous empirical studies that the profitability position of a company indicates its tax-paying position. Loss-making companies are exempted from income tax. Because of flat tax rate provision, the company which has earned higher profit would also pay higher income tax amount. Marsh (1982) has argued that the corporate income taxes affect debt ratios of those companies which are in a tax paying position.

Cooper and Franks (1983) has concluded that the behavior of corporations depends on effective tax rates which are lower than the full corporate tax rate. The effective tax rates depend upon the length of time of carry forward of business loss.

Foster (1986) has suggested profitability as major criteria to classify sample firms for undertaking income tax related studies. MacKie-Mason (1990) has classified sample firms into profit-making and loss-making groups for a comparative analysis of substitution effect on debt tax shield.

Nepalese Income Tax Act, 2001 has made a provision to carry forward of business loss assessed by the tax authority for a period of four years. It means that operating losses made by the companies are allowed to carry forward up to following four consecutive fiscal years for deduction. Because of such provision of carry forward, the business loss of any year of the four preceding years setoff the earned profit of current fiscal year. In this respect, it is not easy to distinguish a company as a profit-making firm based on the currently reported profit. Therefore, in this present study, those companies which have reported operating loss in any year out of the five years (1998/99 to 2002/03), have been classified under loss-making companies. And obviously, those companies which have

reported profit for all last five years of study period have been classified under profit-making companies.

Table 3.4

Profitability-Wise Classification Criteria

S.N.	Classes	Base	Criteria
1	Profit-making	Reported Profit	If profit has been reported for all last five fiscal years of study period.
2	Loss-making	Reported Loss	If loss has been reported in any one year out of last five fiscal years of study period.

Source: On the basis of loss carry-forward provision of Income Tax Act, 2001

b. Linear Empirical Specifications:

In the present study, simple and multiple regression equations with linear relationship of variables were employed to estimate the relationship of corporate income taxes with debt-equity mix. The same types of equations were used to test the substitution effect of tax shield, and to estimate the relationship of debt tax shield with market value of the firm. Specifications of these equations with brief descriptions are given below:

I. Relationship of Corporate Income Tax with Debt-Equity Mix

Alessi (1965) employed an effective tax rate as a single independent variable to investigate the effect of corporate income tax on debt ratio. Rao and Rao (1975) also assumed debt-equity mix as a function of effective tax rate. However, Rao and Rao tested three alternative measures of dependent variable: debt-equity mix.

In the present study, the following equation has been taken as base to specify the equations showing linear relationship between debt-equity mix (measure of debt financing) and corporate income tax rates.

$$Y_t = a_0 + a_1 Z_{t-1} + u. \quad \dots \dots \dots \quad \dots \dots \quad (1)$$

Y= measures of debt-equity mix, Z= effective tax rate, u= error term, a = parameter to be estimated, t= current fiscal year under consideration (Rao and Rao, 1975: 11)

Previous empirical studies have suggested that dependent as well as explanatory variables could be used alternatively to estimate the relationship between debt-equity mix and corporate income tax rates (Rao and Rao, 1975:15). Thus, in this study, different measures of debt-equity mix such as debt to networth ratio; debt to total assets ratio, and total debt to total assets ratio were employed as dependent variables. Therefore, equation (1) has been adjusted with alternative measures of dependent variable (debt-equity mix) and the following specified linear regression equations were employed to estimate the relationship between debt-equity mix and effective tax rate in the present study:

$$(D/NW)_{i,\,t} = a_0 + a_1 Z_{i,\,t-1} + u_i. \quad \dots \dots \quad (2)$$

$$(D/TA)_{i,\,t} = a_0 + a_1 Z_{i,\,t-1} + u_i. \quad \dots \dots . \quad (3)$$

$$(TD/TA)_{i,\,t} = a_0 + a_1 Z_{i,\,t-1} + u_i. \quad \dots \dots \quad (4)$$

D = long term and short term borrowings, NW = net worth, TA = total assets, TD= total debt, Z = effective corporate tax rate, t = current fiscal year under consideration; a_0, a_1 = parameters to be estimated, i = states of nature of the sample companies like: big, medium, small, profit-making, loss-making, and total sample; u = error term.

Graham (1996) has suggested for using marginal tax rate for corporate income tax related studies. The marginal tax rate is usually taken as the statutory corporate income tax rate. Myers and Brealey (2000) have argued that statutory corporate tax rate is useful to analyze the effects of corporate income tax on debt ratio. Further, they advocated that the relative advantage of debt depends only on the statutory corporate tax rates and personal taxes could be ignored. Thus, in the present study, statutory corporate tax rates chargeable to listed manufacturing companies were also employed as the explanatory variable to estimate its relationship with debt-equity mix. The estimated linear equations in this respect are as given below:

$$(D/NW)_{i,t} = a_0 + a_1 (Z_C)_{i,t-1} + u_i. \ldots \ldots \quad (5)$$

$$(D/TA)_{i,t} = a_0 + a_1 (Z_C)_{i,t-1} + u_i. \ldots \ldots . \quad (6)$$

$$(TD/TA)_{i,t} = a_0 + a_1 (Z_C)_{i,t-1} + u_i. \ldots \ldots \quad (7)$$

D = long term and short term borrowings, NW = net worth, TA = total assets, TD= total debt, Z_c = statutory corporate tax rate chargeable to listed manufacturing companies, t = current fiscal year under consideration; a_0, a_1 = parameters to be estimated, i = states of nature of the sample companies like: big, medium, small, profit-making, loss-making, and total sample, u = error term.

Spencer (1969) has argued that inclusion of other nontax variables in regression equation is equally important while estimating the tax influence. Accordingly, Rao and Rao (1975) included further three other explanatory variables and specified the multiple linear equations. These variables were effective interest rate (cost of debt capital), outstanding leverage, and internal resources to investment flow ratio. All these explanatory variables were one year

lagged variables. Thus, an inclusion of other nontax variables in equation (1) gives a multiple linear equation as following:

$$Y_{i,\,t} = a_0 + a_1\,(Z)_{i,\,t\text{-}1} + a_2\,(R_{t\text{-}1}\,/\,It)_i + a_3(r)_{i,\,t\text{-}1} + a_4\,(D/E)_{i,\,t\text{-}1} + u_i \ldots(8)$$

Y = measures of dependent variable, Z = effective corporate tax rate, R= internal resources, I= investment flow, r = effective interest rate, D= interest-bearing debt, E = stock capital, i = states of nature of the firms (Rao and Rao, 1975:15).

Effective tax rate can be measured only when a firm has made an expense of income tax. But, statutory corporate tax rate existed irrespectively of an income tax expense of the firm. In effect, superiority of statutory corporate tax rate over effective tax rate appears. Hence, following specified multiple linear equations were estimated, in the present study, to examine the relationship between corporate income tax rate and debt-equity mix in the presence of other non-tax explanatory variables.

$$(D/NW)_{i,\,t} = a_0 + a_1\,(Z_C)_{i,\,t\text{-}1} + a_2\,(R_{t\text{-}1}/I_t)_i + a_3(r)_{i,\,t\text{-}1} + a_4\,(D/E)_{i,\,t\text{-}1} + u_i \ldots (9)$$

$$(D/TA)_{i,\,t} = a_0 + a_1\,(Z_C)_{i,\,t\text{-}1} + a_2\,(R_{t\text{-}1}/I_t)_i + a_3(r)_{i,\,t\text{-}1} + a_4\,(D/E)_{i,\,t\text{-}1} + u_i \ldots (10)$$

$$(TD/TA)_{i,\,t} = a_0 + a_1\,(Z_C)_{i,\,t\text{-}1} + a_2\,(R_{t\text{-}1}/I_t)_i + a_3(r)_{i,\,t\text{-}1} + a_4\,(D/E)_{i,\,t\text{-}1} + u_i \ldots(11)$$

R= internal resources, D = interest-bearing debt, NW = Net worth, TA = total assets, TD= total debt, E = stock capital, R= internal resources, I = investment flows, r = effective interest rate, Z_C = statutory corporate tax rate chargeable to listed manufacturing companies, t = current fiscal year under consideration; a_0, a_1, a_2, a_3, a_4 = parameters to be estimated, i = states of nature of the sample companies like: big, medium, small, profit-making, loss-making, and total sample, u = error term.

II. Tax shield: A Test of Substitution Effect

DeAngelo and Masulis (1980) demonstrated that when nondebt tax shield increases, debt tax shield decreases; this is also called the substitution effect. In another study, MacKie-Mason (1990) recognized that the substitution effect is more applicable to the firms with a substantial probability of losing the deductibility of their tax shield.

When a firm increases its rate of depreciation, the amounts accumulated in this fund would increase. Consequently, the demand for interest-bearing fund decreases and interest deduction declines. In order to test this substitution effect, the changes in debt tax shields could be regressed on changes in nondebt tax shields (Trenzevant, 1992: 1558).

In Nepalese context, the government enforced a new Income Tax Act, 2001. One of the objectives of this act is to reduce the scope of discretionary interpretation of the tax authorities thereby ensuring simplicity, uniformity and the transparency. Thus, several tax provisions have been simplified. The methods of depreciation as explained in former income tax act has been completely changed and new method based on assets' pooling is introduced. This new depreciation method is based on diminishing balance method along with the provision of pooling of assets. Simplified depreciation method may encourage corporate bodies to involve in enough exercise for getting tax advantage of depreciation deduction. This endeavor of corporations may be reflected on substitution effect of nondebt tax shield of depreciation to debt tax shield. In these perspectives, a test of substitution effect of tax shield is seemed to be relevant for this study. Therefore, the following simple linear regression equation is applied to estimate substitution effect of nondebt tax shield:

$$DIFFDTS = a_0 + b_1 \, DIFFNDTS + e_i. \quad \text{……. …} \quad (12)$$

DIFFDTS= measure of changes in debt tax shields, DIFFNDTS = measure of changes in nondebt tax shields, a_0, b_1 = parameters to be estimated. The parameter b_1 predicts negative sign for substitution effect.

III. Relationship of Debt Tax Shield with Market Value of the Firm

Modigliani and Miller derived tax adjusted valuation model, in which financial distress costs of debt, and personal tax effects, were ignored. Likewise, perpetuity of interest-bearing debt was assumed while setting this valuation model. To modify this valuation model, an empirical work was carried out by Kemsley and Nissim in 2002. The following modified model was estimated in corporate manufacturing sector of USA by Kemsley and Nissim:

$$V_L/TA = a + b_1 \, FOI/TA + b_2 \, D/TA + u. \, \ldots. \, \ldots. \, \ldots \, (13)$$

V_L = market value of the firm, FOI = operating income in following fiscal year, TA = total assets used as deflator, D = interest-bearing long and short terms debt, a = intercept of linear multiple relationship; b_1, b_2 = explanatory coefficients to be estimated, u = an error term.

In their study, Kemsley and Nissim used interest and debt as proxies for debt tax shield alternatively. In both estimations the observed results were fundamentally analogous. Eventually, they have suggested for applying this modified model to predict the influence of debt tax shield on market value of the firms (Kemsley and Nissim, 2002: 2058). In this perspective, alternative proxies for debt tax shield were employed as explanatory variables to estimate relationship between debt tax shield and market value of the firm in this present study. Additionally, in this present study, debt tax shield itself in absolute value, without proxy, was also tested in the regression model specially for exploring

comparative outcomes. Thus, the linear empirical equations that have been employed in this study to observe the inherent relationship between debt tax shield and market value of firm are given below:

$$(V_L/TA)_i = a + b_1 (FOI/TA)_i + b_2 (D/TA)_i + u_i. \ldots \ldots (14)$$

$$(V_L/TA)_i = a + b_1 (FOI/TA)_i + b_2 (I/TA)_i + u_i. \ldots \ldots (15)$$

$$(V_L/TA)_i = a + b_1 (FOI/TA)_i + b_2 (DTS/TA)_i + u_i. \ldots (16)$$

FOI = operating income in following fiscal year, TA = total assets used as deflator, D = interest-bearing long and short terms debt, a = intercept of linear multiple relationship; b_1, b_2 = explanatory coefficients to be estimated, I = interest on debt, DTS = debt tax shield, u = an error term, i = states of nature of the sample companies like: big, medium, small, profit-making, loss-making, and total sample.

c. Analysis of Opinions

A structured questionnaire survey was conducted among the officials of sample companies. In total, seventy-six questionnaire forms were distributed and collected duly. The responses of the officials were tabulated and analyzed by using computer packages like Excel, and SPSS. To analyze the responses under yes/no questions, multiple questions, and rating questions percentage was used. Similarly, to analyze ranking questions, the weighted value based on allotted scores was used. On the basis of priorities given to each factor, a weight of 1 to 6 points was fixed. Thereafter, the computed mean value was considered as the base for overall ranking of the factors. Spearman's rank correlation coefficient test was applied to test the relationship between the ranks given by the

respondents from profit-making and loss-making companies. Likewise, chi-square test was used to test the difference in responses between the groups of respondents from profit-making and loss-making companies.

5. Specification of Variables:

The dependent and explanatory variables that were integrated in linear regression equations are further specified below:

a. Specification of Dependent Variables:

The linear empirical specifications explained in above paragraphs include three dependent variables: debt-equity mix, changes in debt tax shields, and market value of the firm. These dependent variables have been further specified as under:

I. Debt-Equity Mix

Debt-equity mix is the financing mix. It is the proportion of debt and equity capitals used to finance investments. The optimal debt-equity mix of a company normally depends on the nature of the business. There are different motives for borrowing by the firms. Among them, capturing the tax benefits of deductibility of interest is the one (Pringle and Harris, 1987: 493, 506). In this context it is to be noted that the empirical results are sensitive to the ways of measurement of variables. The usefulness of a model, hence, has to be tested with possible alternative measures of the variables. Thus, the ratio of debt to net worth, the ratio of debt to total assets, the ratio of total debt to total assets etc. could be the alternative measures to test the debt-equity mix (Rao and Rao, 1975:15).

In the present study, debt-equity mix has been taken as the measure of debt financing. Three alternative measures of debt-equity mix were employed to examine the relationship between debt financing and corporate taxes. These

measures were: debt to networth ratio, debt to total assets ratio, and total debt to total assets ratio. Further, these measures of debt-equity mix were computed by applying following formulas:

$$D/NW = \frac{\text{Long term borrowings + Short term borrowings}}{\text{Total assets – Total liabilities}} \quad \ldots \ldots \ldots \quad (17)$$

$$D/TA = \frac{\text{Long term borrowings + Short term borrowings}}{\text{Total assets}} \quad \ldots \ldots \ldots \quad (18)$$

$$TD/TA = \frac{\text{Long term liabilities + Current liabilities}}{\text{Total assets}} \quad \ldots \ldots \ldots \ldots \quad (19)$$

Total assets = current assets, and fixed assets. Current assets = cash and bank balance, sundry debtors, inventory and misc.current assets. Fixed assets = plant and machinery, land and buildings, vehicles, furniture and fixture, office equipment and other fixed assets. Total liabilities= long term liabilities, and current liabilities. Long term liabilities= long term loans, and miscellaneous deferred liabilities. Current liabilities = short term loans and advances, sundry creditors, and misc. current liabilities.

II. Value of Debt Tax Shield

The tax shield of debt is the outcome of deductible interest. Thus, debt tax shield and interest tax shield are synonymous. The tax shield on interest is the difference between taxes that would be paid if the firm had no debt and the

taxes that are paid when the firm has debt. If earning before interest and taxes is (EBIT), interest expense is (I), and statutory corporate tax rate is (t), then debt tax shield, (S), is determined by using the following formula (Wrightsman, 1978: 651):

$$DTS = tEBIT - t(EBIT-I) = tI. \quad \dots \quad \dots \quad (20)$$

This is familiar tax shield equation. This equation has been used to measure the value of debt tax shield in this study.

III. Changes in Debt Tax Shields

Changes in debt tax shields before and after enforcement of new Income Tax Act, 2001 were computed by employing Trenzevant (1992) method as following:

$$DIFFDTS = \frac{DTS_t + DTS_{t+1}}{EBITD_t + EBITD_{t+1}} - \frac{DTS_{t-1} + DTS_{t-2}}{EBITD_{t-1} + EBITD_{t-2}} \quad \dots \quad \dots \quad (21)$$

DIFFDTS = changes in debt tax shields, DTS = debt tax shield, EBITD = earning before interest, tax, and depreciation, t = time = fiscal year in which new income tax act was enforced.

IV. Market Value of Firm

While reviewing the literature, it was observed that there is no uniform method to compute firm's market value. However, the method as suggested and used in Kemsley and Nissim (2002) has been applied to compute market value in this study.

Market value of firm in Kemsely and Nissim (2002) study was computed by totaling the market value of common equity, book value of debt and preferred stock. The market value of equity is the product of the outstanding number of shares and price per share at the end of fiscal year. The book value of debt is the debt in current liabilities plus long-term debt. Notably, this measure of debt excludes operating liabilities, which typically do not generate explicit tax-deductible interest expense. However, in this study market value of firm for a fiscal year was computed by totaling market value of equity and book value of debt that excludes operating liabilities. That is so, because preferred stocks were not observed in the financial statements of sample-listed companies. Thus, the following equation was employed to compute market value of company in this study:

$$V_{Lt} = (MP_C \ \times \ NES_O)_t + (TD\text{-}OL)_t \ \ \ldots.. \ \ldots.. \ \ \ (22)$$

V_L = market value of firm for a fiscal year, MP_C = closing market price per share at the end of concerning fiscal year, NES_O = number of equity share outstanding, TD = total long term and short term debt (long and short terms liabilities), OL = operating liabilities (total liabilities that exclude interest-bearing debt), t = time = fiscal year under consideration.

b. **Specification of Explanatory Variables:**

The linear empirical specifications mentioned above articulate some explanatory variables explaining their respective dependent variables. These explanatory variables are further specified as under:

I. Variables Explaining Debt-Equity Mix:

The linear empirical specifications mentioned above include effective tax rates, effective interest rate, internal resources to investment flows ratio,

outstanding leverage, and statutory corporate tax rate as variables explaining the variations in debt-equity mix of firm. These explanatory variables are further specified as under:

Effective Tax Rate

The relation between the income tax accrual and the pre tax income is referred to the effective tax rate (Bernstein, et al., 2000: 587). The measurement of effective tax rate depends upon the method of accounting used to report financial activities. It also depends upon the purpose of enquiry to which effective tax rate is essential. Effective tax rate can be measured as the ratio of tax provisions to profits before tax (Gandhi, 1968: 39). Alternatively, effective tax rate can be measured as the ratio of income tax expense to pre tax income (Sondhi, et al., 1994: 539). Further, effective tax rate can be measured as the ratio of income tax expenses to profit before tax or gross profit (Wang, 1991:162). Where, a positive relationship between effective tax rate and debt-equity mix is expected.

In the present study effective tax rate has been computed by applying the following formula:

$$\text{Effective Tax Rate} = \frac{\text{Income tax provision}}{\text{Profits before tax}} \quad \dots \dots \dots (23)$$

Effective Interest Rate

Effective interest rate normally is computed as total interest incurred divided by average debt (Bernstein, 2000: 586). In another way, effective interest rate for a fiscal year can be computed as interest expenses divided by interest-

bearing debt (Rao and Rao, 1975:15). A negative relationship between effective interest rate and debt-equity mix is expected.

In the present study, the following formula has been used to compute effective interest rate:

$$\text{Effective Interest Rate} = \frac{\text{Interest}}{\text{Interest-bearing debt}} \quad \ldots \ldots (24)$$

Internal Resources to Investment Flows Ratio

Since manufacturing corporations rely heavily on internal finance, particularly small corporations, that are most likely to face asymmetric information problems, do not borrow through long-term debt or issue new equity (Myers, 1984: 575). Access to internal finance meanwhile depends, of course, on the profitability of companies (Pike and Neale, 1999: 464). On the other hand, new debt finance depends on the availability of internal funds (Bernanke and Gertler, 1987). However, the majority of finance is raised internally through retained earnings and depreciation provisions. Thus, a negative relationship between internal resources to investment flows ratio and debt-equity mix is expected.

In the present study, depreciation and retained earnings are considered as major components of internal source of finance. Likewise, change in fixed assets and inventories are considered as investment flows. Thus, the ratio of internal funds to investment flows was computed by employing the following formula:

$$\text{Internal Resource to Investment Flows Ratio} = \frac{\text{Depreciation + Retained earnings}}{\text{Increase in fixed assets and inventories}} \quad \dots (25)$$

Leverage

Bosworth (1971) and Taggart (1977) observed that companies in aggregate attempt to keep predetermined debt to equity ratio or leverage. This measures the extent of owners' commitments to a company and the extent of coverage of creditors claims against it. This variable also represents the availability of credit; hence a positive influence on the demand for external debt funds could be expected (Rao and Rao, 1975: 15).

In this present study, leverage for current fiscal year has been taken as debt to equity ratio of immediate previous fiscal year. Thus, leverage is computed by applying the following formula:

$$\text{Leverage} = (D/E)_{t-1} \quad \dots \quad (26)$$

D = debt capital = long term borrowings + short term borrowings,

E = ordinary stock capital = number of ordinary shares $\times$ face value per share.

Statutory Corporate Tax Rate

According to enforced income tax act, the rate chargeable to corporate bodies is the statutory corporate tax rate. Such rate has to be charged on the corporate taxable income after its adjustments with relevant provisions of other concerning acts. But, fiscal act may change it from year to year. Thus, fluctuations across fiscal years are the general characteristics of statutory corporate tax rate. The economical presence of statutory corporate tax rates in every fiscal year has its sensitivity to financing affairs of the firms. Likewise, when

the variation in financing mix of the firm may be explained by statutory corporate tax rate, a positive relationship between statutory corporate tax rate and debt-equity mix is expected. In the present study, several statutory corporate tax rates that were applicable to the listed manufacturing companies are employed in the estimation. These tax rates are presented in Appendix- 5.

II. Variables Explaining Changes in Debt Tax Shields:

The above linear empirical specification comprises the changes in nondebt tax shield, before and after the enforcement of new income tax act, as an independent variable that explain the changes in debt tax shield. This explanatory variable is further specified as below:

Value of Nondebt Tax Shield

The depreciation on the assets reduces amount of taxes levied on the firms' income. As a result, it saves cash flowing out through taxes. This saving is called the tax shield or tax effect of depreciation (Louderback and Dominiak, 1982: 272). Although depreciation deductions involve no outflows of cash, they are fully deductible in arriving at taxable income. In effect, depreciation deductions shield revenues from taxation and thereby lower the amount of taxes that a company must pay. Because depreciation deductions shield revenues from taxation, they are generally referred as depreciation tax shield. The reduction in tax payment made possible by the depreciation tax shield will always be equal to the amount of the depreciation deduction taken, multiplied by the tax rate (Garrison, 1988: 698). Thus, in this study, depreciation tax shield has been considered as investment related nondebt tax shield, which is computed by applying the following formula:

Nondebt Tax Shield = Statutory Corporate Tax Rate x Depreciation…. (27)

In Wedig, et al. (1988), and DeAnglo and Masulis (1980) studies, depreciation or nondebt tax shield has been tested as independent variable explaining change in financing structure. Titman and Wessels (1988) supposed that the nondebt tax shield represents tax deduction rather than tax deduction net of true economic depreciation. However, in the present study depreciation tax shield has been computed by employing Garrison (1988) formula as given above.

Changes in Nondebt Tax Shield

Changes in nondebt tax shield before and after enforcement of new Income Tax Act, 2001 that includes an improved provision for depreciation allowability has been computed by employing Trenzevant (1992) method as following:

$$\text{DIFFNDTS} = \frac{NDTS_t + NDTS_{t+1}}{EBITD_t + EBITD_{t+1}} - \frac{NDTS_{t-1} + NDTS_{t-2}}{EBITD_{t-1} + EBITD_{t-2}} \quad \dots \dots \quad (28)$$

DIFFNDTS = Changes in nondebt tax shields, NDTS = nondebt tax shield, EBITD = earning before interest, tax and depreciation, t = fiscal year in which new tax act has been enforced.

Tax depreciation in this sense can be measured by taking depreciation expenses reported on the income statement, because depreciation deductible for tax purposes is not observable. Financial records relating to taxable income assessment are preserved at lawful confidential manner for specified periods. Tax authority must ensure the use of financial records for income tax assessment purposes only (Trenzevant, 1992: 1561-63). Hence, in this study the depreciation

shown in financial statement has been used as tax depreciation. In this case, because of substitution effect of nondebt tax shield, a negative relationship between changes in debt tax shields and changes in nondebt tax shields is expected.

III. Variables Explaining Market Value of Firm:

The linear empirical specification mentioned above comprises operating income and tax advantage of debt as variables explaining the associated variations in market value of the firm. These explanatory variables are further specified below:

Operating Income

In Fama and French (1998) study, operating income has been defined as the earning before extraordinary items plus after tax interest expense. Consistently, Kemsley and Nissim (2002) have also defined operating income as profit before tax plus interest expense times $(1- t_c)$, where t_c equals the statutory corporate tax rate. Further, they have measured operating income as the realized income for the year that follows the current year.

In the present study, the actual realized earning before interest and tax of succeeding year has been used as operating income for the concerning fiscal year. The following formula has been employed in the present study in order to compute operating income:

$$FOI_t = \{(PBT+i)\ (1-Tc)\}_{t+1}. \quad \ldots \quad \ldots \quad \ldots \quad (29)$$

PBT = profit before tax, i= interest, FOI = operating income in following fiscal year, t_c = statutory corporate tax rate, t =time: fiscal year under consideration.

Tax Advantage of Debt

Modigliani and Miller (1963) defined tax advantage of debt as one of the important components of market value of the firm. Likewise, Kemsley and Nissim (2002) have regressed market value of firm on operating income and debt tax shield.

Nepalese income tax system has discriminated interest and dividend. Interest incurred, as debt service expense, is deductible, but dividend distributed to stockholders is not deductible while assessing taxable income. Thus, interest deductibility limits taxable corporate income. In effect, this saves the cash outflows, which is generally called tax shield. Hence, advantage of corporate debt is the tax shield of interest. Thus, tax shield of interest is expected to be associated positively with market value.

c. Specification of Other Variables:

The other variables employed to analyse the data in the present study are given below:

I. Debt Ratio

Debt and equity are the major financing sources of a firm. Capital-intensive industries tend to have high levels of debt needed to finance their investment on fixed assets. When the proportion of debt is greater, the firm as a whole bears greater risk. The debt spans over long term to match the horizon of the assets acquired. The short-term debt may include operating debt: accounts payable and accrued liabilities (Sondhi, et al., 1994: 219).

In this present study, for descriptive analysis, debt ratio has been computed by employing the following formula:

$$\text{Debt Ratio} = \text{Total debt} / \text{Total capital employed} \dots \dots \dots (30)$$

Total debt= long term liabilities and current liabilities. Total capital employed = long term liabilities, current liabilities with reserves, and paid up share capital

II. Net worth

Many financial accounting terms mean exactly the same thing. For example, the terms: assets minus liabilities, net worth, stockholders' equity, owner's equity and equity capitalization usually mean the same thing (Ross, et. al., 1993: 377). These terms are used interchangeably to refer to equity capital in a corporation (Thompson, et. al., 1994). However, throughout this study the term net worth has been used and it has been computed by applying following equation:

$$\text{Net worth} = \text{Total assets - Total liabilities.} \dots \dots (31)$$

Total assets = fixed assets and current assets. Total liabilities = long term and current liabilities (it does not include paid up share capital and reserves)

III. Internal Resource

Required funds can be obtained from the internal resource, especially from retained profits and depreciation provisions. Internal fund however depends largely on the profitability of companies (Pike and Neale, 1999: 464).

In this present study, the following formula has been used to determine the internal resource of the company:

$$\text{Internal resource} = \text{Retained earnings} + \text{Depreciation} \dots \dots \dots (32)$$

Depreciation = depreciation as shown in financial statement. Retained earnings = undistributed profits at the end of concerning fiscal year.

IV. Investment Flows

Investment flows for a period is the sum of the flows of gross fixed assets and inventories. In this light, investment demand for plant, equipment and inventories in a fiscal year is the increase in gross fixed assets plus increase in inventories during that year (Rao and Rao, 1971: 243).

In the present study, investment flows were measured by applying the following formula:

Investment Flows = Increase in fixed assets + Increase in inventories…. (33)

Increase in fixed assets = additions to gross fixed assets in comparison to immediate previous fiscal year; Increase in inventories = additions to closing stock in comparison to immediate previous fiscal year.

V. Growth Rate

In this present study, growth rate has been measured as the simple average of annual growth rate in percentage. It shows the average of annual percentage change in different variables over previous fiscal year.

6. Other Statistical Techniques

For this study, purposefully, various statistical tests like: coefficient of multiple determinations (R^2), significance test of regression coefficient (t-test), and significance test of the regression equation (F-test) were employed to arrive at a conclusion. Likewise, under the descriptive analysis of variables, statistical tools such as: standard deviations (S.D.), Mean, Covariance (C.V.), and Correlation (r) have also been utilized.

CHAPTER – IV

CORPORATE INCOME TAX: NEPALESE PERSPECTIVE

This chapter aims to identify major legal provisions governing corporate income tax system and to analyze importance of corporate income tax in government revenue generation in Nepal. In this regard, this chapter organizes entire contents under legal perspective and revenue perspective of corporate income tax.

1. General Background

With the purpose of bringing all the income tax related provisions within one act, the currently enacted act "Income Tax Act, 2001" was introduced in 2002 A.D. The basic objective of this new act is to make income tax system compatible to modern economy and increase the base of income taxation (Kandel, 2003: 11). It has specified three major sources of income namely employment, business, and investment for taxation purpose. According to this act, the business includes an industry, a trade, a profession, a vocation, and an isolated transaction with a business character. Similarly, this act has specified a company as any corporate body incorporated in Nepal as per the law (MOL, Nepal, 2002: 4, 25). It clearly means that the incomes of entities incorporated under company act and other act is chargeable to tax under business heading.

Conceptually, the tax levied on the incomes of companies or other corporations having business character is known as corporate income tax.

Initially, corporate income tax was combined with the individual income tax and the same rate structure was fixed for both taxes for many years in Nepal. Such a system is desirable in an economic situation where the numbers of private and public companies are limited (Carl, 1989: 257). The situation has changed over the years; and the numbers of private and public companies have increased. In such a situation the progressive rate structure of corporate tax is undesirable since such structure encourages companies to split into different units to take advantage of lower rates (George, 1977: 737). For these reasons, corporate income tax was separated from individual income tax and flat rate system was introduced in place of progressive rates. A flat rate corporate income tax was commenced for the government corporations and public limited corporations listed in the Security Exchange Center in 1986. Afterward, corporate tax was extended to private limited companies in 1993 and partnership firms in 1995 (Khadka, 200:104). Nevertheless, individual income tax and corporate income tax are still governed by the same tax law.

Previous studies have shown that taxes were the major source of government revenue in Nepal. And among the direct taxes income taxes were the vital source of government revenue. Further, income tax from corporate sector is easier to collect, in comparison to other taxes, because corporations are the organized bodies and they have legal obligations to maintain their books of accounts correctly. However, there should be clear and transparent legal provisions for taxing business income of the corporations in order to collect more revenue. In spite of many improvements in the tax laws, several problems in administrative aspect of taxation have been reported in previous studies. On the other hand, most of the previous studies were concentrated on income tax in

overall and not particularly on corporate income tax. Thus, an attempt has been made to analyze corporate income tax from legal and revenue perspectives in this chapter.

2. Legal Perspective:

Corporate income tax, in Nepal, has been legalized with the enforcement of Income Tax Act, Finance Acts, Ordinances and Notifications. However, Income Tax Act is the leading legal document that governs overall implementation of the corporate income tax system. At present, Income Tax Act, 2001 is the main tax law enacted in Nepal. Thus, legal perspective of corporate income tax principally includes corporation related provisions of Income Tax Act, 2001 especially in the areas of taxable income and tax rate structure.

a. Base of Corporate Income Tax

The determination of tax base is more important than the rates of the taxation themselves. The principles and methods for determining the tax base constitute the essence of any tax structure. Tax structure should be built up on a reasonably stable basis (Lall, 1975: 531). Nepal is also following the method of making income as the base for corporate taxation. The procedure for calculating taxable income is adding up all items of business revenues and deducting allowable expenses (Kandel, 2001:23).

Under the Income Tax Act, 2001; corporate tax is levied on net profit assessed after the adjustment of chargeability of business incomes and admissibility of business expenses. Profits and gains derived by conducting the business fall under business income. This business income includes: service fees; amounts derived from the disposal of trading stock; gains from the disposal of business assets; amounts derived as excess depreciation on the disposal of depreciable assets; gifts received during business courses and other amounts.

For the purpose of deriving taxable income of a corporation, there are some expenses which are specified by the Act for deductions from the business income. These expenses are: general deductions, interest, cost of trading stock, repair and improvement cost, pollution control cost, research and development cost, depreciation allowance, loss from business and donations (MOL, Nepal, 2002:26).

b. Income

Income is the profit earned during a particular fiscal year. Computation of taxable income means deduction of admissible expenses like: interest on debt, depreciation on fixed assets etc. from gross income from business (Meade, 1987: 229). The taxable income is calculated by following the accounting practice prevailing in the country. The general rule for calculating taxable income is adding up all the incomes of the company and deducting the expenses incurred in earning the income (Shome and Schutte, 1993: 658). As in many other countries, income is specified as the base for corporate tax in Nepal. The corporate tax system followed by Nepal is the net income based system, where all the items of incomes are added-up and all deductible expenses are subtracted to determining the net income.

c. Deductions

The expenses made by the corporate assessee purposely for earning business profit are of two types namely admissible and inadmissible. Admissible expenses are the items that are allowed by enacted laws to deduct from gross income and inadmissible expenses are the items that are disallowed by enacted laws to deduct from gross income when assessing taxable income. Thus, the following are the deductible expenses:

I. General Deductions:

The operating expenses to the extent they are incurred during the fiscal year by the corporation to earn the income from the business are general deductions. All these expenses, except prohibited by the Act, are deductible while computing net income from business.

Interest

All interests paid during the fiscal year by the corporation under a debt obligation to the extent that: the debt obligation was incurred in borrowing money; the money is used in business during the year or was used to acquire the asset; and in any other case, the debt obligation was incurred to earn business income, are deductible.

Cost of Trading Stock

Cost of trading stock is calculated by subtracting the closing value of stock from the opening value plus cost of stock acquired during the year. The opening value of stock of a business for a fiscal year is the closing value of the stock at the end of the previous year. On the other hand, cost or market value of the stock at the end of the fiscal year which one is less is the closing value of stock.

Where trading stock is not readily identifiable, the corporation may select the cost of stock either on the basis of first – in – first out method or the average cost method. However, the method chosen once may only be changed with the prior permission of the tax department. The corporation keeping accounts on cash basis can adopt either prime cost or absorption cost method for stock valuation. Similarly, the corporation keeping accounts an accrual basis should select absorption cost method for stock valuation. In case where the prime cost method is followed, the cost of trading stock is determined following the generally

accepted accounting principle under which the cost of stock is equal to the sum of direct material cost, direct labor cost and variable factory overhead cost. Likewise, in case where absorption cost method is followed, the cost of trading stock is determined following the generally accepted accounting principle where the cost of stock is equal to the sum of direct material costs, direct labor costs and factory overhead costs.

Repair and Improvement Costs

For the purpose of computing taxable income from business, the repair and improvement costs incurred during the year on depreciable assets owned and used by the corporation are deductible. However, such repair cost should not exceed seven percent of the depreciation base of the assets under the pool at the end of each income year. Any unabsorbed balance would be added to the depreciation base of the concerned assets.

Pollution Control Costs

Installation of pollution control device is a capital expenditure. Pollution control cost refers to installation of such device in a manufacturing organization. While calculating taxable income of a corporation such pollution control costs to the extent incurred by the corporation during the year in conducting the business are deductible. However, such deductible amount should not exceed fifty percent of the taxable income before charging pollution control costs, research and development cost and donation paid during the year. Any excess cost, or part thereof, for which a deduction is not allowed, is capitalized and latter is added with the balance of asset under pool 'D'.

Research and Development Costs

For the purpose of calculating a corporation's income for an income year from any business, the research and development expenses to the extent

incurred by the corporation during the year in conducting the business is allowed for deduction. However, such allowable amount of expenses should not exceed fifty percent of the corporation's taxable income before charging pollution control costs, research and development cost and donation paid during the year. Any excess expenses, or part thereof, for which a deduction is not allowed as a result of the limitation of fifty percent, is capitalized and would be added with the balance of assets under pool 'D'.

Depreciation Allowance

While computing taxable income from any business, the depreciation on the assets owned and used by the corporation is allowed for deduction. Income Tax Act, 2001 has classified the depreciable assets into five groups for depreciation purpose. Each group is referred to as a separate pool of depreciable assets. The assets like: buildings, furniture and office equipments, automobiles, constructions, intangible assets are classified into A, B, C, D, and E pools respectively. The depreciation rates applicable to these assets are 5, 25, 20, and 15, percents for classes A, B, C, and D respectively. For class 'E' the depreciation rate is determined on the basis of useful life of the intangible assets. The rates are applicable on depreciable base computed by adding depreciable value at the end of previous year with additions of assets during the year and subtracting any amount derived from the disposal of the assets. The applicable method of depreciation to A, B, C, and D groups is diminishing balance, whereas straight line method is applicable to 'E' group of assets.

II. Losses from a Business:

For the purpose of computing taxable income of a business for an income year, the Act has made a provision to deduct the past loss from the current year profit. The Act has made further clear that:

-the unrelieved loss of the current year incurred by a corporation can be setoff from its any business income.

-the unrelieved loss of the previous four years incurred by a corporation can be carried forward for deduction from its any business income.

III. Gifts or Donation to Exempt Organizations

Income Tax Act, 2001 has made a provision that any gifts or donation paid to exempt organizations are deductible expenses before determining the taxable income of business. However, such deductible amount should not exceed normally of Rs 100 000 or 5 percent of the taxable income before charging actual donation amount as well as cost incurred for pollution control and research and development expenses. Nepalese government may prescribe about deductibility of the amount of donation paid to special purpose in the Nepal Gazette.

d. Nondeductible Expenses:

Few expenses, although incurred by the corporation, are not allowed for deduction as mentioned in the Income Tax Act, 2001. These expenses are:

-domestic or personal expenses,

- amount of tax payable, fines and penalties under this act,

-expenses incurred in deriving tax exempted incomes or final withholding payments,

-cash payment in excess of Rs 50 000 at a time to a particular person having annual transaction exceeding of Rs. two million,

-distribution of profits,

-expenses expressly not allowed for deduction by any section of the act,

-expenses of capital nature and foreign income tax.

e. Corporate Tax Rate

Corporate income tax is levied generally at a flat rate as against the progressive rates of individual income tax. In Nepal, corporations were subjected to the same progressive rate structure as individuals between 1959/60 and 1966/67, from 1968/69 to 1975/76, between 1979/80 and 1982/83 and from 1986/87 to 1989/90. Even in the later period, the structures of corporate income tax rate and individual income tax rate were similar. It is, however, to be noted that corporations, like individuals, were granted exemption limit from 1959/60 to 1964/65. Corporations established with the motive of making profit were deprived off from such facility since 1965/66 and partnership firms since 1975/76. Thus, these corporations are subjected to tax on every rupee of their net income. This means that effective tax rates on corporate income were higher than that on individual income.

Table 4.1

Statutory Corporate Tax Rates: Fiscal Years 1960/61 to 2002/03

FY	Rate	FY	Rate	FY	Rate	FY	Rate
1960/61	25	1971/72	55	1982/83	55	1993/94	35
1961/62	25	1972/73	55	1983/84	55	1994/95	35
1962/63	25	1973/74	55	1984/85	55	1995/96	33
1963/64	30	1974/75	55	1985/86	55	1996/97	25
1964/65	30	1975/76	60	1986/87	55	1997/98	25
1965/66	40	1976/77	51	1987/88	55	1998/99	25
1966/67	40	1977/78	51	1988/89	50	1999/2000	25
1967/68	55	1978/79	50	1989/90	50	2000/01	25
1968/69	55	1979/80	50	1990/91	50	2001/02	25
196970	55	1980/81	50	1991/92	40	2002/03	25
1970/71	55	1981/82	55	1992/93	35		

Sources :(1) MOF, Nepal "Finance Acts." 1960/61 to 1985/86.
(2) Pradhananga, Nagendra Bahadur (1992) "Income Tax Law and Practice."
Ratna Pustak Bhander, Kathmandu.
(3) Dhakal, Kamal Deep "Income Tax, House and Compound Tax."
Kamal Prakashan, Kathmandu, 2049, 2050, 2052, 2055,
2057, 2058, Arjan Prakashan 2059.
(4) MOL, Nepal, "Income Tax Act, 2001"

Nepalese Government had started to tax corporate bodies with marginal progressive slab rate of 25% in 1960/61. It gradually increased up to 60% in 1975/76. From the fiscal year 1976/77, the rate was gradually decreased to 25% in 1997/98. In between the highest rate 60% and the lowest rate 25%, the tax rate were varied like: 55%, 51%, 50%, 40%, 35%, and 33% in different fiscal years.

In between 1960/61 and 1966/67, a single income tax rate structure, for all types of taxpayers including corporate bodies, was prevailed in Nepal. However, a separate rate structure was introduced in 1967/68 for organized enterprises and individuals. The structure of tax rates adopted for the corporate bodies was progressive for the period from 1960/61 to 1984/85. Subsequently, in 1985/86 a flat rate structure was introduced for public corporations. Similarly, private companies since 1993/94, and partnership firms since 1995/96, were brought into the flat rate structure (Khadka, 2000). The Finance Act, 1985 made a provision of tax concession at 5% to all public companies listed in security exchange and to the government enterprises. Industrial Enterprise Act, 1981 further has made a provision of 5% tax concession to all types of industrial corporations. However, this concession is not available to alcohol, tobacco and tobacco related industrial corporations (MOL, Nepal, 1981). Income Tax Act, 2001 has prescribed corporate tax rate of 25% to nonfinancial companies and 30% to financial companies.

f. Tax Incentives

One of the objectives of tax incentive is to increase savings and encourage the potential investors to invest in the desired area or sector. It has been assumed that tax incentives encourage the investors to the selected manufacturing activities (Heller and Kauffman, 1963: 2). Moreover, investment incentives stimulate the investment both by increasing the profitability on the one

hand and reinforcing the cash flow needed to finance the projects on the other. In other words, tax incentives reduce tax burden of an organization thereby reducing the effective tax rates. As a result, it reduces investment risks, and enhances borrowing capacity of the organizations (Scholefield, 1971:1).

There are several types of investment incentives which are provided by the individual country of the world. Among them, the major types of investment incentives are: normal depreciation, regional development grants, carry-forward and backward of losses, relief for terminal losses, investment tax credit or allowance, backward area allowance, labor utilization relief, export incentives, custom duty exemptions, development rebate, amortization of expenses, rehabilitation allowance, tax rate reduction etc. On the basis of feature, these different types of investment incentives can be classified into main six categories such as: preferential tax rates, investment tax credits, allowances and fast written off facility, financing incentives, employment incentives, general policy instruments and technology transfer incentives (Boadway and Shah, 1995: 35). The major objectives of these tax incentives are regional investment, sectoral investment, performance enhancement and technology transfer (United Nations, 2000: 4).

In Nepalese context, tax incentives have been provided in order to achieve certain objectives like: investment in new enterprise, foreign investment, development of national priority industries, investment in large projects, establishment of listed companies, development of fruit based industries, development of cottage industries, export development, employment growth, productivity growth and environmental protection (World Bank, 1997: 8). In view of these objectives, Income Tax Act, 2001 and Industrial Enterprise Act, 1992 have provided tax incentives to industrial communities. Tax incentives stated in these acts are: complete exemption of any type of income tax, sales tax, excise

duty etc. for cottage industries; an additional depreciation facility of 33.33 percent of the specified depreciation rate to the industries; deduction allowed at 5 percent of net income as donation; deduction of 50 percent of expenditure made on pollution control; facility of deducting the expenses incurred on labor's residence, life insurance premium paid on their life policy as well as benefits provided on health, education and training etc.; no double taxation on raw materials used by industries; refund of import duties like custom, sales tax on finished goods, excise etc, if an industry sells its goods to export house; refund of import duties if any industry sells goods for earning foreign currency; refund of import duties imposed on the industries producing subsidiary goods that are required to exporting industries; and exemption of tax on machinery imported by export-oriented industries etc.

3. Revenue Perspective:

Corporate income tax is an important source of government revenue. It would contribute significantly to the government revenue. Therefore, this present study has analyzed corporate income tax from revenue perspective.

a. Composition of Government Revenue

Tax revenue and non-tax revenue are the major sources of government revenue in Nepal. Tax revenue consists of customs, tax on product and consumption, land revenue and registration, tax on property, income and other taxes. Similarly, non-tax revenue includes charges, fees, fines, receipts from sales of commodities and services, dividends, royalty and sale of fixed assets, return back of principal and interest, miscellaneous items etc.

Table 4.2 shows that the total revenue collection from tax and non-tax sources was Rs. 56219.9 million in fiscal year 2002/03. The total revenue was increased gradually from the fiscal year 1990/91 to 2002/03. Along with the same

swiftness of total revenue, tax revenue was also increased from fiscal year 1990/91 to 2002/03. For fiscal year 2002/03, total revenue was increased by 423.89 percent as compared to that of the base year 1990/91. Furthermore, in fiscal year 1990/91 the total tax revenue was only Rs. 8177.4 million, whereas it was Rs. 42577 million in 2002/03. Thus, tax revenue in 2002/03 was increased by 421 percent on that of the base year 1990/91. It shows that the tax revenue is relatively more sensitive as compared to non-tax revenue to increase the total government revenue.

Table 4.2

Collection of Tax and Non-Tax Revenues: (1990/91 to 2002/03)

Rs In Million

Fiscal Year	Tax Revenue		Non-Tax Revenue		Total Revenue
	Amount	Percent	Amount	Percent	
1990/91	8177.6	76.21	2553.5	23.79	10731.1
1991/92	9875.6	73.08	3637.1	26.92	13512.7
1992/93	11662.5	76.99	3485.9	23.01	15148.4
1993/94	15371.5	78.51	4209.4	21.49	19580.9
1994/95	19660.4	79.91	4945.1	20.09	24605.5
1995/96	21665.1	77.68	6225.1	22.32	27890.2
1996/97	24424.3	80.41	5949.1	19.59	30373.4
1997/98	25939.8	78.75	6998.1	21.25	32937.9
1998/99	28707.9	77.16	8498.4	22.84	37206.3
1999/00	33152.3	77.29	9741.6	22.71	42893.9
2000/01	38864.74	79.49	10028.8	20.51	48893.54
2001/02	39330.5	77.97	11114.9	22.03	50445.4
2002/03	42577	75.73	13642.9	24.27	56219.9
Total	319409.24	77.82	91029.9	22.18	410439.14

Sources: (i) MOF, Nepal, "Economic Survey, Fiscal Year 2003/04"

(ii) Appendix – 4.1

In fiscal year 1990/91, percentage of total tax revenue and non-tax revenue on total revenue were 76.21 and 23.79 respectively. Similarly, percentage of total tax revenue and non-tax revenue on total revenue in 2002/03 were 75.73 and 24.27 respectively. The share of tax revenue to total revenue in 2002/03 has been decreased by 0.48 percent as compared to its share in 1990/91. However, in an average of 13 years, out of total revenue, considerably 77.82 percent revenue was collected from various taxes and merely 22.18 percent revenue was collected from non-tax sources. The highest (80.41 %) tax collection was in 1996/97 and the lowest tax collection (73.08 %) was in 1991/92. Likewise, the maximum (26.92%) non-tax revenue collection was in 1991/92 and minimum (19.59%) non-tax revenue collection was in 1996/97. Based on these percentages, it is observed that the relative importance of tax revenue to total revenue is notably higher over non-tax revenue.

b. Composition of Tax Revenue

Tax revenue comprises direct as well as indirect taxes. Direct tax includes income tax, land revenue and registration, urban house and land tax, vehicle tax, tax on interest and other taxes. Indirect tax includes customs, tax on consumption and production of goods and services.

Table 4.3 shows, in fiscal year 1990/91; the total tax revenue collection was Rs. 8177.6 million, out of which Rs 1369.9 million from direct and 6807.7 million from indirect taxes. Total tax revenue has increased gradually from the year 1990/91 and reached to Rs. 42577 million in the year 2002/03. In the same direction of total tax revenue, direct taxes were increased from 16.75 percent in 1990/91 to 23.71 percent in 2002/03. On the other hand, indirect tax revenue was 83.25 percent of total tax revenue in 1990/91, but it decreased to 76.29 percent in 2002/03. Thus, direct tax revenue in 2002/03 was increased by 637

percent on that of base year 1990/91. It shows that direct taxes are also important to the government for collecting more tax revenues.

Table 4.3

Collection of Direct and Indirect Tax Revenues: FY. 1990/91 to 2002/03

Rs. In Million

Fiscal Year	Direct Tax Revenue		Indirect Tax Revenue		Total Tax Revenue
	Amount	Percent	Amount	Percent	
1990/91	1369.9	16.75	6807.7	83.25	8177.6
1991/92	1595.2	16.15	8280.4	83.85	9875.6
1992/93	2036.2	17.46	9626.3	82.54	11662.5
1993/94	2855.3	18.58	12516.2	81.42	15371.5
1994/95	3849.7	19.58	15810.7	80.42	19660.4
1995/96	4656	21.49	17009.1	78.51	21665.1
1996/97	5340	21.86	19084.3	78.14	24424.3
1997/98	6187.9	23.85	19751.9	76.15	25939.8
1998/99	7471.1	26.02	21236.8	73.98	28707.9
1999/00	8951.7	27.01	24200.6	72.99	33152.3
2000/01	10159.04	26.14	28705.7	73.86	38864.74
2001/02	10597.5	26.94	28733	73.06	39330.5
2002/03	10095.8	23.71	32481.2	76.29	42577
Total	75165.34	23.53	244243.9	76.47	319409.24

Sources;   (i) MOF, Nepal, "Economic Survey, Fiscal Year 2003/04"

(ii) Appendix- 4.1

It is observed that the contribution of direct tax revenue and indirect tax revenue to total tax revenue were 16.75 and 83.25 percent respectively in fiscal year 1990/91. Similarly, their contributions to total tax revenue in fiscal year 2002/03 were 23.21 and 76.29 percent respectively. In an average, indirect and direct taxes were collected 76.29 percent and 23.71 percent of total tax revenue respectively. The direct tax collection was highest (27.01 %) in 1999/00 and the

lowest (16.15 %) was in 1991/92. Likewise, the indirect tax revenue collection was maximum (83.85%) in 1991/92 and minimum (72.99%) was in 1999/00. These percentages indicate that the relative importance of indirect tax revenue to total tax revenue is observed notably higher over direct tax revenue.

c. Composition of Direct Tax Revenue

Direct tax comprises land revenue and registration, tax on property, and tax on profit or income.

Table 4.4

Collection of Direct Tax Revenue from Land, Property, and Income:

(1990/91 to2002/03)

Rs In Million

Fiscal Year	Land Revenue and Registration		Tax on Property, And other Taxes		Income Tax		Total Direct Tax Revenue
	Rs.	%	Rs.	%	Rs.	%	
1990/91	540	39.42	83.8	6.11	746.1	54.47	1369.9
1991/92	636.1	39.87	103.6	6.49	855.5	53.64	1595.2
1992/93	754.9	37.07	156.5	7.68	1124.8	55.25	2036.2
1993/94	833.2	29.18	197.6	6.93	1824.5	63.89	2855.3
1994/95	937.7	24.35	199.8	5.19	2712.2	70.46	3849.7
1995/96	1066.6	22.91	277.7	5.96	3311.7	71.13	4656
1996/97	1015.4	19.01	355.6	6.65	3969	74.33	5340
1997/98	1004.2	16.23	497.8	8.04	4685.9	75.73	6187.9
1998/99	1003.2	13.42	662.2	8.86	5805.7	77.72	7471.1
1999/00	1015.9	11.35	929.4	10.38	7006.4	78.27	8951.7
2000/01	612.9	6.03	896.4	8.82	8649.74	85.15	10159.04
2001/02	1131.8	10.67	1029.7	9.72	8436	79.61	10597.5
2002/03	1414.3	14.01	1589.3	15.74	7092.2	70.25	10095.8
Total	11966.2	15.93	6979.4	9.28	56219.8	74.79	75165.34

Sources; (i) MOF, Nepal, "Economic Survey, Fiscal Year 2003/04 (ii) Appendix- 4.1

Table 4.4 shows that in the fiscal year 1990/91, the contribution of direct tax was Rs. 1369.9 million, where the contributions from land revenue and registration, tax on property, and income tax were Rs. 540, Rs. 83.8, Rs. 746.1 millions respectively. It is also observed that the total direct tax revenue has been increased gradually from the year 1990/91 and reached to Rs.10095.8 million in the year 2002/03. The income taxes were also increased from 54.47 percent in 1990/91 to 70.25 percent of total direct tax revenue in 2002/03. Similarly, tax on property was increased from 6.11 percent in 1990/91 to 15.74 percent of total direct tax revenue in 2002/03. On the other hand, land revenue and registration was 39.42 percent of total direct tax revenue in 1990/91 and decreased to 14.01 percent in 2002/03. Based on these percentages, it is observed that income tax revenue is the most important component of direct tax revenue.

In fiscal year 1990/91, the shares of land revenue and registration, tax on property, and income tax on total direct tax revenue were 39.42, 6.11 and 54.47 percent respectively. Similarly, in 2002/03 the shares of land revenue and registration, tax on property, and income tax on total direct tax revenue were 14.01, 15.74 and 70.25 percent respectively. The shares of income tax and property tax revenues to total direct tax revenue in 2002/03 have been increased by 15.78 and 9.63 percent respectively. However, in an average, land revenue and registration, tax on property, and income tax were collected 15.93, 9.28 and 74.79 percent respectively. The collection from land revenue and registration was highest 39.87 percent in 1991/92, and the lowest was 6.03 percent in 2000/01. Likewise, the contribution of tax on property was highest 15.74 percent in 2002/03 and the lowest 5.19 percent was in 1994/95. The maximum 85.15 percent income tax revenue was collected in 2000/01 and minimum 53.64 percent was in 1991/92. These percentages suggest that the revenue contribution of income tax was highest over other types of direct taxes.

d. Composition of Income Tax Revenue

Income tax includes income tax from business corporations, individuals, and remuneration. The Table 4.5 shows that in fiscal year 1990/91, the collection of income tax revenue was Rs. 746.1 million, where corporate bodies have contributed Rs 336, individuals Rs 360.2, and Rs 49.9 million from remuneration. Total income tax revenue increased gradually from the fiscal year 1990/91 and reached Rs 8649.74 million in fiscal year 2000/01. From fiscal year 2001/02, it has started to decrease and reached to Rs. 7092.2 in fiscal year 2002/03.

Table 4.5

Collection of Income Tax Revenue from Different Sources: Corporate Bodies, Individuals, and Remuneration: (1990/91 to 2002/03)

Rs in Million

Fiscal Year	Corporate Income Tax		Income Tax from Individuals		Income Tax From Remuneration		Total Income Tax
	Rs.	%	Rs.	%	Rs.	%	
1990/91	336	45.04	360.2	48.28	49.9	6.68	746.1
1991/92	384	44.89	416.8	48.72	54.7	6.39	855.5
1992/93	523.8	46.57	544.3	48.39	56.7	5.04	1124.8
1993/94	935.3	51.26	805.4	44.15	83.8	4.59	1824.5
1994/95	1715.7	63.26	878.1	32.38	118.4	4.36	2712.2
1995/96	2230.5	67.36	948.1	28.63	133.1	4.01	3311.7
1996/97	2689.6	67.77	1111.3	27.99	168.1	4.24	3969
1997/98	2933.1	62.59	1430.6	30.52	322.2	6.89	4685.9
1998/99	3461.9	59.63	1947.3	33.54	396.5	6.83	5805.7
1999/00	4438.5	63.35	2116.4	30.21	451.5	6.44	7006.4
2000/01	5982.4	69.17	2070.04	23.93	597.3	6.90	8649.74
2001/02	4351.95	51.59	3248.45	38.50	835.6	9.91	8436
2002/03	3644.97	51.39	2194.63	30.95	1252.6	17.66	7092.2
Total	33627.72	59.82	18071.62	32.14	4520.4	8.04	56219.74

Sources: (i) MOF, Nepal, "Economic Survey, Fiscal Year 2003/04 (ii) Appendix- 4.1

It is observed in Table 4.5 that the corporate income tax was increased from 45.04 percent in 1990/91 to 51.39 percent in 2002/03. Similarly, income tax from remuneration was increased from 6.68 percent in 1990/91 to 17.66 percent in 2002/03. On the other hand, income tax from individuals was 48.28 percent of total income tax revenue in 1990/91, which is decreased to 30.95 percent in 2002/03. Thus, it is cleared that the corporate houses are the most important contributors among all other sources towards income tax revenues.

Table 4.5, shows that corporate tax, tax from individuals, tax from remuneration are the major subdivisions of income tax revenue. It is observed that income tax collected from corporate bodies is the highest, and tax from remuneration is the lowest among the various income taxes. In the last 13 years' period, the average collection of corporate tax was 59.82 percent, tax from individuals other than salary holders was 32.14 percent, and tax from remuneration was 17.66 percent. From this analysis, it is depicted that the corporate bodies are the vital source to contribute income tax revenue in the government treasury.

e. Composition of Corporate Income Tax Revenue

Corporate tax includes income tax collected from government and semi-government corporate bodies, as well as income tax collected from public companies and private companies. Income taxes received from statutory corporations and several other companies constitute the total corporate income tax revenue.

Table 4.6 shows that in fiscal year 1990/91 the corporate income tax revenue collection was Rs. 336 million, out of which Rs 162.2, Rs 2.7, Rs 171.1 millions were from government sector, semi-government sector, and private sector companies respectively. Public sector has been recognized as a separate

head of corporate income tax since the fiscal year 1991/92. Thus, corporate income tax collected from public sector in 1991/92 was only Rs 6.5 million. However, total corporate income tax revenue has been increased gradually from the year 1990/91 onwards and reached to Rs. 3644.97 million in the year 2002/03.

Table   4.6

Collection of Corporate Income Tax Revenue from Government, Semi-Government, Public and Private Sectors: (1990/91 to 2002/03)

Rs In Million

Fiscal Year	Corporate Tax Revenue From								Total Corp-orate Tax Revenue
	Government Sector		Semi Govt.Sector		Public Sector		Private Sector		
	Rs.	%	Rs.	%	Rs.	%	Rs.	%	
1990/91	162.2	48.27	2.7	0.80	-	-	171.1	50.93	336
1991/92	171.1	44.56	5.3	1.38	6.5	1.69	201.1	52.37	384
1992/93	255.3	48.74	2.6	0.49	9.5	1.81	256.4	48.96	523.8
1993/94	534.1	57.10	2.1	0.23	19.7	2.11	379.4	40.56	935.3
1994/95	860.2	50.14	-	-	440.1	25.65	415.4	24.21	1715.7
1995/96	1144.5	51.31	-	-	563.9	25.28	522.1	23.41	2230.5
1996/97	1231.1	45.77	-	-	858.4	31.91	600.1	22.32	2689.6
1997/98	1317.8	44.93	-	-	925.1	31.54	690.2	23.53	2933.1
1998/99	1526.5	44.09	-	-	1155	33.36	780.4	22.55	3461.9
1999/00	2198.8	49.53	-	-	1339.5	30.17	900.2	20.20	4438.5
2000/01	2928	48.94	-	-	1924.3	32.17	1130.1	18.89	5982.4
2001/02	1769.3	40.66	-	-	1412	32.45	1170.65	26.89	4351.95
2002/03	1251	34.32	-	-	1226.3	33.64	1167.67	32.04	3644.97
Total	15349.9	45.64	12.7	0.03	9880.3	29.38	8384.82	24.95	33627.72

Sources; (i) MOF, Nepal, "Economic Survey, Fiscal Year 2003/04"

(ii) Appendix- 4.1

Corporate income tax from public sector was also increased from 1.69 percent in 1991/92 to 33.64 percent in 2002/03. On the other hand, corporate income taxes from government sector and private sector were 48.27 and 50.93 percent respectively in 1990/91. It is decreased to 34.32 and 32.04 percent respectively in fiscal year 2002/03. Thus, public sector has been appeared as more important source of corporate income tax revenue.

It is observed that in fiscal year 1990/91 the contribution of corporate income tax from government sector, semi-government sector, public sector, and private sector were 48.27; 0.80; 0 and 50.93 percent of total corporate income tax revenue respectively and in 2002/03 these percentages were 34.32, 0, 33.64, and 32.04 respectively. The share of corporate income tax from public sector to total corporate income tax revenue in 2002/03 has been increased by 31.95 percent over its share in 1991/92. Average contribution of corporate income tax from government sector, semi-government sector, public sector, and private sector were at 45.64, 0.03, 29.38, and 24.95 percent of total corporate income tax revenue respectively. The contribution of private sector was highest 52.37 percent in 1991/92 and the lowest 18.89 percent was in 2000/01. Similarly, the collection of corporate income tax from government sector was highest 57.10 percent in 1993/94 and the lowest collection 34.32 percent was in 2002/03. Likewise, the highest 33.64 percent collection of corporate income tax from public sector was in 2002/03 and the lowest 1.69 percent was in 1991/92. Eventually, the relative importance of corporate income tax revenue from public sector is observed notably higher over private sector.

f. Corporate Income Tax Revenue as Percentage of Direct Tax and Income Tax Revenues

In Nepalese context, the corporate income tax is one of the vital taxes. Further, income tax is one of the major components of direct taxes. Thus, the percentage shares of corporate tax on total income tax and direct tax are to be

measured to evaluate its contribution for revenue generation. The corporate income tax as percentage of direct tax and income tax has been presented in Table 4.7.

Table   4.7

Corporate Income Tax as Percentage of Direct Tax Revenue and Income Tax Revenue (1990/91 to 2002/03)

Rs In million

Fiscal year	Total Direct Tax	Total Income Tax	Corporate Tax	Corporate Tax as a Percent of:	
				Direct Tax	Income Tax
1990/91	1369.9	746.1	336	24.527	45.034
1991/92	1595.2	855.5	384	24.072	44.886
1992/93	2036.2	1124.8	523.8	25.724	46.568
1993/94	2855.3	1824.5	935.3	32.757	51.263
1994/95	3849.7	2712.2	1715.7	44.567	63.259
1995/96	4656	3311.7	2230.5	47.906	67.352
1996/97	5340	3969	2689.6	50.367	67.765
1997/98	6187.9	4685.9	2933.1	47.401	62.594
1998/99	7471.1	5805.7	3461.9	46.337	59.629
1999/00	8951.7	7006.4	4438.5	49.583	63.349
2000/01	10159.04	8649.74	5982.4	58.887	69.163
2001/02	10597.5	8436	4351.95	41.066	51.588
2002/03	10095.8	7092.2	3644.97	36.104	51.394
Total	75165.34	56219.74	33627.72	44.738	59.815

Sources; (i) MOF, Nepal, "Economic Survey, Fiscal Year 2003/04 (ii) Appendix- 4.1

It is observed that in fiscal year 1990/91 the corporate income tax collection was 24.53 percent of total direct tax revenue and 45.04 percent of total income tax revenue. These percentages were decreased to 24.07 percent and 44.88 percent respectively in fiscal year 1991/92. However, from the year 1992/93 onwards, these percentages tend to increase gradually and reached to

36.10 and 51.39 percent respectively in 2002/03. It is also observed that the average corporate income tax revenue is 44.74 percent of direct tax revenue and 59.82 percent of income tax revenue during the study period.

g. Corporate Income Tax Revenue as Percentage of GDP, Total Revenue, and Total Tax Revenue

Table 4.8 depicts contribution of corporate income tax in revenue generation as percentage share of GDP, total revenue and total tax revenue.

Table 4.8

Corporate Income Tax as Percentage of GDP, Total Revenue, and Total Tax Revenue (1990/91 to 2002/03)

Rs In Million

F Y	GDP	Total Revenue	Total Tax Revenue	Corporate Tax	Corporate Tax as Percentage of:		
					GDP	Total Revenue	Total Tax Revenue
1990/91	166127	10731.0	8177.6	336	0.289	3.131	4.109
1991/92	144933	13512.7	9875.6	384	0.265	2.842	3.888
1992/93	165368	15148.4	11662.5	523.8	0.317	3.457	4.491
1993/94	191596	19580.9	15371.5	935.3	0.488	4.776	6.085
1994/95	209974	24605.5	19660.4	1715.7	0.817	6.973	8.727
1995/96	239388	27890.2	21665.1	2230.5	0.932	7.997	10.295
1996/97	269570	30373.4	24424.3	2689.6	0.998	8.855	11.012
1997/98	289798	32937.9	25939.8	2933.1	1.012	8.905	11.307
1998/99	330018	37206.3	28707.9	3461.9	1.049	9.305	12.059
1999/00	366284	42893.9	33152.3	4438.5	1.212	10.348	13.388
2000/01	393566	48893.54	38864.74	5982.4	1.520	12.236	15.393
2001/02	405632	50445.4	39330.5	4351.95	1.073	8.627	11.065
2002/03	435531	56219.9	42577	3644.97	0.837	6.483	8.561
Total	3557785	410439.14	319409.24	33627.72	0.945	8.193	10.528

Sources;   (i) MOF, Nepal, "Economic Survey, Fiscal Year 2003/04 (ii) Appendix- 4.1

In fiscal year 1990/91, the corporate income tax collection was 0.289 percent of GDP, 3.131 percent of total revenue, and 4.109 percent of total tax revenue. It was decreased to 0.265 percent of GDP, 2.842 percent of total revenue, and 3.888 percent of total tax revenue during the year 1991/92. From the year 1992/93 onwards, these percentages were increased gradually till the year 2000/01. However, from the year 2001/02, these percentages of corporate tax on GDP, total revenue and total tax revenue again tend to decrease gradually and fell to 0.837 percent, 6.483 percent, and 8.561 percent respectively in 2002/03.

Over the last thirteen years of study period, the average percentage share of corporate tax is 0.945 percent of GDP, 8.193 percent of total revenue, and 10.528 percent of total tax revenue. These percentages suggest that, although the contribution of corporate income tax to GDP is very low, its contributions to total revenue and total tax revenue are perceptible.

h. Growth Trends of Direct Tax, Income Tax, and Corporate Income Tax Revenues

For analyzing the increasing or decreasing trends, annual growth rates in percentage for direct tax, income tax, and corporate tax have been computed and presented in Table 4.9.

Table 4.9 shows that the growth rate of direct tax in fiscal year 1991/92 was 16.446 percent. From the year 1992/93, it started to increase gradually and reached to 40.227 percent in 1993/94. From 1994/95 it started to decrease and trimmed down to 14.691 percent in 1996/97. Subsequently, the growth rate of direct tax began to increase from the year 1997/98 and it increased to 20.737 percent in 1998/99. Eventually, from fiscal year 1999/00 it started to decrease

gradually till the year 2002/03 and trimmed down even to negative growth. These trends reflect considerable fluctuations in direct tax revenue collections over the years. The mean growth rate is 18.69 percent, which indicates that the growth rate of direct tax is not satisfactory especially in the last four years of the study period.

Table 4.9

Direct Tax, Income Tax, Corporate Income Tax, and Corporate Income Tax from Public Companies and Their Growth Trends: (1990/91 to 2002/03)

Rs. In Million

Fiscal Year	Direct Tax		Income Tax		Corporate Tax		Corporate Tax From Public Companies	
	Amount	AGR	Amount	AGR	Amount	AGR	Amount	AGR
1990/91	1369.9	-	746.1	-	336	-	-	-
1991/92	1595.2	16.446	855.5	14.663	384	14.286	6.5	-
1992/93	2036.2	27.645	1124.8	31.479	523.8	36.406	9.5	46.154
1993/94	2855.3	40.227	1824.5	62.207	935.3	78.561	19.7	107.368
1994/95	3849.7	34.826	2712.2	48.654	1715.7	83.438	440.1	2134.01
1995/96	4656	20.945	3311.7	22.104	2230.5	30.005	563.9	28.130
1996/97	5340	14.691	3969	19.848	2689.6	20.583	858.4	52.226
1997/98	6187.9	15.878	4685.9	18.062	2933.1	9.053	925.1	7.770
1998/99	7471.1	20.737	5805.7	23.897	3461.9	18.029	1155	24.851
1999/00	8951.7	19.818	7006.4	20.681	4438.5	28.210	1339.5	15.974
2000/01	10159.04	13.487	8649.74	23.455	5982.4	34.784	1924.3	43.658
2001/02	10597.5	4.316	8436	-2.471	4351.95	-27.254	1412	-26.623
2002/03	10095.8	-4.734	7092.2	-15.929	3644.97	-16.245	1226.3	-13.152
Total	75165.34	224.283	56219.74	266.650	33627.72	309.856	9880.3	2420.37
Mean	5781.949	18.690	4324.595	22.221	2586.748	25.821	823.358	201.697

Source: (i) MOF, Nepal, "Economic Survey, Fiscal Year 2003/04"

(ii) Appendix- 4.1

In another respect, the growth rate of income tax in fiscal year 1991/92 was 14.663 percent. In 1992/93 it was 31.479 percent and reached to 62.207 percent in 1993/94. It is the highest rate of growth over the study period. From the year 1994/95, it again started to decrease and trimmed down to 18.062 percent in 1997/98. During 1998/99 to 2000/01, some glimpses of improvement could be obscured when the growth rate reached to 23.897 percent. Eventually, from the year 2001/02 it started to decrease gradually and trimmed down to negative growth of 15.924 percent in the year 2002/03. These trends reflect considerable fluctuations in income tax revenue collections over the years. The mean growth rate is 22.221 percent, which indicates that the trend of income tax growth in the earlier period was satisfactory over the latter part of the study period. This indicates the unsatisfactory collection policy of the income tax revenue. The reason for unsatisfactory growth rate of income tax may be attributed to the narrowed base to income tax.

The growth rate of corporate income tax was 14.286 percent in fiscal year 1991/92. It reached to 83.438 percent, the highest, in fiscal year 1994/95. From fiscal year 1995/96, it tends to decrease and trimmed down to 9.053 percent in 1997/98. In the subsequent three years, the growth rate of corporate income tax began to increase and reached to 34.784 percent in 2000/01. Eventually, from the year 2001/02, it started to decline gradually till the year 2002/03 and came down even to negative growth rate of 27.254 percent. These trends reflect that there is considerable fluctuation in corporate income tax revenue collections over the years. The mean growth rate of corporate income tax is 25.821 percent, which indicates an increasing trend of corporate income tax revenue for the study period. The mean growth rate of corporate income tax revenue is the highest over that of direct tax, and income tax revenues.

Again, the growth rate of corporate income tax from public sector was 46.154 percent in fiscal year 1992/93, which increased up to 2134.01 percent in

1994/95. Since that year, there is always decreasing trend over the study period. Its average growth rate is 201.697 percent. It is also observed that except in the year 1994/95, the growth rate is always below the average. It indicates that the tax collection from the public sector is not satisfactory at all. Similarly, in 2002/03 its growth rate remained at negative. These trends reflect considerable fluctuations in corporate income tax revenue collections from public sector over the years. From the above analysis it could be concluded that the growth rate on the collection of corporate tax from public sector is disappointing especially in the latter part of the study period.

4. Summing up

This chapter has analyzed the corporate income tax from legal and revenue perspectives. In Nepal, income tax act and income tax rules are the two basic legal documents, which are systematizing overall taxation procedure of corporate bodies. As there is not any separate act or rule governing the corporate income tax system, both these legal documents are enforced to explain the provisions pertaining to corporate bodies along with other income taxes. Therefore, these documents have covered all the aspects of corporate taxation, which include assessment procedure of taxable income, expenses allowed or disallowed for deduction, tax incentives, tax rate structure and tax administration.

Tax revenue and non-tax revenue are the major sources of government revenue in Nepal. Out of total government revenue, considerably 77.82 percent revenue has been collected from various taxes and merely 22.18 percent revenue has been collected from non-tax sources. Tax revenue comprises direct as well as indirect taxes. on an average, indirect and direct taxes contribute 76.29 and 23.71 percent to the total tax revenue respectively. Total direct tax revenue includes land revenue and registration, tax on property, and tax on

profit. The average contributions of land revenue and registration, tax on property, and income tax are 15.93, 9.28 and 74.79 percent respectively. Obviously, the mean growth rate 18.690 percent indicates an increasing trend of direct tax revenue.

The relative importance of income tax revenue to generate more direct tax revenue is notably the highest over land revenue and registration, and tax on property. Further, for the study period, the mean growth rate 22.221 indicates an increasing trend of income tax revenue. This relationship suggests that income tax is the prime component of direct tax revenue. Income tax revenue includes tax from corporations, individuals, and remuneration. In an average, out of the total income tax revenue, 59.82 percent tax revenue came from corporate bodies, 32.14 percent from individuals, and 17.66 percent from salary holders. These percentages depict that the corporate bodies are the vital source of income tax revenue to the government. The mean growth rate of corporate income tax revenue has exceeded that of direct tax revenue, and income tax revenue.

The sources of corporate income tax revenue include income tax from government corporate bodies, semi-government corporate bodies, public companies, and private companies. In other words, income taxes from statutory corporations and several companies constitute the total corporate income tax revenue. On an average, the collection of corporate income tax from government sector, semi government sector, public sector, and private sector have been 45.64, 0.03, 29.38, and 24.95 percent of total corporate income tax revenue respectively. The average collection of corporate income tax revenue is observed to be 44.74 percent of total direct tax revenue and 59.82 percent of total income tax revenue. The percentage share of corporate income tax is 0.945 percent of GDP, 8.193 percent of total revenue, and 10.528 percent of total tax revenue.

These percentages suggest that, its shares on total revenue and total tax revenue are relatively more than that of other income taxes.

The relative importance of income tax revenue from public sector is observed notably higher than that from private sector. This relationship suggests that corporate income tax from public companies is the prime component of total corporate income tax revenue. Thus, public companies are the vital source that contributing 29.38 percent of total corporate income tax revenue. On the other hand, private companies contribute 24.95 percent income tax to the government. Noticeably, the mean growth rate indicates an increasing trend of corporate income tax revenue from public sector. This is the highest mean growth rate over that of direct tax revenue, income tax revenue, and corporate income tax revenue.

CHAPTER - V

CORPORATE INCOME TAX AND DEBT- EQUITY MIX

This chapter primarily deals with the composition of total capital employed of the sample companies and secondarily it examines the relationship between corporate income taxes and debt-equity mix of the sample companies. In order to examine the relationship between taxes and debt-equity mix, linear regression models have been employed. These models have been estimated separately for different states of nature based on size, and profitability of sample companies.

1. General Background

The interest payments for debt capital are admissible to deduct from income while computing taxable income, whereas dividends paid for share capital are not admissible to deduct from income. In most firms, the prevailing financing practices serve as guides to their decisions about level of debt to include in the capital mix. Consequently, debt-equity mix of the firms differs from one firm to another (Garrison and Noreen, 2003: 775).

Modigliani and Miller (1963) documented that tax deductibility of interest results into a preference for debt over equity financing (Clark, 1993: 19). Consequently, debt financing is positively related to corporate taxes. Higher the corporate tax rate, higher should be the level of debt; it is

because the higher corporate tax rate promotes the use of more debt (Givoly, et al., 1992: 331). Moreover, firms can derive substantial tax benefits from debt, thus debt is a function of corporate income taxes (Graham, 2000: 1901). In contrast, Miller (1977) documented that the tax advantage of debt is normalized by the personal tax disadvantage of debt and thus corporate taxes are irrelevant with the level of debt (Lyon, 1992: 3). Therefore, the results of previous studies are not unanimous. Still, mixed result creates some sort of confusion about the influence of corporate income taxes on debt financing of the firms.

Most of the previous studies have documented that corporate income tax favors the use of debt in the financing mix of manufacturing firms because interest is deductible for income tax purpose. Deductibility of interest relaxes tax burden to the firm. Because of this, firms with higher statutory corporate tax rate increase debt in their financing mix with a view to minimize tax burden. Thus, corporate income taxes and debt-equity mix are related positively. However, adequate empirical investigation at firms' level has not been conducted in Nepalese context. Hence, an attempt has been made to examine the relationship of corporate taxes with debt-equity mix in the context of Nepalese listed manufacturing companies under this study.

2. Composition of Total Capital Employed

Total capital of a firm includes debt capital and equity capital. Debt capital comprises long-term and short-term debts including outstanding liabilities for expenses. Equity capital comprises stock capital and reserves. Total capital is thus composed of total debt and total equity. Total assets also represent the total capital employed by a firm. The composition of total capital might be different according to the size of the firms. The composition of total capital of selected big companies has been presented in Table 5.1.

Table 5.1

Composition of Total Capital Employed by Big Companies

1990/91 to 2002/03

Rs in Million

S.N.	F.Y.	Equity Capital		Debt Capital		Total Capital
		Amount	Percent	Amount	Percent	
1	1990/91	121.74	20.79	463.84	79.21	585.59
2	1991/92	183	19.27	766.81	80.73	949.87
3	1992/93	269.67	24.41	835.61	75.59	1105.28
4	1993/94	335.44	23.08	1117.71	76.92	1453.15
5	1994/95	546.22	28.21	1390.76	71.79	1937.005
6	1995/96	641.98	26.78	1754.77	73.22	2396.76
7	1996/97	875.21	30.41	2003.05	69.59	2878.26
8	1997/98	1062.86	38.69	1684.36	61.31	2747.2
9	1998/99	1288.08	42.07	1774.06	57.93	3062.1
10	1999/00	1377	47.06	1549.09	52.94	2926.09
11	2000/01	1431.18	44.91	1755.87	55.09	3187.05
12	2001/02	1362.13	43.84	1745.32	56.16	3107.45
13	2002/03	1338.62	41.91	1855.68	58.09	3194.3
	Mean	833.32	33.18	1438.225	67.11	2271.55

Source: Computed on the basis of data presented in Appendices 5$_{(a-j)}$

The data presented in Table 5.1 support the argument that debt capital has become a popular source of finance to big companies. The average ratio of debt to total capital of big companies in 1990/91 is observed 79.21 percent. This ratio has been decreased gradually to fiscal year 1999/00, and reached to 52.94 percent. However, it increased gradually since the fiscal year 2000/01 and reached to 58.08 percent in the fiscal year 2002/03.

During study period, it is also observed that the big companies have financed greatly by debt capital. The proportion of debt and equity capital to total capital on an average, during study period, was 67:33. This proportion shows that the big companies are largely depended on debt capital for financing their investment. Thus, debt is observed as major source for raising required funds to the big companies. However, the proportion of total debt and total equity capital for big companies is not similar to that of

medium companies. The composition of total capital of selected medium companies has been presented in Table 5.2.

Table 5.2

Composition of Total Capital Employed by Medium Companies
1990/91 to 2002/03

Rs in Million

S.N.	F.Y.	Equity Capital		Debt Capital		Total Capital
		Amount	Percent	Amount	Percent	
1	1990/91	126.97	44.44	159.4	55.56	285.77
2	1991/92	134.06	38.82	211.28	61.18	345.34
3	1992/93	146.31	42.54	197.47	57.46	343.96
4	1993/94	162.08	40.87	234.51	59.13	396.59
5	1994/95	174.95	36.62	302.83	63.38	477.78
6	1995/96	156.65	25.63	454.65	74.37	611.3
7	1996/97	156.648	27.67	409.62	72.33	566.19
8	1997/98	138.309	21.69	499.42	78.31	637.73
9	1998/99	147.92	22.49	509.85	77.51	657.77
10	1999/00	24.11	3.26	717.18	96.74	741.27
11	2000/01	25.68	3.007	828.07	96.99	853.75
12	2001/02	92.58	9.76	856.57	90.24	949.16
13	2002/03	84.66	8.89	869.68	91.11	954.34
Mean		120.84	25.05	480.81	75.04	601.61

Source: Computed on the basis of data presented in Appendices 5$_{(a-j)}$

The data presented in Table 5.2 depict that the medium companies are outstandingly depending on borrowed funds for financing their investments. It is observed that the average ratio of debt to total capital of medium companies in 1990/91 was 55.56 percent. This ratio has been increased gradually and reached at 91.11 percent in the fiscal year 2002/03.

It is observed that the medium companies were financed greatly by debt capital during study period. The average proportion of debt and equity capital of these companies was 75:25. This proportion shows that the medium companies are heavily depending on debt capital for financing their investments. From this analysis, it is observed that debt is the major source for feeding the required funds to the medium companies. However, the proportion of total debt and total equity capital of medium companies are not similar to that of small companies. The composition of total capital of selected small companies has been presented in Table 5.3.

Table 5.3

Composition of Total Capital Employed by Small Companies
1990/91 to 2002/03

(Rs. In Million)

S.N.	F.Y.	Equity Capital		Debt Capital		Total Capital
		Amount	Percent	Amount	Percent	
1	1990/91	23.47	33.41	46.8	66.59	70.27
2	1991/92	35.53	55.69	28.29	44.31	63.81
3	1992/93	34.59	39.54	52.91	60.46	87.49
4	1993/94	38.84	44.77	47.95	55.23	86.77
5	1994/95	38.7	45.08	47.13	54.92	85.85
6	1995/96	36.11	34.79	67.68	65.21	103.81
7	1996/97	52.4	33.11	105.8	66.89	158.31
8	1997/98	58.00	33.71	114.07	66.29	172.08
9	1998/99	64.42	30.93	143.86	69.07	208.28
10	1999/00	66.96	28.48	168.19	71.52	235.16
11	2000/01	65.42	29.75	154.53	70.25	219.94
12	2001/02	63.88	28.39	161.12	71.61	225.00
13	2002/03	58.04	23.74	186.63	76.26	244.58
Mean		48.95	35.49	101.92	65.41	150.88

Source: Computed on the basis of data presented in Appendices 5$_{(a-j)}$

The data as presented in Table 5.3 support the argument that the debt capital is preferable to small companies too. The debt to total capital ratio of small companies in fiscal year 1990/91 was 66.59 percent, which increased to 76.26 percent in fiscal year 2002/03. The average debt and equity capital proportion of small companies over the study period was 65:35. The mix of debts in latter years has increased tremendously over the initial years of the study period.

Growth Trend of Debt Ratio

After analyzing the composition of total capital, the trend of total debt to total capital ratios has been analyzed. The debt to total capital ratio, its growth rate in percentage, mean, standard deviation and coefficient of variation of big, medium and small companies have been presented in the Table 5.4

Table 5.4

Growth Trends of Debt Ratios of Big, Medium and Small Companies

1990/90 to2002/03

F.Y.	Big Companies		Medium Companies		Small Companies	
	DTCR	GR	DTCR	GR	DTCR	GR
1990/91	0.792	--	0.556	--	0.666	--
1991/92	0.807	1.5	0.612	5.6	0.443	-22.3
1992/93	0.755	-5.2	0.575	-3.7	0.605	16.2
1993/94	0.769	1.4	0.591	1.6	0.552	-5.3
1994/95	0.717	-5.2	0.634	4.3	0.549	-0.3
1995/96	0.732	1.5	0.743	10.9	0.652	10.3
1996/97	0.695	-3.7	0.723	-2	0.669	1.7
1997/98	0.613	-8.2	0.783	6	0.663	-0.6
1998/99	0.579	-3.4	0.775	-0.8	0.691	2.8
1999/00	0.529	-5	0.967	19.2	0.715	2.4
2000/01	0.551	2.2	0.969	0.2	0.703	-1.2
2001/02	0.562	1.1	0.902	-6.7	0.716	1.3
2002/03	0.581	1.9	0.911	0.9	0.763	4.7
Mean	0.658	-1.758	0.749	2.958	0.645	0.808
S.D.	0.101	--	0.151	--	0.087	--
C.V.	15.126	--	20.115	--	13.498	--

Source: Computed on the basis of data presented in Appendices 5$_{(a-j)}$

GR=Growth rate on the basis of previous fiscal year; DTCR=Total Debt to total capital ratio.

It is observed that the average growth rate of debt ratio pertaining to big companies during the study period has shown a negative growth. This indicates, though the big companies were depended on debt in initial years; their dependency on debt has been decreasing with the passage of time. On the other hand, the average growth rate of debt ratio of medium companies is 2.958 percent, which indicates that these companies are still depending on debt heavily with an increasing trend. Similarly, the average growth rate of debt ratio of small companies is 0.808 percent, which reflects that these companies are also using the debt tremendously. The positive growth rate is the symptom of use of heavy debt.

The coefficient of variation is the ratio of standard deviation to the mean expressed in percentage. It is the relative measure and is independent of units and applicable for the comparison of variability of two or more data distributions. The greater the value of the coefficient of variation, the less will be the uniformity and the smaller the value of the coefficient of variation, the more will be the uniformity (Sharma and Silwal, 1999). Thus, the coefficient of variance has also been computed and presented so as to facilitate the analysis of changeability of debt ratio over the study period. The computed coefficient of variation is 20.115, the highest, for medium companies and 13.498, the lowest, for small companies. Therefore, the debt ratio of medium companies is comparatively unstable than that of small companies.

From the above analysis it is concluded that the selected companies have preferred debt capital for their financing needs. However, the factors influencing debt financing of these companies are still under investigation. One of the major factors influencing debt financing of selected companies may be corporate income tax. Thus, an attempt has been made to establish a relationship of corporate income tax with debt-equity mix of the selected companies.

3. Relation of Corporate Income Taxes to Debt-Equity Mix:

Alessi (1965) incorporated corporate income tax rate as a single independent variable to investigate the effect of corporate income tax on debt-equity mix. In that study, he concluded that the corporate income tax rate should be considered as a major independent variable in any model intended to explain variations in debt-equity mix. He considered the effect of other non-tax variables on debt-equity mix to be somewhat less critical and confined to a simple linear equation having the tax rate as the only independent variable.

Rao and Rao (1975) employed three measures of dependent variable debt-equity mix. Spencer (1969) argued that in an unconstrained reduced form equation the variables included are important only in their ability to represent a spectrum of variables which will remove the nontax influences while isolating the tax influence. In another study, Wang (1991) employed three alternative measures of explanatory variable effective tax rate, computed as: the ratio of tax expenses to gross profit, the ratio of tax expenses to pre-tax profit and the ratio of tax expenses to earning before interest and tax, in investigating the relationship between firm size and effective tax rate. Myers and Brealey (2000) pointed out that the debt equity ratio for corporations as a whole depends on the corporate tax rate. If corporate tax rate is increased, migration starts again, leading to a higher debt to equity ratio for companies as a whole.

Previous empirical studies suggest that, for better result, dependent as well as explanatory variables can be used alternatively to estimate the relationship between debt-equity mix and corporate income tax. Thus, in this study different measures of debt-equity mix such as debt to networth ratio, debt to total assets ratio, and total debt to total assets ratio have been employed as dependent variables. In the same way, two measures of

corporate income tax rates like: statutory corporate tax rate and effective tax rate have been employed as explanatory variables alternatively.

Relation of Effective Tax Rate to Debt-Equity Mix

Effective tax rate is a true tax rate applicable to a firm. This rate is usually less than statutory corporate tax rate. The financing mix of a business firm is affected by an effective tax rate. In order to examine the relationship between debt financing and effective tax rate, the debt-equity mix measures have been regressed on effective tax rate. In addition to this, the same regression equations have been used to estimate the relationship of debt financing and effective tax rate separately for size-wise and profitability-wise states of nature of the selected companies.

The results of regression of debt-equity mix measures with effective tax rate for size-wise states of nature of selected companies have been presented in Table 5.5.

For big companies, the coefficients of explanatory variable effective tax rate with dependent variables (D/NW)t, and (TD/TA)t are not significant statistically. However, the coefficient of this explanatory variable is statistically significant at 10 percent, with the dependent variable (D/TA)t. This coefficient (0.540) is followed by weak r^2 (0.055) showing only 5 percent variation in (D/TA)t is explained by effective tax rate. Moreover, the 'F' value is observed statistically insignificant, signaling an absence of evidences of good fitness of the linear model.

Table 5.5

Regression of Debt-Equity Mix Measures on Effective Tax Rate:

Big, Medium and Small Companies (1990/91-2002/03), (Equ. 2, 3, 4)

S.N	Dependent Variables	Constant	Explanatory Variable $(Z)_{t-1}$	r^2	F	N
1	$(D/NW)_t$ Big	0.595	0.714	0.003	0.104	32
		(1.109)	(0.323)			
	Medium	2.161*	-1.663**	0.158	3.932***	23
		(5.725)	(-1.983)			
	Small	1.113*	0.123	0.023	0.485	23
		(4.074)	(0.697)			
	Total	1.257*	-0.023	0.001	0.037	78
		(6.504)	(-0.193)			
2	$(D/TA)_t$					
	Big	0.068	0.540***	0.055	1.756	32
		(0.687)	(1.325)			
	Medium	0.565*	-0.206**	0.198	5.197**	23
		(13.884)	(-2.280)			
	Small	0.298*	0.033	0.057	1.268	23
		(6.507)	(1.126)			
	Total	0.322*	0.031	0.011	0.067	78
		(9.612)	(0.259)			
3	$(TD/TA)_t$					
	Big	0.475*	0.093	0.003	0.082	32
		(6.080)	(0.288)			
	Medium	0.709*	-0.05	0.015	0.321	23
		(16.751)	(-0.567)			
	Small	0.470*	0.044	0.37	1.088	30
		(8.265)	(1.043)			
	Total	0.542*	0.046	0.012	0.168	85
		(18.304)	(0.410)			

Source: Computed on the basis of data presented in Appendices, $5_{(a-j)}$

Notes: Figures in parenthesis are t-values.

*Significant at 1 percent, ** Significant at 5 percent, *** Significant at 10 percent,

For medium companies, the coefficients of explanatory variable are observed statistically significant at 5 percent level with the dependent variables (D/NW)t and (D/TA)t. However, the signs are seemed to be negative, suggesting inverse relationship between effective tax rate and debt-equity mix. These coefficients (-1.663) and (-206) are followed by r^2 (0.158) and r^2 (0.198) respectively. These results indicate that, approximately 16 percent variation in debt to networth ratio and 20 percent variation in debt to total assets ratio are explained by effective tax rate inversely. Further, the 'F' values (3.932) and (5.197) are statistically significant at 10 percent and 5 percent levels respectively, indicating good fitness of the linear models.

For small companies, the regression results presented in Table 5.5 show that all the coefficients of explanatory variables are in positive signs. But, at 10 percent level the observed coefficients are not statistically significant. Thus, the positive association of effective tax rate and debt-equity mix lacks statistical justification concerning to the small companies.

Regarding total sample, Table 5.5 shows that the regression coefficients of effective tax rate have positive sign for two measures of dependent variable and it has negative sign for one measure of dependent variable. The explanatory coefficients are statistically insignificant. Due to this, it can be concluded that debt-equity mix and effective tax rate are related positively, but their relationship is not statistically significant.

The regression results of the measures of debt-equity mix on effective tax rate for profitability-based states of nature of selected companies have been presented in Table 5.6.

Table 5.6

Regression of Debt-Equity Mix Measures on Effective Tax Rate:

Profit-making and Loss-making Companies

1990/91-2002/03   (Equ. 2, 3, 4)

S.N	Dependent Variables	Constant	Explanatory Variable $(Z)_{t-1}$	r^2	F	N
1	$(D/NW)_t$					
	Profit-making	0.458*	0.0736	0.011	0.457	43
		(4.041)	(0.676)			
	Loss-making	2.250*	-0.269	0.009	0.300	34
		(6.865)	(-0.548)			
2	$(D/TA)_t$					
	Profit-making	0.151*	0.0381***	0.045	1.979	44
		(5.433)	(1.407)			
	Loss-making	0.554*	-0.0541	0.032	1.068	34
		(15.889)	(-1.033)			
3	$(TD/TA)_t$					
	Profit-making	0.430*	0.0216	0.009	0.467	51
		(14.158)	(0.684)			
	Loss-making	0.717*	0.0137	0.002	0.071	34
		(21.051)	(0.267)			

Notes: Figures in parenthesis are t-values.

* Significant at 1 percent, ** Significant at 5 percent, ***Significant at 10 percent,

Source: Computed on the basis of data presented in Appendices $5_{(a-j)}$

The Table 5.6 depicts regression results of debt-equity mix measures on effective tax rate for profit-making and loss-making companies. The coefficient of explanatory variable effective tax rate for profit-making

companies is statistically significant at 10 percent level, with the dependent variable (D/TA)t. The sign associated with the coefficient indicates a positive relationship between (D/TA) and effective tax rate. However, this coefficient (0.0381) is followed by weak r^2 showing only about 5 percent variation in debt to total assets ratio is explained by effective tax rate. Moreover, the 'F' value is observed statistically insignificant, which indicates that there is absence of statistical evidence about the good fitness of regression equation. On the other hand, the coefficients of this explanatory variable with dependent variables (D/NW)t and (TD/TA)t have showed positive signs, but these coefficients are statistically insignificant.

For loss-making companies, the regression results have been presented in Table 5.6. It is observed that the coefficients of explanatory variable, effective tax rate, showed negative signs pertaining to dependent variables (D/NW)t, and (D/TA)t. But, the observed coefficients are not statistically significant at 10 percent level. Thus, the negative association of effective tax rate and debt-equity mix lacks considerable statistical justifications in the context of loss-making companies. The coefficient of explanatory variable, in relation to the dependent variable (TD/TA)t, is appeared with positive sign, suggesting positive association of effective tax rate with total debt to total assets ratio. However, this coefficient is not statistically significant, reflecting negligible association between these variables.

b. Relation of Statutory Corporate Tax Rate to Debt-Equity Mix

Basically, most of the manufacturing companies are assumed to be sensible to statutory corporate tax rate rather than that to effective tax rate. Immediate corporate reactions are accounted for changes in statutory corporate tax rate rather than for changes in effective tax rate. Changes in corporate tax rate are generally influential for unambiguous tax consciousness of the companies. Profit maximizing companies are always

seeking for any promising tax relaxes due to policy level decisions. In these outlooks, an alliance can be anticipated between debt-equity mix and statutory corporate tax rate.

Cooper and Franks (1983), with the objective of examining the effect of corporate income tax on financing decisions, had employed statutory corporate tax rate as one of the explanatory variables. They urged that statutory corporate tax rate is an endogenous factor to the financing choices of the firms. Taggart (1977) found that firms tend to adjust debt-equity mix in response to the changes in statutory corporate tax rates. Givoly et al. (1992) documented that there is positive association between debt-equity mix and corporate tax rate. These observations have clearly indicated that statutory corporate tax rate influences financing mix of the firms.

After analyzing the relation of effective tax rate to debt-equity mix, it is now reasonable to analyze the relationship between statutory corporate tax rate and debt-equity mix. In practice, companies are attentive towards the existing statutory corporate tax rate rather than towards effective tax rate applicable to them. Conscious companies usually show their reaction over newly changed statutory corporate tax rate. This reactiveness lead to change in the major policy level decision like: financing decision, of the manufacturing companies. Paying tax, usually conceived in discharging the liability instead of resuming statutory obligation. Such attribute may reflect an attainment of tax relaxing result from responded financial adjustments while mixing up debt and equity capital in total capital. Thus, at present, an attempt has been made to regress debt-equity mix with statutory corporate tax rate separately for size-wise, and profitability-wise states of nature of the selected companies. The regression results of the measures of debt-equity mix on statutory corporate tax rate for size-wise states of nature of selected companies have been presented in Table 5.7.

Table 5.7

Regression of Debt-Equity Mix Measures on Statutory Corporate Tax Rate

Big, Medium, and Small Companies

(1990/91-2002/03)   (Equ. 5, 6, 7)

S.N	Dependent Variables	Constant	Explanatory Variable $(Z_C)_{t-1}$	r^2	F	N
1	$(D/NW)_t$					
	Big	7.686	21.807	0.15	0.678	48
		(1.118)	(0.824)			
	Medium	2.529	-2.116	0.002	0.068	39
		(1.163)	(-0.261)			
	Small	2.965*	7.167**	0.173	4.825**	25
		(3.613)	(2.197)			
2	$(D/TA)_t$					
	Big	-105	1.727*	0.153	8.326*	48
		(-0.675)	(2.885)			
	Medium	0.943*	-1.481*	0.215	10.107*	39
		(7.539)	(-3.179)			
	Small	0.592*	1.099**	0.137	3.643***	25
		(4.088)	(1.909)			
3	$(TD/TA)_t$					
	Big	0.252**	1.455*	0.151	8.156*	48
		(1.901)	(2.856)			
	Medium	1.100*	-1.370*	0.210	9.864*	39
		(9.399)	(-3.141)			
	Small	0.521*	0.051	0.000	0.006	33
		(2.961)	(0.075)			

Notes: Figures in parenthesis are t-values.

*Significant at 1 percent, ** Significant at 5 percent, *** Significant at 10 percent,

Source: Computed on the basis of data presented in Appendices $5_{(a-j)}$

The regression results depicted in the Table 5.7 show that, the coefficient of explanatory variable (statutory corporate tax rate) with the dependent variable (D/NW)t, for big companies, is not statistically significant. However, the coefficients of this explanatory variable with dependent variables (D/TA)t and (TD/TA)t are statistically significant at 1 percent level, which is followed by positive signs. The values of r^2 pertaining to these dependent variables are 0.153, and 0.151 respectively, suggesting 15.3 percent variation in (D/TA)t and 15.1 percent variation in (TD/TA)t are explained by statutory corporate tax rate.

Thus, statutory corporate tax rate has positive alliance with the measures of debt-equity mix, especially with debt to total capital, and total debt to total capital ratios of big companies. The 'F' ratios computed for these regressions are statistically significant at 1 percent level, indicating better fitness of the linear model.

For medium companies, the coefficient (-2.116) of explanatory variable statutory corporate tax rate with dependent variable (D/NW)t is not statistically significant, suggesting negligible adverse association of statutory corporate tax rate with debt-equity mix. However, the coefficients of this explanatory variable with dependent variables (D/TA)t and (TD/TA)t, are observed statistically significant at 1 percent level. The negative signs of these coefficients indicate an inverse association of statutory corporate tax rate with debt-equity mix of medium companies. The values of r^2 pertaining to these dependent variables are 0.215, and 0.210 respectively, suggesting about 22 percent variation in (D/TA)t and 21 percent variation in (TD/TA)t are explained by statutory corporate tax rate. The 'F' values computed for these regressions are statistically significant at 1 percent level, indicating better fitness of the linear model.

For small companies, the regression result shows that the coefficients of explanatory variable statutory corporate tax rate 7.167, 1.099 are statistically significant at 5 percent. These significant coefficients are pertained to the dependent variables (D/NW)t, and (D/TA)t respectively. Also, these significant explanatory coefficients are appeared with positive signs, suggesting positive association of statutory corporate tax rate with debt-equity mix. However, the values of r^2 are not enough powerful, and are reflecting only 17 percent, and 14 percent variations in the dependent variables are explained by variation in statutory corporate tax rate respectively. An overall fitness of the linear model, as indicated by statistically significant value of 'F', is better.

The regression results of the measures of debt-equity mix on statutory corporate tax rate for profitability-wise states of nature of the selected companies have been presented in Table 5.8.

For profit-making companies, Table 5.8 depicts that the coefficients of explanatory variable (statutory corporate tax rate) with the dependent variables are statistically significant at 1 percent and 10 percent significance levels, and are followed with positive signs. The values of r^2 pertaining to these dependent variables are 0.038, 0.301 and 0.249 respectively, suggesting about 4 percent variation in (D/NW)t, 30 percent variation in (D/TA)t, and 25 percent variations in (TD/TA)t have been explained by statutory corporate tax rate. Thus, it could be stated that statutory corporate tax rate has positive alliance with debt-equity mix, especially with debt to total assets ratio and total debt to total assets ratio. The 'F' values computed for these regressions are statistically significant at 1 percent level, indicating better fitness of the linear model.

Table 5.8

Regression of Debt-Equity Mix Measures on Statutory Corporate Tax Rate: Profit-making and Loss-making Companies (1990/91-2002/03), (Equ. 5, 6, 7)

S.N	Dependent Variables	Constant	Explanatory Variable $(Z_C)_{t-1}$	r^2	F	N
1	$(D/NW)_t$					
	Profit-making	1.987***	6.749***	0.038	1.968	52
		(1.583)	(1.403)			
	Loss-making	7.169***	-9.012	0.009	0.520	59
		(1.314)	(-0.721)			
	Total sample	3.985*	11.289**	0.108	1.857	111
		(2.547)	(1.684)			
2	$(D/TA)_t$					
	Profit-making	0.200**	1.637*	0.301	22.006*	53
		(2.203)	(4.691)			
	Loss-making	0.899*	-1.248*	0.172	11.819*	59
		(9.459)	(-3.438)			
	Total sample	0.614*	2.831*	0.252	15.104*	112
		(4.927)	(5.514)			
3	$(TD/TA)_t$					
	Profit-making	0.061	1.689*	0.249	19.613*	61
		(0.606)	(4.429)			
	Loss-making	1.133*	-1.413*	0.249	18.926*	59
		(13.310)	(-4.350)			
	Total sample	0.985*	1.526*	0.278	20.012*	120
		(5.223)	(4.988)			

Notes: Figures in parenthesis are t-values.

* Significant at 1 percent, ** Significant at 5 percent, *** Significant at 10 percent,

Source: Computed on the basis of data presented in Appendices, $5_{(a-j)}$

For loss-making companies, the regression result showed the coefficients of explanatory variable -1.248, and -1.413 are statistically significant at 1 percent. These significant coefficients are related to the dependent variables (D/TA)t, and (TD/TA)t respectively. The significant explanatory coefficients have been appeared with negative signs, suggesting an inverse association of statutory corporate tax rate with debt-equity mix. However, the values of r^2 are not so much powerful, reflecting only 17 percent and 25 percent variations in the dependent variables are explained by variation in statutory corporate tax rate respectively. An overall fitness of the linear model, as signaled by statistically significant 'F' value, is better.

Regarding total sample, as shown in Table 5.8, the regression coefficients of statutory corporate tax rate are with positive sign for three measures of dependent variable debt-equity mix. The coefficients of statutory corporate tax rate have been observed statistically significant. From this point of view, it could be concluded that there exists a positive and significant relationship between debt-equity mix and statutory corporate tax rate.

Introduction of Nontax Explanatory Variables:

After analyzing the relationship of different corporate tax variables with debt-equity mix measures, it is reasonable to analyze this relationship along with other nontax variables. Whether the corporate tax is major factor or something else influencing debt-equity mix, could be investigated only in the presence of other explanatory variables. The previous studies like Smith (1952) and Rao and Rao (1975) have also considered other explanatory nontax variables to examine the relationship between corporate income tax and debt-equity mix.

The primary concern of the present study is to analyze the influence of corporate income tax on debt financing. This can be done with the inclusion of other nontax explanatory variables in the estimating models. Thus, three nontax explanatory variables like: effective interest rate, internal resources to investment flows ratio, and leverage were introduced in these estimating models.

I. Relationship of Corporate tax Rate with Debt to Total Assets Ratio in the Presence of Other Explanatory Variables

With a view to observe relationship between corporate income tax and debt-equity mix in the presence of other explanatory variables, the debt to total assets ratio has been regressed on $(Zc)t-1$; $(D/E)t-1$; $(r)t-1$; and $(Rt-1/It)$ and the results are presented in Table 5.9.

For big companies, the regression result depicts that the explanatory coefficients of $(Zc)t-1$ and $(D/E)t-1$ are significant at 1 percent level, implying positive association with dependent variable. Similarly, the coefficient of $(r)t-1$ is significant at 5 percent level. However, the observed negative sign of this coefficient indicates the inverse association between $(r)t-1$ and $(D/TA)t$. Among significant coefficients, the regression coefficient of corporate tax rate is the highest one. The computed R^2 value reflects higher explanatory power of the variables. Further, the significant value of 'F' provides an evidence for the better fitness of the linear model.

For medium companies, the regression coefficient of $(Zc)t-1$ is the only significant coefficient. Other coefficients are not significant at 10 percent level. These coefficients are followed by weak R^2 value. The observed negative sign of the coefficient of $(Zc)t-1$, suggests its inverse association with $(D/TA)t$.

Table 5.9

Regression of Debt-Equity Mix Measure (D/TA)t on Corporate Tax Rate, Leverage, Interest Rate and Internal Resource to Investment Flow Ratio for Different States of Nature of the Sample Companies

1990/91-2002/03

Dependent Variable: (D/TA)t, (Equ. 10)

States of Nature	Intercept	Zc(t-1)	D/E(t-1)	r(t-1)	R(t-1)/It	R^2	F	N
Big	-0.075 (-0.604)	1.245* (3.409)	0.157* (8.584)	-0.799** (-1.736)	-0.00479 (-0.208)	0.887	33.160*	48
Medium	0.733* (3.515)	-1.183** (-1.709)	0.0073 (1.275)	0.473 (0.762)	-0.0016 (-1.238)	0.258	2.263***	39
Small	-0.118 (-1.130)	0.374** (1.924)	0.196* (10.845)	0.396 (1.270)	0.0013 (0.425)	0.919	45.688*	25
Profit-making	-0.082 (-1.099)	0.590** (2.173)	0.162* (8.705)	0.016 (0.058)	-0.0046*** (-1.746)	0.795	39.813*	53
Loss-making	0.755* (5.070)	-0.805*** (-1.673)	0.0057 (1.195)	-0.043 (-0.086)	-0.0012 (-0.898)	0.154	1.905	59
Total Sample	0.231 (0.780)	0.430* (2.925)	0.0239* (4.709)	-0.454 (-0.960)	-0.0023*** (-1.669)	0.276	7.896*	88

Notes: Figures in parenthesis are t-values.

* Significant at 1 percent, ** Significant at 5 percent, *** Significant at 10 percent,

Source: Computed on the basis of data presented in Appendices, $5_{(a-j)}$

In the context of small companies, the coefficients of explanatory variables (Zc)t-1 and (D/E)t-1 are statistically significant at 5 and 1 percent levels, signifying a positive association with dependent variable (D/TA)t. In combination, all the explanatory variables have considerable level of explanatory power; suggesting nearly 92 percent variation in debt to total

assets ratio is explained by these variables. The computed value of 'F' is significant at 1 percent level, implying better fitness of the linear model.

With respect to profit-making companies, the regression coefficients of the explanatory variables $(Zc)t-1$, $(D/E)t-1$ and $(Rt-1/It)$ are statistically significant at 5,1 and 10 percent levels. However, corporate tax rate has comparatively higher coefficient. As the matter of relationship, there appear positive alliances of explanatory variables $(Zc)t-1$, $(D/E)t-1$ and negative alliance of $(Rt-1/It)$ with dependent variable $(D/TA)t$. The computed values of R^2 and 'F' provide evidences to support better fitness of the linear model.

For loss-making companies, the regression coefficient of $(Zc)t-1$ is the only statistically significant coefficient. The coefficients of other explanatory variables are not statistically significant at 10 percent level. The weak value of R^2 and insignificant 'F' value suggest poor fitness of the linear model.

With an objective of examining the relationship of corporate tax rate with debt-equity mix in the presence of other explanatory variables for all selected companies, the debt-equity mix measure $(D/TA)t$ has also been regressed with explanatory variables like: $(Zc)t-1$, $(D/E)t-1$, $(r)t-1$, and $(Rt-1/It)$. The observed regression result has been presented in Table 5.9. This regression result shows that the coefficients of the explanatory variables $(Zc)t-1$, $(D/E)t-1$ and $(Rt-1/I)$ are significantly associated with the dependent variable $(D/TA)t$. However, these coefficients have been appeared with positive and negative signs respectively. Therefore, $(Zc)t-1$, $(D/E)t-1$ are positively related and $(Rt-1/It)$ is negatively related to the dependent variable $(D/TA)t$. The partial regression coefficient (0.430) of $(Zc)t-1$ means that, holding all other variables constant, an increase in corporate tax rate by 1 unit is accompanied by an increase in the mean value of debt to total assets ratio of about 0.430 times. The partial

regression coefficient (-0.0023) of (Rt-1/It) means that, holding all other variables constant, an increase in internal resource to investment flow ratio by 1 unit is accompanied by a decrease in the mean value of debt to total assets ratio of about 0.003 times. Similarly, the partial regression coefficient (0.0239) of (D/E)t-1 means that, holding all other variables constant, an increase in leverage by 1 unit is accompanied by an increase in the mean value of debt to total assets ratio of about 0.24 times. The regression coefficient of explanatory variable (r)t-1 is observed to be insignificant at 10 percent level. This insignificant coefficient has been appeared with the negative sign, suggesting an inverse association of (r)t-1 with the dependent variable (D/TA)t. The R^2 value 0.276 shows that these explanatory variables accounted for about 28 percent of the variation in debt to total assets ratio. The computed value of 'F' is statistically significant at 1 percent level, indicating overall significance of the regression model.

II. Relationship of Corporate Tax Rate with Total Debt to Total Assets Ratio in the Presence of Other Explanatory Variables

With the purpose of observing relationship between corporate income tax and debt-equity mix in the presence of other explanatory variables, the total debt to total assets ratio has been regressed on (Zc) t-1; (D/E)t-1; (r)t-1; and (Rt-1/It) and the results are presented in Table 5.10.

It is observed in the Table 5.10 that the coefficients of (Zc)t-1, (D/E)t-1 and (Rt-1/It) for big companies are statistically significant at 5 and 1 percent levels. The positive signs of the coefficients of (Zc)t-1 and (D/E)t-1 reveal that there is positive association of these explanatory variables with (TD/TA)t. The coefficient (0.685) of (Zc)t-1 is higher than that of (D/E)t-1. However, the coefficient of (Rt-1/It) has negative sign indicating its inverse association with the dependent variable (TD/TA)t. The powerful value of R^2 and statistically significant 'F' value indicate the better fitness of the linear model.

Table 5.10

Regression of Debt-Equity Mix Measure (TD/TA)t on Corporate Tax Rate, Leverage, Interest Rate, and Internal Resource to Investment Flow Ratio for Different States of Nature of the Sample Companies 1990/91-2002/03

Dependent Variable: (TD/TA)t, (Equ. 11)

States of Nature:	Intercept	Zc(t-1)	D/E(t-1)	r(t-1)	R(t-1)/It	R^2	F	N
Big	0.284 (1.419)	0.685** (1.991)	0.141* (8.146)	-0.178 (-0.410)	-0.0042** (-1.951)	0.728	24.126*	48
Medium	1.091** (1.334)	-1.571** (-2.314)	-0.0199 (-0.034)	0.320 (0.525)	-1.19 (-0.906)	0.221	1.847	39
Small	0.015 (0.077)	0.519 (1.093)	0.191* (5.823)	1.511* (2.674)	0.0084*** (1.516)	0.724	10.479*	33
Profit-making	0.237 (0.659)	0.487** (1.801)	0.142* (6.396)	0.311 (0.953)	-0.0073** (-2.293)	0.696	23.452*	61
Loss-making	1.124** (1.279)	-1.425* (-3.247)	-0.0018 (-0.413)	0.074 (0.162)	-0.00087 (-0.838)	0.222	3.801**	59
Total Sample	0.559 (1.05)	0.267* (2.707)	0.0141* (3.039)	-0.130 (-0.301)	-0.022** (-1.714)	0.150	3.650*	88

Notes: Figures in parenthesis are t-values.

* Significant at 1 percent, ** Significant at 5 percent, *** Significant at 10 percent,

Source: Computed on the basis of data presented in Appendices, 5(a-j)

In the case of medium companies, only the coefficient of (Zc)t-1 is statistically significant at 5 percent level. However, this coefficient is negatively associated with the dependent variable (TD/TA)t. The weaker R^2 value and insignificant value of 'F' are not in favour of better fitness of the linear model.

For small companies, the regression coefficients of explanatory variables (D/E)t-1, (r)t-1, and (Rt-1/It) are statistically significant at 1 and 10

percent levels. The coefficient of $(Zc)t-1$ is not statistically significant. It is also observed that all the coefficients of explanatory variables have positive signs, suggesting a positive association of these variables with dependent variable $(TD/TA)t$. The computed value of R^2 shows considerable explanatory power of the entertained variables. The statistically significant 'F' value provides evidence in favour of better fitness of the linear model.

With respect to profit-making companies, the regression result shows that the coefficients of $(Zc)t-1$, $(D/E)t-1$ and $(Rt-1/It)$ are statistically significant. The coefficient of $(Zc)t-1$ is the highest coefficient and that of $(Rt-1/It)$ is the lowest coefficient. The positive signs associated with the coefficients of $(Zc)t-1$, and $(D/E)t-1$ indicate positive association of these variables with dependent variable $(TD/TA)t$. On the other hand, the sign of the coefficient of $(Rt-1/It)$ indicate its inverse association with dependent variable $(TD/TA)t$. The comparatively stronger R^2 value and significant 'F' value provide evidences for better fitness of the linear model.

For loss-making companies, the regression coefficient (-1.425) of $(Zc)t-1$ is the only statistically significant coefficient. This coefficient appears with negative sign, implying an inverse association between corporate tax rate and total debt to total assets ratio. The computed explanatory coefficients with negative signs, for $(D/E)t-1$ and $(Rt-1/It)$, are statistically insignificant, showing their negligible inverse association with the dependent variable $(TD/TA)t$. On the other hand, the statistically insignificant coefficient of $(r)t-1$ with positive sign shows its negligible positive association with the dependent variable $(TD/TA)t$. Although the computed R^2 value is comparatively weaker, the observed significant 'F' value shows a good fitness of the linear model.

For total sample, the regression of $(TD/TA)t$ on $(Zc)t-1$, $(D/E)t-1$, $(r)t-1$ and $(Rt-1/It)$ shows different result to some extent. This regression

result shows that the coefficients of the explanatory variables $(D/E)t-1$ and $(Rt-1/It)$ are significantly associated with the dependent variable $(TD/TA)t$. However, these coefficients are appeared with positive and negative signs respectively. Therefore, $(D/E)t-1$ is positively and $(Rt-1/It)$ is negatively related to the dependent variable $(TD/TA)t$. The partial regression coefficient (0.0141) of $(D/E)t-1$ explains that, holding all other variables constant, an increase in leverage by 1 unit is accompanied with an increase in the mean value of total debt to total assets ratio by nearly 0.015 times. Similarly, the partial regression coefficient (-0.0022) of $(Rt-1/It)$ indicates that, holding all other variables constant, an increase in internal resource to investment flow ratio by 1 unit is accompanied by a decrease in the mean value of total debt to total assets ratio by nearly 0.003 times. The regression coefficient of explanatory variable (Zc) t-1 is observed significant, but that of (r) t-1 is observed insignificant. These coefficients have been appeared with positive and negative signs, suggesting positive association of $(Zc)t-1$ and inverse association of $(r)t-1$ with the dependent variable $(TD/TD)t$. The R^2 value (0.150) shows that the four explanatory variables accounted for more than 15 percent variation in total debt to total assets ratio. The computed value of 'F' is statistically significant at 1 percent level, indicating overall significance of the regression model.

III. Relationship of Corporate Tax Rate with Debt to Networth Ratio in the Presence of Other Explanatory Variables

With the purpose of observing relationship between corporate income tax and debt-equity mix in the presence of other explanatory variables, the debt to networth ratio has been regressed on (Zc) t-1; $(D/E)t-1$; $(r)t-1$; and $(Rt-1/It)$ and the results are presented in Table 5.11.

Table 5.11

Regression of Debt-Equity Mix Measure (D/NW)t on Corporate Tax Rate, Leverage, Interest Rate and Internal Resource to Investment Flow Ratio for Different States of Nature of the Sample Companies 1990/91-2002/03

Dependent Variable :(D/NW) t, (Equ. 9)

States of Nature:	Intercept	Zc(t-1)	D/E(t-1)	r(t-1)	R(t-1)/It	R^2	F Ratio	N
Big	-2.709***	9.306**	0.665**	2.854	0.097*	0.352	4.881*	48
	(-1.387)	(1.698)	(2.315)	(0.396)	(2.687)			
Medium	-3.179	10.117	0.172**	5.200	-0.0817*	0.461	5.561*	39
	(-1.069)	(1.025)	(2.097)	(0.586)	(-4.264)			
Small	-1.242	0.277	1.097*	5.706***	0.0193	0.750	12.015*	25
	(-1.087)	(0.097)	(5.559)	(1.675)	(0.576)			
Profit-making	0.982***	1.676	0.826*	2.621	0.071*	0.517	10.686*	52
	(1.631)	(0.768)	(5.510)	(1.197)	(3.295)			
Loss-making	-0.0142	5.068	0.113***	0.131	-0.0559*	0.191	2.476***	59
	(-0.005)	(0.585)	(1.331)	(0.015)	(-2.741)			
Total Sample	0.155	3.537	0.141*	-1.643	-0.0534*	0.212	5.519*	87
	(0.107)	(0.766)	(2.501)	(-0.312)	(-3.551)			

Notes: Figures in parenthesis are t-values.

* Significant at 1 percent, ** Significant at 5 percent, *** Significant at 10 percent,

Source: Computed on the basis of data presented in Appendices, $5_{(a-j)}$

For big companies, the regression result presented in Table 5.11 depicts that the explanatory coefficients of (Zc)t-1, (D/E)t-1 and (Rt-1/It) are significant at 5 and 1 percent levels, implying positive association with dependent variable. Similarly, the coefficient of (r)t-1 is insignificant at 10 percent level. However, the observed positive sign of this coefficient, indicates positive association between (r)t-1 and (D/NW)t. The regression coefficient of statutory corporate tax rate is the highest coefficient among

the statistically significant explanatory coefficients. The computed R^2 value reflects better explanatory power of the variables. Furthermore, the significant value of 'F' provides an evidence for the better fitness of the regression equation.

The regression coefficients of $(D/E)t-1$ and $(Rt-1/It)$, as shown by the Table 5.11, are significant coefficients for medium companies. Other coefficients are not significant at 10 percent level. The positive sign of the coefficient of $(D/E)t-1$ and negative sign of $(Rt-1/It)$, suggest the positive and negative associations of these variables with $(D/NW)t$. The comparative stronger R^2 value and significant 'F' value provide evidences in favour of better fitness of the linear model.

The coefficients of explanatory variables $(D/E)t-1$ and $(r)t-1$ pertaining to small companies are statistically significant at 1 and 10 percent levels, indicating their positive associations with dependent variable $(D/NW)t$. In between these two significant coefficients, the coefficient of $(r)t-1$ is the highest coefficient. The coefficient of $(Zc)t-1$ is not statistically significant, however it indicates a positive association with the dependent variable $(D/NW)t$. A combination of all these explanatory variables has considerable explanatory power; suggesting nearly 75 percent variation in debt to networth ratio has been explained by these variables. The computed value of 'F' is significant at 1 percent level, implying a better fitness of the linear model.

With respect to profit-making companies, the regression coefficients of the explanatory variables $(D/E)t-1$ and $(Rt-1/It)$ are statistically significant at 1 percent level. However, explanatory variable $(D/E)t-1$ has comparatively higher coefficient. There appear positive alliances of explanatory variables $(D/E)t-1$ and $(Rt-1/It)$ with dependent variable $(D/NW)t$. Although the coefficient of $(Zc)t-1$ is not statistically significant, it indicates a positive

association of corporate tax rate with dependent variable (D/NW)t. The computed values of R^2 and 'F' provide the evidences to support better fitness of the linear model.

For loss-making companies, the regression coefficients of (D/E)t-1 and (Rt-1/It) are statistically significant. The signs of these coefficients indicate their respective positive and negative associations with the dependent variable (D/NW)t. Regression coefficients of other explanatory variables are not statistically significant at 10 percent level. Further, this linear regression is followed by weak R^2 value. However, the significant 'F' value suggests the good fitness of the linear model.

For total sample, regression result presented in Table 5.11 shows that the coefficients of the explanatory variables (D/E)t-1 and (Rt-1/I) are significantly associated with the dependent variable (D/NW)t. However, these coefficients have been appeared with positive and negative signs respectively. Therefore, (D/E)t-1 is positively and (Rt-1/It) is negatively related to the dependent variable (D/NW)t. The regression coefficient for (D/E)t-1 is 0.141,which means that, holding all other variables constant, an increase in leverage by 1 unit would increase the mean value of debt to networth ratio by 0.141 times. Similarly, the partial regression coefficient of (Rt-1/It) is (-0.0534), which means that, holding all other variables constant, an increase in internal resource to investment flow ratio by 1 unit would decrease the mean value of debt to networth ratio by 0.06 times. The regression coefficients of explanatory variables (Zc)t-1 and (r)t-1 are observed to be insignificant at 10 percent level. These insignificant coefficients have been appeared with positive and negative signs, which suggest that there are positive association of (Zc)t-1 and inverse association of (r)t-1 with the dependent variable (D/NW)t. The R^2 value shows that the four explanatory variables accounted for nearly 22 percent variation in debt

to networth ratio. The computed 'F' value is significant at 1 percent level, indicating that the regression equation is statistically significant.

4. Summing up

In this chapter, the relationship of corporate income tax with debt-equity mix of the selected companies has been analyzed. It analyzed the different states of nature with respect to size and profitability of the selected companies purposefully for exploring diverse relationships of corporate income tax with debt-equity mix. Such relationships were established by employing linear regression models. Accordingly, debt-equity mix has been regressed with effective tax rate and statutory corporate tax rate. The relation of statutory corporate tax rate to debt-equity mix has also been estimated by introducing additional nontax variables, like: leverage, internal resources, and effective interest rate, in Rao and Rao (1975) model.

The proportions of total debt and equity capital for the study period for big, medium and small companies are 67:33, 75:25 and 65:35 respectively. It shows that medium companies have the highest and small companies have the lowest proportion of debt on total capital. Debt is observed as a major source for raising required funds to all big, medium, and small companies. In addition, the observed average growth rates of debt ratio pertaining to big, medium and small companies are (-1.758), (2.958) and (0.808) respectively. This growth rate is highest for medium and lowest for small companies. Similarly, the computed coefficient of variation is (20.115) the highest for medium companies and (13.498) the lowest for small companies. Thus, the debt ratio of medium companies is unstable as compared to that of small companies.

Depending upon the nature of dependent variable, the analysis has shown a mixed picture about the relationship between corporate tax and debt-equity mix. A significant negative relationship of effective tax rate with

two measures of dependent variables (D/NW)t and (D/TA)t has been observed for medium company. However, a significant positive relationship of effective tax rate with dependent variable (D/TA)t has been observed for big and profit-making companies. This relationship is observed insignificant for total sample of the companies. This observation is consistent with the findings made by Rao and Rao (1971) and Rao and Rao (1975) studies. Moreover, the analysis has shown that the relationship between effective tax rate and debt-equity mix vary according to the size and profitability of the companies.

Additionally, statutory corporate tax rate was tested in the same model and statistically significant results were observed. The corporate tax rate for small company is observed positively related to dependent variable (D/NW)t. It is negatively related to the dependent variable (D/TA)t for medium and loss-making companies, but for big and profit-making companies it is positively associated. In the same pattern, the corporate tax rate is found related positively to the dependent variable (TD/TA)t for big and profit-making companies, but negatively related to medium and loss-making companies. From these outcomes, it could be concluded that the corporate income tax influences debt-equity mix of big and profit-making companies positively and affects the debt-equity mix of medium and loss-making companies negatively in lagged fashion. Furthermore, the statutory corporate tax rate has significant relationship with debt-equity mix of more companies than the effective tax rate.

With a view to isolate the influence of corporate income tax to debt-equity mix, other explanatory variables like: leverage, effective interest rate and internal resources to investment flow ratio were introduced and tested in the regression model. Statutory corporate tax rate was taken as an explanatory tax-variable in the multiple regression models. The multiple regression analysis revealed the mix results regarding the relationship of

corporate income tax with debt-equity mix across the size-wise types of the companies. In the presence of other explanatory variables also corporate income tax and debt-equity mix have been observed to be related positively for big and small companies. Conversely, corporate income tax and debt-equity mix have been observed to be related inversely for medium company.

As revealed by the multiple regression analysis, the relationship between corporate income tax and debt-equity mix differs from profit-making company to loss-making company. In the context of profit-making company the corporate income tax and debt-equity mix have been observed to be related positively, whereas they are related inversely for loss-making company, in the presence of other non-tax explanatory variables.

In the estimation, statistically significant and positive relationship has been observed between leverage and debt-equity mix for big, small, and profit-making companies. In addition, a positive relationship of leverage and debt-equity mix has been observed for medium and loss-making companies.

Effective interest rate is observed associated positively and significantly with debt-equity mix of small companies, but negatively associated with debt-equity mix of big companies. Similarly, an internal resource to investment flow ratio is positively associated with debt-equity mix significantly for small companies, but negatively associated significantly for profit-making, and big companies.

Eventually, for all sample companies, significant positive relationship of corporate income tax with two measures of debt-equity mix $(D/TA)t$, and $(TD/TA)t$ have been observed. However, significant positive relations of leverage to all three measures of debt-equity mix have been observed.

Contrary to this, statistically significant and negative relations of internal resource to investment flow ratio to all three measures of debt-equity mix have been observed. On the other hand, effective interest rate has been observed to be insignificant to influence debt-equity mix of the sample companies. The observed signs of explanatory coefficients are consistent with the theoretical statements.

Based on above observations, it is concluded that the leverage and internal resources are the prime factors in determining the shape of debt-equity mix, whereas rate of interest (cost of capital) has negligible influence on it. Corporate income tax has an intermediary influence, in between these factors, in determining debt-equity mix. These observations support the findings made by Bosworth (1971), Rao and Rao (1971), and Taggart (1977) studies. More importantly, corporate income tax has positive relationship with debt-equity mix of big, profit-making and small companies. This finding empirically supports the findings of Marsh (1982), Mittal (1989), Givoly et al. (1992), Chua (1995), Kotrappa (1995), and Zingales and Rajan (1995) studies. On the other hand, corporate income tax has negative influence on debt-equity mix of medium, and loss-making companies. This finding empirically supports the findings of Hite (1977), and Fama (1978) studies. Further, effective tax rate is negligibly influential and statutory corporate tax rate is significantly influential to debt-equity mix of the sample companies. This finding supports the finding of Cordes and Sheffrin (1983) study.

CHAPTER - VI

DEBT TAX SHIELD AND NON-DEBT TAX SHIELD

In this chapter particularly debt tax shield and nondebt tax shield of the selected companies have been analyzed. Correlation coefficient technique has been used for analyzing the relationship between debt and nondebt tax shields. An emphasis has been given to analyze such relationship according to the size, profitability, and products of the companies. Finally, substitution effect on debt tax shield has been estimated by employing a linear regression equation.

1. General Background

A company may be financed with a number of ways such as: equity capital, debt capital, preferential capital, and a combination of all or any two where equity capital is compulsory. Corporate income tax favors the use of debt, because interest on debt is a deductible expense for income tax purpose (Khadka, 2001: 46). Therefore, deductibility of interest appears as important reason for using debt instead of using additional equity capital to secure the saving from tax (Smith, 1952: 2). A firm can thus attain tax saving from the deductibility of interest expense (Ross, et al., 2001: 375). This tax saving is also called as the interest tax shield, which is obtained from the reduction in taxes and is the result from tax deductibility of interest (Pringle and Harris, 1987: 493). The tax shield of debt is mainly caused by deductible interest. Thus, interest tax shield and debt tax shield are of same values (Wrightsman, 1978: 651).

Likewise, depreciation charged on assets reduces amount of taxes on the firms' income. As a result, it saves cash flowing-out through taxes. This saving is called the tax shield of depreciation (Louderback and Dominiak, 1982: 272). Although depreciation deductions involve no outflows of cash, they are fully deductible in arriving at taxable income. In effect, depreciation deduction shields revenues from taxation and thereby lowers the amount of taxes that a company must pay (Garrison, 1988: 698). Depreciation is related to the level of investment in fixes assets, thus it is an investment related measure to shield revenues from taxation. In other words, depreciation tax shield is the nondebt tax shield (Dammon and Senbet, 1988: 358).

Empirically, some research works were done previously to investigate the attribute of relationship between debt tax shield and nondebt tax shield of manufacturing companies. In their work, DeAngelo and Masulis (1980) concluded that there is a negative relationship between debt tax shield and nondebt tax shield. Similarly, in another study, Trezevant (1992) also found that there is a negative relationship between debt tax shield and nondebt tax shield. Similarly, Mackie-Mason (1990) also found a negative relationship between debt tax shield and nondebt tax shield. In contrast to above findings, Titman and Wessels (1988) found a positive relationship between debt tax shield and nondebt tax shield. In another study, Dammon and Senbet (1988) also found a positive relationship between debt tax shield and nondebt tax shield. Thus, mixed results were documented in previous empirical studies about the attributes of relationship between debt tax shield and nondebt tax shield.

The literature review showed that many other empirical works have also been conducted, especially to test the relevancy of debt tax shield with the financing mix of the firms. However, there is no uniformity in results, rather creating a state of ambiguity, pertaining to the influence of debt tax shield on financing mix. Among them, most of the scholars have the similar views about the income tax sheltering effect of debt financing. However, there

are insufficient empirical evidences supporting the debt tax shield as only the major influential factor of financing mix. Despite, some scholars have documented that debt tax shield has an effect in shaping financing mix of the manufacturing companies. But, some other empirical studies documented that because of neutralizing effect of personal tax disadvantage of interest and substitution effect of nondebt tax shield, debt tax shield is not much important to prefer debt.

In Nepalese context, personal tax rate of interest is lower than statutory corporate tax rate; therefore the personal tax disadvantage of interest is negligible. On the other hand, enacted tax laws do not provide the investment tax credits to the corporate taxpayers. Thus, neutralizing effects of personal tax disadvantage of interest and substituting effect of tax shield of investment tax credits have been ignored in this study. Only the depreciation tax shield, hence, has been considered as nondebt tax shield.

2. Debt Tax Shield and Nondebt Tax Shield:

Debt tax shield and nondebt tax shield of different states of nature of the selected companies have been analyzed descriptively by employing statistical tools like mean, standard error, and coefficient of variance. In order to analyze the relationship between debt tax shield and nondebt tax shield, correlation coefficient has been employed. These statistical tools have been used separately for size, profitability, and products based states of nature of the selected companies.

I. Size-wise Analysis

With the objective of interpreting relation of debt tax shield to nondebt tax shield, the related values of these tax shields have been computed for the period of 1990/91 to 2002/03, and are presented in the Table 6.1.

Table 6.1

Debt Tax Shield and Nondebt Tax Shield

Big, Medium, and Small Companies

1990/91-2002/03

Average Rs in Million

FY	Big		Medium		Small		Total Sample	
	DTS	NDTS	DTS	NDTS	DTS	NDTS	DTS	NDTS
1990/91	3.754	1.398	0.812	0.592	0.221	0.258	2.133	0.923
1991/92	8.536	1.287	2.613	1.123	0.410	0.223	4.230	1.068
1992/93	7.404	4.035	2.379	0.598	0.210	0.228	3.754	1.926
1993/94	6.655	4.814	2.044	0.857	0.343	0.376	3.266	2.302
1994/95	6.837	4.624	2.334	0.773	0.018	0.278	4.329	2.615
1995/96	9.353	4.912	3.879	0.676	0.286	0.236	5.973	2.721
1996/97	9.222	5.461	3.832	0.686	0.789	0.247	5.049	2.671
1997/98	8.155	4.826	3.013	0.486	0.549	0.311	4.338	2.360
1998/99	3.676	5.755	3.447	0.488	0.575	0.137	2.761	2.777
1999/00	4.194	6.065	4.258	0.496	0.925	0.145	3.196	2.950
2000/01	4.217	6.437	5.346	0.607	0.983	0.161	3.575	3.193
2001/02	3.754	7.094	5.103	1.269	0.962	0.158	3.293	3.744
2002/03	3.576	7.035	4.693	1.307	0.752	0.192	3.105	4.583
Mean	6.101	4.903	3.365	0.766	0.538	0.226	3.769	2.603
S.D.	2.299	1.833	1.322	0.289	0.322	0.071	1.013	0.980
C.V.	37.686	37.376	39.282	37.848	59.807	30.869	26.886	37.656
r	-0.357	-	0.270	-	-0.606*		0.006	-

Source: Computed from the Data Presented in Appendices 5$_{(a-j)}$
* Significant at 5 percent, ** Significant at 1 Percent,
Notes: S.D. = Standard Deviation, C.V. = Coefficient of Variance, r = Correlation Coefficient

(Karl Pearson) Between DTS and NDTS (DTS = Debt tax shield, NDTS= Nondebt tax shield)

Table 6.1 depicts that the computed mean values of debt tax shield of big, medium and small companies' are 6.101, 3.365 and 0.538 respectively. Similarly, the computed mean values of nondebt tax shield of big, medium and small companies are 4.903, 0.766 and 0.223 respectively. The highest mean value of debt tax shield 6.101 belongs to the big companies and the lowest mean value of debt tax shield 0.538 belongs to the small companies. In the same manner, the highest mean value of nondebt tax shield 4.903 belongs to the big companies and the lowest mean value of nondebt tax shield 0.223 belongs to the small companies. It, therefore, reveals that both the mean values of debt as well as nondebt tax shields are positively related to the size of the companies.

The standard deviation of debt tax shield distribution of big, medium and small companies are 2.299, 1.322 and 0.322 respectively. Similarly, the standard deviation of nondebt tax shield distribution of big, medium and small companies are 1.833, 0.289 and 0.071 respectively. These values suggest that the standard error of both debt and nondebt tax shield distributions are positively related to the size of the companies, indicating higher the size, higher is the standard error in time series distribution of tax shield values.

The observed coefficients of variance to debt tax shield distribution of big, medium and small companies are 37.686, 39.282 and 59.807 respectively. Similarly, the observed coefficients of variance to nondebt tax shield of big, medium and small companies are 37.376, 37.848 and 30.869 respectively. The small companies have the highest coefficient of debt tax shield variance, whereas big companies have the lowest coefficient of debt tax shield variance. Contrary to this, the medium companies have the highest coefficient of nondebt tax shield and small companies have the lowest coefficient of nondebt tax shield variance. These coefficients, therefore, signify the opposite variability of debt tax shield with the size of the companies. However, nondebt tax shield signify the positive variability with the size of the companies. It eventually, shows that higher the size of the

company more uniform is the time series distribution of the debt tax shield and less uniform is the time series distribution of the nondebt tax shield.

In order to identify whether there exists any relationship between debt and nondebt tax shields, the coefficient of Karl Pearson correlation has been computed and shown in Table 6.1. The correlation coefficients for big, medium and small companies are -0.357, 0.270 and -0.606 respectively. It indicates that debt tax shield and nondebt tax shield are negatively related for big and small companies, whereas they are positively related for medium companies. The correlation coefficients of debt and nondebt tax shields for big and medium companies are not statistically significant. However, the correlation coefficient of debt and nondebt tax shields for small companies is statistically significant and this coefficient has been appeared with negative sign. This significant coefficient reveals that an increase in nondebt tax shield is followed by a decrease in debt tax shield.

Taking a reference of their growth rates, debt tax shield and nondebt tax shield could be compared to each other. Thus, growth rates of debt and nondebt tax shields are computed on the basis of tax shield of immediate previous fiscal year in percentage. Tax shield growth rates for big, medium and small companies are shown in Table 6.2.

For big companies, Table 6.2 shows that the mean growth rates of debt tax shield and nondebt tax shield are 6.215 and 22.245 percents respectively. The mean growth rate of nondebt tax shield is higher than that of debt tax shield. Mean growth rate of nondebt tax shield is greater by 16.03 percent. This suggests that both debt tax shield and nondebt tax shield, for big companies, are in increasing trend along with the passage of time, but nondebt tax shield has been increasing relatively with higher rate.

Table 6.2

Growth Trends of Debt Tax Shield and Nondebt Tax Shield

Big, Medium, and Small Companies

1990/91-2002/03

(Average Growth Rates in Percentage)

FY	Big		Medium			Small	Total Sample	
	DTS	NDTS	DTS	NDTS	DTS	NDTS	DTS	NDTS
1990/91	-	-	-	-	-	-	-	-
1991/92	127.407	-7.908	221.695	89.583	86.136	-13.856	98.304	15.771
1992/93	-13.263	213.49	-8.919	-46.763	-51.16	2.924	-11.258	80.248
1993/94	-10.119	19.314	-14.116	43.375	71.25	64.481	-13.002	19.559
1994/95	2.745	-3.947	14.157	-9.825	-94.895	-25.914	32.542	13.585
1995/96	36.791	6.223	66.086	-12.466	1529.8	-15.426	37.983	4.0757
1996/97	-1.399	11.195	-1.068	1.361	174.87	4.715	-15.463	-1.856
1997/98	-11.591	-11.626	-21.376	-29.189	-31.132	25.844	-14.087	-11.637
1998/99	-54.916	19.239	14.385	0.549	4.749	-56.009	-36.348	17.649
1999/00	14.107	5.405	23.558	1.639	63.587	5.854	15.750	6.246
2000/01	0.537	6.125	25.454	22.383	6.277	11.059	11.847	8.207
2001/02	-10.969	10.207	-4.517	109.13	-2.136	-2.075	-7.870	17.284
2002/03	-4.755	-0.832	-8.037	2.997	-21.829	22.034	-5.750	22.396
Mean	6.215	22.245	25.607	14.394	144.68	1.969	7.721	15.961

Source: Computed from the Data Presented in Table 6.1

AGR= Average growth rate in percent is computed on the basis of previous

fiscal year, DTS= Debt Tax Shield, NDTS= Nondebt Tax Shield

In the case of medium companies, the observed mean growth rates of debt and nondebt tax shields are 25.607 and 14.394 percents. The mean growth rate of debt tax shield is higher over that of nondebt tax shield. The difference in mean growth rates of debt and nondebt tax shields is 11.213 percent. Both tax shields are in increasing trend.

With respect to small companies, the mean growth rates of debt and nondebt tax shields are 144.676 and 1.969 percents. In comparison to the mean growth rate of debt tax shield, the mean growth rate of nondebt tax shield is extremely lower. The difference between mean growth rates of debt and nondebt tax shields is 142.707 percent. Both the mean growth rates are positives, reflecting increasing trend of debt as well as nondebt tax shields over the years.

II. Profitability-wise Analysis

With the objective of interpreting the relation of debt tax shield to nondebt tax shield, certain tax shield measures have been computed for the period from 1990/91 to 2002/03, pertaining to debt and nondebt tax shields of profit-making and loss-making companies and are presented in the Table 6.3.

Table 6.3 depicts that the mean values of debt tax shield of profit-making and loss-making companies are 1.221 and 2.492 respectively. Similarly, the computed mean values of nondebt tax shield of profit-making and loss-making companies are 2.713 and 2.491 respectively. The higher mean value of debt tax shield 2.492 belongs to the loss-making companies and lower mean value of debt tax shield 1.221 belongs to the Profit-making companies. The higher mean value of nondebt tax shield 2.713 belongs to the profit-making companies and lower mean value of nondebt tax shield 2.491 belongs to the loss-making companies. It, therefore, reveals that the mean values of debt tax shield are negatively related to the profitability status of the companies and the mean values of nondebt tax shield are positively related to the profitability status of the companies.

Table 6.3

Debt Tax Shield and Nondebt Tax Shield

Profit-making and Loss- making Companies

1990/91-2002/03

(Average Rs in Million)

FY	Profit-making		Loss-making		Total sample	
	DTS	NDTS	DTS	NDTS	DTS	NDTS
1990/91	2.961	1.317	1.306	0.529	2.133	0.923
1991/92	2.023	1.145	6.432	0.993	4.230	1.068
1992/93	1.142	1.168	6.367	2.684	3.754	1.926
1993/94	0.552	1.242	5.981	3.364	3.266	2.302
1994/95	0.806	1.481	7.853	3.746	4.329	2.615
1995/96	1.904	1.613	10.04	3.832	5.973	2.721
1996/97	1.615	2.204	8.485	3.139	5.049	2.671
1997/98	1.046	2.221	7.631	2.501	4.338	2.360
1998/99	0.737	3.161	4.786	2.394	2.761	2.777
1999/00	0.456	3.611	5.937	2.291	3.196	2.950
2000/01	0.918	4.231	6.232	2.155	3.575	3.193
2001/02	0.827	5.056	5.761	2.432	3.293	3.744
2002/03	0.882	6.834	5.327	2.332	3.105	4.583
Mean	1.221	2.713	2.492	2.491	3.769	2.603
S.D.	0.716	1.778	0.953	0.952	1.013	0.980
C.V.	58.611	65.538	38.212	38.211	26.886	37.656
r	0.434	-	0.766**	-	0.006	-

Source: Computed from the Data Presented in Appendices 5(a-j)

* Significant at 5 percent, ** Significant at 1 Percent, S.D. = Standard Deviation, C.V. = Coefficient of Variance, r = Correlation Coefficient (Karl Pearson) Between DTS and NDTS,

The standard deviations of debt tax shield distribution of profit-making and loss-making companies are 0.716 and 0.953 respectively. Similarly, the standard deviations of nondebt tax shield distribution of profit-making and

loss-making companies are 1.778 and 0.952   respectively. These values suggest that the standard error of debt tax shield distribution is negatively and that of nondebt tax shield is positively related to the profitability status of the companies.

The observed coefficients of variance to debt tax shield distribution of profit-making and loss-making companies are 58.611 and 38.212 respectively. Similarly, the observed coefficients of variance to nondebt tax shield of profit-making and loss-making companies are 65.538 and 38.211 respectively. The profit-making companies have the higher coefficient of debt tax shield variance; whereas loss-making companies have lower coefficient of debt tax shield variance.   The profit-making companies have higher coefficient of nondebt tax shield and loss-making companies have lower coefficient of nondebt tax shield variance. These coefficients, therefore, signify the variability of debt tax shield and nondebt tax shield with the profitability status of the companies. It eventually, shows that higher the profitability of the company less uniform is the time series distribution of the debt tax shield and nondebt tax shield.

In order to deduce any perceptible relationship between debt and nondebt tax shields, the coefficient of Karl Pearson correlation has been computed and shown in Table 6.3. The correlation coefficients for profit-making and loss-making companies are 0.434 and 0.766 respectively. It indicates that debt tax shield and nondebt tax shield are positively related for both profit-making and loss-making companies. The correlation coefficient of debt and nondebt tax shields for profit-making companies is not statistically significant. Whereas, the correlation coefficient of debt and nondebt tax shields for loss-making companies is statistically significant and this coefficient is appeared with positive sign.

Tax shield growth rates for profit-making and loss-making companies are shown in Table 6.4.

Table 6.4

Growth Trends of Debt Tax Shield and Nondebt Tax Shield

Profit-making, and Loss-making Companies

1990/91-2002/03

(Average Growth Rates in Percent)

FY	Profit-making		Loss-making		Total Sample	
	DTS	NDTS	DTS	NDTS	DTS	NDTS
1990/91	-	-	-	-	-	-
1991/92	-31.456	-13.076	392.438	87.571	98.304	15.771
1992/93	-43.764	2.082	-1.000	170.408	-11.258	80.248
1993/94	-51.698	6.277	-6.067	25.344	-13.002	19.559
1994/95	46.087	19.525	31.294	11.392	32.542	13.585
1995/96	136.398	8.638	27.889	2.268	37.983	4.0757
1996/97	-15.217	36.667	-15.509	-18.067	-15.463	-1.856
1997/98	-35.238	0.749	-10.064	-20.332	-14.087	-11.637
1998/99	-29.541	42.342	-37.281	-4.273	-36.348	17.649
1999/00	-38.153	14.256	24.045	-5.903	15.750	6.246
2000/01	101.537	17.158	4.966	12.880	11.847	8.207
2001/02	-9.967	19.527	-7.561	-4.143	-7.870	17.284
2002/03	6.634	35.166	-7.527	87.571	-5.750	22.396
Mean	2.969	15.776	32.969	21.068	7.721	15.961

Source: Computed from the Data Presented in Table 6.3
AGR= Average growth rate in percent computed on the basis of
previous fiscal year, DTS= Debt Tax Shield, NDTS= Nondebt Tax Shield

For profit-making companies, as shown by the Table 6.4, the mean growth rates of debt tax shield and nondebt tax shield are 2.969 and 15.776 percent respectively. The mean growth rate of nondebt tax shield is higher than that of debt tax shield. Mean growth rate of nondebt tax shield is greater by 12.807 percent. This suggests that both debt tax shield and nondebt tax shield, for profit-making companies, are in increasing trend alongwith the

passage of time, but nondebt tax shield has been increasing with relatively higher percentage.

In case of loss-making companies, the mean growth rates of debt and nondebt tax shield are 32.969 and 21.068 percents. In comparison to the mean value of debt tax shield growth rate, the mean value of nondebt tax shield growth rate is relatively lower. The difference between mean growth rates of debt and nondebt tax shields is 11.901 percent. Both mean growth rates are positives, reflecting increasing trend of debt as well as nondebt tax shields over the passage of time; however debt tax shield has been increasing with comparatively higher percentage.

III. Product- wise Analysis

The status of relationship between debt and nondebt tax shields may be different to the companies producing different types of products. The values of debt tax shield and nondebt tax shields have been computed on the basis of manufactured products of the selected companies and presented in Table 6.5.

It is observed that, for soft drinks company, the mean values of debt and nondebt tax shields are 1.093 and 3.576 million rupees respectively. The mean value of nondebt tax shield is higher than that of debt tax shield, showing soft drinks companies are getting comparatively more tax benefit from the nondebt measures namely deductibility of depreciation. On the other hand, standard deviations for debt and nondebt tax shields are 1.457 and 2.249 respectively. It, therefore, depicts that the error of nondebt tax shield distribution is higher than that of debt tax shield distribution. The computed coefficients of variance to debt and nondebt tax shields are 132.718 and 62.883 percents. Thus, the variability of debt tax shield over the passage of time is comparatively higher than that of nondebt tax shield. Further, the correlation coefficient of debt and nondebt tax shields is negative and statistically significant. A negative relationship has been suggested by this significant correlation coefficient.

Table 6.5

Debt Tax Shield and Non Debt Tax Shield

Types of Companies Based on Manufactured Products

1990/91-2002/03

(Average Rs in Million)

FY	Soft Drinks		Vegetable Ghee		Lube Oil And Bitumen		Rubber and Tire		Flour		Soap and Deterger	
	DTS	NDTS	DTS	NDTS	DTS	NDTS	DTS	NDTS	DTS	NDTS	DTS	NDTS
1990/91	4.236	1.926	0.358	0.562	0.22	0.464	2.788	0.34	1.72	0.652	NA	NA
1991/92	3.859	1.631	3.109	1.515	0.411	0.346	17.888	0.602	1.617	0.336	NA	NA
1992/93	1.94	1.581	2.363	0.775	0.345	0.283	18.33	8.94	2.413	0.245	NA	NA
1993/94	1.085	1.778	2.622	1.143	0.598	0.41	17.793	10.88	0.888	0.285	NA	NA
1994/95	1.467	2.871	2.638	1.02	0.003	0.39	24.412	12.667	1.723	0.277	0.003	0.085
1995/96	0.828	2.029	4.767	0.895	0.285	0.361	28.547	13.296	2.089	0.239	7.206	2.288
1996/97	0.311	2.044	4.582	0.862	1.169	0.319	29.237	13.107	2.335	0.334	7.034	4.648
1997/98	0.011	2.318	3.627	0.715	0.807	0.427	27.91	10.48	1.786	0.026	4.678	4.188
1998/99	0.129	4.11	4.454	0.72	0.848	0.177	12.42	10.426	1.432	0.024	2.024	4.372
1999/00	0.143	5.054	5.801	0.723	0.925	0.193	15.722	9.864	1.174	0.042	0.768	4.29
2000/01	0.046	6.16	7.115	0.748	0.983	0.219	13.932	8.866	1.798	0.324	2.842	4.562
2001/02	0.09	7.151	6.724	1.421	0.962	0.217	12.312	8.23	1.856	0.964	2.524	5.844
2002/03	0.061	7.847	6.318	1.593	0.752	0.249	11.658	7.638	1.438	0.734	2.522	4.808
Mean	1.093	3.576	4.191	0.976	0.639	0.312	17.919	8.873	1.728	0.345	3.289	3.898
S.D.	1.457	2.249	1.979	0.339	0.356	0.095	7.819	4.134	0.427	0.283	2.535	1.703
C.V.	132.718	62.883	47.245	34.739	55.656	30.761	43.635	46.593	24.915	81.965	77.087	43.692
r	-0.566*	-	0.297	-	-0.594*	-	0.684**	-	0.10	-	0.16	-

Source: Computed from the Data Presented in Appendix No 5(a-j)
(* Significant at 5 percent, ** Significant at 1 Percent) Notes: S.D. = Standard Deviation, C.V. = Coefficient of Variance, r = Correlation Coefficient (Karl Pearson) Between Debt Tax Shield and Non Debt Tax Shield, DTS= Debt Tax Shield, NDTS= Non Debt Tax Shield, NA= Not Available.

For vegetable ghee company, the mean values of debt tax shield and nondebt tax shield are 4.191 and 0.976 million rupees. The mean value of debt tax shield is higher than that of nondebt tax shield; showing vegetable ghee companies are getting comparatively more tax benefit from debt measure, that is deductibility of interest. The computed values of standard deviation for debt tax shield and nondebt tax shield are 1.979 and 0.339 respectively. It, therefore, depicts that the error of debt tax shield distribution is higher than that of nondebt tax shield distribution. The computed coefficients of variance to debt tax shield and nondebt tax shield are 47.245 and 34.739 percents. Thus, the variability of debt tax shield, over the passage of time, is comparatively higher than that of nondebt tax shield. On the other respect, the correlation coefficient of debt and nondebt tax shields is 0.297. This coefficient is statistically insignificant. However, the associated sign suggests a positive relationship.

For lube oil and bitumen company, the mean values of debt tax shield and nondebt tax shield are 0.639 and 0.312 million rupees. The mean value of debt tax shield is higher than that of nondebt tax shield, indicating lube oil and bitumen companies are getting comparatively more tax benefit from the debt measures like deductibility of interest. The values of standard deviation for debt tax shield and nondebt tax shield are 0.356 and 0.095 respectively. It, therefore, depicts that the error of debt tax shield distribution is higher than that of nondebt tax shield distribution. The computed coefficients of variance to debt tax shield and nondebt tax shield are 55.656 and 30.76 percents. Thus, the variability of debt tax shield over passage of time is comparatively higher than that of nondebt tax shield. On the other respect, the correlation coefficient of debt tax shield and nondebt tax shield is (-0.594). This coefficient is statistically significant. A negative relationship has been suggested by this significant correlation coefficient.

In the context of rubber and tire company, the mean values of debt tax shield and nondebt tax shield are 17.919 and 8.873 million rupees. The

mean value of debt tax shield is higher than that of nondebt tax shield, showing rubber and tire company is getting comparatively more tax benefit from debt measure like deductibility of interest. On the other hand, the values of standard deviation for debt and nondebt tax shield are 7.819 and 4.134 respectively. It is also observed that the error of debt tax shield distribution is higher than that of nondebt tax shield distribution. The computed coefficients of variance to debt and nondebt tax shield are 43.635 and 46.593 percents. Thus, the variability of nondebt tax shield is comparatively higher than that of debt tax shield. The correlation coefficient of debt and nondebt tax shields is 0.684. This coefficient is statistically significant. A positive relationship has been suggested by this significant correlation coefficient.

For flour company, the mean values of debt tax shield and nondebt tax shield are 1.728 and 0.345 million rupees. The mean value of debt tax shield is higher than that of nondebt tax shield, showing flour company are getting comparatively more tax benefit from the debt measure like deductibility of interest. The values of standard deviation for debt and nondebt tax shields are 0.427 and 0.283 respectively. It, therefore, depicts that the error of debt tax shield distribution is higher than that of nondebt tax shield distribution. The computed coefficients of variance to debt and nondebt tax shields are 24.915 and 81.965 percents. Thus, the variability of nondebt tax shield, over the passage of time, is comparatively higher than that of debt tax shield. On the other hand, the correlation coefficient of debt and nondebt tax shields is 0.10. This coefficient is not statistically significant. However, it suggests a positive relationship between debt and nondebt tax shields.

Similarly, for soap and detergent company, the mean values of debt and nondebt tax shields are 3.289 and 3.898 million rupees. The mean value of nondebt tax shield is slightly higher than that of debt tax shield, showing soap and detergent company is getting comparatively more tax benefits from the nondebt measure like deductibility of depreciation. At next, the values of standard deviation for debt tax shield and nondebt tax shield are 2.535 and

1.703 respectively. It, therefore, depicts that the error of debt tax shield distribution is higher than that of nondebt tax shield distribution. The computed coefficients of variance to debt tax shield and nondebt tax shield are 77.087 and 43.692 percents. Thus, the variability of debt tax shield, over passage of time, is comparatively higher than that of nondebt tax shield. On the other respect, the correlation coefficient of debt and nondebt tax shields is (0.16). This coefficient is not statistically significant. However a positive relationship has been suggested by this correlation coefficient.

In the case of color photographs company, the mean values of debt and nondebt tax shields are 0.033 and 0.106 million rupees. The mean value of nondebt tax shield is higher than that of debt tax shield, showing color photographs company is getting comparatively more tax benefit from nondebt measure like deductibility of depreciation. The values of standard deviation for debt and nondebt tax shields are 0.034 and 0.084 respectively. It, therefore, depicts that the error of debt tax shield distribution is higher than that of nondebt tax shield distribution. The computed coefficients of variance to debt tax shield and nondebt tax shield are 104.421 and 78.042 percent respectively. Thus, the variability of debt tax shield, over the study period, is comparatively higher than that of nondebt tax shield. In other respect, the correlation coefficient of debt tax shield and nondebt tax shield is 0.972. This coefficient is statistically significant. A positive relationship has been suggested by this significant correlation coefficient.

The growth trends of debt tax shield and nondebt tax shield, for different states of nature of the selected companies based on products, are shown in the Table 6.6.

Table 6.6
Growth Trends of Debt Tax Shield and Non Debt Tax Shield
Types of Companies Based on Manufactured Products
1990/91-2002/03

(Average Growth Rates in Percent)

FY	Soft Drinks		Vegetable Ghee		Lube Oil And Bitumen		Rubber And Tire		Flour
	DTS	NDTS	DTS	NDTS	DTS	NDTS	DTS	NDTS	DTS
1990/91	-	-	-	-	-	-	-	-	
1991/92	-8.906	-15.408	768.645	169.662	86.136	-25.323	541.625	77.059	-5.
1992/93	-49.725	-2.946	-24.029	-48.862	-15.751	-18.470	2.468	1385.05	49.
1993/94	-44.072	12.490	10.952	47.419	73.188	45.134	-2.933	21.728	-63.
1994/95	35.184	61.377	0.619	-10.722	-95.816	-4.878	37.199	16.402	94.
1995/96	-43.549	-29.289	80.729	-12.172	1040.8	-7.410	16.941	4.964	21.
1996/97	-62.494	0.692	-3.884	-3.851	310.081	-11.465	2.397	-1.418	11.
1997/98	-96.458	13.416	-20.836	-16.991	-30.999	33.562	-4.518	-20.047	-23.
1998/99	1072.727	77.308	22.801	0.699	5.081	-58.548	-55.499	-0.515	-19.
1999/00	10.853	22.968	30.242	0.417	9.080	9.039	26.586	-5.391	-18.
2000/01	-67.832	21.884	22.651	3.458	6.270	13.472	-11.385	-10.118	53.
2001/02	95.652	16.088	-5.495	89.973	-2.136	-0.913	-11.628	-7.173	3.
2002/03	-32.222	9.733	-6.038	12.104	-21.829	14.747	-5.312	-7.193	-22.
Mean	67.430	15.693	73.029	19.261	113.675	-0.921	44.662	121.113	6.

Source: Computed from the Data Presented in Table 6.5

The Table 6.6 shows that the mean growth rates of debt tax shield and nondebt tax shield for soft drinks companies are 67.430 and 15.693 percents. The mean growth rate of debt tax shield is higher than that of nondebt tax shield. Mean growth rate of debt tax shield is greater by 51.737 percent. This growth rate suggests that both debt tax shield and nondebt tax shield, for soft drinks companies, are in increasing trend alongwith the passage of time, but debt tax shield has been increasing with relatively higher percentage.

Tax shield growth rates for vegetable ghee companies are shown in the Table 6.6. In this Table, it is observed that the mean growth rates of debt tax shield and nondebt tax shield for vegetable ghee companies are 73.029 and 19.261 percents. The mean growth rate of debt tax shield is higher than that of nondebt tax shield. Mean growth rate of nondebt tax shield is greater by 53.768 percent. This suggests that both debt tax shield and nondebt tax shield are in increasing trend over the study period, but debt tax shield has been increasing with relatively higher percentage.

Tax shield growth rates for lube oil and bitumen companies are shown in Table 6.6. This Table shows that the mean growth rates of debt tax shield and nondebt tax shield for lube oil and bitumen companies are (113.675) and (-0.921) percent respectively. The mean growth rate of debt tax shield is higher than that of nondebt tax shield. Mean growth rate of debt tax shield is greater by 114.596 percent. This suggests that debt tax shield is in increasing trend and nondebt tax shield is in declining trend over the study period, but debt tax shield has been increasing with relatively higher percentage.

Tax shield growth rates for rubber and tire company are shown in Table 6.6. It is observed that the mean growth rates of debt tax shield and nondebt tax shield for rubber and tire company are 44.662 and 121.113 percent respectively. The mean growth rate of nondebt tax shield is higher than that of debt tax shield. Mean growth rate of nondebt tax shield is greater by 76.451 percent. This suggests that both debt tax shield and nondebt tax

shield are in increasing trend, but nondebt tax shield has been increasing with relatively higher percentage.

Tax shield growth rates for flour company are shown in Table 6.6. In this Table it is observed that the mean growth rates of debt tax shield and nondebt tax shield for flour company are 6.636 and 65.413 percent respectively. The mean growth rate of nondebt tax shield is higher than that of debt tax shield. Mean growth rate of nondebt tax shield is greater by 58.777 percent. This suggests that debt tax shield and nondebt tax shield both are in increasing trend alongwith the passage of time, but nondebt tax shield has been increasing with relatively higher percentage.

It is observed in the Table 6.6 that the mean growth rates of debt tax shield and nondebt tax shield are 14.873 and 16.064 percent respectively. The mean growth rate of nondebt tax shield is higher than that of debt tax shield. Mean growth rate of nondebt tax shield is greater by 1.191 percent. This suggests that both debt tax shield and nondebt tax shield are in increasing trend alongwith the passage of time, but nondebt tax shield has been increasing with relatively higher percentage.

As shown in Table 6.6, the mean growth rates of debt tax shield and nondebt tax shield for color photographs company are -38.089 and 15.593 percents. The mean growth rate of nondebt tax shield is higher than that of debt tax shield. This suggests that nondebt tax shield is in increasing trend and debt tax shield is in decreasing trend alongwith the passage of time, but debt tax shield has been decreasing with relatively higher percentage.

3. Tax Shield: A Test of Substitution Effect

A study as conducted by DeAngelo and Masulis (1980) concluded that the depreciation related tax shield substitutes the interest related tax shield. This is called the substitution effect. MacKie-Mason (1990) argued that the

substitution effect on debt tax shield is more applicable to those firms which are unable to get the tax benefits from interest expenses.

Titman and Wessels (1988) documented that the manufacturing firms usually use fixed assets as collateral for corporate debt; consequently there exists a debt securability effect of depreciable assets. Considering the debt securability effect of depreciable assets, both debt tax shield and nondebt tax shield would increase when new depreciable assets are purchased. Trezevant (1992), by using the relationship between changes in depreciation tax shield and changes in interest tax shield of firms in response to the Economic Recovery Tax Act,1981(USA), has found that the nondebt tax shield substitutes debt tax shield.

In Nepalese context, the previous Income Tax Act, 1974 had complicated provisions relating to depreciation. The assets' categories for depreciation purpose were around three dozens. Different rates were allocated to different types of assets. Obviously there was confusion in the rate of depreciation among various assets. There was also the chance of manipulation of depreciation rates due to this confusing state. Further, the rates allowed for diminishing balance method were more attractive than the rates allowed for straight line method. To avoid this chaotic situation, new Income Tax Act, 2001 has tried to minimize the rooms to play. It has specified diminishing balance method based on pool system with five categories of assets as the system of depreciation to be used by business communities (Kandel, 2003). Simplified depreciation method may encourage corporate bodies to involve in enough exercise for getting tax advantage of depreciation deduction. This endeavor of corporations may be reflected on substitution effect of nondebt tax shield of depreciation to debt tax shield. In these perspectives, a test of substitution effect of tax shield is seemed to be relevant for this study.

In order to test the substitution effect of nondebt tax shield over debt tax shield, a regression model, as employed by Trezevant (1992), has been applied in this study. More details about this model have been presented in methodology chapter.

Table 6.7

Changes in Debt and Nondebt Tax Shields

Before and After Enforcement of Income Tax Act, 2001

S.N.	Companies	DIFFNDTS	DIFFDTS
1	BONL	0.058396	0.003903
2	NELL	0.101346	0.05771
3	BNTL	0.167862	-0.00032
4	GRUL	-0.4032	-0.72045
5	KHUL	0.170031	-0.107
6	NBGL	1.262736	13.34578
7	AVUL	-0.16139	-1.94865
8	NLOL	-0.06914	-0.20861
9	NBBL	-0.00836	-0.30551
10	SCLL	-0.04534	0
Mean		0.107294	1.011685
S.D.		0.440413	4.375979
C.V.		4.104729	4.325435
r		0.944155	

Source: Computed on the basis of data presented in Appendices 5 (a-j)

It is observed from the Table 6.7 that the mean value of changes in debt tax shield is higher than that of changes in nondebt tax shield. Similarly, the standard deviation and coefficient of variance are also higher for the changes in debt tax shield. These descriptive statistics support that there is no any inverse relationship between nondebt tax shield and debt tax shield. Moreover, these two shields are highly correlated with positive sign. It means that nondebt tax shield does not substitute the debt tax shield after the enforcement of new Income Tax Act, 2001.

Table 6.8

Regression of Changes in Debt Tax Shield on Changes in Nondebt Tax Shield: Before and After Enforcement of Income Tax Act, 2001

Dependent Variable: DIFFDTS, (Equ. 12)

Constant	Explanatory Variable (DIFFNDTS)	r^2	F	N
0.0052 (0.010)	9.381 (8.105)*	0.891	65.684*	10

Notes: Figures in parenthesis are t-values.

*Significant at 1 percent, ** Significant at 5 percent,*** Significant at 10 percent.

The regression model is estimated for all selected manufacturing listed companies combinely. Table 6.8 presents regression results of testing substitution effect of tax shield. The estimated coefficient on the combined substitution effect (B_1) is positive (8.105) and significant at 1 percent. The explanatory variable (Diffndts), i. e. measure of changes in nondebt tax shield due to the change in tax law provisions, has considerable power to explain the variation in dependent variable (Diffdts), i. e. measure of changes in debt tax shield. It explains about 90 percent variation in the measure of changes in debt tax shield. The computed value of 'F' is statistically significant at 1 percent, suggesting the better fitness of the linear model.

This test has examined the theoretical statement of the substitution effect that there is a negative relationship between changes in nondebt tax shield and changes in debt tax shield in response to the depreciation and interest deduction provisions of the Income Tax Act, 2001. In contrary to this theoretical statement, a positive relationship between changes in debt tax shield and the changes in nondebt tax shield before and after the enforcement of Income Tax Act, 2001 has been observed in the context of selected listed manufacturing companies. This contradicts the substitution effect of nondebt tax shield over debt tax shield.

4. Summing up

This chapter has estimated the relationship between debt tax shield and nondebt tax shield. For the analysis, different states of nature like size, profitability and manufactured products have been entertained, purposely for capturing diverse relations between debt tax shield and nondebt tax shield. An emphasis has been given to analyze debt tax shield, and nondebt tax shield with mean values, coefficient of variation, annual growth rate and correlation coefficient.

The analysis revealed that the mean values of both debt as well as nondebt tax shields are positively related to the size of the companies. Standard deviations suggest that the standard error of both debt and nondebt tax shield distributions are positively related to the size of the companies, indicating higher the size, higher is the standard error in time series distribution of tax shield values. Debt tax shield and nondebt tax shield are negatively related for big and small companies, whereas they are positively related for medium companies. The correlation coefficients of debt and nondebt tax shields for big and medium companies are not statistically significant. However, the correlation coefficient of debt and nondebt tax shields for small companies is statistically significant and negative. This significant coefficient reveals that an increase in nondebt tax shield is followed by a decrease in debt tax shield. Both debt tax shield and nondebt tax shield; for big, medium and small companies; are in increasing trend alongwith the passage of time. However, nondebt tax shield is in increasing trend with relatively higher percentage for big companies and debt tax shield is in increasing trend with higher percentage for medium and small companies.

The mean value of debt tax shield is negatively related to the profitability status of the companies, but the mean value of nondebt tax shield is positively related to the profitability status of the companies. Values of standard deviation suggest that the standard error of debt tax shield distribution is negatively, whereas nondebt tax shield is positively related to

the profitability status of the companies. Coefficient of variation eventually shows that higher the profitability of the company, less uniform is the time series distribution of the debt tax shield and nondebt tax shield. The correlation coefficient of debt and nondebt tax shields for profit-making companies is not statistically significant. However, the correlation coefficient of debt and nondebt tax shields for loss-making companies is statistically significant and this coefficient appeared with positive sign. This significant coefficient reveals that an increase in nondebt tax shield is followed by an increase in debt tax shield. It indicates that debt tax shield and nondebt tax shield are positively related for both profit-making and loss-making companies. Both debt tax shield and nondebt tax shield, for profit-making and loss-making companies, are in increasing trend alongwith the passage of time, but nondebt tax shield is increasing with relatively more percent for profit-making companies and in contrary to this debt tax shield is increasing with comparatively more percent for loss-making companies.

In another case, the mean value of nondebt tax shield is greater over that of debt tax shield for soft drinks, soap and detergent, and color photographs companies. On the other hand, the mean value of debt tax shield is greater over that of nondebt tax shield for vegetable ghee, lube oil and bitumen, rubber and tire, and flour companies. Further, in an aggregate the mean value of debt tax shield is greater than that of nondebt tax shield. It implies that selected companies are enjoying relatively more benefits from debt tax shield. Similarly, the percentage of debt tax shield variability is higher for soft drinks, vegetable ghee, and lube oil and bitumen companies whereas that of nondebt tax shield is higher for soap and detergent, rubber and tire, flour, and color photographs companies. In an aggregate, the percentage of variability of debt tax shield is higher than that of nondebt tax shield indicating that the debt tax shield is, comparatively, less uniform.

Again, the observed correlation coefficients of debt tax shield and nondebt tax shield, for soft drinks, and lube oil and bitumen companies are

statistically significant with negative signs. And correlation coefficient of rubber and tire companies is statistically significant with positive sign. However, overall correlation coefficient is positive and significant.

The debt tax shield and nondebt tax shield are negatively related for big, small, soft drinks, and lube oil and bitumen companies. This result supports the findings of DeAngelo and Masulis (1980), and Dotan and Ravid (1985) studies. In contrary to this, debt tax shield and nondebt tax shield are positively related for medium, loss-making, rubber and tire, and color photograph companies. Further, debt tax shield and nondebt tax shield are also positively related for all selected companies. This result supports the findings of Hite (1977), Bradley, Jarrell and Kim (1984), Long and Malitz (1985), Dammon and Senbet (1988), Titman and Wessels (1988), Fischer, et al. (1989) studies.

The estimated substitution effect of tax shield after the enforcement of new Income Tax Act, 2001 is negative. It means debt tax shield is not substituted by nondebt tax shield in the context of Nepalese listed manufacturing companies. This observation contradicts the theoretical statement that nondebt tax shield substitutes debt tax shield. Also, this result contradicts the findings of Trezevant (1992), and Mackie-Mason (1990) studies.

CHAPTER- VII

DEBT TAX SHIELD AND VALUE OF THE FIRM

This chapter assesses the association of debt tax shield with the market value of the sample companies. To estimate such association, same linear regression equation has been applied separately for size-wise and profitability-wise states of nature of the selected companies.

1. General Background

A corporation can finance its investment by issuing either equity or debt. Equity represents ownership in the corporation. An equity investor receives a proportionate share of an uncertain future stream of income from the corporation. Debt, on the other hand, represents a promise of a fixed payment to the lender. These two different financing options have different return characteristics. In the presence of the income tax effects, one might expect that there is an optimal mix of debt and equity that maximizes the value of the firm (Lyon, 1995: 196).

A study conducted by Modigliani and Miller (1958) concluded that the value of the firm is independent of its financing choice. This conclusion on corporate finance was derived by ignoring the influence of corporate income tax on financing choice of the firm. In the presence of taxes, this result was not true,

as Modigliani and Miller (1963) subsequently demonstrated that debt tax shield increases the firm's value with tax savings of interest payment. Subsequently, Jensen (1986) documented a positive relationship between debt tax shield and market value of the firm. Similarly in another study, Clark (1993) concluded that debt tax shield is reflected in market price of equity. Likewise, Graham (2000) found a positive relationship between debt tax shield and market value of the manufacturing firms. Later, Kimsley and Nissim (2002) found a positive relationship between debt tax shield and market value of the manufacturing firms. In contrast, Miller (1977) demonstrated that debt tax shield does not affect market value of the firm. Subsequently, Fama and French (1998) documented that debt tax shield and market value of the firms are related negatively because of inefficiency signaling effect of debt.

Literatures suggest that there is no uniformity in previous empirical results regarding the effect of debt tax shield on market value of the firms. However, the observations made by several authors can be grouped into two broad views. First view has supported the Modigliani and Miller's (1963) conclusion that debt tax shield has a positive association with firm's market value. The second view contradicts with Modigliani and Miller's (1963) conclusion and has suggested that debt tax shield has a negative association with firm's market value.

The managers of value maximizing firms usually consider an implication of their financing choice to the market value of the firm. Thus, before choosing debt or equity capital, for financing investment, the effect of debt tax shield on market value of the firm is to be analyzed essentially. However, in Nepalese context, the association of debt tax shield with firm's market value has not been estimated adequately with reference to manufacturing companies. Thus, in this study an attempt has been made to estimate and analyze the association of debt tax shield with market value of the sample companies.

2. Market Value, Operating Income, Debt, and Interest:

The regression equation employed to examine relationship between market value and debt tax shield includes operating income as another nontax explanatory variable. Similarly, interest-bearing debt, and interest are employed as the proxies of debt tax shield. Thus, market value, operating income, interest-bearing debt, and interest are analyzed descriptively in this section.

I. Market Value of the Firm

Total assets deflected market value provides a quantitative figure representing relative market value. Thus, in similar method to Kemsley and Nissim (2002) study, the market values of selected companies are deflected with total assets and an average of it has been taken into consideration for analytical purpose. To examine the descriptive attributes, the time series distributions of market values with mean, standard deviation, and covariance are computed and presented in Table 7.1.

Table 7.1 has shown the mean values of market value for big, medium, small, profit-making and loss-making companies. It is observed that the big company has the highest mean value of 1.256, followed by profit-making (1.237), small (0.836), medium (0.701), and loss-making company (0.677). This also reveals that the market values of the companies under study differ with the size and profitability. Further, the market values of big and profit-making companies are slightly higher than the book value of their respective total assets. However, the market values of small, medium, and loss-making companies are lower than the book values of their total assets. Thus, in majority of companies, market values are lower than the book value of their total assets. In an aggregate, the mean market value for all selected companies is 0.955, suggesting lower market value than book value of total assets. In an average, such market value covers nearly 96 percent of book value of the total assets.

Table 7.1
Market values and Its Growth Trends:

Big, Medium, Small, Profit-making, and Loss-making Companies

1990/91-2002/03

FY	Big		Medium		Small		Profit-making		Loss-making		Total Sample	
	VL/TA	AGR (%)	VL/TA	AGR (%)	VL/TA	AGR (%)	VL/TA	AGR (%)	VL/TA	AGR (%)	VL/TA	AGR (%)
1990/91	1.134	---	0.208	---	0.694	---	0.914	---	0.208	---	0.677	
1991/92	0.988	-12.919	0.611	193.509	0.816	17.579	0.999	9.299	0.672	222.756	0.802	18.232
1992/93	1.975	99.949	0.665	8.846	0.785	-3.799	2.020	102.202	0.675	0.447	1.213	51.122
1993/94	0.786	-60.217	0.654	-1.656	0.945	20.382	0.981	-51.436	0.621	-8.008	0.765	-36.945
1994/95	1.286	63.654	0.649	-0.689	1.049	11.005	1.341	36.718	0.621	-0.014	1.021	33.505
1995/96	0.951	-26.059	0.723	11.454	0.851	-18.971	0.977	-27.185	0.697	12.414	0.853	-16.491
1996/97	0.775	-18.464	0.772	6.729	0.836	-1.647	0.837	-14.295	0.726	4.087	0.788	-7.612
1997/98	0.909	17.355	0.822	6.477	0.763	-8.771	0.946	13.047	0.732	0.889	0.839	6.558
1998/99	1.515	66.520	0.661	-19.587	0.871	14.161	1.426	50.709	0.705	-3.769	1.065	26.943
1999/00	1.985	31.049	0.928	40.444	0.899	3.293	1.834	28.584	0.851	20.749	1.342	25.993
2000/01	1.532	-22.824	0.945	1.796	0.896	-0.371	1.497	-18.368	0.833	-2.069	1.165	-13.202
2001/02	1.358	-11.343	0.752	-20.459	0.781	-12.798	1.280	-14.485	0.726	-12.842	1.003	-13.897
2002/03	1.136	-16.348	0.729	-3.059	0.685	-12.287	1.029	-19.625	0.728	0.303	0.879	-12.411
Mean	1.256	9.196	0.701	18.651	0.836	0.648	1.237	7.931	0.677	19.579	0.955	5.149
S.D.	0.406	---	0.181	---	0.101	---	0.373	---	0.156	---	0.199	---
C.V.	32.253	---	25.831	---	11.983	---	30.134	---	23.091	---	20.791	----

Source: Computed on the basis of data presented in appendix no. 7.1 to 7.5
Notes: S.D. = Standard deviation, C.V. = Coefficient of variance, VL =Market value, TA= Total assets, AGR = Annual growth rate in percent.

The Table 7.1 also depicts the variations in the market value over the years within each type of company; from 0.775 to 1.985 in big company, from 0.208 to 0.945 in medium company, from 0.685 to 1.045 in small company, from 0.837 to 2.020 in profit-making company and from 0.208 to 0.851 in loss-making companies. For all selected companies, the coefficient of variance in market value is 20.791. Thus, big, medium, profit-making, and loss-making companies have coefficients of variance greater than aggregate coefficient of variance. But, small company has lower coefficient than aggregate coefficient of variance. Comparatively, small company has lower variability in market value followed by loss-making, medium, profit-making, and big companies. This reflects that higher the size, higher is the fluctuation in market value and higher the profitability, higher is the fluctuation in market value of the firms.

The highest average growth rate of market value is 19.579 for loss-making company, followed by medium (18.651), big (9.196), profit-making (7.931), and small company (0.648). On the other hand, the average growth rate of market value for all sample companies is 5.149 percent. Thus, except small company all other types of companies have their average growth rates of market value greater than aggregate growth rate. These growth rates suggest that the market values of most of the companies are in increasing trend.

II. Operating Income

The operating incomes of selected companies are deflected with total assets of respective companies and an average of it has been taken into consideration for analytical purpose. The time series distributions of operating income followed by mean, standard deviation, and covariance are computed and presented in Table 7.2.

Table 7-2

Operating Income and Its Growth Trends:

Big, Medium, Small, Profit-making, and Loss-making Companies

1990/91-2002/03

FY	Big		Medium		Small		Profit-making		Loss-making		Aggregate	
	FOI/TA	AGR (%)	FOI/TA	AGR (%)	FOI/TA	AGR (%)	FOI/TA	AGR (%)	FOI/TA	AGR (%)	FOI/TA	AGR (%)
1990/91	0.048	---	0.069	---	0.106	---	0.078	---	0.063	---	0.071	---
1991/92	0.051	6.294	0.047	-32.057	0.066	-38.208	0.074	-5.466	0.033	-48.221	0.053	-24.645
1992/93	0.113	123.026	0.023	-50.704	0.046	-30.534	0.096	29.932	0.030	-9.924	0.063	17.647
1993/94	0.171	51.327	-0.003	-114.286	0.049	8.791	0.139	45.288	0.012	-60.169	0.075	20.400
1994/95	0.123	-28.216	0.011	-420	0.037	-26.263	0.112	-19.279	0.009	-23.404	0.066	-11.997
1995/96	0.097	-20.774	-0.023	-318.750	0.044	19.178	0.092	-18.214	-0.013	-244.444	0.045	-31.879
1996/97	0.133	36.761	0.045	-292.857	0.068	55.556	0.123	33.843	0.051	-495.385	0.087	92.857
1997/98	0.109	-18.233	0.067	48.888	0.062	-8.867	0.111	-9.952	0.054	4.669	0.082	-5.632
1998/99	0.095	-12.873	-0.008	-111.443	0.041	-32.973	0.089	-18.841	0.006	-88.104	0.048	-41.535
1999/00	0.052	-45.118	0.047	-717.391	0.026	-37.903	0.053	-40.848	0.032	406.250	0.043	-11.042
2000/01	0.043	-18.750	0.067	41.549	0.056	118.182	0.059	10.943	0.049	50.618	0.054	25.995
2001/02	0.044	3.551	0.045	-32.836	0.048	-14.286	0.044	-25.171	0.047	-4.098	0.045	-15.613
Mean	0.090	6.999	0.033	-181.808	0.054	1.152	0.089	-1.615	0.031	-46.565	0.061	1.323
S.D.	0.043	---	0.032	---	0.021	---	0.029	---	0.023	---	0.016	---
C.V.	47.087	---	98.199	---	37.913	---	32.581	---	74.193	---	26.229	---

Source: Computed on the basis of data presented in appendix no. 7.1 to 7.5

Notes: S.D. = Standard deviation, C.V. = Coefficient of variance, FOI = Operating Income, TA= Total assets

AGR = Annual growth rate in percent

Table 7.2 depicts the mean values of operating income for big, medium, small, profit-making and loss-making companies. Big company has the highest mean value of 0.090, followed by profit-making (0.089), small (0.054), medium (0.033), and loss-making company (0.031). On the other hand, the mean value of operating income is 0.061 for all selected companies. In an average, big and profit-making companies have higher, but medium, small, and loss-making companies have lower mean values of operating income over the aggregate mean. This shows that the operating incomes vary across the size and profitability of the companies. It also explains that the total assets of big and profit-making companies generate comparatively more operating income than that of medium and small companies. In an average, operating income of the sample companies is 6.10 percent of book value of their total assets.

Table 7.2 also depicts that the variations of operating income within each type of company are from 0.043 to 0.171 in big, from -0.023 to 0.069 in medium, from 0.026 to 0.106 in small, from 0.044 to 0.139 in profit-making, and from (-0.013) to 0.063 in loss-making companies. The coefficient of variance of operating income is 32.581 the lowest, for profit-making company, followed by 37.913 for small, 47.087 for big, 74.193 for loss-making, and 98.199 for profit-making companies. However, the coefficient of variance is 26.229 for overall sample companies. Thus, big, medium, small, profit-making, and loss-making companies have coefficient of variance greater than aggregate coefficient of variance for all selected companies. However, profit-making company has lower variability followed by small, big, loss-making and medium companies. This analysis reflects that higher the size, higher is the fluctuation in operating income.

The mean growth rate of operating income is 6.999 the highest, for big company followed by small (1.152), profit-making (-1.615), loss-making (-46.565), and medium (-181.808) companies. The average growth rate of

operating income for all selected companies is 1.323 percent. Thus, big and small companies have greater growth rates than aggregate growth rate, but profit-making, medium, and loss-making companies have lower growth rates than the aggregate growth rate. The positive growth rates of big and small companies reveal that the operating incomes of these companies are in increasing trend. On the other hand, the negative growth rates of profit-making, medium, and loss-making companies reveal that the operating incomes in these companies are in decreasing trend.

III. Interest Bearing Debt

The interest-bearing debts of selected companies have been deflected with total assets of respective companies and an average of it has been taken into consideration for analysis. To analyze the descriptive attributes of interest-bearing debt over the studied period, time series distributions of interest-bearing debt followed by mean, standard deviation, and covariance are computed and presented in Table 7.3.

Mean values and growth rates of interest-bearing debt for selected companies presented in the Table 7.3 shows that the loss-making company has the highest mean value 0.574 of interest-bearing debt , followed by medium (0.559), small (0.343), big (0.337), and profit-making company (0.245). However, the mean value of interest-bearing debt for all selected companies is 0.412. Thus, medium, and loss-making companies have higher mean value than aggregate mean value of interest-bearing debt. Whereas, big, profit-making, and small companies have lower mean values than aggregate mean. These mean values of interest-bearing debt reflect that the interest-bearing debt is associated with the size and profitability of the companies. The Loss-making and medium companies have relatively higher mean values reflecting debt as an important source of funds for financing their investments.

Table 7.3
Interest Bearing Debt and Its Growth Trends:
Big, Medium, Small, Profit-making, and Loss-making Companies
1990/91-2002/03

FY	Big D/TA	AGR (%)	Medium D/TA	AGR (%)	Small D/TA	AGR (%)	Profit-making D/TA	AGR (%)	Loss-making D/TA	AGR (%)	Aggregate D/TA	AGR (%)
1990/91	0.486	---	0.340	---	0.142	---	0.355	---	0.355	---	0.355	---
1991/92	0.633	30.178	0.477	40.392	0.156	9.859	0.365	8.799	0.546	53.624	0.456	28.451
1992/93	0.551	-12.961	0.345	-27.654	0.294	88.462	0.396	8.430	0.424	22.400	0.411	-10.08
1993/94	0.363	-34.140	0.457	30.502	0.406	38.095	0.344	-13.084	0.469	10.803	0.407	-0.731
1994/95	0.309	-14.936	0.463	2.663	0.359	-11.576	0.289	-15.985	0.474	1.013	0.382	-6.143
1995/96	0.352	14.100	0.556	20.245	0.438	22.006	0.337	16.828	0.567	19.515	0.472	23.561
1996/97	0.271	-23.153	0.590	5.992	0.429	-2.055	0.267	-20.984	0.561	-0.971	0.414	-12.288
1997/98	0.231	-14.695	0.640	8.536	0.434	1.243	0.212	-20.630	0.618	10.089	0.415	0.242
1998/99	0.225	-2.384	0.515	-19.583	0.365	-15.886	0.097	-54.253	0.611	-1.004	0.354	-14.698
1999/00	0.217	-3.774	0.851	65.285	0.389	6.387	0.120	23.967	0.797	30.357	0.458	29.379
2000/01	0.245	13.149	0.798	-6.152	0.376	-3.173	0.164	36.333	0.737	-7.478	0.451	-1.528
2001/02	0.239	-2.345	0.638	-20.125	0.313	-16.829	0.112	-31.296	0.650	11.907	0.381	-15.531
2002/03	0.258	7.829	0.615	-3.607	0.353	12.780	0.136	21.352	0.651	0.185	0.394	3.413
Mean	0.337	-3.594	0.559	8.041	0.343	10.776	0.245	-3.377	0.574	6.819	0.412	2.001
S.D.	0.137	---	0.153	---	0.096	---	0.108	---	0.124	---	0.039	---
C.V.	40.653	---	27.370	---	27.988	---	44.082	---	21.603	---	9.489	---

Source: Computed on the basis of data presented in appendix no. 7.1 to 7.5

Notes: S.D. = Standard deviation, C.V. = Coefficient of variance, D= Interest-bearing debt, TA =Total assets, AGR = Annual growth rate in percent.

Table 7.3 also depicts that the interest-bearing debt has varied widely with in each type of company from 0.217 to 0.633 in big, from 0.340 to 0.851 in medium, from 0.142 to 0.438 in small, from 0.097 to 0.396 in profit-making, and from 0.355 to 0.797 in loss-making company. The coefficient of variance in interest-bearing debt is the lowest for loss-making (21.603) followed by medium (27.370), small (27.988), big (40.653), and profit-making (44.082) companies. Comparatively, profit-making and big companies have higher variability in interest-bearing debt. From the above analysis it is observed that greater the size, higher is the fluctuation in interest-bearing debt, and higher the profitability, greater is the fluctuation in interest-bearing debt of the companies.

It is also observed that the growth rate of interest-bearing debt is 10.776 the highest for small company followed by medium (8.041), loss-making (6.819), profit-making (-3.377), and big (-3.594) companies. The growth rate of interest-bearing debt for all selected companies is 2.001. Thus, small, medium, and loss-making companies have greater growth rates than aggregate growth rate, but profit-making and big companies have lower growth rates than aggregate growth rate. The positive growth rates of small, medium, and loss-making companies reveal that the interest-bearing debt is in increasing trend. On the other hand, the negative growth rates of profit-making and big companies reveal that the interest-bearing debt is in decreasing trend.

iv. Interest

To fit the interest variable on regression model, it has been deflected from the total assets of respective companies. Deflected interest provides a quantitative figure representing relative value. Time series distributions of interest followed by mean, standard deviation and covariance are computed to analyze the descriptive attributes of interest over the study period, and presented in Table 7.4.

Table 7.4

**Interest and Its Growth Trends: Big, Medium,
Small, Profit-making and Loss-making Companies
1990/91-2002/03**

FY	Big		Medium		Small		Profit-making		Loss-making		Aggregate	
	I/TA	AGR (%)	I/TA	AGR (%)	I/TA	AGR (%)	I/TA	AGR (%)	I/TA	AGR (%)	I/TA	AGR (%)
1990/91	0.083	---	0.033	---	0.001		0.053	---	0.033	---	0.043	---
1991/92	0.101	22.267	0.070	117.526	0.008	700	0.099	87.255	0.069	109.022	0.085	95.647
1992/93	0.086	-14.238	0.088	25.592	0.016	100	0.048	-51.637	0.086	23.741	0.067	-20.593
1993/94	0.046	-47.104	0.055	-37.359	0.018	9.375	0.024	-50.000	0.057	-33.432	0.041	-39.365
1994/95	0.043	-6.934	0.059	6.025	0.018	2.857	0.028	3.333	0.063	10.044	0.042	2.838
1995/96	0.051	18.235	0.082	39.773	0.016	-11.111	0.029	18.548	0.083	31.746	0.053	27.394
1996/97	0.041	-17.910	0.092	12.195	0.043	170.833	0.018	-37.415	0.095	13.976	0.057	6.159
1997/98	0.042	2.424	0.085	-7.609	0.033	-24.615	0.015	-20.652	0.091	-4.651	0.052	-7.257
1998/99	0.018	-57.396	0.077	-9.804	0.020	-38.776	0.005	-65.753	0.068	-25.055	0.036	-30.725
1999/00	0.023	29.028	0.081	5.653	0.048	137.500	0.017	239.600	0.077	13.905	0.047	29.449
2000/01	0.026	11.518	0.089	9.877	0.031	-34.737	0.004	-74.441	0.082	6.753	0.043	-7.917
2001/02	0.025	-4.054	0.078	-11.985	0.029	-6.452	0.006	35.484	0.073	-10.949	0.040	-8.620
2002/03	0.025	1.107	0.069	-11.489	0.036	22.414	0.013	122.789	0.068	-7.651	0.040	2.049
Mean	0.047	-5.255	0.074	11.533	0.024	85.607	0.027	17.259	0.073	10.621	0.050	4.088
S.D.	0.027	---	0.017	---	0.014	---	0.026	---	0.016	---	0.014	---
C.V.	57.447	---	22.973	---	58.333	---	96.296	---	21.918	---	28.00	---

Source: Computed from the Data Presented in Appendix No. 7.1 to 7.5

Notes: S.D. = Standard Deviation, C.V. = Coefficient of Variance, I/TA = Interest to Total Assets Ratio, AGR = Annual Growth Rate in Percent.

Table 7.4 shows that the mean value of interest for medium company is the highest (0.074), followed by loss-making (0.073), big (0.047), profit-making (0.027) and small company (0.024). The overall mean value of interest for the selected companies is 0.050. Thus, medium and loss-making companies have higher mean value, but small and profit-making companies have lower one over the aggregate mean. These means reflect that the interest is associated with the size and profitability of the companies. The loss-making and medium companies have relatively higher mean values, reflecting interest as an important financial expense.

Table 7.4 also depicts the variations of interest within each type of company from 0.018 to 0.101 in big, from 0.033 to 0.092 in medium, from 0.001 to 0.048 in small, from 0.004 to 0.099 in profit-making and from 0.033 to 0.091 in loss-making company. The coefficient of variance of interest is 21.918 the lowest for loss-making company followed by medium (22.973), big (57.447), small (58.333) and profit-making (96.296) companies. For the selected companies, the overall coefficient of variance is 28.000. Thus, big, small and profit-making companies have higher coefficient of variance, however the loss-making, and medium companies have lower coefficients of variance than aggregate coefficient. Comparatively, profit-making company has higher variability followed by small, big, medium and loss-making companies. This analysis has reflected that higher the size, higher is the fluctuation in interest and also greater the profitability, greater is the fluctuation in interest expense.

The growth rate of interest is the highest for small (85.607) followed by profit-making (17.259), medium (11.533), loss-making (10.621), and big (-5.259) companies. The overall growth rate of interest for all the selected companies is 4.088 percent. Thus, small, medium, profit-making and loss-making companies have greater growth rates, whereas big company has lower growth rate than

aggregate growth rate. The positive growth rates of small, medium, profit-making, and loss-making companies reveal that the interest is in increasing trend. On the other hand, the negative growth rate of big company reveals interest is in decreasing trend.

3. Relationship of Debt Tax Shield with Value of the Firms:

With the purpose to examine relation of debt tax shield with firm's value, primarily the market value has been regressed on interest-bearing debt and operating income. Interest has also been introduced as an explanatory variable in the same regression equation to estimate the relationship. In the meantime, the market value of sample firms has been regressed on debt tax shield and operating income.

i. Regression of Market Value on Operating Income and Debt

The results of regression of market value with interest-bearing debt and operating income are presented in Table 7.5.

For big companies, Table 7.5 shows that the regression coefficients of interest-bearing debt (D/TA) and operating income (FOI/TA) are (-0.531) and (0.934). These results indicate, with (FOI/TA) held constant, a unit increase in (D/TA) is associated with an average decrease of 0.531 in (VL/TA). Similarly, with (D/TA) held constant, a unit increase in (FOI/TA) is associated with an average increase of 0.934 in (VL/TA). However, both the explanatory coefficients are not statistically significant. The week value of R^2 and insignificant 'F' value do not suggest the good fitness of the regression model.

For medium companies, the regression coefficients of interest-bearing debt (D/TA) and operating income (FOI/TA) are (0.847) and (0.705). These results indicate, with (FOI/TA) held constant, a unit increase in (D/TA) is associated with an average increase of 0.847 in (VL/TA). Similarly, with (D/TA)

held constant, a unit increase in (FOI/TA) is associated with an average increase of 0.705 in (VL/TA). However, the coefficient of (D/TA) is statistically significant and that of (FOI/TA) is statistically insignificant. The value of R^2 is comparatively stronger and 'F' value is statistically significant, suggesting the better fitness of the linear model.

Table 7.5

Regression of Firm Value on Operating Income and Interest Bearing Debt

Listed Manufacturing Companies

(1990/91 – 2002/03)

Dependent Variable: VL/TA, (Equ. 14)

S.N	States of Nature	Constant	Explanatory Variables		R^2	F	N
			FOI/TA	**D/TA**			
1	Big	1.359* (4.474)	0.934 (0.475)	-0.531 (-1.098)	0.064	1.239	39
2	Medium	0.250* (4.337)	0.705 (1.501)	0.847* (8.165)	0.779	49.352*	31
3	Small	1.281* (9.153)	-2.635*** (1.851)	-0.552 (-1.711)	0.236	3.400**	25
4	Profit-making	1.233* (5.526)	0.580 (0.362)	0.123 (0.222)	0.004	0.082	48
5	Loss-making	0.212* (3.961)	0.496 (1.231)	0.835* (9.386)	0.702	51.802*	47
6	Total Sample	0.971* (7.436)	2.588*** (2.759)	0.262 (1.172)	0.113	5.848**	95

Notes: Figures in parenthesis are t-values.

* Significant at 1 percent, ** Significant at 5 percent, *** Significant at 10 percent,

Source: Computed on the basis of data presented in Appendices 5 (a- j).

For small companies, Table 7.5 shows that the regression coefficients of interest-bearing debt (D/TA) and operating income (FOI/TA) are (-0.552) and (-2.635) respectively. These results indicate, with (FOI/TA) held constant, a unit increase in (D/TA) is associated with an average decrease of 0.552 in (VL/TA).

Similarly, with (D/TA) held constant, a unit increase in (FOI/TA) is associated with an average decrease of 2.635 in (VL/TA). However, the coefficient of (D/TA) is statistically insignificant and that of (FOI/TA) is statistically significant. The value of R^2 is weak and that of 'F' is statistically significant, suggesting lack of adequate evidence for the good fitness of the linear model.

For profit-making companies, the regression coefficients of interest-bearing debt (D/TA) and operating income (FOI/TA) are (0.123) and (0.580). These results indicate, with (FOI/TA) held constant, a unit increase in (D/TA) is associated with an average increase of 0.123 in (VL/TA). Similarly, with (D/TA) held constant, a unit increase in (FOI/TA) is associated with an average increase of 0.580 in (VL/TA). The signs of these coefficients show the positive association of both operating income and debts with the market value of the firm. However, both the explanatory coefficients are not statistically significant. The week value of R^2 and insignificant 'F' value do not suggest the good fitness of the linear model.

For loss-making companies, Table 7.5 shows that the regression coefficients of interest-bearing debt (D/TA) and operating income (FOI/TA) are (0.835) and (0.496) respectively. These results indicate, with (FOI/TA) held constant, a unit increase in (D/TA) is associated with an average increase of 0.835 in (VL/TA). Similarly, with (D/TA) held constant, a unit increase in (FOI/TA) is associated with an average increase of 0.496 in (VL/TA). However, the coefficient of (D/TA) is statistically significant and that of (FOI/TA) is statistically insignificant. The value of R^2 is comparatively stronger and that of 'F' is statistically significant, suggesting the better fitness of the linear model.

For total sample companies also the market value has also been regressed with operating income and debts. The computed regression coefficients of debt (D/TA) and operating income (FOI/TA) are (0.262) and

(2.588) respectively. These results indicate that, with (FOI/TA) held constant, a unit increase in (D/TA) is associated with an average increase of 0.262 in (VL/TA). Similarly, with (D/TA) held constant, a unit increase in (FOI/TA) is associated with an average increase of 2.588 in (VL/TA). The prefixed signs of these coefficients imply that the debt is positively associated with the market value of the firm and operating income is also positively associated with the market value of the firm. However, the regression coefficient of debt is not statistically significant. But, the regression coefficient of operating income is statistically significant. The value of R^2 is not so stronger to explain the variation of dependent variable (VL/TA). Eventually, the statistically significant 'F' value suggests the good fitness of the linear model.

ii. Regression of Market Value on Operating Income and Interest

The market value of the firm has also been regressed with operating income and interest and the results are presented in Table 7.6.

For big companies, Table 7.6 depicts that the regression coefficients of interest (I/TA) and operating income (FOI/TA) are (-1.773) and (1.687). These results indicate, with (FOI/TA) held constant, a unit increase in (I/TA) is associated with an average decrease of 1.773 in (VL/TA). Similarly, with (I/TA) held constant, a unit increase in (FOI/TA) is associated with an average increase of 1.687 in (VL/TA). The observed signs of these coefficients imply that the interest on debt is negatively associated, but operating income is positively associated with the market value of the firm. However, both the explanatory coefficients are not statistically significant. The week value of R^2 and insignificant 'F' value do not suggest the good fitness of the linear model.

Table 7.6

Regression of Firm Value on Operating Income and Interest

Listed Manufacturing Companies

1990/91-2002/03

Dependent Variable: VL/TA, (Equ. 15)

S.N	States of Nature	Constant	Explanatory Variables		R^2	F-Ratio	N
			FOI/TA	I/TA			
1	Big	1.203* (4.316)	1.687 (0.919)	-1.773 (-0.498)	0.040	0.744	39
2	Medium	0.308* (5.209)	0.740 (1.412)	5.317* (7.003)	0.728	37.555*	31
3	Small	1.205* (16.592)	-2.345** (-2.059)	-5.863* (-4.141)	0.514	11.616*	25
4	Profit-making	1.206* (6.960)	-0.103 (-0.064)	5.514 (1.574)	0.055	1.299	48
5	Loss-making	0.301* (5.349)	0.315 (0.660)	5.346* (7.378)	0.600	32.999*	47
6	Total Sample	0.913* (8.379)	2.793** (3.065)	1.233 (0.859)	0.107	5.495***	95

Notes: Figures in parenthesis are t-values.

* Significant at 1 percent, ** Significant at 5 percent, *** Significant at 10 percent,

Source: Computed on the basis of data presented in Appendices 5 (a- j).

For medium companies, the regression coefficients of interest (I/TA) and operating income (FOI/TA) are (5.317) and (0.740). These results indicate, with (FOI/TA) held constant, a unit increase in (I/TA) is associated with an average increase of 5.317 in (VL/TA). Similarly, with (I/TA) held constant, a unit increase

in (FOI/TA) is associated with an average increase of 0.740 in (VL/TA). The observed signs of these coefficients imply that the interest on debt and operating income both are positively associated with the value of the firm. However, the coefficient of (I/TA) is statistically significant and that of (FOI/TA) is statistically insignificant. The value of R^2 is comparatively stronger and that of 'F' is statistically significant, suggesting the better fitness of the linear model.

For small companies, the regression coefficients of explanatory variables interest (I/TA) and operating income (FOI/TA) are (-5.863) and (-2.345). These results indicate, with (FOI/TA) held constant, a unit increase in (I/TA) is associated with an average decrease of 5.863 in (VL/TA). Similarly, with (I/TA) held constant, a unit increase in (FOI/TA) is associated with an average decrease of 2.345 in (VL/TA). The observed signs of these coefficients imply that both interest and operating income are negatively associated with the value of the firm. Similarly, both coefficients are statistically significant. The value of R^2 is comparatively stronger and that of 'F' is statistically significant, suggesting the better fitness of the linear model.

For profit-making companies, the regression coefficients of explanatory variables interest (I/TA) and operating income (FOI/TA) are (5.514) and (-0.103). These results indicate, with (FOI/TA) held constant, a unit increase in (I/TA) is associated with an average increase of 5.514 in (VL/TA). Similarly, with (I/TA) held constant, a unit increase in (FOI/TA) is associated with an average decrease of 0.103 in (VL/TA). The signs of these coefficients imply positive association of interest and negative association of operating income with the value of the firm. However, both the explanatory coefficients are not statistically significant. The week value of R^2 and insignificant 'F' value do not suggest the good fitness of the linear model.

For loss-making companies, Table 7.6 shows that the regression coefficients of interest (I/TA) and operating income (FOI/TA) are (5.346) and (0.315). These results indicate, with (FOI/TA) held constant, a unit increase in (I/TA) is associated with an average increase of 5.346 in (VL/TA). Similarly, with (I/TA) held constant, a unit increase in (FOI/TA) is associated with an average increase of 0.315 in (VL/TA). However, the coefficient of (I/TA) is statistically significant and that of (FOI/TA) is statistically insignificant. The value of R^2 is comparatively stronger and that of 'F' is statistically significant, suggesting better fitness of the linear model.

For total sample, the regression results are also presented in Table 7.6. The computed regression coefficients of interest (I/TA) and operating income (FOI/TA) are (1.233) and (2.793). These results indicate, with (FOI/TA) held constant, a unit increase in (I/TA) is associated with an average increase of 1.233 in (VL/TA). Similarly, with (I/TA) held constant, a unit increase in (FOI/TA) is associated with an average increase of 2.793 in (VL/TA). The observed signs of these coefficients imply both interest and operating income are positively associated with the market value of the firm. However, the regression coefficient of interest is not statistically significant, but that of operating income is statistically significant. The value of R^2 is not so stronger to explain the variation of dependent variable (VL/TA). About 11 percent variations in firm's market value are explained by operating income and interest. Eventually, the statistically significant 'F' value suggests the good fitness of the linear model.

iii. Regression of Market Value on Operating Income and Debt Tax Shield

The value of the firm has also been regressed with operating income and debt tax shield and the results are presented in Table 7.7.

Table 7.7

Regression of Market Value on Operating Income and Debt Tax Shield

Listed Manufacturing Companies

1990/91- 2002/03

Dependent Variable: VL/TA, (Equ.16)

S.N	States of Nature	Constant	Explanatory Variables		R^2	F	N
			FOI/TA	DTS/TA			
1	Big	1.239* (4.799)	1.634 (0.913)	-10.342 (-0.813)	0.51	0.958	39
2	Medium	0.423* (6.623)	1.350** (2.170)	15.597* (4.682)	0.581	19.409*	31
3	Small	1.377* (16.155)	-2.208** (-2.098)	-46.263* (-4.900)	0.586	15.582*	25
4	Profit-making	1.232* (6.809)	0.355 (0.220)	7.807 (0.606)	0.011	0.241	48
5	Loss-making	0.409** (7.195)	0.774 (1.431)	16.272* (5.369)	0.459	18.690*	47
6	Total Sample	0.920* (8.510)	2.798** (3.080)	5.623 (0.961)	0.108	5.598**	95

Notes: Figures in parenthesis are t-values.

* Significant at 1 percent, ** Significant at 5 percent, *** Significant at 10 percent,

Source: Computed on the basis of data presented in Appendices 5 (a- j).

For big companies, the regression coefficients of debt tax shield (DTS/TA) and operating income (FOI/TA) are (-10.342) and (1.634). These results indicate, with (FOI/TA) held constant, a unit increase in (DTS/TA) is associated with an average decrease of 10.342 in (VL/TA). Similarly, with (DTS/TA) held constant, a unit increase in (FOI/TA) is associated with an average increase of 1.634 in (VL/TA). The observed signs of these coefficients imply debt tax shield is negatively associated, but operating income is positively associated with the value of the firm. However, both the explanatory coefficients are not statistically significant. The week value of R^2 and insignificant 'F' value do not suggest the good fitness of the linear model.

For medium companies, the regression coefficients of (DTS/TA) and operating income (FOI/TA) are (15.597) and (1.350). These results indicate, with (FOI/TA) held constant, a unit increase in (DTS/TA) is associated with an average increase of 15.597 in (VL/TA). Similarly, with (DTS/TA) held constant, a unit increase in (FOI/TA) is associated with an average increase of 1.350 in (VL/TA). The observed signs of these coefficients imply both debt tax shield and operating income are positively associated with the value of the firm. Similarly, both coefficients of (DTS/TA) and (FOI/TA) are statistically significant. The value of R^2 is comparatively stronger and that of 'F' is statistically significant, suggesting the better fitness of the linear model.

For small companies, the regression coefficients of explanatory variables debt tax shield (DTS/TA) and operating income (FOI/TA) are (-46.263) and (-2.208). These results indicate, with (FOI/TA) held constant, a unit increase in (DTS/TA) is associated with an average decrease of 46.263 in (VL/TA). Similarly, with (DTS/TA) held constant, a unit increase in (FOI/TA) is associated with an average decrease of 2.208 in (VL/TA). The observed signs of these coefficients imply both debt tax shield and operating income are negatively associated with the value of the firm. The coefficient of (DTS/TA) is statistically significant and

that of (FOI/TA) is also statistically significant. The value of R^2 is comparatively stronger and that of 'F' is statistically significant, suggesting the better fitness of the linear model.

For profit-making companies, the regression coefficients of explanatory variables interest (DTS/TA) and operating income (FOI/TA) are (7.807) and (0.355). These results indicate, with (FOI/TA) held constant, a unit increase in (DTS/TA) is associated with an average increase of 7.807 in (VL/TA). Similarly, with (DTS/TA) held constant, a unit increase in (FOI/TA) is associated with an average decrease of 0.355 in (VL/TA). The signs of these coefficients imply both the explanatory variables are positively associated with the value of firm. However, both the explanatory coefficients are not statistically significant. The week value of R^2 and insignificant 'F' value do not suggest the good fitness of the linear model.

For loss-making companies, Table 7.7 shows that the regression coefficients of debt tax shield (DTS/TA) and operating income (FOI/TA) are (16.272) and (0.774). These results indicate, with (FOI/TA) held constant, a unit increase in (DTS/TA) is associated with an average increase of 5.346 in (VL/TA). Similarly, with (DTS/TA) held constant, a unit increase in (FOI/TA) is associated with an average increase of 0.315 in (VL/TA). However, the coefficient of (DTS/TA) is statistically significant, but that of (FOI/TA) is statistically insignificant. The value of R^2 is comparatively stronger and that of 'F' is statistically significant, suggesting the better fitness of the linear model.

For total sample, the computed regression coefficients of debt tax shield (DTS/TA) and operating income (FOI/TA) are (5.623) and (2.798). These results indicate, with (FOI/TA) held constant, a unit increase in (DTS/TA) is associated with an average increase of 5.623 in (VL/TA). Similarly, with (DTS/TA) held constant, a unit increase in (FOI/TA) is associated with an average increase of

2.798 in (VL/TA). The observed signs of these coefficients imply both debt tax shield and operating income are positively associated with the market value of the firm. However, the regression coefficient of debt tax shield is not statistically significant. The regression coefficient of operating income is statistically significant. The value of R^2 is not stronger to explain the variation of dependent variable (VL/TA). But the statistically significant 'F' value suggests the good fitness of the model.

4. Summing up

This chapter has analyzed the debt tax shield and its association with the market value of the companies. Different size-wise and profitability-wise states of nature of the companies have been considered purposefully for examining diverse associations between debt tax shield and market value of the companies. An emphasis also has been given to estimate association of debt tax shield with market value of the firm by employing Kemsley and Nissim (2002) regression model. In the model, market value is employed as dependent variable and debts, interest, debt tax shield, and operating income are employed as explanatory variables.

Descriptive analysis of market value has revealed that it differs widely across the size and profitability of the companies. Accordingly, the market values of big and profit-making companies are slightly higher than the book value of their total assets. However, the market values of small, medium, and loss-making companies are much lower than book value of their total assets. In majority companies under study, market values are lower than the book values of the total assets. Comparatively, small company has lower variability in market value followed by loss-making, medium, profit-making and big companies. This analysis reflects that higher the size, higher is the fluctuation in market value and higher the profitability, higher is the fluctuation in market value of the companies.

However, in an aggregate, the positive growth rates suggest that the market value of company is in increasing trend.

The operating income also differs widely across the size and profitability of the companies. The total assets of big and profit-making companies are comparatively generating more operating income. The profit-making company has lower variability in operating income followed by small, big, loss-making and medium companies. This analysis reflects that higher the size, higher is the fluctuation in operating income, and higher the profitability, lower is the fluctuation in operating income. The operating income is in decreasing trend for profit-making, medium, and loss-making companies and it is in increasing trend for big and small companies.

In another case, the interest-bearing debt is also associated with the size and profitability of the companies. The loss-making and medium companies have relatively higher mean value reflecting debt as an important source of funds for financing investments. Relatively, profit-making company has higher variability of debt followed by big, small, medium and loss-making companies. This reflects that higher the size, higher is the fluctuation in debt, and also greater the profitability, greater is the fluctuation in debt. The growth rate of debt is the highest for small company followed by medium, loss-making, profit-making, and big companies. The positive growth rates for small, medium, and loss-making companies suggest that the interest-bearing debt is in increasing trend. On the other hand, the negative growth rates for profit-making, and big companies suggest that the operating income is in decreasing trend.

Likewise, the interest is associated with the size and profitability of the companies. The loss-making and medium companies have relatively higher means reflecting interest as an important financial expense. Comparatively,

profit-making company has higher variability of interest followed by small, big, medium and loss-making companies. This reflects that higher the size, higher is the fluctuation in interest, and greater the profitability, greater is the fluctuation in interest. The interest has been observed to be in increasing trend for small, medium, profit-making, and loss-making companies. On the other hand, it has been observed to be in decreasing trend for big company.

The regression coefficient of interest-bearing debt is statistically significant to medium companies. Similarly, the coefficient of interest-bearing debt is statistically significant to loss-making companies. The signs of these explanatory coefficients for both companies have signaled a positive association of interest-bearing debt to market value. On the other hand, the explanatory coefficients of interest are statistically significant for medium, small, and loss-making companies, but statistically insignificant for big, and profit-making companies. Further, interest is positively associated to the market value of the medium, and loss-making companies, but it is negatively associated with the market value of big, and small companies.

The regression results of total sample indicate that interest-bearing debt, interest, and debt tax shield are not associated to market value significantly. Therefore, it can be stated that debt tax shield does not have significant association with market value.

So far as the regression result of market value on debt variables is concerned, it is concluded that the debt tax shield and market value are positively associated for medium, and loss-making companies. This observation supports the findings of Modigliani and Miller (1963), Sarma and Rao (1969), Taggart (1980), Sarnat and Levy (1990), Graham (2000), and Kemsley and Nissim (2002) studies. But, this observation contradicts with the findings of Modigliani and Miller

(1958), Miller (1977), Myers (1984), Myers and Majluf (1984), Miller and Rock (1985), Eckbo (1986) and Fama and French (1998) studies.

On the basis of observed regression results, it has been noticed that there exists a negative relationship between debt tax shield and market value for big, and small companies. Also, the regression results for all the selected companies indicate that interest-bearing debt, interest, and debt tax shield are not associated to market value significantly. Therefore, debt tax shield does not have additive effect on market value of the companies. This observation supports the findings of Modigliani and Miller (1958), Miller (1977), Myers (1984), Myers and Majluf (1984), Miller and Rock (1985), Eckbo (1986), and Fama and French (1998) studies. However, this observation contradicts with the findings of Modigliani and Miller (1963), Sarma and Rao (1969), Taggart (1980), Sarnat and Levy (1990), Graham (2000), and Kemsley and Nissim (2002) studies.

CHAPTER - VIII

CORPORATE INCOME TAX AND
DEBT FINANCING: AN OPINION SURVEY

This chapter deals with the opinions of the respondents in respect to corporate income tax and debt financing of manufacturing listed companies. Basically, this chapter examines the inclination of officials of sample companies towards sources of funds, influence of tax factors on retained earning as well as debt and new equity financings. In this chapter, further attempts have been made to analyze effects of tax factors on debt-equity mix, influence of corporate income tax on operating cash flows and price of equity. In last section of this chapter, respondents' views towards few general observations in regard with corporate income tax and debt financing have been analyzed.

1. General Background

A firm has three major sources of funds: they are retained earnings, issue of new share, and debt (King, 1995:158). In this regard, tax induced financing hierarchy suggests that debt and retained earnings are preferable over new share issue. For many tax systems, debt finance is preferable to retained earnings as well. Thus, debt, retained earnings, preference share, and new equity share is the order of preference of financing sources based on tax induced financing hierarchy (Lyon, 1995: 201).

One of the advantages of debt is that the interest payments are deductible for income tax purpose (Van Horne, 2000: 295). Likewise, personal taxation rate of interest is less than the rate of corporate income taxation (Lyon, 1995: 201). Consequently, the corporate income tax system motivates the firm to issue debt, since the firm can shield a part of its operating profits from taxation (Shevlin, 1999: 10). Moreover, in most of the countries, the tax laws give a definite cost advantage to debt financing over preferred stock and new equity issue because of tax-deductible interest (Martin, et al., 1991). However, the cash-flow ability of the company to service debt, determines the level of debt from the financial manager's point of view (Graham, et al., 1985: 416).

Debt related securities are senior to which firm has to pay interest first. Common shares are residual securities to which firm has to pay dividend only after meeting all operational and financial charges when the firm is earning enough profit. This seniority and residual status of debt and equity may affect the firm's preference over the sources of funds (Smith, 1952: 35). Besides, the existence of sound relationship between banks and firms is likely to mitigate the information problem that arises when debt and equity are diffusedly held. Banks serve as corporate creditors, which gather information, and monitor firms that are demanding funds (Requejo, 1996: 53). In addition, the desire to retain effective control of a company could lead management to adopt a higher level of debt than would otherwise be desirable in order to avoid issuing additional voting stock (Sarnat and Levy, 1986: 385). Depending upon these theoretical assertions, it can be argued that various factors like: specific cost of capital (coupon rate of interest, expected dividend), effects of corporate income tax, lending procedure of commercial banks, desire of management to retain effective control, debt servicing ability of the firms, and seniority and residual status of the securities, may influence the firm's preference over the different sources of funds.

The financing theories assert that the type of assets owned by a firm affects its financing choice. So, structure of assets is another factor that should be taken into consideration while fixing the debt-equity mix of the firm. As a result, capital-intensive firm with securable fixed assets uses relatively more debt, whereas labor-intensive firm that has less securable fixed assets uses less debt and more equity (Titman and Wessels, 1988: 3).

The tax incentive for a company to use debt depends on the company's ability to generate sufficient earnings from which interest payments can be deducted before determining the taxable income (DeAngelo and Masulis, 1980: 4). It means the companies with high and stable earnings have more ability to take advantages of tax incentives (Graham, 1985: 416). Further, the past profitability position of a firm and the amount of earnings that are retained in the business are other important determinants of its current debt level (Titman and Wessels, 1988: 6). In this background, the expected risk associated with the debts of a manufacturing firm also affects its debt-equity mix (Flath and Knoeber, 1980: 113).

Many authors have suggested that the big firms have higher level of debt in their financing mix as compared to small firms where they use lower level of debt and higher level of equity (Warner, 1977: 239). Regarding the issue of equity securities, size may be related to the accessibility to capital markets and economies of scale (Marsh, 1982: 141).

The tax deductibility of interest payments positively impacts future cash flows, resulting in a preference for debt financing over equity. Debt has tax benefits; there is a positive relationship between debt and market value of the firm (Modigliani and Miller, 1963: 433). In other words, use of debt in financing mix does affect future cash flows, which in turn impact the firm's market value (Clark 1993: 29). However, the effective tax advantage available to the firms from

using debt is less than the benefits of statutory income tax from using debt. Such advantages vary across the types of manufacturing firms (Cordes and Sheffrin, 1983: 95). Besides effective tax and statutory tax advantages, other tax advantages are also available to a firm which include carry-forward of losses, allowability to write off specified capital expenditures, allowability of operating expenses, interest versus dividend allowability and depreciation deductions. Thus, these are the major tax factors which have the effect on financing choice of the manufacturing companies (Mittal, 1989: 2).

Based on these theoretical assertions, a questionnaire form was devised and it was executed to collect the opinions of officials of Nepalese listed manufacturing companies. The collected opinions have been then used to analyze the influence of corporate income tax on debt financing along with other nontax factors.

2. Inclination towards Sources of Funds

An objective of opinion survey was to find out the preferred financing hierarchy of Nepalese manufacturing listed companies and to compare it with tax induced financing hierarchy. The financing hierarchy of a company depends upon the inclination of its officials towards different sources of funds. Tax induced financing hierarchy provides first priority to debt and second priority to retained earnings. To observe the preferred financing hierarchy of the sample companies, different sources of funds like: internal resource, issue of equity, issue of preference share and trade dues were allowed for ranking to the respondents (Appendix-8, Q.No.1). All the 76 respondents have answered this question. The patterns of ranking have shown the slight difference of opinions between the respondents from profit-making and loss-making companies. The mean value and rank of the responses pertaining to the inclination towards sources of funds are presented in Table 8.1.

Table 8.1

Inclination towards Sources of Funds:

Mean value and Rank of Responses

Sources of Funds	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
a. Institutional loans	4.026	3	4.447	2	4.237	2
b. Issue of debentures	2.737	4	3.158	4	2.947	4
c. Internal resources	4.501	2	3.526	3	4.013	3
d. Issue of equity shares	4.842	1	4.474	1	4.658	1
e. Issue of preference shares	2.289	6	2.501	6	2.395	6
f. Trade dues and creditors	2.605	5	2.895	5	2.751	5

Source: Appendix 8.1

With respect to inclination to the sources of funds, Table 8.1 reveals that the respondents from profit-making companies have given first priority to issue of equity share, second to internal resources, third to institutional loan, fourth to issue of debenture, fifth to trade dues and creditors, and sixth to issue of preference shares. Likewise, the respondents from loss-making companies have given first priority to issue of equity share, second to institutional loan, third to internal resources, fourth to issue of debentures, fifth to trade dues and creditors,

and sixth to issue of preference shares. In overall, equity, institutional loan, and internal resources are the preferred sources of funds to the manufacturing listed companies.

Both groups of respondent have given first priority to issue of equity share and last priority to issue of preference shares. Similarly, both groups of respondents have given fourth priority to issue of debenture and fifth priority to trade dues. Whatsoever, they have given different priorities to institutional loan and internal resources. The degree of relationship between responses of two groups is computed by employing Spearman rank correlation. In this regard, the observed rank correlation coefficient is 0.943 and the critical value for 6-paired observations is 0.823 at 0.05 significance level. The observed correlation coefficient, is thus, significant suggesting a positive relationship between the ranks assigned by respondents from two different groups (Appendix 8.1). Further, to observe whether there is any the difference in the preferences of the two different groups of respondents from profit-making and loss-making companies is significant or not, the chi-square test is employed. The observed chi- square value is 8.629 and its critical value for 5 degree of freedom is 11.07 at 0.05 significance level. Thus, the observed chi-square value is insignificant, suggesting similarity in views of respondents from two different groups with respect to the inclination towards sources of funds.

In a nutshell, it can be pointed out that the officials of Nepalese listed manufacturing companies prefer tax induced financing hierarchy to a noticeable extent.

The inclination of corporate officials towards different sources of funds is affected by several factors. The financial and nonfinancial limitations experienced in corporate circumstances may cause to build up specific opinion over the sources of funds too. Thus, to observe major factors of inclination towards the

sources of funds; all together six factors were allowed for ranking to the respondents (Appendix- 8, Q.No.2). All the 76 respondents have replied this question, which showed the differences in the patterns of ranking between the respondents from profit-making and loss-making companies. The mean value and rank of the responses, pertaining to the factors of inclination towards sources of funds, are presented in Table 8.2.

Table 8.2

Factors Influencing Inclination towards Sources of Funds:

Mean value and Rank of Responses

Factors Influencing Inclination	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
(a) Interest vs. expected dividend	2.395	6	2.316	6	2.355	5
(b)Corporate income tax effects	4.211	2	4.132	3	4.171	1
(c) Seniority and residual status	2.974	5	4.526	1	3.751	3
(d) Level of retained earnings	3.605	3	2.816	5	3.211	6
(e) Debt servicing capacity	4.632	1	2.974	4	3.803	2
(f)Ownership and control	3.184	4	4.237	2	3.711	4

Source: Appendix 8.2

Regarding the factors influencing the inclination, it is revealed from Table 8.2 that the respondents from profit-making companies have given first priority to debt servicing capacity, second to corporate income tax effects, third to level of retained earnings, fourth to ownership and control, fifth to seniority and residual status, and sixth to interest vs. expected dividend. Likewise, the respondents from loss-making companies have given first priority to seniority and residual status, second to ownership and control, third to corporate income tax effects, fourth to debt servicing capacity, fifth to level of retained earnings, and sixth to interest vs. expected dividend. In totality, corporate income tax effects, debt servicing capacity, and seniority and residual status are the major factors influencing the inclination of corporate officials towards the sources of funds.

It is also observed in the Table 8.2 that, both groups of respondent have given least priority to interest vs. expected dividend. Besides this, they have given different priorities to other remaining factors. Respondents from profit-making companies have given second priority, but respondents from loss-making companies have given third priority to corporate income tax effects. Thus, the degree of relationship between responses of two groups has been computed by employing Spearman rank correlation analysis. The rank correlation coefficient is observed at 0.029 and the critical value for 6-paired observations is 0.823 at 0.05 significance level. The observed correlation coefficient is thus insignificant suggesting absence of relationship between the ranks assigned by two different responding groups (Appendix 8.2). Further, to observe whether the difference in the views of the two different groups is significant or not, the chi-square test is employed. The observed chi- square value is 31.579 and its critical value for 5 degree of freedom is 15.086 at 0.01 significance level. The observed chi-square value is significant; suggesting the difference in opinions of respondents from different groups is significant with respect to the factors of inclination towards sources of funds.

In conclusion, it can be stated that the major factors influencing inclination towards sources of funds are different over the profitability positions of the companies. In addition, effect of corporate income tax is an important factor influencing the inclination of corporate officials towards the sources of funds. However, debt servicing capacity and, seniority and residual status of the securities are also influential in shaping specific inclination towards different sources of funds.

3. Reasons behind Borrowing

Entertaining loans from banks including financial institutions is one of the popular components for financing fixed as well as operating expenditures. Loans are the interest-bearing debt to a company and are served regularly within the agreed terms and conditions. A proper serving of debt requires deriving sufficient earnings and making payments of interest on a regular basis. Improper utilization of debt in the business limits the firm's ability to serve debt through regular payment of interest. In that sense, a risk is always associated with the borrowing. In spite of this risk, debt stands at the top of tax-induced financing hierarchy, because of its tax advantage. Therefore debts are preferable over other sources of funds. Recognizing this fact, firms usually include debt in their financing mix. However, in practice, borrowing may not be materialized always because of its tax advantage. Besides the tax advantage, there may be other advantages behind the borrowing of funds. It is therefore, an attempt has been made to explore reasons of borrowing funds in manufacturing companies. For this purpose three questions, were devised: one dichotomous and other two factors ranking, and included in the questionnaire distributed to the respondents (Appendix 8, Q.No. 3, 4, 5). All the 76 respondents replied for two questions only. The respondents from profit-making companies however responded the dichotomous question in similar pattern with that of respondents from loss-

making companies. The frequencies of their responses followed by percentage are presented in Table 8.3.

Table 8.3

Importance of Borrowing: Frequencies and Percentage

Responses	Respondents from				Overall	
	Profit-making Co.		Loss-making Co.			
	F	P	F	P	F	P
Yes	38	100	38	100	76	100
No	-	-	-	-	-	-
Total	38	100	38	100	76	100

Source: Field survey. (F = Frequency, P = Percent)

With respect to importance of borrowing, Table 8.3 shows that the responses of the question are affirmative. It means all respondents from profit-making and loss-making companies have recognized the importance of borrowing. This 100 percent affirmative response has indicated that debt component occupies its prominent place in the financing mix irrespective of the profitability status of the company.

Based on the opinions of respondent it can undoubtly be confirmed that borrowing is an important and popular source of funds to the companies. Despite, there may be different reasons of borrowing to the companies. Thus, a reasons seeking question, with respect to borrowing, was devised and included in survey questionnaire distributed to the respondents. The mean value and rank of responses to this question are presented in Table 8.4.

Table 8.4

Reasons behind Borrowing:

Mean value and Rank of Responses

Reasons	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
(a) Positive attitude of managers on debt capital	3.079	5	2.816	6	2.947	6
(b) Advantage of interest tax shield	4.289	1	4.026	2	4.158	1
(c) Adequate earning to serve debt	3.158	4	3.132	5	3.145	4
(d) Lower rate of interest	2.974	6	3.158	4	3.066	5
(e) Inadequate internal funds	3.474	3	4.036	1	3.751	3
(f) Credibility of the company	4.026	2	3.842	3	3.934	2

Source: Appendix 8.3

As regards reasons behind borrowing, Table 8.4 reveals that the respondents from profit-making companies gave first priority to advantage of interest tax shield; second to credibility of the company; third to inadequate internal funds; fourth to adequate earning to serve debt; fifth to positive attitude of managers on debt capital; and sixth to lower rate of interest. Likewise, the respondents from loss-making companies gave first priority to inadequate internal funds; second to advantage of interest tax shield; third to credibility of the company; fourth to lower rate of interest; fifth to adequate earnings to serve debt;

and sixth to positive attitude of managers towards debt. However, in an average, the major reasons behind borrowing are: advantage of interest tax shield, credibility of the company, and inadequate internal funds.

The two groups of respondent have given different priorities to the reasons behind borrowing. Respondents from profit-making companies gave first priority to the advantage of interest tax shield, whereas respondents from loss-making companies gave second priority to it. Thus, the degree of relationship between responses of both groups is computed by employing Spearman rank correlation analysis. In this regard, the observed rank correlation coefficient is 0.657 and its critical value, at 0.05 level of significance, is 0.823. The observed correlation coefficient is thus insignificant suggesting there is no statistical relationship between the ranks assigned by respondents from two different groups (Appendix 8.3). Further, to observe whether the difference in the views of the two different groups of respondents from profit-making and loss-making companies is significant, the chi-square test is employed. The observed chi- square value is 15.172 and its critical value, for 5 degree of freedom, is 15.086 at 0.01 significance level. The observed chi-square value is thus significant, suggesting difference in the opinions of respondents from different groups is significant with respect to reasons behind borrowing funds.

Based on the opinions of the respondents, it can be concluded that the preferential reasons against borrowings are different between the two groups of respondents from profit-making and loss-making companies. The advantage of interest tax shield is the major reason for the borrowing of funds. However, credibility and earnings prospective of the company limit the level of borrowings.

4. Reasons behind Retained Earnings

Retained earning is the most important internal source of funds in terms of its cheapness and convenience. However, it depends on the level of earning, and

its retention policy of the firm. Usually, income tax system favors retained earnings. Consequently, tax induced financing hierarchy keeps it on the top next to debt. In this perspective, in order to survey the opinions of officials of sample companies, one dichotomous question was included in questionnaire distributed to them (Appendix 8, Q.No.6). All 76 respondents replied this question. The frequencies and percentage of their responses are presented in Table 8.5.

Table 8.5

Importance of Retained Earnings:

Frequencies and Percentage

Responses	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	F	P	F	P	F	P
Yes	38	100	30	79	68	89
No	-	-	8	21	8	11
Total	38	100	38	100	76	100

Source: Field Survey, (F = Frequency, P = Percentage)

Table 8.5 shows that the responses on the importance of retained earnings are mostly affirmative consisting 100 percent from profit-making and 79 percent from the loss-making companies. It means majority of respondents have recognized retained earnings as an important component of financing mix.

Based on the opinions of respondents, it can undoubtly be concluded that retained earning is an important component of financing mix of the manufacturing companies.

The reasons behind retaining of earnings might be different between the two groups of respondents from profit-making and loss-making companies. This may be so, because the profitability status affects the level of earnings retained

in the company. Thus, a ranking question was devised and included in the survey questionnaire to explore the major reasons of retaining earnings in the companies (Appendix 8, Q.No.7). Out of 76 respondents, 68 respondents replied this question. The mean value and rank of responses to this question are presented in Table 8.6.

Table 8.6

Reasons behind Retained Earnings:

Mean value and Rank of Responses

Reasons	Respondents from Profit-making Co.		Respondents from Loss making Co.		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
(a) Comparatively lower cost of capital	3.316	4	3.401	4	3.352	4
(b) Tax advantage to the shareholders	3.632	3	3.733	3	3.676	3
(c) Conveniently available of funds.	4.474	1	4.567	1	4.515	1
(d) Addition to owner's equity	4.316	2	4.334	2	4.323	2
(e) Necessary to maintain stock price.	2.631	6	2.467	6	2.559	6
(f) Relatively lower capital gain tax rate	2.632	5	2.501	5	2.574	5

Source: Appendix 8.4

It is observed in Table 8.6 that both groups of respondents gave first priority to conveniently available of funds; second to addition to owners' equity; third to tax advantage to the shareholders; fourth to comparatively lower cost of capital; fifth to relatively lower capital gain tax rate; and sixth to necessary to maintain stock price. Thus, the major reasons behind retained earnings are: conveniently available of funds, addition to owners' equity, and tax advantages to the shareholders.

Both groups of respondent gave first priority to conveniently available of funds and least priority to necessary to maintain stock price. Similarly, both groups of respondents gave third and fourth priorities equally to the tax related reasons. Thus, the degree of relationship between responses of both the responding groups is computed by employing Spearman rank correlation analysis. In this regard, the observed rank correlation coefficient is 1.000 and the critical value, for 6-paired observations at 0.01 significance level, is 0.928. The observed correlation coefficient, is thus, significant suggesting a positive relationship between the ranks assigned by respondents from two different groups (Appendix 8.4). Further, to observe whether the opinions of the two different groups of respondents from profit-making and loss-making companies in same patterns are statistically significant or not, the chi-square test is employed. The observed chi- square value is 1.886 and its critical value, for 5 degree of freedom at 0.05 significance level, is 11.07. The observed value of chi-square is less than its critical value. Thus the observed chi-square value is insignificant, suggesting similarity in views of respondents from different groups with respect to reasons behind retained earnings.

It can therefore be concluded that the reasons behind retained earnings are identical between the groups of respondents from profit-making and loss-making companies. Advantage of income tax to the shareholders is a major reason for retaining earnings in the manufacturing companies.

5. Reasons behind New Equity Issue

Issue of new equity share increases the number of common stockholders restraining voting right. Major motive of investment in stocks is to obtain dividend. Common stockholders thus expect sound dividend distribution to their investment. Usually, dividends on equity capital are residual. And it is distributed if any balance of profit remains after satisfying the income tax and interest recipients. As a return to the owner's contribution, dividend is distributed only in a situation when firm derives profit satisfactorily. No dividend is distributed even though there is less profit. In this sense, equity remains less risky than debts to the firm. Also, new equity dilutes the concentrated control of the limited owners. Equities occupy least option in the tax induced financing hierarchy as compared to other options, because it creates nondeductible expense to the firm for income tax purpose.

There may be several reasons including residual status behind choosing new equity issue as the source of funds to the companies. Therefore, an attempt has been made to find out the specific reasons for using new equity share in the companies. For accomplishing this purpose, two questions: one dichotomous and another ranking were devised and included in the survey questionnaire distributed to the respondents (Appendix 8, Q.No.8, 9). All the 76 respondents replied the dichotomous question. However, the respondents from profit-making companies have responded this question in similar pattern with that of respondents from loss-making companies. The frequencies of responses of the respondents followed by percentage are presented in Table 8.7.

As regards the importance of new equity issue, Table 8.7 shows that the responses are almost affirmative consisting 89 percent of profit-making companies and 84 percent of loss-making companies. On the other hand, only 11 percent respondents from profit-making and 13 percent respondents from loss-making companies replied in negative terms. Thus it is proved that the

majority of respondents from profit-making and loss-making companies have recognized the importance of new equity issue. These affirmative responses have indicated that the new equity component occupies its important place in financing mix irrespective of the profitability status of the company.

Table 8.7

Importance of New Equity Issue:

Frequencies and Percentage

Responses	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	F	P	F	P	F	P
Yes	34	89	32	84	66	87
No	4	11	6	16	10	13
Total	38	100	38	100	76	100

Source: Field Survey, (F = Frequency, P = Percentage)

Based on the opinions of respondents it can obviously be confirmed that new equity is an important and popular component of financing mix. Despite, the reasons influencing new equity are not identical for every business situation. In some situations it is necessary to dilute concentrated control with limited owners and in other situations it is necessary to cope with risk forestalling attitude of the managers. A reasons seeking question, with respect to new equity issue, was devised and included in survey questionnaire distributed to the respondents. Out of the 76 respondents, 66 respondents answered this question. The mean value and rank of responses to this question have been presented in Table 8.8.

Table 8.8

Reasons behind New Equity Issue:

Mean value and Rank of Responses

Reasons	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
(a) Dividend can be distributed after interest and tax.	4.382	2	4.406	2	4.394	2
(b) Negligible risk than debt.	4.235	3	4.219	3	4.227	3
(c) Non-debt tax shield substitutes debt tax shield.	2.529	6	2.531	6	2.531	6
(d) Uncertain future profits	4.647	1	4.501	1	4.576	1
(e) Lower collateral value of business assets.	2.559	5	2.656	5	2.606	5
(f) Desire to dilute control of limited owners.	2.647	4	2.688	4	2.667	4

Source: Appendix 8.5

As regards reasons of new equity issue, both groups of respondent gave first priority to uncertain future profits, second to dividend can be distributed after interest and tax, third to negligible risk than debt, fourth to desire to dilute control of limited owners, fifth to lower collateral value of business assets, and sixth to nondebt tax shield substitutes debt tax shield. In totality, the major reasons behind new equity issue are: uncertain future profits, dividend can be distributed after interest and tax, and negligible risk than on debt.

Both groups of respondent have given their priorities in identical patterns to the reasons behind issuing new equity shares. Similarly, both groups of respondent seemed to be identical in ranking the tax related reason. The degree of relationship between responses of two responding groups from profit-making and loss-making companies is computed by employing Spearman rank correlation analysis. In this regard, the observed rank correlation coefficient is 1.000 and the critical value, for 6-paired observations at 0.05 significance level, is 0.928. The observed correlation coefficient, is thus, significant suggesting a positive relationship between the ranks assigned by respondents from two different groups (Appendix 8.5). Further, for observing whether there is any significant difference in ranks assignment of two different groups of respondents from profit-making and loss-making companies, the chi-square test is employed. The observed chi- square value is 4.922 and its critical value for 5 degree of freedom at 0.05 significance level is 11.07. The observed chi-square value is insignificant, suggesting similarity in the opinions of respondents from different groups with respect to the reasons behind issuing new equity shares.

Therefore, it is observed that the reasons behind issuing of new equity shares are identical between two groups of respondents from profit-making and loss making companies. Tax related reason does not disfavor the issuing of new equity shares greatly in the context of manufacturing companies.

6. Factors Influencing Debt-Equity Mix

After analyzing importance and reasons behind: borrowing the funds, retaining the earnings, and issuing of new equity shares, it is reasonable to analyze the influence of corporate income tax in shaping debt-equity mix. Based on the opinions of the respondents on this matter some sort of relationship can be established between corporate income tax and debt-equity mix. Accordingly, a ranking question that allowed six factors to the respondents for ranking was

devised and included in the questionnaire (Appendix- 8, Q.No.10). All the 76 respondents replied this question. However, the patterns of ranking were different between the respondents from profit-making and loss-making companies. The mean value and rank of the responses pertaining to the factors influencing debt-equity mix are presented in Table 8.9.

Table 8.9

Factors Influencing Debt-Equity Mix: Mean value and Rank of Responses

Factors	Respondents from Profit-making Companies		Respondents from Loss-making Companies.		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
(a) Profitability status	4.658	1	4.106	3	4.382	1
(b) Tax benefits available	4.158	2	4.211	2	4.184	2
(c) Assets structure	2.842	5	2.947	4	2.895	4
(d) Risk associated with debt	3.895	3	4.316	1	4.105	3
(e) Cost of capital employed.	2.605	6	2.737	5	2.672	6
(f) Size of the company.	2.843	4	2.684	6	2.763	5

Source: Appendix 8.6

With respect to factors influencing debt-equity mix, Table 8.9 reveals that the respondents from profit-making companies have given first priority to profitability status of the company, second to tax benefits available under enacted tax laws, third to risk associated with debt, fourth to size of the company, fifth to assets structure, and sixth to cost of capital employed. Likewise, the

respondents from loss-making companies have given first priority to risk associated with debt, second to tax benefits available under enacted tax laws, third to profitability status of the company, fourth to assets structure, fifth to cost of capital employed, and sixth to size of the company. However, in totality, profitability status of the company, tax benefits available under enacted tax laws, and risk associated with debt are the major factors influencing debt-equity mix of the manufacturing companies.

Both groups of respondent have given different priorities to different factors. However, they have given similar priority to tax related factor. Respondents from profit-making companies gave the first priority and respondents from loss-making companies gave the second priority to the profitability status of the company. Thus, the degree of relationship between responses of two groups has been computed by employing Spearman rank correlation analysis. In this regard, the observed rank correlation coefficient is 0.601 and the critical value for 6-paired observations at 0.05 significance level is 0.928. The observed correlation coefficient is thus insignificant suggesting absence of relationship between the ranks assigned by respondents of two different groups (Appendix 8.6). Further, to observe whether difference in views of the two different groups of is significant, the chi-square test is employed. The observed chi- square value is 12.904 and its critical value for 5 degree of freedom at 0.01 significance level is 11.07. The observed chi-square value is thus significant, suggesting that the difference in opinions of respondents from different groups is significant with respect to factors influencing debt-equity mix.

In the nutshell, it can therefore be pointed out that the factors influencing debt-equity mix have been recognized differently between the groups of respondents from profit-making and loss-making companies. Tax benefit available under the enacted tax law is one of the major factors influencing debt-

equity mix. However, risk associated with the debt limits its maximum use. Similarly, profitability status limits debt-equity mix of the company as well.

7. Tax Influence to Debt Financing of the Companies

Theoretical assertions specify that extent of income tax influence on debt financing mainly depends upon size, and profitability of firms. Accordingly, big and profit-making firms are often influenced largely from corporate income tax than small and loss-making firms. Usually, loss-making firms are in tax arbitrating position because of loss carry-forward provisions. Similarly, the firms within high tax bracket are more conscious in making financing decisions so that incidence of future taxes could be minimized. Depending on these theoretical assertions, in present study, opinions of the officials of selected companies were collected through a rating question. All the 76 respondents replied this question. Their responses in scale-wise percentage are presented in Table 8.10.

Table 8.10

Corporate Tax Influence to Debt Financing of Different Companies

Percentage

Types of Company	Respon-dents	Fully Influence	Greatly Influence	Moderately Influence	Slightly Influence	Not at all Influence
(a) Big	P	13	39	32	16	0
	L	11	38	36	12	3
	T	12	38	34	14	2
(b) Medium	P	5	34	24	26	11
	L	5	29	26	29	11
	T	5	32	25	28	10
(c) Small	P	8	31	32	21	8
	L	8	26	34	21	11
	T	8	29	33	21	9
(d)Profit-making	P	18	42	26	14	0
	L	16	39	29	11	5
	T	17	41	28	11	3
(e)Loss-making	P	3	11	32	42	12
	L	0	16	29	37	18
	T	1	13	30	40	16

Source: Appendix 8.9 (P=Respondents from profit-making companies, L =Respondents from loss-making companies, T= Total)

Table 8.10 clearly shows that the majority of respondents from profit-making and loss-making companies have believed corporate income taxes influence debt financing of big company greatly. With this respect, the computed chi-square value is 2.331, which is less than its critical value 9.488 for 4 degree of freedom at 0.05 significance level. Thus, the difference in opinions of respondents between two groups is not significant. So, there is similarity in opinions of two different groups regarding the influence of corporate income tax on debt financing of big company.

Likewise, the majority of respondents opined that corporate income taxes influence debt financing of medium company greatly. Regarding this opinion, the computed value of chi-square is 14.861, which is greater than its critical value 9.488 for 4 degree of freedom at 0.05 significance level. Thus, the difference in opinions of respondents between two groups is significant. So, there is no similarity in the opinions of two responding groups from profit-making and loss-making companies about the influence of corporate income tax on debt financing of medium company.

It is observed in Table 8.10 that the majority of respondents have replied corporate income taxes moderately influence debt financing of small company. In relation to this response, the computed chi-square value is 0.429, which is less than its critical value 9.488 for 4 degree of freedom at 0.05 significance level. Thus, the difference in opinions between two groups of respondents is not significant. So, there is similarity in opinions of two different groups about the influence of corporate income tax on debt financing of small company.

Again, the majority of respondents believed corporate income taxes greatly influence debt financing of profit-making company. For this opinion, the computed chi-square value is 3.456, which is less than its critical value 9.488 for 4 degree of freedom at 0.05 significance level. Thus, the difference in opinions of

respondents between two groups is not significant. So, there is similarity in opinions of two different groups in regard with the influence of corporate income tax on debt financing of profit-making company.

Table 8.10 also shows that the majority of respondents believed corporate income taxes slightly influence debt financing of loss-making company. For this response, the computed chi-square value is 4.202, which is less than its critical value 9.488 for 4 degree of freedom at 0.05 significance level. Thus, the difference in opinions of respondents between two groups from profit-making and loss-making companies is not significant. So, there is similarity in opinions of two different groups regarding the influence of corporate income tax on debt financing of loss-making company.

As the indications of above analysis, it can be stated that the majority of respondents believed corporate income taxes greatly influence debt financing of profit-making and big companies; moderately influence debt financing of small company; slightly influence debt financing of loss-making company. Similarly, there is no similarity in opinions between two groups from profit-making and loss-making companies about the influence of corporate income tax on the debt financing of medium company. Obviously, these observations support the size-wise and profitability-wise extent of corporate income tax influence on debt financing of the companies.

8. Tax Factors Influencing Debt-Equity Mix

In the present study, in order to identify major tax factors influencing debt-equity mix of the manufacturing companies; a ranking question was asked to the officials of sample companies (Appendix- 8, Q.No.12). This question allowed six tax factors to the respondents for ranking under their importance. All the 76 respondents replied this question. However, the patterns of ranking were slightly different between the groups of respondents from profit-making and loss-making

companies.   Tax factors along with mean values and ranks of responses are presented in Table 8.11.

Table 8.11

Tax Factors Influencing Debt-Equity Mix:

Rank and Mean Value of Responses

Tax Factors	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	Mean Value	Rank	Mean Value	Rank	Mean Value	Rank
(a) Tax relief available on interest payment.	4.289	2	4.237	2	4.263	2
(b) Corporate Income tax rate structure.	4.658	1	4.395	1	4.526	1
(c) Allowability to write off specified capital expenditures.	2.895	4	3.105	4	3.001	4
(d) Carry-forward of business losses	2.658	5	2.421	6	2.539	6
(e) Capital gain tax rate structure	2.632	6	2.921	5	2.776	5
(f) Full allowability of operating expenses.	3.868	3	3.922	3	3.895	3

Source: Appendix 8.7

With respect to tax factors influencing debt-equity mix, Table 8.11 reveals that the respondents from profit-making companies have given first priority to corporate income tax rate structure, second to tax relief available on interest payment, third to full allowability of operating expenses, fourth to allowability to

write-off specified capital expenditures, fifth to carry-forward of business losses, and sixth to capital gain tax rate structure.

Likewise, the respondents from loss-making companies have given first priority to corporate income tax rate structure, second to tax relief available on interest payment, third to full allowability of operating expenses, fourth to allowability to write-off specified capital expenditures, fifth to capital gain tax rate structure, and sixth to carry-forward of business losses. In overall, corporate income tax rate structure, tax relief available on interest payment, and full allowability of operating expenses are the major tax factors influencing debt-equity mix of the manufacturing companies.

Both groups of respondent have assigned their priorities to the tax factors influencing debt-equity mix in similar patterns. Thus, the degree of relationship between responses of both groups has been computed by employing Spearman rank correlation analysis. In this regard, the observed rank correlation coefficient is 0.952 and the critical value for 6-paired observations at 0.05 significance level is 0.928. The observed correlation coefficient, is thus, significant suggesting a positive relationship between the ranks assigned by respondents from two different groups (Appendix 8.7). Further, to observe whether the slight difference in ranks assigned by two different groups is significant or not, the chi-square test is employed. The observed chi- square value is 6.921 and its critical value for 5 degree of freedom at 0.05 significance level is 11.07. The observed chi-square value is insignificant, suggesting similarity in opinions of respondents from different groups with respect to tax factors influencing debt-equity mix.

On the basis of overall views of the respondents, it can be concluded that statutory corporate income tax rate is the most influencing tax factor followed by tax relief of interest and fully deductible operating expenses. Both responding groups have same views in regard with the influence of statutory corporate

income tax rate on the debt-equity mix. Obviously, the views of respondents have supported the theoretical statement that there exists a positive relationship between corporate income tax and debt-equity mix in the context of Nepalese manufacturing listed companies.

9. Corporate Income Tax and Operating Cash Flows

The amount of income taxes are the cash outflows to a firm. Income taxes reduce operating cash flows of the firm. On the other hand, income tax incentives and facilities save cash flowing-out as income tax charges. Both these influences may be relevant to financing decision of a manufacturing firm. Thus, an attempt has been made to collect and analyze the opinions of respondents with respect to the influence of corporate income tax on operating cash flows. For this purpose, two questions: one dichotomous and another multiple choice, were devised and included in the survey questionnaire (Appendix 8, Q.No.13, 14). All respondents have replied the dichotomous question. The frequencies of responses to this question followed by percentage are presented in Table 8.12.

Table 8.12

Influence of Corporate Income Tax on Operating Cash Flows

Responses	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	F	P	F	P	F	P
Yes	30	79	28	74	58	76
No	8	21	10	26	18	23
Total	38	100	38	100	76	100

Source: Field Survey, (F = Frequency, P = Percent)

Regarding the influence of corporate income tax on operating cash flows, the Table 8.12 shows that the responses are almost affirmative consisting 79 percent of Profit-making companies and 74 percent of loss-making companies. On the other hand, only 21 percent respondents from profit-making and 26 percent respondents from loss-making companies replied in negative terms. Thus, the majority of respondents from profit-making and loss-making companies have recognized that corporate income tax influences operating cash flows.

On the basis of opinions of respondents, it can obviously be stated that there exist an influence of corporate income tax on operating cash flows of the manufacturing listed companies.

A separate question was also devised and included in survey questionnaire in order to observe the opinions of the respondents about the attributes of influence of corporate income tax on operating cash flows (Appendix 8, Q.No.14). Out of the 76 respondents, 58 respondents have replied this question. The attributes of influence of corporate income tax on operating cash flows along with frequencies and percentage are presented in Table 8.13.

With respect to attributes of influence of corporate income tax on operating cash flows, Table 8.13 reveals that 60 percent respondents from profit-making companies and 61 percent respondents from loss-making companies have replied corporate income tax reduces operating cash flows. Likewise, 23 percent respondents from profit-making companies and 25 percent respondents from loss-making companies have replied corporate income tax increases cash flows through tax saving of depreciation. Again, 17 percent respondents from profit-making and 14 percent respondents from loss-making companies have replied corporate income tax increases operating cash flows through tax saving of interest.

Table 8.13

Attributes of Influence of Corporate Income Tax on Operating Cash Flows

Attributes of Influence	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	F	P	F	P	F	P
(a) Corporate income tax reduces operating cash flows.	18	60	17	61	35	60
(b) Tax saving of interest increases operating cash flows	5	17	4	14	9	16
(c) Tax saving of depreciation increases operating cash flows	7	23	7	25	14	24
Total	30	100	28	100	58	100

Source: Field Survey, (F = Frequency, P = Percent)

In overall, majority of respondents hold the view that corporate income tax reduces operating cash flows. To test the significance of difference in the opinions of the respondents from profit-making and loss-making companies, the chi-square test is employed. The computed value of chi-square is 0.382 and the critical value for 2 degree of freedom at 0.05 significance level is 5.991. The computed value of chi –square is less than its critical value so there is no significant difference between the opinions of respondents. Thus, the opinions of respondents from Profit-making and Loss-making companies are similar with respect to attributes of corporate income tax influence on operating cash flows.

10. Corporate Income Tax and Price of Equity

In this study, an attempt has been made to analyze the opinions of respondents with respect to income tax influence to market price of equity. For this purpose, two questions: one dichotomous and another multiple choice, were

included in the survey questionnaire (Appendix 8, Q.No.15, 16). All the 76 respondents have replied the dichotomous question. The frequencies of responses to this question followed by percentage are presented in Table 8.14.

Table 8.14

Influence of Corporate Income Tax on Price of Equity

Responses	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	F	P	F	P	F	P
Yes	6	16	10	26	16	21
No	32	84	28	74	60	79
Total	38	100	38	100	76	100

Source: Field Survey, (F = Frequency, P = Percentage)

Regarding the corporate income tax influence to market price of equity, the Table 8.14 shows that the responses are almost negative consisting 84 percent of profit-making companies and 74 percent of loss-making companies. On the other hand, only 16 percent respondents from profit-making and 26 percent respondents from loss-making companies replied in affirmative. The majority of respondents from profit-making and loss-making companies have believed that corporate income tax does not influence market price of the equity.

A separate question was devised and included in survey questionnaire to observe attributes of income tax influence to market price of equity, (Appendix 8, Q.No.16). Out of the 76 respondents, only 16 respondents responded this question. The attributes of influence along with frequencies and percentage of responses to this question are presented in Table 8.15.

Table 8.15

Attributes of Influence of Corporate Income Tax on Price of Equity

Attributes of Influence	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	F	P	F	P	F	P
(a) Corporate income tax reduces market price of equity.	4	67	7	70	11	69
(b) Corporate income tax advantages are reflected in an increased market price of equity.	2	33	3	30	5	31
Total	6	100	10	100	16	100

Source: Field Survey, (F = Frequency, P = Percent)

The Table 8.15 shows that out of 16 respondents 67 percent respondents from profit-making and 70 percent respondents from loss-making companies have replied corporate income tax reduces market price of equity. But 33 percent respondents from profit-making and 30 percent respondents from loss-making companies have replied that corporate income tax advantages are reflected in an increased market price of equity. To test the significance of difference in the opinions of two groups, the chi-square test is employed. The computed value of chi-square is 0.209 and the critical value for 1 degree of freedom at 0.05 significance level is 3.841. The computed value of chi–square is less than its critical value, so there is no significant difference between the opinions of respondents. The opinions of respondents from profit-making and loss-making companies are similar with respect to attributes of corporate income tax influence

to market price of equity. However, it is quite doubtful to establish a clear relationship between corporate income tax and market price of equity depending on the opinions of the respondents.

11. Changing Debt-Equity mix

Two hypothetical questions, to assess the relative importance of tax factors in shaping debt-equity mix of the selected companies, were incorporated in survey questionnaire. Out of these two questions, one was dichotomous and another was multiple-choice question (Appendix 8, Q.No.17, 18). All the 76 respondents have answered dichotomous question. The frequencies of responses to this question followed by percentage are presented in Table 8.16.

Table 8.16

Changing Debt-Equity Mix in Response to the Changed Tax Factors

Responses	Respondents from Profit-making Co.		Respondents from Loss making Co.		Overall	
	F	P	F	P	F	P
Yes	26	68	22	58	48	63
No	12	32	16	42	28	37
Total	38	100	38	100	76	100

Source: Field Survey, (F = Frequency, P = Percentage)

Regarding the changes in existing debt-equity mix in response to the changes in tax factor, the Table 8.16 shows that the responses are almost affirmative, consisting 68 percent of profit-making companies and 58 percent of loss-making companies. On the other hand, only 32 percent respondents from profit-making and 42 percent respondents from loss-making companies replied in negative terms. Therefore, the majority of respondents from profit-making and loss-making companies have replied that the changes in tax factors would lead to

the changes in debt-equity mix of the manufacturing companies. These affirmative responses indicate that the debt-equity mix is responsive to the change in tax factors.

Table 8.17

Tax Factors Influential to the Change in Existing Debt-Equity Mix:

Frequencies and Percentage

Tax Factors	Respondents from Profit-making Co.		Respondents from Loss-making Co.		Overall	
	F	P	F	P	F	P
(a) Disallowance of interest.	5	19.23	4	18.17	9	18.75
(b) Allowability of dividend.	4	15.38	2	9.09	6	12.50
(c) Increase/decrease in depreciation rate for tax purpose.	4	15.38	3	13.64	7	14.58
(d) Changes in statutory corporate tax rate.	8	30.78	6	27.28	14	29.17
(e) Changes in interest tax rate.	1	3.86	2	9.09	3	6.25
(f) Changes in dividend tax rate.	1	3.86	2	9.09	3	6.25
(g) Offering additional income tax incentives.	3	11.51	3	13.64	6	12.50
Total	26	100	22	100	48	100

Source: Field Survey, (F = Frequency, P = Percent)

Table 8.17 reveals that 30.78 percent respondents from profit-making companies and 27.28 percent respondents from loss-making companies have replied changes in statutory corporate income tax rate, would lead to the change in existing debt-equity mix. Likewise, 19.23 percent respondents from profit-making companies and 18.17 percent respondents from loss-making companies have replied disallowance of interest would lead to the change in existing debt-equity mix. Again, 15.38 percent respondents from profit-making and 13.64 percent respondents from loss-making companies have replied increase/decrease in depreciation rate for income tax purpose would lead to the change in existing debt-equity mix.

In overall, change in statutory corporate tax rate, disallowance of interest and the increase/decrease in depreciation rate are the major changes in tax factors that would lead to the change in debt-equity mix of the manufacturing companies. To test the significance of difference in the opinions of the respondents from profit-making and loss-making companies, the chi-square test is employed. The computed value of chi-square is 14.164 and the critical value for 6 degree of freedom at 0.05 significance level is 12.592. The computed value of chi –square is greater than its critical value, so there is significant difference between the opinions of two groups of respondents. There is no similarity in the views of two different groups of respondents from profit-making companies and loss-making companies in regard with the change in existing debt-equity mix in response to the change in tax factors.

12. Respondents' Views on General Observations

To identify the views of officials of the selected companies towards previous general observations, a rating question was incorporated in the survey questionnaire (Appendix- 8, Q.No.19). This question allowed six statements of observation to the respondents for rating according to their importance. Out of 76, only 66 respondents replied this question, the result of which shows slight

difference in opinions between the groups of respondents from profit-making and loss-making companies. The result of responses has been summarized in Table 8.18.

Table 8.18

Respondents' Views on General Observations Relating to Corporate Income Tax and Debt Financing

Percentage

Statements of Observation	Respondent	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
(a) The management takes tax factors into consideration while choosing suitable sources of funds.	P	9	44	29	12	6
	L	3	38	34	16	9
	T	6	41	32	14	7
(b) The management prefers borrowing with a view of tax saving of interest.	P	6	41	29	18	6
	L	6	44	28	22	0
	T	6	42	29	20	3
(c) Corporate income tax and debt-equity mix of manufacturing companies have a positive relationship.	P	9	35	35	18	3
	L	9	31	41	13	6
	T	9	33	38	15	5
(d) Debt capital is cheaper than share capital because interest is deductible expense for income tax purpose.	P	15	44	35	3	3
	L	13	40	41	6	0
	T	14	42	38	4	2
(e) Tax saving of depreciation offsets the importance of tax saving of interest.	P	6	32	44	9	9
	L	9	31	44	6	10
	T	8	32	44	8	8
(f) Tax saving of interest has a positive relationship with market value of the firm.	P	12	26	24	29	9
	L	16	22	28	31	3
	T	14	24	26	30	6

Source: Appendix 8.8 (P= Respondents from profit-making companies, L = Respondents from loss-making companies, T= Total)

The management of manufacturing companies considers the influence of corporate income tax while choosing suitable sources of finance. In this regard, the majority of respondents (41 percent) have agreed, 6 percent respondents have strongly agreed; 14 percent respondents have disagreed; and only 7 percent respondents have strongly disagreed this statement. But 32 percent respondents were found to be undecided towards this statement. In overall, the result of above analysis supports the statement that the management of manufacturing companies considers income tax as an important factor while choosing suitable sources of finance. To test the significance of difference in the opinions of the respondents from profit-making and loss-making companies, the chi-square test is employed. The computed value of chi-square is 5.198 and the critical value for 4 degree of freedom at 0.05 significance level is 9.488. The computed value of chi – square is less than its critical value, so there is no significant difference between the opinions of two responding groups.

As regards the statement that management prefers borrowing with a view of tax saving of interest, Table 8.18 reveals that majority of respondents (42 percent) have agreed, 6 percent respondents have agreed strongly; 20 percent respondents have disagreed, and only 3 percent respondents have disagreed this statement strongly. But 29 percent respondents were undecided about this statement. To test the significance of difference in the opinions of the respondents from profit-making and loss-making companies, the chi-square test is employed. The computed value of chi-square is 5.283 and the critical value for 4 degree of freedom at 0.05 significance level is 9.488. The computed value of chi – square is less than its critical value, so there is no significant difference between the opinions of two groups of respondents. Thus, the respondents from profit-making and loss-making companies were of similar opinions and agreed the statement that management prefers borrowing with a view of tax saving of interest.

The corporate income tax and debt-equity mix of manufacturing companies have a positive relationship. Regarding this statement, the Table 8.18 reveals that majority of respondents (38 percent) have agreed, 9 percent respondents have agreed strongly; 15 percent respondents have disagreed, and only 5 percent respondents have disagreed this statement strongly. But, 33 percent respondents were undecided about this statement. To test the significance of difference in the opinions of the respondents from profit-making and loss-making companies, the chi-square test is employed. The computed value of chi-square is 3.359 and the critical value for 4 degree of freedom at 0.05 significance level is 9.488. The computed value of chi – square is less than its critical value, so there is no significant difference between the opinions of respondents. Thus, the respondents from profit-making and loss-making companies were of similar opinions and agreed the statement that corporate income tax and debt-equity mix of manufacturing companies have a positive relationship.

With respect to the statement that debt capital is cheaper than share capital because interest is deductible expense for income tax purpose, the Table 8.18 reveals that majority of respondents (42 percent) have agreed, 14 percent respondents have agreed strongly; 4 percent respondents have disagreed, and only 2 percent respondents have disagreed this statement strongly. But 38 percent respondents were undecided about this statement. To test the significance of difference in the opinions of the respondents from profit-making and loss-making companies, the chi-square test is employed. The computed value of chi-square is 3.254 and the critical value for 4 degree of freedom at 0.05 significance level is 9.488. The computed value of chi-square is less than its critical value, so there is no significant difference between the opinions of respondents. Thus, the respondents from profit-making and loss-making companies were of similar opinions and agreed the statement that debt capital is

cheaper than share capital because interest is deductible expense for income tax purpose.

Regarding the statement of observation that tax saving of depreciation offsets the importance of tax saving of interest, Table 8.18 shows that 32 percent of respondents have agreed, 8 percent of respondents have agreed strongly; 8 percent respondents have disagreed, and 8 percent respondents have disagreed this statement strongly. But majority of respondents (44 percent) were undecided about this statement. To test the significance of difference in the opinions of the respondents from profit-making and loss-making companies, the chi-square test is employed. The computed value of chi-square is 2.444 and the critical value for 4 degree of freedom at 0.05 significance level is 9.488. The computed value of chi – square is less than its critical value, so there is no significant difference between the opinions of respondents from profit-making and loss-making companies. Thus, the respondents from profit-making and loss-making companies were undecided about the statement that tax saving of depreciation offsets the importance of tax saving of interest.

With respect to positive relationship between tax saving of interest and market value of the firm, the Table 8.18 reveals that majority of respondents (30 percent) have disagreed, 24 percent respondents have agreed, 14 percent respondents have agreed strongly; and 6 percent respondents have disagreed this relationship strongly. Further, 26 percent respondents were undecided about this statement. To test the significance of difference in the opinions of the respondents from profit-making and loss-making companies, the chi-square test is employed. The computed value of chi-square is 3.539 and the critical value for 4 degree of freedom at 0.05 significance level is 9.488. The computed value of chi –square is less than its critical value so there is no significant difference between the opinions of respondents. Thus, the respondents from profit-making

and loss-making companies did not agree the statement that tax saving of interest has a positive relationship with market value of the firm.

13. Summing up

This chapter has analyzed opinions of the respondents from profit-making and loss-making companies in respect to corporate income tax and debt financing. For this purpose, a structured questionnaire was used to survey and collect the opinions of respondents. The executed questionnaire comprises mainly ranking, rating, dichotomous, and multiple-choice questions. Each question has certain relationship with other questions and even more than one questions were asked for the same purpose so that essential information could be covered. All 76 respondents had returned the distributed questionnaires. The opinions gathered through questionnaires were analyzed by employing statistical tools like: weighted value, mean value, percentage, ranks, rank correlation, and chi-square.

Opinions based major observations in relation to corporate income tax and debt financing revealed that the Nepalese listed companies prefer tax induced financing hierarchy to a noticeable extent. Officials of Nepalese listed manufacturing companies showed their inclination towards new equity, institutional loan, and internal resources as the major sources of funds. Their inclination to these sources was mainly affected by corporate income tax, debt servicing capacity of the company, and seniority and residual status of the sources. In addition, the corporate income tax is observed as an important factor influencing inclination towards sources of funds. The responses regarding the factors influencing inclination, however, were different between the groups of respondents from profit-making and loss-making companies. Thus, reasons to prefer even the same type of financing source were different between the groups of respondents from profit-making and loss-making companies.

Regarding the borrowing of funds; advantage of interest tax shield, credibility of the company, and inadequate internal funds were the prioritized reasons. Likewise, for retained earnings, the prioritized reasons were: conveniently available of funds, addition to owners' equity, and tax advantage to the shareholders. On the other hand, uncertain future profits, dividend can be distributed after interest and tax, and negligible risky than debt, were the prioritized reasons behind new equity issue. The overall responses indicate that corporate income tax is an important factor influencing level of borrowing. However, the first priority was given to new equity because of its residual status over other sources.

With respect to factors influencing debt-equity mix; profitability status of the company, tax benefits available as per the tax laws, and risk associated with debt were the prioritized factors. Among them, the tax benefit is one of the major factors influencing debt-equity mix. The majority of respondents believed that corporate income taxes greatly influence debt financing of profit-making and big companies; moderately influence debt financing of small company; and slightly influence debt financing of loss-making company. These observations support the extent of corporate income tax influence to debt financing according to the size and profitability of the companies.

According to the opinions of the respondents, statutory corporate income tax rate is the most influencing tax factor to debt-equity mix followed by tax relief of interest, and fully deductible operating expenses. Both groups of respondents have similar views regarding the influence of statutory corporate income tax rate to the debt-equity mix. On the other hand, change in statutory corporate tax rate, disallowance of interest, and increase/decrease in depreciation rate were the prioritized changes in tax factors leading to the change in debt-equity mix of the manufacturing companies. Obviously, on the basis of respondents' opinions, a

positive relationship can be established between corporate income tax and debt-equity mix of the manufacturing companies.

The selected officials favored cash flow reducing effect of corporate income tax rather than its implicit effect on the increase of cash flow through savings in income tax with deductible interest and depreciation. But it is doubtful to establish a clear relationship between corporate income tax and market price of equity on the basis of opinions as collected from the officials of selected companies. Further, the respondents from profit-making and loss-making companies were of similar opinions and agreed that management considers tax factors while choosing suitable sources of funds. Likewise, they agreed the statements that management prefers borrowing with a view of tax saving of interest; debt capital is cheaper than share capital because of interest deductibility; and corporate tax rate is positively related to debt-equity mix of manufacturing companies. However, the respondents were undecided about the statement that tax saving of depreciation offsets the importance of tax saving of interest. The respondents were not agree with the statement that tax saving of interest has a positive relationship with market value of the firm.

CHAPTER - IX

SUMMARY, CONCLUSION AND SUGGESTIONS

This chapter presents summary of the entire study including major findings, conclusion, and suggestions.

1. Summary:

Corporate income tax is an important source of revenue to the government of Nepal. Among the types of income tax, corporate tax contributes most to the government revenue assortment. Nonetheless, no considerable focus has been given to corporate income tax to systematize revenue collection procedure by making separate legal provision, since so far, it is operating like any other income taxation procedure. Income Tax Act functions as the prime legislative document of income and tax assessment procedures for corporations as well as individuals. Thus, policy and regulations on corporate tax overlook the differences between the joint legal execution and specific authoritarian execution. Consequently, there remains possibility of irrational practices in tax administration which narrow the tax base. The government should have considerations on base broadening rather than just increasing the rate of tax to maximize the tax output in long-term perspective.

Since corporate bodies have to pay tax regularly under the framework of the enforced income tax system, obviously corporate income tax has its influence

over the business transactions of a company. The ultimate influence exists on the financing mix of the company. But the extent and direction of such influence would be varied in accordance with the types and nature of business companies. And also, the extent and direction of influence of a tax factor to the different sources of financing are different for a business company. In these grounds, this study has examined basically an inherent relationship between corporate income taxes and debt financing of Nepalese manufacturing listed companies.

Previous empirical assertions hold two basic arguments regarding relevancy of taxes to financing choice of manufacturing firms. First argument is that corporate income tax favors debt financing because of interest deductibility for income tax purpose. Interest deductibility saves cash from flowing-out in the form of tax liability, which ultimately increases market value of the firm. Second argument, in contrary to the first one, is that corporate income tax favors debt financing, but in practice the favorable treatment of corporate income tax system to debt is not materialized to prefer debt because the advantage of nondebt tax shield normalizes the advantage of debt tax shield. Consequently, nondebt tax shield substitutes debt tax shield. However, these two arguments are conflicting to each other requiring an empirical investigation to apply either of them in the Nepalese context. Reasonably, this study had made an attempt to analyze the relation of corporate income taxes to debt-equity mix, and also the relationship of debt tax shield with nondebt tax shield in the context of Nepalese manufacturing listed companies.

During study period, there were twenty-nine manufacturing companies as enlisted in Stock Exchange Limited of Nepal. Out of them, ten companies were selected on the basis of their size and profitability. In addition to this, timely submission of audited financial statement of the companies to NEPSE was also considered in the selection of companies. The necessary financial data were gathered mainly through the publications of NEPSE and that of SEBO/N.

Moreover, the reports of annual general meeting of the selected companies were also consulted for information collection.

The secondary data were analyzed descriptively by employing statistical tools like annual growth rate, percent, mean, standard deviation, covariance, and simple correlation. Similarly, the data were also analyzed inferentially by employing simple and multiple linear regressions followed by test of explanatory coefficients. All the dependent as well as explanatory variables like: debt-equity mix, changes in debt tax shields, market value of the firm, effective tax rate, effective interest rate, ratio of internal resource to investment flow, changes in nondebt tax shields, operating income have been specified almost in consistent with the specifications of those variables in previous empirical studies.

For inferential analysis, the linear regressions estimated in previous studies, as used by Allessi (1965), Rao and Rao (1975), Trenzevant (1992), and Kemsley and Nissim (2002), have been used in this study. These regression equations have been used to analyze the relationship among the variables as they are completely based upon financial accounting data and are appropriate for drawing logical conclusion to achieve the objectives of this study. Accordingly, debt-equity mix on corporate tax rates, changes in debt tax shields on changes in nondebt tax shields, and market value on debt tax shield have been regressed to estimate the relationship between corporate income tax and debt financing. To draw comparative inferences, the estimating linear regression equations were tested separately for size-wise and profitability-wise states of nature of the selected companies.

During the study, structured questionnaires consisting of twenty questions including dichotomous, ranking, rating, multiple choice, and open questions, were distributed to the purposely-selected seventy-six officials including at least one from finance department of each selected company. Out of seventy-six,

thirty-eight officials were from profit-making companies, and thirty-eight were from loss-making companies. The opinions obtained from them were then analyzed by employing relevant tools like weighted value, mean value, rank, rank correlation, and chi-square value. The computer packages, mainly Excel and SPSS (10.0), was used while analyzing both the primary and secondary data.

The analysis of this study reveals that corporate income tax is more important than other income taxes to the Nepalese government for collecting sufficient revenue. During the study period, average collection of corporate income tax revenue was about 60 percent of total income tax revenue. This percentage indicates that corporate income tax revenue occupies major share of income tax revenue to the government. Likewise, the collection of corporate income tax revenue from public companies in an average was about 30 percent of total corporate income tax revenue. This percentage also indicates that public companies are the important sector to the government from the viewpoint of revenue collection.

The firm level empirical analysis of this study indicates that corporate income taxes are important factors to influence debt-equity mix of the manufacturing listed companies. It is evident that effective and statutory, both corporate tax rates are related to debt-equity mix of selected companies. Though, the relationship of statutory corporate tax rate with debt-equity mix is wider and significant than that of effective corporate tax rate. However, in this regard, the attributes of relationship vary across the size and profitability of the selected companies.

In the context of Nepalese manufacturing listed companies, it is observed that nondebt tax shield does not substitute debt tax shield. Thus, nondebt tax shield does not normalize the importance of debt tax shield. However, the attributes of relationship between debt tax shield and nondebt tax shield vary

across the size and profitability of the companies. Using the relationship between changes in nondebt tax shield and changes in debt tax shield, no empirical evidence to confirm substitution effect is observed. It is also observed that the market value of listed manufacturing companies does not reflect its significant association with debt tax shield. Nonetheless, on the basis of responses of the officials, it could be stated that statutory corporate tax rate structure is the most important tax factor influencing debt financing of the manufacturing listed companies.

2. Major Findings:

Following are major findings of this study pertaining to the corporate income tax from legal perspective as well as from revenue perspective, debt as a major source of financing, effective tax rate and debt-equity mix , statutory corporate tax rate and debt-equity mix , debt tax shield, nondebt tax shield, relationship of debt tax shield with nondebt tax shield, relation of interest-bearing debt and interest to market value of the firms, relation of debt tax shield to market value of the firms, and findings of opinion survey.

I. Corporate Income Tax from Legal Perspective

In Nepal, there is not any separate act or rule governing corporate income tax system. Rather the system operates under the rules that explain its provisions along with other income taxes jointly. Again, income tax act and income tax rule are the fundamental legal documents to systematize overall taxation procedures of corporate bodies, and non-corporate bodies. Taxable income, general deductions, nondeductible expenses, tax incentives, tax rate structure, and tax administration are some of the major segments covered by the income tax act and its rule. According to Income Tax Act, 2001 depreciation of fixed assets used for business purpose, and interest on debt capital are deductible items and dividends distributed as returns to the shareholders are

nondeductible while determining the net income. In Nepal statutory corporate tax rate was 60 percent, the highest percent in fiscal year 1975/76, it had been brought down to 25 percent in fiscal year 1996/97 and this rate is constant till the fiscal year 2002/03 also.

II. Corporate Income Tax from Revenue Perspective

Government revenue comprises tax revenues and non-tax revenues. During the study period, the average contribution of taxes was about 78 percent of total government revenue. Thus, the relative importance of taxes is notably higher than that of non-tax revenue. Similarly, indirect taxes have occupied about 76 percent of total tax revenue during study period. This relationship suggests that both direct and indirect taxes are the important sources of revenue to the government. However, indirect taxes are more important than direct taxes for revenue collection.

The contribution of income tax in direct tax revenue is observed higher than that of other components of direct taxes namely: land revenue and registration, and tax on property. In an average, income tax has contributed about 75 percent of total direct tax revenue during study period. This relationship suggests that income tax is the prime component in total direct tax revenue. By income tax here, it includes tax from corporations, individuals, and remuneration. The average contribution of corporate bodies was about 60 percent of total income tax revenue. This shows that corporate bodies are the vital source of income tax revenue. Moreover, the amount collected as income tax from corporate bodies has shown an increasing trend over the study period. The contribution of corporate income tax on GDP is not much significant; however its contribution on total tax revenue is relatively more over other items of income taxes.

The contribution of public companies was about 30 percent of total corporate income tax revenue. Moreover, the mean growth rate of corporate income tax revenue from public companies has shown an increasing trend. Likewise, the mean growth rate of corporate income tax revenue from public companies is higher over the mean growth rates of other direct tax revenues. Such growth rate suggests that there is a significant contribution of public sector to increase corporate income tax revenue. The relative importance of public sector companies in the collection of corporate income tax revenue is higher over private sector companies. Therefore, the public sector companies are the vital source of corporate income tax revenue in Nepal.

These results support the theoretical statement that corporate income tax revenue occupies important percentage share of total tax revenue.

III. Debt as a Major Source of Financing

Debt has been found to be a major source of financing to the listed manufacturing companies. In an average, the debt capital was 69 percent of total capital employed by the selected companies during study period. The growth rate of debt ratio pertaining to big companies has shown a decreasing trend. It indicates that big companies also depend on debt; though their dependency on debt is in decreasing trend. However, the medium companies depend largely on debt financing. Comparatively, small companies have lower debt level than that of medium companies. It means medium companies have the highest growth in debt ratio reflecting heavy dependency on debt. The coefficient of variation is also found highest for medium companies and lowest for small companies. Therefore, debt ratio of medium companies is comparatively more volatile than that of small companies.

IV. Effective Tax Rate and Debt-Equity Mix

The regression coefficients of explanatory variable (effective tax rate) with dependent variables (D/NW)t, and (TD/TA)t are observed insignificant for big companies. But with dependent variable (D/TA)t, the coefficient of this explanatory variable is observed significant. On the other hand, the coefficients of explanatory variable (effective tax rate) with the dependent variables (D/NW)t and (D/TA)t are observed significant for medium companies. Thus, a significant negative relationship has been found between effective tax rate and debt-equity mix of medium companies. The regression coefficients of effective tax rate with dependent variables for small companies are observed with positive signs. But, the observed coefficients are not significant. An insignificant positive relationship has been found between effective tax rate and debt-equity mix of small companies.

The regression coefficient of explanatory variable (effective tax rate) for profit-making companies is observed significant with the dependent variable (D/TA)t. The sign associated with this coefficient has indicated a positive relationship between (D/TA) and effective tax rate. Likewise, the coefficients of effective tax rate with dependent variables (D/NW)t and (TD/TA)t have positive signs, however these coefficients are observed insignificant. Thus, an insignificant positive relationship has been found between effective tax rate and debt-equity mix of profit-making companies.

For loss-making companies, the regression coefficients of explanatory variable (effective tax rate) with dependent variables (D/NW)t, and (D/TA)t are observed with negative signs. But, the observed coefficients are not significant. Again, the coefficient of this explanatory variable in relation to the dependent variable (TD/TA)t has been observed with positive sign, suggesting positive relationship of effective tax rate with debt-equity mix. However, this coefficient of the effective tax rate is also not significant. Thus, there is an insignificant

negative relationship between effective tax rate and debt-equity mix of loss-making companies.

The results, depending upon the measures of dependent variable used, are consistent with the findings of Rao and Rao (1971) and Rao and Rao (1975) studies that the relationships of effective tax rate with debt-equity mix vary across the measures of dependent variable tested in the model. Moreover, the relationship of effective tax rate and debt-equity mix varies according to size and profitability status of the companies. For total sample, the regression coefficients of effective tax rate with debt-equity mix are positive. Thus, an insignificant positive relationship has been found between effective tax rate and debt-equity mix. This observed relationship has indicated that the effective tax rate does not influence debt financing of manufacturing listed companies significantly.

V. Statutory Corporate Tax Rate and Debt-Equity Mix

The regression coefficients of explanatory variable (statutory corporate tax rate) with dependent variables $(D/TA)t$ and $(TD/TA)t$ for big companies are observed significant and positive. Thus, statutory corporate tax rate is found positively related to debt-equity mix for big companies.

The regression coefficients of explanatory variable (statutory corporate tax rate) with dependent variables $(D/TA)t$ and $(TD/TA)t$ are observed significant and negative for medium companies. An inverse relationship of statutory corporate tax rate with debt-equity mix is found for medium companies.

The regression coefficients of explanatory variable (statutory corporate tax rate) pertaining to the dependent variables $(D/NW)t$ and $(D/TA)t$ are observed significant and positive for small companies. Thus, a positive relationship is found between statutory corporate tax rate and debt-equity mix for small companies.

For profit-making companies, the regression coefficients of explanatory variable (statutory corporate tax rate) with the dependent variables are also observed significant and positive. Hence, a positive relationship is found between statutory corporate tax rate and debt-equity mix of profit-making companies. Likewise, the coefficients of explanatory variable (statutory corporate tax rate) with the dependent variables (D/TA)t, and (TD/TA)t are observed significant and negative for loss-making companies. So, an inverse relationship is found between statutory corporate tax rate and debt-equity mix for loss-making companies.

The mixed results, depending upon the measures of dependent variable used, have been observed in respect to the relationship between statutory corporate tax rate and debt-equity mix. In an aggregate, for all sample companies, a significant positive relationship of statutory corporate tax rate with debt-equity mix has been observed. Statutory corporate tax rate, even in the presence of other nontax explanatory variables (like: effective interest rate, leverage, internal resource), has also been observed positively related to debt-equity mix of sample companies. From such outcome, based on the regression analysis of the data, it can be inferred that corporate income taxes positively influence debt financing of manufacturing listed companies. These results provide empirical support to the theoretical statement that corporate income taxes favor the use of debt in financing mix and there exists a positive relationship between corporate income taxes and the debt financing of manufacturing listed companies. This finding empirically supports the findings of Marsh (1982), Mittal (1989), Givoly, et al. (1992), and Chua (1995) studies.

VI. Debt Tax Shield

Debt tax shield has been found positively related with the size of the companies and it is observed in increasing trend for big, medium, and small

companies. However, debt tax shield has increased with the higher percentage for medium companies. On the other hand, the variability of debt tax shield is higher for big companies and lower for small companies.

In relation to the profitability of the companies, debt tax shield is found negatively related. However, debt tax shields for both profit-making and loss-making companies are observed in increasing trend. But, debt tax shield has increased with higher percentage for loss-making companies. Besides this, the variability of debt tax shield is higher for profit-making companies.

In another case, the mean value of debt tax shield is the highest for rubber and tire company followed by vegetable ghee, soap and detergent, flour, soft drinks, lube oil and bitumen, and color photograph companies. The debt tax shield has an increasing trend for these companies. Apart from this, the variability of debt tax shield is the highest for soft drinks companies and the lowest for flour company.

On the whole, for all selected companies, the mean annual growth rate of debt tax shield has been observed in increasing trend. It has indicated that the tax benefits of debt tax shield to the listed manufacturing companies are also in increasing trend.

VII. Nondebt Tax Shield

Nondebt tax shield has been found related positively with the size of the companies. It has an increasing trend for big, medium, and small companies. However, it has been increased with higher percentage for the big companies. Apart from this, the variability of nondebt tax shield is higher for medium companies and lower for small companies.

In relation to the profitability of the companies, nondebt tax shield is found positively related. Nondebt tax shields for both profit-making and loss-making companies are in increasing trend. It has been increased with higher percentage for loss-making companies. However, the variability of nondebt tax shield is higher for profit-making companies.

Further, mean value of nondebt tax shield is the highest for rubber and tire company followed by soap and detergent, soft drinks, vegetable ghee, flour, lube oil and bitumen, and color photograph companies. The nondebt tax shields showed an increasing trend in the majority of companies under study. Besides this, the variability of nondebt tax shield is the highest for soft drinks companies and the lowest for flour company.

On the whole, for all selected companies, the mean annual growth rate of nondebt tax shield has been observed in increasing trend. It has indicated that the tax benefits of nondebt tax shields to the manufacturing companies are also in increasing trend.

VIII. Relationship of Debt Tax Shield with Nondebt Tax Shield

Debt as well as nondebt tax shields are found positively related with the size of the companies. Both debt tax shield and nondebt tax shield for big, medium and small companies are in increasing trend. However, the correlation coefficient of debt and nondebt tax shields is significant only for small companies.

In relation to the profitability of the companies, debt tax shield is found negatively related, but nondebt tax shield is found positively related. Both debt tax shield and nondebt tax shield for profit-making and loss-making companies are in increasing trend. The correlation coefficient of debt and nondebt tax shields for profit-making companies is not statistically significant. However, the

correlation coefficient of debt and nondebt tax shields for loss-making companies is statistically significant and positive.

The mean value of nondebt tax shield is greater over that of debt tax shield for soft drinks, soap and detergent, and color photographs companies. But in the case of vegetable ghee, lube oil and bitumen, rubber and tire and flour companies, the mean value of debt tax shield is greater over that of nondebt tax shield. In an aggregate, the mean value of debt tax shield is greater over that of nondebt tax shield. Therefore, it implies that the selected companies are enjoying relatively more benefit from debt tax shield.

Likewise, the observed correlation coefficients of debt tax shield and nondebt tax shield, for soft drinks, and lube oil and bitumen companies are observed statistically significant and negative, but correlation coefficient for rubber and tire companies are observed statistically significant and positive. Similarly, the correlation coefficient for total sample is observed positive and significant.

Further, debt tax shield and nondebt tax shield are also positively related for all selected companies. The substitution effect to debt tax shield after the enforcement of Income Tax Act, 2001 has been found negative. It means, in the context of Nepalese listed manufacturing companies, debt tax shield is not substituted by nondebt tax shield. This finding supports the findings of Dammon and Senbet (1988) and Titman and Wessels (1988) studies.

These findings, however, do not support the theoretical statement that nondebt tax shield substitutes debt tax shield, but support the tax relevancy theory of debt financing. Stated precisely, the nature of relationship between debt tax shield and nondebt tax shield varies across the size and types of products of the companies.

IX. Market Value, Operating Income, Interest Bearing Debt, and Interest

The attributes of market values are found different across the size and the profitability status of the companies. The market values of big and profit-making companies are slightly higher than book value of total assets. However, in some other companies, market values are found lower than book value of total assets. Comparatively, small company has lower variability in market value followed by loss-making, medium, profit-making, and big companies. The variability of market value is found associated positively with the size and profitability. This reflects positive relationship between the size and the fluctuation in market value, and also between the profitability and the fluctuation in market value of the companies.

The attributes of operating income are also found different across the size, and the profitability of the sample companies. It is also found that the profit-making company has lower variability in operating income followed by small, big, loss-making and medium companies. The growth rates of operating income for big and small companies are observed in increasing trend. Adversely, the growth rates of operating income for profit-making, medium and loss-making companies are in decreasing trend. The aggregate growth rate of operating income is 1.323 percent for all selected companies.

The attributes of interest-bearing debt differ across the size and profitability of the companies. The loss-making and medium companies have relatively higher interest-bearing debt ratio. But as compared, profit-making company has higher variability in interest-bearing debt followed by big, small, medium and loss-making companies. Thus, it is concluded that higher the size, higher is the fluctuation in interest-bearing debt to total assets ratio and greater the profitability, greater is the fluctuation in interest-bearing debt to total assets ratio of the companies. The growth rate of interest-bearing debt is the highest for small company followed by medium, loss-making, profit-making, and big

companies. Likewise, the attributes of interest also differ across the size and profitability status of the companies. Medium company has the highest interest to total assets ratio followed by loss-making, big, profit-making and small companies. The loss-making and medium companies have relatively higher interest ratios. Comparatively, profit-making company has the highest variability of interest ratio followed by small, big, medium and loss-making companies. This reflects that higher the size, higher is the fluctuation in interest expenses and greater the profitability, greater is the fluctuation in the interest expenses of the companies.

X. Relation of Interest Bearing Debt and Interest to Market Value

The association of Interest-bearing debt with market value is found negative for big and small companies, but it has positive association with the market value for profit-making companies. The regression coefficient of interest-bearing debt with market value is observed statistically significant, but the regression coefficient of operating income with market value is observed statistically insignificant for medium companies. Likewise, the regression coefficient of interest-bearing debt is observed statistically significant, but that of operating income is observed statistically insignificant for loss-making companies. The signs of these explanatory coefficients have indicated positive association of interest-bearing debt and operating income with the market value of medium and loss-making companies. Again, interest is significantly associated with the market value of medium, small and loss-making companies, but insignificantly associated with the market value of big and profit-making companies. In totality, the associations of both interest-bearing debt and interest with market value are found insignificant.

XI. Relation of Debt Tax Shield to Market Value

The debt tax shield is found positively associated with the market value of the medium and loss-making companies, but negatively associated with the market value of big and small companies. The observed regression coefficients of debt tax shield are statistically significant for medium, small and loss-making companies and insignificant for big and profit-making companies. Depending on these identical regression results it has been found that interest-bearing debt or interest, anyone, can represent debt tax shield in the estimating model.

The regression results for all selected listed companies have indicated that debt tax shield is not associated with market value significantly. This observation is consistent with the findings of Modigliani and Miller (1958) and Eckbo (1986) studies.

Operating income is found positively associated with the market value of big and profit-making companies, but negatively associated with the market value of small companies. A positive and significant association of operating income and market value has been observed. These findings support theoretical statement that debt tax shield alongwith nontax dimensions have an influence on market value of the firm for medium, and loss-making companies. But the findings do not support this theoretical statement for big, profit-making and small companies. Nevertheless, the findings support the theoretical statement that the nature of relationship between debt tax shield and market value differs across the size, and profitability status of the firms.

XII. The Findings of Opinion Survey

Regarding the inclination to the sources of funds, majority of respondents have opined that issue of equity shares, institutional loans, and internal resources are the main sources of funds to the manufacturing companies. Their

inclination to these sources is affected mainly by corporate income tax, debt servicing capacity, and seniority and residual status of the sources. However, the opinions of respondents from profit-making and loss-making companies are different in respect to the reasons of inclination. Both groups of respondents have accepted corporate income tax as an important factor influencing inclination towards sources of funds. Thus, the observed inclination of the respondents towards sources of funds provides a support to tax induced financing hierarchy to a noticeable extent.

The opinions of respondents have confirmed that borrowing is an important component of financing mix to the manufacturing companies. However, the opinions have differed pertaining to the reasons behind borrowing between different groups of respondents. In this respect, advantage of interest tax shield is the most important reason amongst the respondents from profit-making companies, and inadequate internal fund is the most important reason amongst the respondents from loss-making companies. Whatsoever, considering aggregate score value, advantage of interest tax shield, credibility of the company, and inadequate internal resources are major reasons behind borrowing of funds.

As far the importance of retained earnings is concerned, majority of respondents replied in the affirmative way. The difference in views of two responding groups in relation to the reasons of retained earnings is not significant. Thus, the officials of both profit-making and loss-making companies have similar views about the reasons of retained earnings. In this regard, it is found that conveniently available of funds, addition to owner's equity, and tax advantage to the shareholders are the prioritized reasons behind retaining earnings.

Concerning the importance of new equity issue, majority of respondents replied in affirmative way. But the percentage of respondents who have recognized the importance of borrowing is higher than that of recognizing the importance of new equity issue. Both groups of respondents have similar opinions about the reasons of new equity issue. In an aggregate, uncertain future profitability, dividend could be distributed after interest and tax, and negligible risk than on debt are found as the reasons of new equity issue.

As regards the factors influencing debt-equity mix, the opinions of two groups of respondents are different. Respondents from profit-making companies felt that profitability status of the company is the most important factor influencing debt-equity mix; whereas respondents from loss-making companies felt that risk associated with debt financing is the most important factor influencing debt-equity mix. Besides this, considering the aggregate score value, profitability status of the company, tax benefits available under enacted tax laws, and risk associated with debt financing are found as major factors influencing debt-equity mix.

In relation to the extent of influence of corporate income tax on debt financing in different types of companies, the opinions of two groups of respondents are different. The highest percentage of respondents has accepted that corporate income taxes greatly influence the debt financing in big as well as medium companies. However, some respondents have accepted that corporate income taxes moderately influence the debt financing in small companies. Similarly, the highest percentage of respondents has accepted that corporate income taxes greatly influence the debt financing in profit-making companies. But, other respondents have accepted that corporate income taxes slightly influence the debt financing in loss-making companies. To a large extent, these responses have supported the statement that corporate income taxes influence

the debt financing according to the size and profitability status of the manufacturing companies.

Regarding the tax factors that influence debt-equity mix, the opinions of responding groups from profit-making and loss-making companies are similar to a great extent. On the whole, their opinions revealed that corporate income tax rate is the most important tax factor influencing debt-equity mix followed by tax relief available on interest payment, full allowability of operating expenses, allowability to write off specified capital expenditures, capital gain tax rate, and carryforward of business loss.

With respect to the influence of corporate income tax on operating cash flows, majority of respondents have recognized that operating cash flows are influenced by corporate income tax. In a question asked about the nature of such influence, the opinions of both responding groups are similar. Out of the respondents who recognized that operating cash flows are influenced by corporate income tax, majority of respondents, 60 percent, have believed that corporate income tax reduces operating cash flows, whereas, 24 percent respondents have believed that corporate income tax increases operating cashflows due to tax savings from depreciation. Similarly, 16 percent respondents have believed that corporate income tax increases operating cashflows due to tax savings of interest.

In relation to the influence of corporate income tax to the market price of equity, the majority of respondents have believed that corporate income tax does not influence price of equity share. Among the respondents who have believed corporate income tax influences the price of equity share, the majority of them have replied that corporate income tax liability ultimately reduces market price of the equity share. Pertaining to such influence, there is not a significant difference between the opinions of two responding groups.

Regarding the change in debt-equity mix, the majority of respondents agreed that the debt-equity mix of a manufacturing company is likely to be changed in response to the changed tax factor. The opinions of responding groups from profit-making and loss-making companies are different for the major changes in tax factors that lead to the change in debt-equity mix. Even though, both responding groups have pointed clearly that change in statutory corporate tax rate is the most important tax factor that leads to the change in debt-equity mix. Based on aggregate percentage, the other tax factors that lead to the change in debt-equity mix, in order of importance are: disallowance of interest for deduction, increase or decrease in depreciation rate, allowability of dividend, offering additional income tax incentives, change in interest tax rate and change in dividend tax rate.

Most of the respondents are of opinion that management of manufacturing companies considers the effects of tax factors while choosing appropriate source of funds. In this regard, their opinions from profit-making and loss-making companies are similar. Similarly, most of the respondents have accepted that manufacturing companies prefer borrowings for tax benefits. In this point also, the opinions of respondents from profit-making and loss-making companies are similar. However, the respondents from profit-making and loss-making companies identically agreed that cost of debt capital is cheaper than the cost of equity share capital because of interest deductibility. But, most of the respondents are undecided on the argument that the tax saving from depreciation supersedes the importance of tax saving from interest. Most respondents showed their disagreement that the tax saving of interest is positively related to the market value of the company. In these regards, the opinions of respondents from profit-making and loss-making companies are similar.

3. Conclusion

In Nepal, the relative importance of listed companies in the collection of corporate income tax revenue is higher than that of private sector companies. Tax from listed companies is the prime source for corporate income tax revenue. Corporate income tax revenue occupies important percentage share in the total tax revenue in comparison to that of other kinds of income tax revenue.

Nepalese corporate income tax system generally favors the use of debt in financing mix of listed manufacturing companies. Consequently, a positive relationship exists between corporate income tax and debt financing of the companies. Although, debt tax shield is not associated significantly with market value, debt is preferable to these companies because of tax shield. Moreover, nondebt tax shield does not have substitution effect on debt tax shield. It means nondebt tax shield does not normalize the importance of debt tax shield. In effect, debt has become an important financing source to the companies with a view to get tax benefit.

The opinions of the officials from profit-making and loss-making companies are not similar in most of the cases regarding the various aspects of corporate income tax and debt financing. However, in an aggregate, the analysis of this study suggests that the management of listed manufacturing companies takes tax factors into consideration while choosing appropriate source of financing. The change in statutory corporate tax rate is the major change that would lead to the change in debt level of the companies. Corporate income taxes greatly influence the debt financing of profit-making and big companies. Advantage of debt tax shield is the major reason of borrowing funds.

In the context of Nepalese listed manufacturing companies, corporate income tax influences debt financing positively, but the extent of this influence varies with the size and profitability status of the companies.

4. Suggestions

Based on the findings of the study and the suggestions collected during opinion survey, the following suggestions have been underlined in respect to corporate income tax policies and practices in Nepal:

Corporate tax is the main component of income tax system in Nepal. The present study thus suggests broadening the base of the corporate income tax by adopting clear rules on deductible business expenses and tax incentives. The study also suggests implementing minimum corporate income tax system based on gross receipts for small companies which are not maintaining proper books of account. It should be better to bring educational and transportation entities running at private sectors into the tax bracket under corporate income tax system. For this purpose a sound revenue responsive policy should be formulated for tax assessment and collection procedures.

Providing allowances to reserves for contingent liabilities or for business expansion is desirable to encourage the companies to raise their resources internally and make them financially sound. In this respect, a clear rule on earning retention should be passed and enforced effectively. Such rule should specify the proportion of profit after tax that should be retained in the business of the companies.

To enhance the effectiveness of financial manager in treating the various tax factors, the tax authorities should view the business decisions in larger context of business necessity. The necessary changes in the taxation law should be made on the basis of the modern business requirements. For this purpose, an

electronic system of tax administration is suggested to implement in various steps like: submission of income statements to tax authorities, tax assessment information to the companies and income tax appeal.

As per the corporate income tax system, owned capital and borrowed capitals get different treatment. When the share of borrowed capital is greater, taxable profit would be lesser and hence, lower would be the burden of corporate taxation. However, borrowed capital may be beyond the long-term interest of the corporate sector. It is thus essential to promote the use of owned capital by fixing the minimum required proportion of owned capital to form a company as well as to expand its business.

The existing corporate tax system has an inherent bias in favor of debt financing inhibiting the growth of underdeveloped equity market. Therefore, necessary fiscal reforms would help corporate sector to broaden its equity base. For this purpose, adjusting the tax base measurement to avoid discrimination against equity financing and integrating of corporate and individual income taxes is to be properly considered. An alternative for this purpose might be the imputation system that mitigates the effects of double taxation on dividends. Imputation system of corporate taxation favors equity financing of the companies. Fundamentally, this system is dominated by a systematic provision to normalize the effect of double taxation on dividend. A separate study should be done by the government to decide suitable model of imputation system in Nepalese context.

The differences in the tax treatment of interest and dividends do affect companies' choices between debt and equity financing. Tax discrimination between debt and equity financing may have important effects on company behavior. Thus, an approach to the income tax system could be of cash flow income tax system that provides the same way to tax the incomes of interest and dividend recipients.

In order to increase the mobility of capital, the shareholders should be allowed to sell their share without being taxed if they reinvest the sales receipts for buying shares within a specified period of time. A company should be encouraged to reinvest its profits in other companies if it does not want to reinvest internally.

The management of the companies is suggested to prefer tax induced financing hierarchy. It means financing preference should be in the order of debt, retained earnings, and new equity. However, the maximum level of debt must be defined by considering the debt servicing capacity of the companies. While choosing the source of funds, the effects of income tax should also be evaluated and several tax factors like tax deductions, tax incentives, and income tax rate structure should be taken into consideration. Only the direct and explicit considerations to tax effects are not sufficient in determining overall effect to the financing choice of the corporations. So, implicit tax influences in terms of tax savings like interest tax shield should be considered while making decision on financing mix of the company.

Modern management is more concerned with cost control because it helps to attain business objectives. In modern society, taxes constitute major cost of doing business. Thus, the management has to be vigilant and prudent in dealing with the tax authorities. This is why, while taking any business decision including that of financing, the management should consider tax effects of all financing alternatives one by one in a very systematic manner before selecting any one of them. For this purpose, management should be well known about every aspect of enacted tax laws, otherwise the tax consultancy could be proceeded on. Moreover, the study suggests big and profit-making companies to hold a separate functional department to manage income tax affairs.

5. Areas for Future Research

Considering the results of the present research work as the basis, further research can be taken up in a number of areas. For instance, there is a good scope for further research regarding the relationship between debt financing and corporate income tax, beside the manufacturing listed companies, that can be about the private manufacturing companies or government owned companies. Other areas might be:

- Imputation system for corporate income tax,

-relation between debt tax shield and operating income,

-comparison between tax induced financing hierarchy and pecking order

  financing hierarchy,

-corporate income tax and financing behavior,

-impact of taxes on equity financing,

-relation between effective tax rate and size of the firms,

-debt financing: a test of value additive effect,

-corporate income tax: an influence to the composition of total capital.

BIBLIOGRAPHY

Adhikari, Chandra Mani (2003) *"An Analysis of the System of Income Tax Management in Nepal." Ph.D. Thesis.* Lucknow: University of Lucknow.

Agrawal, Govinda Ram (1978) *"Resource Mobilization for Development: The Reform of Income Tax in Nepal."* Kathmandu: *CEDA*.

Agrawal, R. P. (1969-July) "Financing Company Expansion" *The Chartered Accountant*, The Institute of Chartered Accountants of India, P.19.

Alam, Kazi Firoz, (1994) "Taxation and Investment Policy: A Survey Report on the New Zealand Manufacturing Industry." *Accounting Forum*, School of Accounting, University of South Australia, Vol.17, No.4, PP.121-143.

Alessi, Louis De (1965 -Spring) "The Corporate Income Tax and Debt to Equity Ratio." *Western Economic Journal*, PP. 195-199.

Allen, D. (1993) "Financial Managers' Perspectives of the Factors Determining the Investment Policies of Listed Australian Companies." *Accounting Forum*, Vol.17, No 3, School of Accounting, University of South Australia, PP.3-23.

Altman, Edward I. and Subrahamanyam, Marit G. (1985) "Recent *Advances in Corporate Finance"* NewYork: Irwin Homewood Illinois

Andersen, Torben M. and Dogonowski, Robert R. (2004) "What Should Optimal Taxes Smooth? " *The Journal of Public Economic Theory*, Vol. 6, No.3, PP.491-507.

Andrade, Gregor and Kaplan, Steven N. (1998) "How Costly is Financial (Not Economic) Distress? Evidence from Highly Levered Transactions that Became Distressed, *The Journal of Finance*, Vol. 53, PP. 1443-1493.

Arditti, F. D. and Pinkerton, J.M. (1978-March) "The valuation and Cost of Capital of the Levered Firm with Growth Opportunities." *The Journal of Finance*, Vol. 33, PP. 65-73.

Auerbach, Alan J. (1983-Sept.) "Taxation, Corporate Financial Policy and the Cost of Capital." *The Journal of Economic Literature*, Vol.21, PP.905-940.

Baral, Keshar Jung (1998) "*Capital Structure and Cost of Capital in Public Sector Enterprises in Nepal." Ph.D. Thesis,* New Delhi: Delhi University.

Barnea, A; Haugen, R; and Senbet, L. (1981-June) "An Equilibrium Analysis of Debt Financing under Costly Tax Arbitrage and Agency Problems." *The Journal of Finance,* Vol. 28, PP. 569-81.

Baumol, W. J. and Malkiel, B. G. (1967) "The Firm's Optimal Debt Equity Combination and the Cost of Capital." *Quarterly Journal of Economics*, Vol. 81, No. 4, PP. 547-578.

Baxter, N. D. (1967-Sept.) "Leverage, Risk of Ruin and the Cost of Capital." *Journal of Finance*, Vol. 22, PP. 395-403.

Bennett, M. and Donnelly, R. (1993) "The Determinants of Capital Structure: Some UK Evidence."*The British Accounting Review,*Vol.25, No.1. PP.43-59.

Bernanke, Ben and Gertler, Mark (1987-July) "Financial Fragility and Economic Performance." *NBER Working Paper*, No. 2318.

Bernstein, Leopold A. and Wild John J., (2000) "*Financial Statement Analysis, Theory, Application and Interpretation.*" Seventh Edition, California: Mc Gray Hill.

---------- (1997)*"Financial Statement Analysis, Theory, Application and Interpretation."* Sixth Edition, California: Mc Gray Hill.

Bhandari, Lila Ballav (2001) *"Tax Reform in Nepal." Ph.D. Thesis",* Nainital: Kumaon University.

Bhatia H .L. (1992) *"Public Finance"* Revised Edition, New Delhi: P.B. Publishing House Pvt. Ltd.

Bierman, JR. Harold, and Oldfield, JR (1979) "Corporate Debt and Corporate Taxes." *The Journal of Finance*, Vol. 34, No. 4, PP. 951-956.

Block, Stanley B. and Hirt, Geoffrey (2000) "*Foundations of Financial Management*" Ninth Edition, California: McGraw Hill.

Boadway, Robin and Shah, Anwar (1995) "Perspectives on the Role of Investment Incentives in Developing Countries." In Anwar Shah (Ed.) "*Fiscal Incentives for Investment and Innovation."* Washington: World Bank, P.35.

Bosworth, B. (1971) "Patterns of Corporate External Financing." *Brookings Papers on Economic Activity,* Vol. 2, PP. 253-279.

Bradley, M; Jarrell, G. A; and Kim, E. H. (1984-July) "On the Existence of an Optimal Capital Structure: Theory and Evidence." *The Journal of Finance,* PP.857-78.

Brennan, Michael, (1970) "Taxes, Market Valuation and Corporate Financial Policy."*National Tax Journal,* Vol. 23, PP. 417-427.

Brennan, M. J. and Schwartz E. S. (1978-Jan.) "Corporate Income Taxes, Valuation, and the Problem of Optimum Capital Structure." *Journal of Business,* Vol. 51, PP. 103-14.

Brigham, Eugene F., Gapenski Louis C. and Ehrhardt Michael C. (1999) *"Financial Management, Theory and Practice."* Florida: The Dryden Press, Har Court Brace College Publishers.

Brinner, Roger E. and Brooks, Stephen H. (1981) "Stock Prices." In Aaron, Henry J. and Pechman, Joseph, A. (Eds.) *"How Taxes Affect Economic Behaviour."* Washington: The Brookings Institution. PP. 199-239.

Britannica, INC (1990) *"The New Encyclopedia Britannica,"* Fifteenth Edition, Vol. 28, Chigago.

Calomiris, C. and Hubbard, G. (1995-Oct.) "Internal Finance and Investment: Evidence from the Undistributed Profits Tax of 1936-1937." *Journal of Business*, PP. 443-482.

Calomiris, Charles W. and Hubbard, R. Glem (1987-Dec.) "Firm Heterogeneity, Internal Finance Credit Rationing." *NBER Working Paper,* No. 2497.

Carl, S. Shoup (1989) "Retrospectives on Tax Mission to Venezuela, 1959; Brazil; 1964; and Liberia, 1970" in Malcolm Gillis (Ed.) *"Tax Reform in Developing Countries."* Durhan: Duke University Press. P. 257.

---------(1959) *"The Fiscal system of Venezuela."* Baltimore: The Johns Hopkins Press. P. 116.

Castanias, R. (1983-Dec.) "Bankruptcy risk and optimal capital structure." *The Journal of Finance,* PP. 1617-1635.

Chakraborty, S. K, (1977) *"Corporate Capital Structure and Cost of Capital."* Calcutta: Institute of Cost of Works Accountants.

Chang, Rosita P. and Rhee, S.Ghon (1990-Summer) "The Impact of Personal Taxes on Corporate Dividend Policy and Capital Structure Decisions." *The Journal of Financial Management,* Vol. 19, P.27.

Choi, J. J. (1988-Spring) "Debt Financing and the Cost of Capital in the Neoclassical Investment Model." *American Economist,* Vol. 32, PP. 19-29.

Choudhary, Narayan (2000) *"Agriculture Taxation and Economic Development in Nepal, During Plan Period." Ph.D. Thesis.* Muzaffarpur: B. R. A. Bihar University.

Chua, Dale (1995) "The Concept of Cost of Capital: Marginal Effective Tax Rate on Investment." In Parthasarathi Some (Ed.) "*Tax Policy"* Washington: IMF.

Clark, Myrtle W. (1993) "Entity Theory, Modern Capita Structure Theory, and the Distinction between Debt and Equity." *Accounting Horizons,* The Journal of American Accounting Association, Vol. 7, No. 3, PP.14-31.

Coen, Robert M.(1968-May) "Effects of Tax Policy on Investment in Manufacturing" *The American Economic Review, Vol.* 58, No. 2, PP.201- 11.

Cooper, Ian and Franks, Julian R. (1983-May) "Taxation and Financial Decisions: The Interaction of Financing and Investment Decisions When the Firm has Unused Tax Credits." *The Journal of Finance,* Vol. 38, No.2, PP. 571-583.

Copeland, Tom E., Tim Koller, and Jack Murrin (2000) *"Valuation: Measuring and Managing the Value of Companies."* Third Edition, New York: John Wiley and Sons.

--------And Fred Weston (1998) *"Financial Theory and Corporate Policy."* Third Edition, Sydney: McGraw Hill Book Company.

Cordes, Joseph J. and Sheffrin, Steven M. (1983) "Estimating the Tax Advantage of Corporate Debt." *The Journal of Finance,* Vol. 38, No.1, PP. 95-105.

Cross, Stephen M. (1980-March) "A Note on Inflation, Taxation and Investment." *The Journal of Finance, Vol.* 35, No. 1, PP. 177-181.

Dahal, Madan K. (1991- June) "Tax Structure and Policy Framework in Developing Countries." *The Economic Journal of Nepal,* TU: Department of Economics, PP.1-17

Dammon, R. M. and Senbet, L.W. and (1988-June) "The Effect of Taxes and Depreciation on Corporate Investment and Financial Leverage."*The Journal of Finance,* Vol. 43, No 2,   PP. 357-372.

Davidson, S. and Drake, D. F. (1961-Oct.) "Capital Budgeting and the Best Tax Depreciation Method." *Journal of Business,* Vol. 34,   PP. 272-87.

DeAngelo, Harry and Masulis, Ronald W. (1980-March) "Optimal Capital Structure Under Corporate and Personal Taxation." *Journal of Financial Economics,*   Vol.8, No.1, PP. 3-29.

Devereux, M. and Schiantarelli, F. (1990) "Investment, Financial Factors and Cash Flow: Evidence from U.K. Panel Data." In R. Glenn Hubbard (Ed.) *"Asymmetric Information, Corporate Finance, and Investment."* Chicago: University of Chicago Press. PP. 279-306.

Dhakal, Kamal Deep (2004) *"Income Tax Administration in Nepal: Areas for Reform." Ph. D. Thesis.* Kathmandu: Tribhuvan University.

--------*"Income Tax, House and Compound Tax."* Kathmandu: Kamal Prakashan, 1992, 1993, 1995, 1997, 1999, 2000, Arjan Prakashan 2001.

Dhaliwal, Dan; Heitzman, Shane and Zhen, Oliver (2006-Sept.) "Taxes, Leverage,   and the Cost of Equity Capital." *The Journal of Accounting Research,*   Vol. 44, No.4, PP. 691- 723.

Dixon, Wilfrid J. and Massey, Jr. Frank J. (1983) *"Introduction to Statistical Analysis."* New York: McGraw Hill.

Dotan, A. and Ravid S. (1985) "On the Interaction of Real and Financing Decisions of the Firm under Uncertainty." *The Journal of Finance,* Vol. 40, PP.501-17.

Downs, Thomas W. (1993-Nov.) "Corporate Leverage and Nondebt Tax Shields: Evidence on Crowding-out." *The Financial Review,* Vol.28, No.4, PP. 549-583.

Durand, D. (1952) "Costs of Debt and Equity Funds of Business: Trends and Problems of Measurements." *Research in Business Finance,* New York: National Bureau of Economic Research.   PP. 214-47.

Easterbrook, Frank H. (1984) "Two Agency Cost Explanations of Dividends." *American Economic Review,* Vol. 74, PP. 650-659.

Eckbo, B. Espen (1986) "Valuation Effects and Corporate Debt Offerings." *Journal of Financial Economics,* Vol. 15,   PP. 119-152.

Emanual, D. (1983-Sept.) "A Theoretical Model for Valuing Preferred Stock." *The Journal of Finance,*   Vol. 38,   PP. 83-123.

Emery, D. R. and Gehar, A. K. (1988-Summer) "Tax Options, Capital Structure, and Miller's Equilibrium: A Numerical Illustration." *The Financial Management*, Vol. 17, PP. 30-40.

Engel, Ellen, Merle Erickson, and Edward Maydew (1999) "Debt Equity Hybrid Securities."*Journal of Accounting Research,* American Accounting Association, Vol. 37, PP. 249-273.

Enrhardt, Michael C. and Brigham Eugene F. (2002) *"Financial Management, Theory and Practice."* Tenth Edition, Singapore: Thompson Asia Pte. Ltd.

Fama, E. (1978-June) "The Effects of a Firm's Investment and Financing Decisions   of the Welfare of its Security Holders." *American Economic Review,* Vol. 68, PP. 273-84.

Fama, Eugene F. and French Kenneth R. (1998) "Taxes, Financing Decisions, and Firm Value." *The Journal of Finance,* Vol. 53, No. 3, PP. 819-843.

------And Miller Merton H.(1972) *"The Theory of Finance."* Hinsdale: Dryden Press.

Farrar, D. and Selwyn, L. L. (1967-Dec.) "Taxes, Corporate Policy and Returns to Investors." *National Tax Journal,* Vol. 20,   PP. 444 - 454.

Fazzari, Steven M., Hubbard, Gleen R., Perterson, Bruce C. (1988) "Financing Constraints and Corporate Investment. *"Brookings Paper on Economic Activity,* No.1, P.142.

Fischer, Edwin, Robert Heinkel, and Josef Zechner (1989) "Dynamic Capital Structure Choice: Theory and Tests, *The Journal of Finance,* Vol. 44, PP. 19-40.

Flath, David and Knoeber, Charles (1980) "Taxes, Failure Costs, and Optimum Industry Capital Structure: An Empirical Test." *The Journal of Finance,* Vol.35,   No.1,   PP. 99-117.

Foreign Investment Advisory Service, Nepal (1997) *"Investment Incentives, Capital Repatriation and Dispute Resolution."* FIAS Mimeo, Kathmandu, Appendix: 1-3.

Foster, George (1986) *"Financial Statement Analysis."* Second Edition, New Jersey: Prentice Hall International.

Franks, Julian R. and Cooper, Ian (1983) "Taxation and Financial Decisions." *The Journal of Finance,* Vol .38, No. 2, PP. 571-583.

Gandalf, A. E (1976-Dec.) "Taxation and the Fisher Effect." *The Journal of Finance.* Vol.48, No.5

Gandhi, Ved, P. (1968-April) "Company Tax Incidence- Industry Studies." *The Indian Economic Review,* Vol. 3, No. 1, PP. 33-47.

Garrison, Ray H. (1988) *"Managerial Accounting; Concepts for Planning, Control, Decision Making."* Fifth Edition, New York: Business Publications Inc, Homewood Illinois. P. 698.

-------And Noreen, Eric W. (2003) *"Managerial Accounting."* New York: McGraw Hill.

George, E. Lent (1977) "Corporation Income Tax Structure in Developing Countries." *IMF Staff Papers,* Vol. 24, P. 737.

Ghosh, Syamal K. (1971) "Corporate Taxation and Financial Management: A Survey of Some Critical Aspects." *Indian Journal of Commerce,* Vol. 26, No.90,PP.181-84.

Gitman, Lawrence (2004) *"Principles of Managerial Finance."* Tenth Edition, Singapore: Pearson Education Pte. Ltd.

Giudici and Paleari (2003) "Should Firms Going Public Enjoy Tax Benefits? An Analysis of the Italian Experience in the 1990s." *The European Financial Management,* Vol.9, No.4, PP. 513 – 534.

Givoly, Dan and Hayn, Carly (1992-April) "The Valuation of the Deferred Tax Liability: Evidence from the Stock Market." *The Accounting Review,* A Quarterly Journal of the American Accounting Association, Vol. 67, No 2, PP. 394 - 410.

Givoly, D.; Ofer, A.R.and Sarig, O. (1992) "Taxes and Capital Structure: Evidence from Firms' Response to the Tax Reform Act of 1986." *The Review of Financial Studies,* Vol.5, No.2, PP. 331-55.

Gordon, Roger H. and Malkiel, Burton G. (1981) "Corporate Finance." In Aaron, Henry J. and Pechman, Joseph, A. (Eds.) *"How Taxes Affect Economic Behaviour."* Washington: The Brookings Institution. PP. 131-196.

Graham, John R. (1996) "Debt and the Marginal Tax Rate." *Journal of Financial Economics,* Vol.41, PP. 41-73.

-------- (2000) "How Big are the Tax Benefits of Debt?" *The Journal of Finance,* Vol. 55, PP. 1901-1940.

Graham, Peirson; Bird Ron and Brown Rob (1985) *"Business Finance."* Sydney: McGraw Hill Book Company.

Greenberg, Edward (1964-July) "A Stock Adjustment Investment Model." *Econometrica, PP.* 339-57.

Gujarati, Damodar N. (2005) "*Basic Econometrics."* New Delhi: Tata McGraw-Hill Publishing Company Limited.

Haley, Charles W. (1971-Sept.) "Taxes, The Cost of Capital, and the Firm's Investment Decisions." *The Journal of Finance,* Vol. 26, No. 4, PP. 901-17.

Hall, R. E.and Jorgenson, D.W. (1967-June) "Tax Policy and Investment Behavior."*American Economic Review,* Vol. 57, No. 3, PP. 391-414.

Hamada, R.S. (1969-March) "Portfolio Analysis, Market Equilibrium and Corporation Finance. *"The Journal of Finance,* Vol. 24, PP. 13-32.

Heller, Jack and Kauffman, Kenneth M. (1963) *"Tax Incentives for Industry in Less Developed Countries."* Boston: Harvard Law School, PP. 2, 24.

Herper, Benard P. (1996) *"Modern Public Finance",* New Delhi: Nice Printer.

Hite, G. L. (1977-March) "Leverage, Output Effects, and the M-M Theorems." *Journal of Financial Economics,* Vol. 4, PP. 177-202.

Hutchinson, Patrick, Alison Stewart, Gregory Warwick and Lumby Stephen (1994) *"Financial Management Decisions, Principles and Practices."* Sydney: Thomas Nelson.

Jaffe, J. J. (1978-Dec.) "A Note on Taxation and Investment." *The Journal of Finance, Vol.* 33, No. 5, PP. 1439-45.

Jensen, Michael C. (1986) "Agency costs of Free Cashflow, Corporate Finance and Takeovers." *American Economic Review,* Vol. 76, PP. 323-329.

-------And Meckling, William H. (1976) "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure."*Journal of Financial Economics, Vol.* 3, PP. 305-360.

John, Eatwell; Milgate, Murray and Newman, Peter (1996) *"The New Palgrave, A Dictionary of Economics."* Vol.4, (Q to Z), London: The Macmillan Press Limited. P. 600.

Jorgenson, Dale W. and Hall, Robert E. (1967) "Tax Policy and Investment Behaviour."*The American Economic Review,* Vol. 57, P. 392.

-------And Stephenson, James A. (1967) "Investment Behaviour in U.S. Manufacturing." *Econometrica,* Vol. 35, No. 2, PP. 216-217.

Kandel, Puspa (2000) *"Corporate Tax System and Investment Behaviour in Nepal." Ph.D. Thesis.* New Delhi: Delhi University.

-------(2001) *"Corporate Taxation, Issues in Nepalese Perspective."* Kathmandu: Bhawana Prakashan.

-------(2003) *"Tax Laws and Tax Planning in Nepal."* Katmandu: Buddha Academic Enterprises Pvt.Ltd.

Kanji, Gopal K. (2005) "*100 Statistical Tests."* New Edition, London: Sage Publications.

Kemsley, Deen and Nissim, Doron (2002-Oct.) "Valuation of the Debt Tax Shield." *The Journal of Finance,* Vol. 57, No. 5. PP. 2045-2073.

Keown, Arthur J., Martin John D., Petty J. William and Scott JR. David F. (2001) *" Foundations of Finance, The Logic and Practice of Financial Management."* Third Edition. New Jersey: Prentice Hall International.

Khadka, Rup (1994) *"Nepalese Taxation, A Path for Reform."* Merburg: Merburg Consult for Self Help Promotion. P.119.

---------(2001) *"Income Taxation in Nepal: Retrospect and Prospect."* Kathmandu: Ratna Pustak Bhandar.

---------(2000) *"The Nepalese Tax System."* Kathmandu: Sajha Prakashan.

Kilby, Peter, Liedholm Carl, and Meyer Richard (1984) "Working Capital and Nonfarm Rural Enterprises." In Adams Dale W., Graham D. H. and Pischke Von J. D. (Eds.) *"Undermining Rural Development with Cheap Credit."* Boulder Colo: Westview Press.

Kim, E. H. (1978-March) "A Mean Variance Theory of Optimal Structure and Corporate Debt Capacity." *The Journal of Finance,* Vol. 33, PP. 45-64.

Kim, W. Lewellen and McConnell, J. (1979-March) "Financial Leverage Clienteles: Theory and Evidence." *Journal of Financial Economics.* PP 83-109.

King, John R. (1995) "Debt and Equity Financing." In Parthasarathi Some (Ed.) *"Tax Policy",* Washington: IMF. P.158.

King, M. A. (1974 -Jan.) "Taxation and the Cost of Capital." *Review of Economic Studies,* Vol. 42, PP. 21-35.

--------(1972) "Taxation and Investment Incentives in a Vintage Investment Model." *Journal of Public Economics,* Vol. 1, P. 141.

---------(1977) *"Public Policy and the Corporation."* London: Chapman and Hall.

Koirala, Shalik Ram (1992) *"A Study of Accounts Receivable Management in Public Manufacturing Industries in Nepal." Ph.D. Thesis.* Udaipur: Mohanlal Sukhadia University.

Kopche, R. W. (1989 -July-Aug.) "The Roles of Debt and Equity in Financing Corporate Investments." *New England Economic Review,* PP. 25-48.

Kothari, C.R. (2003) *"Research Methodology, Methods and Techniques."* New Delhi: K.K. Gupta for New Age International (P) Ltd.

Kotrappa, G. (1995 -Dec.) "The Impact of Income Tax on Equity Financing. "*Indian Journal of Commerce, Vol.* 48, No.185, PP. 17-22.

Kraus, A. and Litzenberger, R.H. (1973 -Sept.) "A State Preference Model of Optimal Financial Leverage." *The Journal of Finance,* Vol. 28, PP. 911-922.

Kraus, Joshua; Hochman, Joel and Schiff, Allen (1987-Sept.) "The Impact of Taxation on Project Valuation for Alternative Depreciation Methods." *Accounting Horizons,* The American Accounting Association, Vol.1, No 3, PP. 37- 40.

Kshetry, Karna B. Poudyal (1997) *"Corporate Tax Planning in Nepal." Ph.D. Thesis,* Varanasi: Banaras Hindu University.

Lall, V. D. (1975-March) "Changing the Corporate Tax Base" *Economic and Political Weekly.* P. 531.

Lewellen, Wilbur G. and Mauer, David C. (1987) "Debt Management under Corporate and Personal Taxation." *The Journal of Finance,* Vol.52, No. 5, PP.1275-1291.

Lincoln, E.E.(1932) *"Applied Business Finance."* Chicago: A.W. Shaw Company.

Linter, J. (1962-Aug.) "Dividends, Earnings, Leverage, Stock Prices and the Supply of Capital to Corporations." *Review of Economics and Statistics,* Vol.44, PP. 243-70.

Liu Jing, Nissim Doron, and Thomas Jacob (2002) "Equity Valuation Using Multiples. *"Journal of Accounting Research,* Vol. 40, PP. 135-72.

Long, M.S. and Malitz, I. B. (1985) "Investment Patterns and Financial Leverage." In Friedman (Ed.) *Corporate Capital Structures in the United States,* Chicago: University of Chicago, PP. 325-48.

Louderback and Dominiak (1982) *"Managerial Accounting."* Third Edition, Boston: Kent Publishing Company, P. 272.

Lyon, Andrew (1992) "Taxation, Information Asymmetries, and Firm's Financing Choices." *Policy Research, WPS -936,* Washington: The World Bank.

---------(1995) "Debt, Equity and Taxes under Symmetric Information." In Anwar Shah (Ed.) *"Fiscal Incentives for Investment and Innovation."* Washington: The World Bank.

MacKie-Mason (1990) "Do taxes affect corporate financing decisions?" *The Journal of Finance,* Vol. 45, PP. 1471-1493.

Mao, James C. T. (1969) *"Quantitative Analysis of Financial Decisions."* New York: Macmillan and Company, PP. 371-463.

Marsh, Paul (1982) "The Choice between Equity and Debt: An Empirical Study." *The Journal of Finance,* Vol. 37, No. 1, PP. 121-144.

Martin, John D., Petty J. William, Keown Arthur J. and Scott David F. (1991) *"Basic Financial Management."* New Jersey: Prentice Hall International.

Masulis, Ronald W. (1983) "The Impact of Capital Structure Changes on Firm Value: Some Estimates."*The Journal of Finance,* Vol.38, No. 1, PP.107-126.

Mauer, David C. and Triantis, Alexander J. (1994) "Interactions of Corporate Financing and Investment Decisions: A Dynamic Framework." *The Journal of Finance,* Vol. 59, No. 4, PP. 1253-1277.

Mayer, Colin (1990) "Financial Systems, Corporate finance, and Economic Development." In R. Glenn Hubbard (Ed.) "Asymmetric *Information, Corporate Finance, and Investment,* Chicago: University of Chicago Press.

Meade, J. E. (1987) "*The Structure and Reform of Direct Taxation."* London: The Institute of Fiscal Studies, P. 229.

Miles, James A. (1983) "Taxes and Fisher Effect: A clarifying Analysis." *The Journal of Finance,* Vol. 38, No. 1, PP. 67-77.

Miller, Merton H. (1977-May) "Debt and Taxes." *The Journal of Finance,* Vol.32, No.2,P.269.

--------And Scholes, Myron S. (1978) "Dividends and Taxes." *Journal of Financial Economics,* Vol. 6, PP. 333-364.

-------And Rock, Kevin, (1985) "Dividend Policy under Asymmetric Information." *The Journal of Finance,* Vol. 40, PP. 1031-1051.

Miller, M. H. and Modigliani (1961-Oct.) "Dividend Policy, Growth, and the Valuation of Shares." *Journal of Business,* Vol. 34, PP. 411-33.

Ministry of Finance, Department of Economic Affairs, Government of India (1953) *"Report of the Taxation Inquiry Commission."* Vol. 2, P. 152.

MOF, IRD: Ministry of Finance, Inland Revenue Department (2000) *"Statistical Abstracts, Facts and Figures about Taxation since 1959 A. D."*

---------(2001) *"Annual Report on Taxation, For the Fiscal Year, 2000/01."*

-------- (2002) *"Annual Report on Taxation, For the Fiscal Year, 2001/02."*

-------- (2003) "Annual Report on Taxation, For the Fiscal Year, 2002/03."

MOF: Ministry of Finance, Nepal (1951) ''Budget Speech of Fiscal year 1951."

-------- (2002*) "Economic Survey, For the Fiscal Year, 2001/02."*

------- (2003*) "Economic Survey, For the Fiscal Year, 2002/03."*

-------- (2004*) "Economic Survey, For the Fiscal Year, 2003/04."*

-------- (2001) *"Public Statement on Income and Expenditure of the Fiscal Year, 2000/01.*

-------- (2003) *"Public Statement on Income and Expenditure of the Fiscal Year, 2002/03.*

MOL: Ministry of Law and Justice, Law Books Management Committee, Nepal (2002) *"Income Tax Act, 2001."*

MOL: Ministry of Law and Justice, Nepal (1962) "*Income Tax Act, 1962."*

-------------(1960) *"Business Profits and Salaries Tax Act, 1960."*

-------------(1974) *"Income Tax Act, 1974."*

-------------(1981) *"Industrial Enterprise   Act, 1981."*

------------ (1992) *"Industrial Enterprise   Act, 1992."*

Mira, Francisco S. (2005) "How SME Uniqueness Affects Capital Structure: Evidence from A 1994-1998 Spanish Data Panel." *Small Business Economics,* Vol. 25,   PP. 447-457.

Mittal, S. W. (1989) *"Taxation Policies and Financial Decisions, With Case Studies."* New Delhi: V. K. Publishing.

Modigliani, F. and Miller, M. H. (1958-June) "The Cost of Capital, Corporation Finance and the Theory of Investment." *The American Economic Review,* Vol. 3, PP. 261-97.

---------(1963-June) "Corporate Finance, Taxes and the Cost of Capital A Correction." *American Economic Review,* Vol. 53, PP. 433-443.

---------(1966-June) "Some Estimates of the cost of Capital to the Electric Utility Industry." *American Economic Review,* Vol. 56, PP.333-391

Mohasin, Mohammad (1968) "Effect of Corporate Income Taxes on Methods of Financing." *Commerce Pamphlet*, No. 23, P.1-19

Morris, Robert and Associates (1983) *"Annual Statement Studies."* Philadelphia: RMA.

Musgrave, R. A. (1963) "Effect of the Tax Policy on Private Capital Formation." In Commission on Money and Credit (Ed.) *Fiscal and Debt Management Policies,* New Jersey: Prentice Hall International.

--------And Musgrave, Peggy B. (1984) "*Public Finance in Theory and Practice",* Singapore: McGraw Hill.

Myers, Stewart C. (1977) "Determinants of Corporate Borrowing." *Journal of Financial Economics,* Vol. 13, No. 2, PP. 147-175.

--------(1984-July) "The Capital Structure Puzzle." *The Journal of Finance,*Vol.39, PP. 575-592.

--------- And Brealey Richard A. (2000) *"Principles of Corporate Finance."* Sixth Edition, New York: McGraw Hill.

---------And Majluf, N. (1984-June) "Financing Decisions When Firms Have Investment Information That Investors Do Not." *Journal of Financial Economics.* PP. 187-220.

Nepal, Shankar Prasad (2002) *"Taxation of Income in Nepal." Ph.D. Thesis,* Gorakhpur: Gorakhpur University.

NEPSE (1995) *"Financial Statements of Listed Companies, FY 1993/94,"* Vol. I.

---------(1996) *"Financial Statements of Listed Companies, FY 1994/95,"* Vol. II.

---------(1997) *"Financial Statements of Listed Companies, FY 1995/96,"* Vol. III.

---------(1999) "*Financial Statements of Listed Companies, FY 1997/98,"* Vol. IV.

---------(2001) *"Financial Statements of Listed Companies, FY 1999/00,"* Vol. VI.

--------(2002) *"Financial Statements of Listed Companies, FY 2000/01,"* Vol. VII.

--------(1997 to 2004) *"Trading Reports, For the Fiscal Years 1995/96 to 2002/03".*

Newbery, David and Stern, Nicholas (1987) "The Theory of Taxation in Developing Countries." *A World Bank Research Publication,* Washington: World Bank

Noreen, Eric W. and Bowen, Robert M. (1989) "Tax Incentives and the Decision to Capitalize or Expense Manufacturing Overhead." *Accounting Horizons,* A Quarterly Publication of the American Accounting Association, Vol. 3, No 1, PP. 29-42.

Owen, C.F. (1960-Sept.) "Business Financing and Taxation Policies" *The Journal of Finance,* Vol.15, No. 3, PP. 417- 419.

Oza, P.R. (1971-March) "Corporate Tax Planning and Managerial Decisions." *Indian Journal of Commerce, Vol.* 24, No. 86, PP .83-89.

Panda, Ghanashyam (1971) "Tax Incidence as a Determinant of Corporate Financing Decision: The Indian Scene." *Indian Journal of Commerce,* Vol. 26, No. 90, PP. 192 -198.

Penman, Stephen H. (1996) "The Articulation of Price Earnings Ratios and Market to Book Ratios and the Evaluation of Growth." *Journal of Accounting Research,* Vol. 34, PP. 235-259.

Petersen, H. Craig and Lewis W. Cris (2005) "Business Decision and Taxes" *Managerial Economics,* Fourth Edition, New Delhi: Prentice-Hall of India Pvt. Ltd. PP. 603-627.

Pike, Richard and Neale Bill (1999) *"Corporate Finance, Investment Decisions & Strategies"* New Delhi: Prentice Hall of India, Pvt. Ltd.

Pocock, M. A. and Taylor, A. H. (1981) "*Handbook of Financial Planning and Control."* West mead: Grower Publishing Company Limited.

Poudyal, Karna B. (1998) *"Corporate Tax Planning in Nepal."* Pokhara: Sita Poudyal.

Pradhan, Radhe S. (1994) "*Industrialisation in Nepal: A Macro and Micro Perspective",* New Delhi: NBO Publishers' Distributors.

--------(2003) *"Research in Nepalese Finance."* First Edition, Kathmandu: Buddha Academic Publishers and Distributers Pvt. Ltd.

------- And Chaudhary, Mahesh Prasad (2004) "The Relationship between Firm Investment and Financial Status of Nepalese Enterprises." *A Journal of Management and Development Review,* Vol. 1, No.1, Kathmandu: Society for Development and Welfare Nepal,   PP. 9-16.

Pradhananga, Nagendra Bahadur (1992) *"Income Tax Law and Practice."* Kathmandu: Ratna Pustak Bhandar.

Prest, A.R. and Barr, N. A. (1985) *"Public Finance in Theory and Practice"* London: Weidenfeld and Nicolson.

Pringle, John J. and Harris, Robert S. (1987) *"Essentials of Managerial Finance."* Sydney: Scott Foresman and Company.

Rao, S. C. Humananta and Rao, V. Ganapathi, (1971-Dec.) "The Effects of Taxation on Corporate Capital Structure. "*Indian Journal of Commerce."* Vol. 26,   No. 90,   PP. 239-248.

Rao, V. G. and Rao K. S. H., (1975-April) "The Corporate Income Tax and Corporate Debt Policy." *Indian Economic Review,* Vol,10.New Series, No. 1. PP. 7-25.

Requejo, Jesus S. (1996- Autumn) "Financing Decisions: Lessons from the Spanish Experience."*The Financial Management,* Vol.25, No. 3, PP.44 - 56.

Richard, M. Bird (1970) *"Taxation and Development Lessons from Colombian Experience."* Cambridge: Harvard University Press, P. 82.

Robichek, A. A. and Myers S. C.(1966-June) "Problems in the Theory of Optimal Capital Structure."*Journalof Financial and Quantitative Analysis,*Vol.1,No.2.

Robson, Colin (2003) *"Real World Research."* Second Edition, Malden: Black-Well Publishing Ltd.

Ross, Stephen A., Westerfield Randolph W. and Jaffe Jeffrey F. (1993) *"Corporate Finance."* International Student Edition, Boston: Irwin Inc.

-----------Jordan, Bradford D. and Westerfield, Randolph W.; (2001) *"Essential of Corporate Finance."* Third Edition, New York: McGraw Hill.

Sah, Ram Khelawan (1992) *"The Role of Fiscal Policy in the Economic Development of Nepal." Ph.D. Thesis,* Darbhanga: L.N. Mithila University.

Sahu, Promod K. (1971) "Corporate Taxation and Investment Decision; Effect of Tax in Financing the Investment." *Indian Journal of Commerce,* Vol. 26, No. 90, PP. 199-205.

Salinger, Michael A. and Summers, Lawrence H. "Tax Reform and Corporate Investment: A Micro Econometric Simulation Study."In Martin Feldstein (Ed.)*"Behavioral Simulation Methods in Tax Policy."* Chicago: University of Chicago Press. P.273.

Samuelson, P. A. (1964 -Dec.) "Tax Deductibility of Economic Depreciation to Insure Invariant Valuations." *Journal of Political Economy,* PP. 604-6.

Sandy, Robert (1990) "Statistics for Business and Economics." New York: McGraw Hill.

Sarma, L.V.L.N. and Rao, K. S. H. (1969) "Leverage and the Value of the Firm." *The Journal of Finance, Vol.* 24, No. 4, PP. 673-677.

Sarnat, Marshall and Levy Haim, (1990) *"Capital Investment and Financial Decisions."* London: Prentice Hall International.

Saynyal, S. K. (1971-May) "Trading on the Equity: A Tool in the Hands of the Financial Manager". *The Chartered Accountant,* The Institute of Chartered Accountants of India,   P. 817.

Scholefield, Harry (1971) "What has Happened to Investment Incentives." *Journal of Business Finance, Vol.* 3, No. 4,   P.1.

Scholes, M. and Wolfson, M. (1988) "The Cost of Capital and Changes in Tax Regimes",in H.Aaron,H.Galper, and J. Pechman (Eds.) *"Uneasy Compromise: Problems of a Hybrid Income Consumption Tax."* Washington: Brookings Institution.

SEBO/N: Securities Board, Nepal (2003) "Annual Report, 2002/03."

--------(2004) "Annual Report, 2003/04."

Shah, Anwar (1995) *"Fiscal Incentives for Investment and Innovation."* Washington: The World Bank.

Shalizi, Zmrak and Thirsk, Wayne (1990) *"Tax Reform In Malawi." WPS-493,* Washington: The World Bank, Country Economic Department.

Sharma, Puskar Kumar and Silwal, Dhruba Prasad (1999) *"Business Statistics."* Kathmandu: Taleju Prakashan.

Sheth, C. S. (1982) *"Theory and Practice of Public Finance."* Bombay: Himalayan   Publishing House.

Shevlin, Terry (1999) "Research in Taxation." *Accounting Horizons,* Journal of American Accounting Association, Vol. 13, No. 4, PP. 427- 441.

Shome, Parthasarathi and Schutte, Christian (1993) "Cash Flow Tax." *IMF Staff Papers,* Vol. 40, No. 3,   P. 658.

Shrestha, Puran Prasad (2004) *"Privatisation and Economic Performance: A Study of Selected Privatised Public Enterprises of Nepal." Ph.D.Thesis.* Kathmandu: Tribhuvan University.

Singh, Rajiv Kumar (2004) "Long Term Decision Making- Estimation of Cash Flow and Valuation of Business." *The Chartered Accountant,* The Institute of Chartered Accountants of India, Vol. 8,   No.1,   PP. 6-9.

Sing, S.K.(2001) *"Public Finance in Theory and Practice"* New Delhi: S. Chand and Company Ltd.

Smith, Dan Throop (1952) *"Effects of Taxation, Corporate Financial Policy."* Boston: Harvard University, Division of Research, Graduate School of Business Administration.

Smith, V. L. (1963-Jan.) "Tax Depreciation Policy and Investment Theory." *International Economic Review,* Vol. 4, PP. 80-90.

Solnik, B. H. and Grall, J. (1975-Winter) "Eurobonds: Determinants of the Demand   for Capital and the International Interest Rate Structure." *The Journal of Bank Research*.

Solomon, Ezra (1968) *"The Management of Corporate Capital."* New York: The Free Press, P. 41.

Sondhi, C. Ashwinpaul, White I. Gerald, and Fried Dov, (1994) *"The Analysis and Use of Financial Statements."* New York: John Wiley & Sons, Inc.

Southwick, Jr. Lawrence (1985) *"Managerial Economics."* New York: Business Publications Inc.

Spencer, Byron G. (1969-Feb) "The Shifting of the Corporate Income Tax in Canada." *The Canadian Journal of Economics,* PP. 21-34.

Srivastava, R.M. (1984) *"Financial Decision Making: Text, Problems and Cases."* New Delhi: Sterling Publishers Pvt. Ltd.

Starkey, James L. (1972) "Tax Incentives and Investment Behaviour in Manufacturing, 1954-68." *The Journal of Finance,* Vol. 27, P. 740.

Stonehill, A.; Beekhuisen, T.; Wright, R.; Remmers; L.; Toy, N.; Pares, A.; Shapiro, A; Egan, D.; Betes, T;(1973) *"Determinants of Corporate Financial Structure: A Survey of Practice in Five Countries."* Unpublished Paper.

Taggart, Robert A. (1980)"Taxes and Corporate Capital Structure in a Incomplete Market." *The Journal of Finance,* Vol. 35, No. 3, PP. 645-659.

-------(1977-Dec.) "A Model of Corporate Financing Decisions." *The Journal of Finance,* Vol. 32, PP. 1467-1484.

Tambrini, L. (1969) "Financial Policy and the Corporation Income Tax." In Harberger M.J.and Bailey M. J. (Eds.) *'The Taxation of Income from Capital.'* Washington: Brookings Institute.

Taub, A. (1975-Nov.) "The Determinants of Firm's Capital Structure." *Review of Economics and Statistics,* Vol. 57, PP. 410-416.

"The World Book Encyclopedia" (1966), Volume 12, London: Field Enterprises Education Corporation.

Thompson, Spencer C., Ross Stephen A., Christenman Mark J., Westerfield Randolph W. and Jordan Bradford D. (1994)"*Fundamentals of Corporate Finance."* First Australian Edition, New South Wales: Irwin Inc.

Titman, Sheridan and Wessels, Roberto (1988-March) "The Determinants of Capital Structure Choice." *The Journal of Finance,* Vol. 43, No. 1, PP. 1-19.

Trezevant, Robert (1992) "Debt Financing and Tax Status: Tests of the Substitution Effect and the Tax Exhaustion Hypothesis Using Firms Responses to the Economic Recovery Tax Act of 1981." *The Journal of Finance,* Vol. 45, PP. 1557-1568.

United Nations, (2000) *"Tax Incentives and Foreign Direct Investment: A Global Survey."* PP. 3-5.

Van Horne, James C. (2000) *"Financial Management and Policy."* New Delhi: Prentice Hall of India Pvt. Ltd.

Vasan, Srini and Vijay, Philip (1986) *"Credit Rationing and Corporate Investment." Unpublished Doctoral Dissertation,* Boston: Harvard University.

Veseth, Michael (1984) *"Public Finance"* New York: John Wiley & Sons, Inc.

Vogt, Stephen C. (1997-Summer) "Cash Flow and Capital Spending: Evidence from Capital Expenditure Announcements." *The Journal of Financial Management,* Vol.26, No 2, PP. 44-57.

Wang, Shiing Wu (1991) "The Relation between Firm Size and Effective Tax Rates: A Test of Firms' Political Success." *The Accounting Review*, American Accounting Association, Vol. 66, No.1, PP. 158-169.

Warner, Jerold R. (1977) "Bankruptcy Costs, Absolute Priority, and the Pricing of Risky Debt Claims."*Journal of Financial Economics,*Vol. 4, No. 3, PP.239-76.

Webster, Thomos J. (2003) *"Managerial Economics, Theory and Practice."* California: Academic Press, An Imprint of Elsevier.

Wedig, Gerard, Sloan A. Frank, Hassan Mohamed and Morrissey A. Michael (1988- March) "Capital Structure, Ownership and Capital Payment Policy: The case of Hospital." *The Journal of Finance,* Vol. 43, No 1, PP. 32-37.

Whited, T. (1992-Sept.) "Debt, Liquidity Constraints and Corporate Investment: Evidence from Panel Data." *The Journal of Finance,* PP. 1425-1460.

White, W. L. (1974-May) "Debt Management and the Form of Business Financing." *The Journal of Finance,* Vol. 29, PP. 565-577.

Wolff, Howard and Pant, Prem R. (2002) *"A Hand Book for Social Science Research and Thesis Writing."* Third Edition, Kathmandu: Buddha Academic Publishers & Distributor Pvt. Ltd.

World Bank, Foreign Investment Advisory Service, (1997) *"Nepal: Investment Incentives, Capital Repatriation and Dispute Resolution."* P. 8.

Wrightsman, Dwayne (1978) "Tax Shield Valuation and Capital Structure Decision." *The Journal of Finance,* Vol. 38, No. 2, PP. 650-658.

Zimmerman, Jerold L., (1983-Aug.) "Taxes and Firm Size," *Journal of Accounting and Economics.* PP. 119-149.

Zingales and Rajan (1995) "What do We Know about Capital Structure Choice? Some Evidence from International Data." *The Journal of Finance,* Vol. 50, PP. 1421-60.

Appendix-3

A Brief Profile of the Selected Companies:

(a) Nepal Lube Oil Ltd. (NLOL) was established in 1984, as a public sector company under the Company Act, 1964. This company is located at Amlekhgunj of Bara district. It was enlisted in Stock Exchange Limited, Nepal (NEPSE) in 1986. The main objective of the company is to produce lubricating oil and process them for the use of automatic machineries and also to contribute for the economic development of the country by reducing the import of various lubricating oils. The company was privatized in 1993, in accordance with Privatization Programme of Nepalese Government. The company is managed by ABB Investment Pvt. Ltd. Company.

(b) Gorakhkali Rubber Udyog Limited (GRUL) was incorporated in 1984 under the Company Act, 1964 with an objective of manufacturing tire and tube of various types for trucks, buses, cars, jeeps, motorcycles and other vehicles and market them in and outside the country. This company is located at Majuba Deurali of Gorkha district. It was enlisted in Stock Exchange Limited, Nepal (NEPSE) in 1991. This company was incorporated as a joint sector company. Nepal Oil Corporation, National Trading Limited, Nepal Industrial Development Corporation, and Salt Trading Corporation are the main promoters of the company. Salt Trading Corporation has been managing this company. Asian Development Bank is also holding 13 percent equity in the company.

(c) Sayapatri Colour Lab Limited (SCLL) was established in 1989 under the Company Act, 1964. This company is located at Jamal, Kathmandu Metropolitan City. The main objective of the company is to develop and print color photographs and to provide other color printing facilities to the public. The other objective of the company is to import and distribute chemical, paper and other

printing materials. It was enlisted in Stock Exchange Limited, Nepal (NEPSE) in 1992.

(d) Nepal Lever Ltd. (NELL) was established in 1994 as a joint venture company with an objective of establishing a factory to manufacture soaps, detergents, cosmetics, and other chemical products under the brand name of the products of Hindustan Lever Limited. This company is located at Hetauda of Makawanpur district. Hindustan Lever Limited with 80 percent ownership has invested Rs. 73.7 millions in equity. This is the first joint venture of Hindustan Lever Limited outside India. It was enlisted in Stock Exchange Limited, Nepal (NEPSE) in 1994.

(e) Nepal Banaspati Ghee Udyog Limited (NBGL) was established under the Company Act, 1964 in 1976 with an objective of producing ghee, oil and other byproducts and market them allover the country. The main promoter of the company is Salt Trading Corporation Limited, which has largest trading network and well trading reputation throughout the country. This company is located at Hetauda Industrial District, Makawanpur district. It was enlisted in Stock Exchange Limited, Nepal (NEPSE) in 1988.

(f) Khadya Udyog Limited (KHUL), a subsidiary of Salt Trading Corporation was established in 1971 under the Company Act, 1964 as a private limited company. It was converted into public company in 1993. The company is purely agro-based company and situated at Hetauda Industrial District, Hetauda, Makawanpur district. The major objective of the company is to produce and distribute high quality flour and other byproducts within the country. It was enlisted in Stock Exchange Limited, Nepal (NEPSE) in 1994.

(g) Arun Vanaspati Udyog Limited (AVUL) a joint venture with Charnli Development Company Limited of Bermuda, was established in 1988 under the Company Act, 1964 with an objective of producing edible vegetable ghee and

refined oil. The company with a production capacity of thirty metric ton a day has been producing vegetable ghee and oil of international standard since 1991. The company is promoted and operated by Golcha Group under its management. This company is located at Duhabi of Sunsari district. It was enlisted in Stock Exchange Limited, Nepal (NEPSE) in 1991.

(h) Bottlers Nepal Limited (BONL) was established in 1973 as a private limited company under the Company Act, 1964. This company is located at Balaju of Kathmandu district. It was converted into public limited company in 1984. The main objective of the company is to produce and bottle soft drinks under the brand name of Coke, Fanta, and Sprite etc. The company has established a subsidiary company in Chitwan district. F & N Cocacola Pte. Ltd., Singapore, the major shareholder of the company, is managing the company since 1993. It was enlisted in Stock Exchange Limited, Nepal (NEPSE) in 1986.

(i) Nepal Bitumen and Barrel Udyog Limited (NBBL) was established in 1985 as a subsidiary company of Nepal Oil Corporation under the company Act, 1964. It is situated in Amlekhgunj of Bara district. The main objective of the company is to supply bitumen, bitumen drums manufacture of barrels with the options to generate value added income through the marketing of bitumen in bulk. It was privatized in 1994 and enlisted in Stock Exchange Limited, Nepal (NEPSE) in 1999.

(j) Bottlers Nepal (Terai) Limited (BOTL) was established in 1986 as a subsidiary company of Bottlers Nepal Ltd., under the Company Act, 1964. The main objective of the company is to produce and bottle soft drinks under the brand name of Coke, Fanta, Sprite, etc. This Company is situated in Chitwan District and is under the management of F & N Cocacola Pte. Ltd., Singapore since 1993. It was enlisted in Stock Exchange Limited, Nepal (NEPSE) in 1991.

(Source: Field Survey)

Appendix- 4.1

National Account Data (1990/91 to 2002/03)

Rs. In Million

FY.	Customs (1)	Tax on Goods and Services(2)	Indirect Tax (3) 1+2	Income Tax From:				Corporate Income Tax (8) 4+5+6+7
				Govt. Corps. (4)	Semi Govt. Corps. (5)	Public Comp- anies (6)	Private Comp- anies (7)	
1990/91	3044.3	3763.4	6807.7	162.2	2.7		171.1	336
1991/92	3358.9	4921.5	8280.4	171.1	5.3	6.5	201.1	384
1992/93	3945	5681.3	9626.3	255.3	2.6	9.5	256.4	523.8
1993/94	5255	7261.2	12516.2	534.1	2.1	19.7	379.4	935.3
1994/95	7018.1	8792.6	15810.7	860.2		440.1	415.4	1715.7
1995/96	7324.4	9684.7	17009.1	1144.5		563.9	522.1	2230.5
1996/97	8309.1	10775.2	19084.3	1231.1		858.4	600.1	2689.6
1997/98	8502.2	11249.7	19751.9	1317.8		925.1	690.2	2933.1
1998/99	9517.17	11719.1	21236.8	1526.5		1155	780.4	3461.9
1999/00	10813.3	13387.3	24200.6	2198.8		1339.5	900.2	4438.5
2000/01	12552.1	16153.6	28705.7	2928		1924.3	1130.1	5982.4
2001/02	12658.7	16074.3	28733	1769.3		1412	1170.7	4351.9
2002/03	14236.4	18244.8	32481.2	1251		1226.3	1167.7	3644.9
Total	106535.2	137708.7	244243.9	15349.9	12.7	9880.3	8384.8	33627.7
Mean	8195.1	10592.9	18787.9	1180.8	3.175	823.4	644.9	2586.8

Contd.

F.Y.	Income Tax From:		Total Income Tax (11) 8+9+10	Tax On Propert y (12)	Land Revenue (13)	Total Direct Tax (14) 11+12+13	Total Tax Revenue (15) 3+14	Non Tax Reve- nue (16)	Total Revenue (17) 15+16	GDP (IO) Factor Cost
	Remun eration (9)	Indivi- dual (10)								
1990/91	49.9	360.2	746.1	83.8	540	1369.9	8177.6	2553.5	10731.1	116127
1991/92	54.7	416.8	855.5	103.6	636.1	1595.2	9875.6	3637.1	13512.7	144933
1992/93	56.7	544.3	1124.8	156.5	754.9	2036.2	11662.5	3485.9	15148.4	165368
1993/94	83.8	805.4	1824.5	197.6	833.2	2855.3	15371.5	4209.4	19580.9	191596
1994/95	118.4	878.1	2712.2	199.8	937.7	3849.7	19660.4	4945.1	24605.5	209974
1995/96	133.1	948.1	3311.7	277.7	1066.6	4656	21665.1	6225.1	27890.2	239388
1996/97	168.1	1111.3	3969	355.6	1015.4	5340	24424.3	5949.1	30373.4	269570
1997/98	322.2	1430.6	4685.9	497.8	1004.2	6187.9	25939.8	6998.1	32937.9	289798
1998/99	396.5	1947.3	5805.7	662.2	1003.2	7471.1	28707.9	8498.4	37206.3	330018
1999/00	451.5	2116.4	7006.4	929.4	1015.9	8951.7	33152.3	9741.6	42893.9	366284
2000/01	597.3	2070.1	8649.8	896.4	612.9	10159.1	38864.8	10028.8	48893.5	393566
2001/02	835.6	3248.5	8436	1029.7	1131.8	10597.5	39330.5	11114.9	50445.4	405632
2002/03	1252.6	2194.7	7092.2	1589.3	1414.3	10095.8	42577	13642.9	56219.9	435531
Total	4520.4	18071.6	56219.8	6979.4	11966.2	75165.4	319409.2	91029.9	410440	3557785
Mean	347.8	1390.2	4324.6	536.9	920.5	5781.9	24569.9	7002.3	31572.3	273675.8

Sources: (1) MOF "Economic Survey, For the Fiscal Year 2001/02."
(2) MOF "Economic Survey, For the Fiscal Year 2003/04."
(3) MOF "Public Statement on Income and Expenditure of the Fiscal Year 2000/01."
(4) MOF "Public Statement on Income and Expenditure of the Fiscal Year 2002/03."
(5) IRD "Statistical Abstracts 2000, Facts & Figures about Taxation Since 1959 A.D."
(6) IRD "Annual Report, 2000/01."
(7) IRD "Annual Report, 2001/02."
(8) IRD "Annual Report2002/03."

Appendix - 5

Statutory Corporate Tax Rates for Listed Manufacturing Companies:

S.No.	Fiscal Year:	Rates (%):
1	1990/91	40
2	1991/92	35
3	1992/93	25
4	1993/94	25
5	1994/95	25
6	1995/96	23
7	1996/97	23
8	1997/98	20
9	1998/99	20
10	1999/00	20
11	2000/01	20
12	2001/02	20
13	2002/03	20

Sources: (1) Kandel (2001) "Corporate Taxation: Issues in Nepalese Perspectives."
Appendix-1, P. 134.

(2) MOL (2002) "Income Tax Act, 2001."

Appendix- 5 (a)

Financial Accounting Data Used for Analysis: (BONL, 1990/91-2002/03

Rs in Million

FY	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Total Assets	93.28	93.37	78.3	227.68	281.55	335.42	626.1	733.77	812.75	842.65	951.88	1036.05	1038.41
Total Liabilities	77.47	70.98	58.28	69.1	88.09	107.08	224.71	277.45	294.26	275.26	285.06	340.11	332.84
Net Worth	15.81	22.39	20.02	158.58	193.46	228.33	401.39	456.32	518.51	567.39	666.82	695.94	705.57
Gross Block	37.32	37.11	37.13	46.33	68.25	78.91	100.96	384.76	432.67	483.85	514.99	634.45	654.18
Inventories	23.23	49.88	40.75	67.45	70.2	72.95	78.14	86.35	136.77	121.11	142.73	185.96	277.23
Operating Liabilities	29.57	19.62	19.95	54.15	69.67	85.19	217.77	276.16	290.66	270.16	284.61	336.44	331.28
IBD	47.9	51.36	38.33	14.95	18.42	21.89	6.94	1.29	3.6	5.1	0.45	3.67	1.56
Depreciation	3.25	2.85	2.48	4.17	5.45	6.73	7.88	16.5	32.34	37.45	44.11	51.57	56.27
EBIT	9.06	15.16	11.85	39.18	74.09	109	85.57	73.36	72.03	65.95	45.6	58.14	30.06
Interest	8.63	8.77	8.53	2.8	3.45	4.1	1.3	0.07	0.72	0.92	0.08	0.66	0.28
Provision For Income Tax	0.13	0.13	0.13	10.92	20.12	29.33	19.59	14.32	9.13	9.13	9.64	8.87	10.4
Profit Before Tax	0.43	6.39	3.32	36.38	70.64	104.9	57.27	73.29	71.31	65.03	45.52	57.48	29.78
Retained Earnings	-3.58	-6.39	-15.19	31.05	34.88	34.88	34.47	54.93	62.19	48.88	-272.54	314.46	9.63
Share Capital	19.29	19.67	108.28	108.28	108.27	108.28	108.27	108.27	108.27	300	194.89	194.89	194.89
Price per Share (Closing) Rs	300	300	200	200	200	351	320	375	380	605	600	700	700

Notes: EBIT =   Earning before interest and tax, IBD = Interest bearing debt, Share = Equity share.
Sources: (1) NEPSE (1995) "Financial Statements of Listed Companies, FY 1993/94." Vol. I.
   (2) NEPSE (1996) "Financial Statements of Listed Companies, FY 1994/95" Vol. II
   (3) NEPSE (1997) "Financial Statements of Listed Companies, FY 1995/96" Vol. III
   (4) NEPSE (1999) "Financial Statements of Listed Companies, FY 1997/98" Vol. IV
   (5) NEPSE (2001) "Financial Statements of Listed Companies, FY1999/00" Vol. VI
   (6) NEPSE (2002) "Financial Statements of Listed Companies, FY 2000/01" Vol. VII
   (7) NEPSE (1997 to 2004) "Trading Report" For the Fiscal Years 1995/96 to 2002/03
   (8) SEBO/N (2003) "Annual Report, 2002/03."
   (9) SEBO/N (2004) "Annual Report, 2003/04.
   (10) AGM Reports of the respective company for various fiscal years.

Appendix- 5 (b)

Financial Accounting Data Used for Analysis: (BNTL, 1990/91 to 2002/03)

Rs. In Million

FY	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Total Assets	106.75	94.39	97.97	94.84	216.26	258	301.89	345.77	454.98	529.47	626.85	687.92	667.8
Total Liabilities	110.73	112.99	79.54	63.81	140.78	139.55	147.24	154.93	194.77	199.48	267.49	305.68	272.31
Net Worth	-3.98	-18.62	18.42	31.02	75.46	118.45	154.65	190.85	260.22	329.99	359.36	382.24	395.49
Gross Block	78.77	79.09	109.91	113.87	127.89	141.88	161.65	195.98	217.7	250.16	265.37	288.96	333.69
Inventory	36.05	27.35	25.99	18.08	46.63	75.18	71.84	73.35	126.76	94.27	150.85	177.74	134.41
Operating Liabilities	52.77	56.7	30.06	16.66	61.64	120.18	136.03	154.69	191.42	196.3	265.11	304.18	270.35
IBD	57.96	56.29	49.48	47.15	79.14	19.37	11.21	0.24	3.35	3.18	2.38	1.5	1.96
Depreciation	6.38	6.46	10.17	10.06	17.95	10.92	10.92	6.68	8.76	13.09	17.49	19.94	22.2
EBIT	-7.7	-1.01	6.47	20.43	72.94	58.76	75.6	92.43	86.66	81.33	71.75	49.89	34
Interest	12.55	13.28	6.99	5.88	8.56	3.1	1.57	0.04	0.57	0.51	0.38	0.24	0.33
Provision For Income Tax	0	0	0	1.94	19.95	12.67	16.33	19.98	16.71	14.54	15.11	10.51	8.32
Profit Before Tax	-20.25	-14.29	-0.52	14.55	64.38	55.66	74.03	92.39	86.09	80.82	71.37	49.65	33.67
Retained Earnings	-20.25	-14.29	-47.39	12.58	44.44	43	0	73.39	69.36	61.33	33.65	27.04	13.26
Share Capital	34.9	34.9	34.9	121	121	121	121	121	121	121	121	121	121
Price per Share,Rs. (Closing)	NA	NA	NA	NA	85	102	131	325	785	710	630	534	456

Notes: EBIT = Earning before interest and tax, IBD = Interest bearing debt, Share = Equity share.

Sources :(1) NEPSE (1995) "Financial Statements of Listed Companies, FY 1993/94." Vol. I.
(2) NEPSE (1996) "Financial Statements of Listed Companies, FY 1994/95" Vol. II
(3) NEPSE (1997) "Financial Statements of Listed Companies, FY 1995/96" Vol. III
(4) NEPSE (1999) "Financial Statements of Listed Companies, FY 1997/98" Vol. IV
(5) NEPSE (2001) "Financial Statements of Listed Companies, FY1999/00" Vol. VI
(6) NEPSE (2002) "Financial Statements of Listed Companies, FY 2000/01" Vol. VII
(7) NEPSE (1997 to 2004) "Trading Report" For the Fiscal Years 1995/96 to 2002/03
(8) SEBO/N (2003) "Annual Report, 2002/03."
(9) SEBO/N (2004) "Annual Report, 2003/04."
(10) AGM Reports of the respective company for various fiscal years.

Appendix- 5 (c)

Financial Accounting Data Used for Analysis :(GRUL, 1990/91 to 2002/03)

Rs. In Million

FY	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Total Assets	195.85	762.11	929.01	1130.7	1293.575	1456.6	1543.8	1225.9	1249.6	924.22	847.9	812.13	703.2
Total Liabilities	85.93	582.84	697.79	984.8	1104.53	1224.3	1311.5	993.6	1017.3	810.42	839.84	876.31	824.07
Net Worth	109.92	179.26	231.23	145.84	189.05	232.26	232.26	232.25	232.25	113.8	8.06	-64.18	-120.9
Gross Block	17.84	19.75	882.47	1073.9	874.535	675.09	715.52	694.12	651.62	611.16	576.63	540.68	499.6
Inventory	0	0	41.16	222.03	309.37	348.34	369.19	152.54	196.73	197.05	187.28	206.64	144.83
Operating Liabilities	7.55	11.23	86.29	391.28	446.925	354.82	438.76	66.2	56.81	53.09	174.45	204.42	172.04
IBD	78.38	571.61	611.5	593.52	657.605	869.44	872.71	927.4	960.5	757.33	665.39	671.89	652.03
Depreciation	0.85	1.72	35.76	43.53	50.67	57.81	56.99	52.4	52.13	49.32	44.33	41.15	38.19
EBIT	7.245	51.36	-12.89	71.81	97.645	7.28	34.38	24.61	17.17	3.7	-36.27	-11.16	2.03
Interest	6.97	51.11	73.32	71.17	97.645	124.12	127.09	139.55	62.1	78.61	69.66	61.56	58.29
Provision (Income Tax)	0.11	0.09	0.15	0.16	NA	NA	NA	NA	NA	NA	NA	NA	NA
Profit Before Tax	0.275	0.25	-86.21	0.64	NA	-116.9	-92.71	-114.9	-44.93	-74.91	-105.93	-72.72	-56.26
Retained Earnings	NA	NA	NA	NA	NA	-116.8	24.13	-179.5	-33.07	-16.79	-105.74	-72.71	-56.26
Share Capital	109.92	179.26	179.26	232.03	232.03	232.25	232.25	232.25	232.25	232.25	287.18	287.18	287.18
Price per Share,Rs. (Closing)	125	113	130	130	130	75	41	34	50	68	38	32	21

Notes: EBIT =   Earning before interest and tax, IBD = Interest bearing debt, Share = Equity share.
Sources: (1) NEPSE (1995) "Financial Statements of Listed Companies, FY 1993/94." Vol. I.
(2) NEPSE (1996) "Financial Statements of Listed Companies, FY 1994/95" Vol. II
(3) NEPSE (1997) "Financial Statements of Listed Companies, FY 1995/96" Vol. III
(4) NEPSE (1999) "Financial Statements of Listed Companies, FY 1997/98" Vol. IV
(5) NEPSE (2001) "Financial Statements of Listed Companies, FY1999/00" Vol. VI
(6) NEPSE (2002) "Financial Statements of Listed Companies, FY 2000/01" Vol. VII
(7) NEPSE (1997 to 2004) "Trading Report" For the Fiscal Years 1995/96 to 2002/03
(8) SEBO/N (2003) "Annual Report, 2002/03."
(9) SEBO/N (2004) "Annual Report, 2003/04.
(10) AGM Reports of the respective company for various fiscal years.

Appendix- 5 (d)

Financial Accounting Data Used for Analysis :(NLOL, 1990/91 to 2002/03)

Rs. In Million

FY	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Total Assets	66.89	58.83	79.08	72.2	79.69	98.06	88.61	93.52	101.2	126.05	117.18	112.36	145.01
Total Liabilities	45.75	26.03	48.45	40.9	44.54	65.69	55.04	57.58	60.44	83.26	76.6	73.76	105.4
Net Worth	21.14	32.8	30.63	31.31	35.13	32.35	33.46	35.93	40.75	42.78	40.58	38.6	39.7
Gross Block	12.98	13.18	14.52	19.23	16.37	17.22	16.10	15.79	14.68	18.20	16.75	15.29	17.94
Inventories	27.18	18.83	39.24	41.65	27.87	23.93	25.81	25.89	24.78	23.26	28.98	19.27	30.57
Operating Liabilities	36.28	16.84	25.23	11.57	15.97	22.76	18.91	15.86	42.66	48.46	40.19	49.53	63.64
IBD	9.47	9.19	23.22	29.33	28.57	42.93	36.13	41.72	17.78	34.8	36.41	24.23	41.76
Depreciation	1.16	0.99	1.13	1.64	1.56	1.57	0.47	1.43	1.37	1.43	1.74	1.53	1.98
EBIT	4.63	11.86	7.58	3.23	4.74	4.06	7.04	8.88	14.71	9.67	1.63	11.39	8.51
Interest	0.55	1.17	1.38	2.39	0.01	1.24	2.8	2.05	2.63	3.32	3.84	3.69	3.01
Provision of Income Tax	1.7	3.4	0.2	5.15	6.34	0.69	0.91	1.46	2.42	1.28	0	1.48	2.75
Profit Before Tax	4.09	10.69	6.2	0.8	4.73	2.82	4.24	6.83	12.08	6.35	2.21	7.7	5.5
Retained Earnings	4.57	3.69	4.27	0.59	3.54	-2.94	-2.53	2.07	4.11	2.03	2.54	3.17	1.2
Share Capital	16.07	16.89	16.89	16.89	16.89	16.89	16.89	16.89	20.29	20.29	20.29	20.29	20.29
Price/Share,Rs. (Closing)	230	230	230	230	380	380	315	340	420	580	580	440	350

Notes: EBIT=Earning before interest and tax, IBD = Interest bearing debt, Share = Equity share.

Sources: (1) NEPSE (1995) "Financial Statements of Listed Companies, FY 1993/94." Vol. I.
(2) NEPSE (1996) "Financial Statements of Listed Companies, FY 1994/95" Vol. II
(3) NEPSE (1997) "Financial Statements of Listed Companies, FY 1995/96" Vol. III
(4) NEPSE (1999) "Financial Statements of Listed Companies, FY 1997/98" Vol. IV
(5) NEPSE (2001) "Financial Statements of Listed Companies, FY1999/00" Vol. VI
(6) NEPSE (2002) "Financial Statements of Listed Companies, FY 2000/01" Vol. VII
(7) NEPSE (1997 to 2004) "Trading Report" For the Fiscal Years 1995/96 to 2002/03
(8) SEBO/N (2003) "Annual Report, 2002/03."
(9) SEBO/N (2004) "Annual Report, 2003/04."
(10) AGM Reports of the respective company for various fiscal years.

Appendix- 5 (e)

Financial Accounting Data Used for Analysis: (NELL, 1994/95 to 2002/03)

Rs. In Million

FY	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Total Assets	145.62	346.82	406.54	441.81	544.81	629.75	760.42	571.35	784.89
Total Liabilities	57.36	283.88	319.63	258.38	267.72	263.93	363.48	223.22	426.46
Net Worth	88.25	62.94	86.91	183.44	277.1	365.82	396.94	348.13	358.43
Gross Block	25.82	258.74	263.66	272.23	280.34	270.4	317.06	325.63	314.06
Inventories	9.77	71.57	106.25	118.91	172.2	132.46	293.93	144.48	126.11
Operating Liabilities	14.45	55.07	128.88	186.57	202.62	241.62	218.4	153.1	347.59
IBD	42.91	228.81	190.75	71.81	65.1	22.31	145.08	70.12	78.87
Depreciation	0.34	9.95	20.21	20.94	21.86	21.45	22.81	29.22	24.04
EBIT	-3.81	27.31	54.52	123.1	136.35	148.63	107.75	55.23	105.78
Interest	0.01	31.33	30.58	23.39	10.12	3.84	14.21	12.62	12.61
Provision: Income Tax	0	0	0	0	7.2	24.2	25.5	14	30.87
Profit Before Tax	-3.82	-4.02	23.94	99.71	126.23	144.79	93.54	56.61	124.05
Retained Earnings	-3.82	-25.31	23.97	81.29	82.2	74.54	17.41	5.78	10.3
Share Capital	92.07	92.07	92.07	92.07	92.07	92.07	92.07	92.07	92.07
Price per Share,Rs. (Closing)	417	290	405	480	1501	2230	2200	1350	1130

Notes: EBIT =Earning before interest and tax, IBD = Interest bearing debt, Share=Equity share.
Sources :(1) NEPSE (1997) "Financial Statements of Listed Companies, FY 1995/96 " Vol. III
(2) NEPSE (1999) "Financial Statements of Listed Companies, FY 1997/98" Vol. IV
(3) NEPSE (2001) "Financial Statements of Listed Companies, FY1999/00" Vol. VI
(4) NEPSE (2002) "Financial Statements of Listed Companies, FY 2000/01" Vol. VII
(5) NEPSE (1997 to 2004) "Trading Report" For the Fiscal Years 1995/96 -2002/03
(6) SEBO/N (2003) "Annual Report, 2002/03."
(7) SEBO/N (2004) "Annual Report, 2003/04."
(8) AGM Reports of the respective company for various fiscal years.

Appendix- 5 (f)

Financial Accounting Data Used for Analysis: (NBGL, 1990/91 to 2002/03)

Rs. In Million

FY	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Total Assets	118.99	134.81	132.99	131.18	170.37	210.64	180.7	194.96	244.46	335.12	428.56	426.45	443.52
Total Liabilities	40.62	54.39	52.78	51.16	90.35	130.62	100.76	114.93	164.43	261.94	355.38	353.27	370.34
Net Worth	78.36	80.42	80.02	80.02	80.02	80.02	80.02	80.03	80.03	73.18	73.18	73.18	73.18
Gross Block	39.63	37.94	40.25	42.55	38.26	29.8	30.84	24.13	25.15	22.58	21.78	24.94	39.25
Inventories	23.56	61.16	52.44	43.71	59.92	52.76	32.28	44.08	59.56	66.69	141.49	124.04	75.86
Operating Liabilities	36.11	34.84	35.2	35.55	71.05	26.67	11.82	10.8	14.79	38.67	28.6	30.29	32.39
IBD	4.51	19.55	17.58	15.61	19.3	102.96	88.77	103.96	149.47	223.27	326.78	322.98	337.95
Depreciation	0.36	0.32	0.34	4.47	4.68	4.03	3.5	3.17	2.73	2.5	2.19	2.63	2.77
EBIT	22.04	8.74	1.76	-2.38	-22.05	-4.23	-6.88	1.47	-2.84	-23.1	-8.54	11.63	-12.07
Interest	1.1	1.52	1.31	2.84	2.43	14.43	11.36	11.5	18.31	23.36	36.49	25.02	30.16
Provision For Income Tax	8.33	11.21	NA	NA	NA	NA	3.08	3.08	7.27	NA	NA	NA	NA
Profit Before Tax	20.94	7.22	0.45	-5.22	-24.48	-18.66	-18.24	-10.03	-21.15	-46.46	-45.03	-13.39	-42.23
Retained Earnings	8.85	-6.68	3.96	-16.8	-24.68	-18.36	-18.54	-10.03	-21.15	-46.46	-45.04	-13.39	-42.22
Share Capital	10.125	10.125	10.125	10.125	10.125	10.125	10.125	10.125	10.125	10.125	10.125	10.125	10.125
Price per Share,Rs. (Closing)	200	200	200	200	135	325	300	300	300	300	300	300	300

Notes: EBIT = Earning before interest and tax, IBD = Interest bearing debt, Share = Equity share.
Sources:(1) NEPSE (1995) " Financial Statements of Listed Companies, FY 1993/94." Vol. I.
(2) NEPSE (1996) "Financial Statements of Listed Companies, FY 1994/95" Vol. II
(3) NEPSE (1997) "Financial Statements of Listed Companies, FY 1995/96" Vol. III
(4) NEPSE (1999) "Financial Statements of Listed Companies, FY 1997/98" Vol. IV
(5) NEPSE (2001) "Financial Statements of Listed Companies, FY1999/00" Vol. VI
(6) NEPSE (2002) "Financial Statements of Listed Companies, FY 2000/01" Vol. VII
(7) NEPSE (1997 to 2004) "Trading Report" For the Fiscal Years 1995/96 to 2002/03
(8) SEBO/N (2003) "Annual Report, 2002/03."
(9) SEBO/N (2004) "Annual Report, 2003/04."
(10) AGM Reports of the respective company for various fiscal years.

Appendix- 5 (g)

Financial Accounting Data Used for Analysis: (KHUL, 1990/91 to 2002/03)

Rs. In Million

FY	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Total Assets	53.37	104.69	81.29	94.13	94.54	108.85	87.15	69.2	105.2	134.26	112.45	171.17	163.94
Total Liabilities	31.97	83.01	59.55	72.33	75.58	87.25	65.55	65.95	92.3	108.43	86.43	90.86	92.42
Net Worth	21.41	21.68	21.74	21.8	18.96	21.6	21.6	3.25	12.9	25.84	26.02	80.31	71.52
Gross Block	12.51	24.55	19.07	21.59	21.05	20.24	19.39	19.45	20.51	22.57	24.83	25.13	35.59
Inventories	32.44	63.65	46.99	59.64	43.8	37.85	21.27	17.75	63.6	65.01	48.44	29.91	62.2
Operating Liabilities	10.47	6.69	19.25	8.22	15.58	27.25	6.73	4.51	52.31	11.91	9.48	7.95	30.83
IBD	21.5	76.32	40.3	64.11	60	60	58.82	61.44	39.99	96.52	76.95	82.91	61.59
Depreciation	1.63	0.96	0.97	1.14	1.11	1.03	1.45	0.13	0.12	0.21	1.62	4.82	3.67
EBIT	6.43	5.59	9.95	4.37	4.05	5.46	0.85	6.22	16.82	14.87	9.19	10.79	15.99
Interest	4.3	4.62	9.65	3.55	6.89	9.08	10.15	8.93	7.16	5.87	8.99	9.28	7.19
Provision For Income Tax	1.05	0.46	0.11	0.25	NA	NA	NA	NA	0.25	0.24	NA	0.34	0.35
Profit Before Tax	2.13	0.97	0.3	0.82	-2.84	-3.62	-9.3	-2.71	9.66	9	-0.2	1.51	-8.8
Retained Earnings	0.15	0.03	0.04	-0.09	-2.84	-3.63	-9.3	-2.7	9.65	9.01	0.19	-1.2	-7.91
Share Capital	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	12.93	12.93	12.93	12.93
Price per Share,Rs. (Closing)	NA	NA	NA	NA	231	231	231	231	231	231	231	231	231

Notes: EBIT = Earning before interest and tax, IBD = Interest bearing debt, Share = Equity share.
Sources: (1) NEPSE (1995) "Financial Statements of Listed Companies, FY 1993/94." Vol. I.
(2) NEPSE (1996) "Financial Statements of Listed Companies, FY 1994/95" Vol. II
(3) NEPSE (1997) "Financial Statements of Listed Companies, FY 1995/96" Vol. III
(4) NEPSE (1999) "Financial Statements of Listed Companies, FY 1997/98" Vol. IV
(5) NEPSE (2001) "Financial Statements of Listed Companies, FY1999/00" Vol. VI
(6) NEPSE (2002) "Financial Statements of Listed Companies, FY 2000/01" Vol. VII
(7) NEPSE (1997 to 2004) "Trading Report" For the Fiscal Years 1995/96 to 2002/03
(8) SEBO/N (2003) "Annual Report, 2002/03."
(9) SEBO/N (2004) "Annual Report, 2003/04.
(10) AGM Reports of the respective company for various fiscal years.

Appendix- 5 (h)

Financial Accounting Data Used for Analysis: (NBBL, 1996/97 to 2002/03)

Rs. In Million

FY	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Total Assets	64.66	74.26	102.99	105.16	98.77	108.45	95.23
Total Liabilities	49.49	56.01	83.16	84.85	77.85	87.17	80.89
Net Worth	15.17	18.25	19.84	20.31	20.93	21.28	14.34
Gross Block	33.83	34.05	22.11	25.12	24.21	27.98	27.17
Inventories	18.16	20.84	29.4	35.53	27.68	22.07	28.67
Operating Liabilities	18.48	25.55	6.51	20.28	27.8	32.17	34.95
IBD	31.01	30.46	76.65	64.57	50.05	55	45.94
Depreciation	2.31	2.84	0.4	0.5	0.45	0.64	0.51
EBIT	8.18	9.79	7.29	6.6	6.8	7.27	-11.46
Interest	7.37	6.02	5.85	5.93	5.99	5.93	4.51
Provision For Income Tax	NA	0.69	1.06	1.28	1.52	1.92	1.92
Profit Before Tax	0.81	3.77	1.44	0.67	0.81	1.34	-6.95
Retained Earnings	-5.89	3.08	1.08	0.44	0.57	0.94	-6.95
Share Capital	21.07	21.07	21.07	21.07	21.07	21.07	21.07
Price per Share, Rs. (Closing)	NA	100	100	100	100	100	63

Notes: EBIT = Earning before interest and tax, IBD = Interest bearing debt, Share = Equity share.
Sources: (1) NEPSE (1997) "Financial Statements of Listed Companies, FY 1995/96" Vol. III
   (2) NEPSE (1999) "Financial Statements of Listed Companies, FY 1997/98" Vol. IV
   (3) NEPSE (2001) "Financial Statements of Listed Companies, FY1999/00" Vol. VI
   (4) NEPSE (2002) "Financial Statements of Listed Companies, FY 2000/01" Vol. VII
   (5) NEPSE (1997 to 2004) "Trading Report" For the Fiscal Years 1995/96 to 2002/03
   (6) SEBO/N (2003) "Annual Report, 2002/03."
   (7) SEBO/N (2004) "Annual Report, 2003/04.
   (8) AGM Reports of the respective company for various fiscal years.

Appendix- 5 (i)

Financial Accounting Data Used for Analysis: (AVUL, 1990/91 to 2002/03)

Rs. In Million

FY	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Total Assets	113.41	105.84	129.68	171.275	212.87	291.81	298.34	373.57	308.11	271.89	312.74	351.54	346.88
Total Liabilities	86.81	73.88	85.14	111.02	136.9	236.78	243.31	318.54	253.12	346.81	386.26	412.44	406.92
Net Worth	27.2	31.96	44.55	60.26	75.97	55.03	55.028	55.029	54.99	-74.91	-73.52	-60.91	-60.04
Gross Block	75.9	81.56	84.63	87.325	90.02	96.78	96.96	105.89	112.34	126.54	128.43	91.75	113.16
Inventories	33.74	11.89	28.83	26.26	23.69	56.79	21.92	36.84	47.49	26.88	15.15	67.99	236.69
Operating Liabilities	21.15	14.87	32.42	16.6	0.78	53.64	63.7	131.811	83.37	29.93	90.34	175.86	162.25
IBD	65.66	59.01	52.72	94.42	136.12	183.14	179.61	186.729	169.75	316.88	295.92	236.58	244.67
Depreciation	2.45	8.34	5.86	4.67	3.48	3.76	3.99	3.98	4.47	4.73	5.29	11.58	13.16
EBIT	-1.59	21.34	6.83	11.285	15.74	3.38	-19.03	25.82	31.4	-19.43	36.05	56.289	34.18
Interest	0.69	16.25	17.59	18.13	18.67	27.02	28.48	24.77	26.23	34.65	34.66	42.22	33.02
Provision: Income Tax	NA	0.52	0.52	0.645	0.77	0.77	0.52	0.52	0.52	NA	NA	NA	0.87
Profit Before Tax	-2.28	5.09	-10.76	-6.845	-2.93	-23.64	-47.51	1.05	5.17	-54.08	1.39	14.069	1.16
Retained Earnings	-2.26	2.59	-11	-0.01	-0.01	-23.55	-47.5	0.9	4.43	-54.09	1.39	13.18	0.31
Share Capital	29.46	29.96	54.97	54.97	55.028	55.03	55.03	55.03	55.03	55.03	55.03	55.03	55.03
Price per Share,Rs. (Closing)	130	130	150	150	100	82	77	60	66	60	60	60	58

Notes: EBIT = Earning before interest and tax, IBD = Interest bearing debt, Share = Equity share.
Sources: (1) NEPSE (1995) "Financial Statements of Listed Companies, FY 1993/94." Vol. I.
          (2) NEPSE (1996) "Financial Statements of Listed Companies, FY 1994/95" Vol. II
          (3) NEPSE (1997) "Financial Statements of Listed Companies, FY 1995/96" Vol. III
          (4) NEPSE (1999) "Financial Statements of Listed Companies, FY 1997/98" Vol. IV
          (5) NEPSE (2001) "Financial Statements of Listed Companies, FY1999/00" Vol. VI
          (6) NEPSE (2002) "Financial Statements of Listed Companies, FY 2000/01" Vol. VII
          (7) NEPSE (1997 to 2004) "Trading Report" For the Fiscal Years 1995/96 to 2002/03
          (8) SEBO/N (2003) "Annual Report, 2002/03."
          (9) SEBO/N (2004) "Annual Report, 2003/04.
        (10) AGM Reports of the respective company for various fiscal years.

Appendix- 5 (j)

Financial Accounting Data Used for Analysis: (SCLL, 1990/91 to 2002/03)

Rs. In Million

FY	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Total Assets	3.38	4.98	8.41	14.57	6.16	5.75	5.04	4.3	4.09	3.95	3.99	4.19	4.34
Total Liabilities	1.05	2.26	4.46	7.05	2.59	1.99	1.27	0.48	0.26	0.08	0.08	0.19	0.34
Net Worth	2.33	2.73	3.96	7.53	3.57	3.76	3.77	3.82	3.83	3.87	3.91	4	4
Gross Block	2.6	2.83	7.27	14.91	7.64	4.81	4.34	3.82	2.64	2.36	2.15	1.99	1.8
Inventories	0.48	1.26	1	1.82	0.82	0.77	0.55	0.27	0.43	0.38	1.12	1.34	1.86
Operating Liabilities	1.05	2.26	3.13	4.96	1.83	1.99	1.07	0.432	0.243	0.08	0.08	0.19	0.34
IBD	NA	NA	1.33	2.09	0.76	NA	0.2	0.048	0.017	NA	NA	NA	NA
Depreciation	0.13	0.28	0.7	1.37	0.67	0.48	0.44	0.39	0.28	0.24	0.22	0.19	0.39
EBIT	0.08	0.62	0.66	1.1	0.44	0.3	0.165	0.111	0.06	0.052	0.053	0.17	0.0044
Interest	NA	NA	0.22	0.35	0.13	NA	0.055	0.028	0.002	NA	NA	NA	NA
Provision For Income Tax	NA	0.28	0.28	0.44	0.16	0.11	0.034	0.018	0.015	0.014	0.014	0.048	0.0013
Profit Before Tax	0.08	0.62	0.44	0.75	0.31	0.3	0.11	0.083	0.058	0.052	0.053	0.17	0.0044
Retained Earnings	0.07	-0.05	4.68	0.081	-4.71	0.189	0.01	0.05	0.01	0.04	0.04	0.09	0.01
Share Capital	2.26	2.71	3.49	6.98	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49
Price per Share,Rs. (Closing)	NA	NA	NA	NA	143	100	90	99	99	99	99	99	99

Notes: EBIT = Earning before interest and tax, IBD = Interest bearing debt, Share = Equity share.
Sources: (1) NEPSE (1995) "Financial Statements of Listed Companies, FY 1993/94." Vol. I.
      (2) NEPSE (1996) "Financial Statements of Listed Companies, FY 1994/95" Vol. II
      (3) NEPSE (1997) "Financial Statements of Listed Companies, FY 1995/96" Vol. III
      (4) NEPSE (1999) "Financial Statements of Listed Companies, FY 1997/98" Vol. IV
      (5) NEPSE (2001) "Financial Statements of Listed Companies, FY1999/00" Vol. VI
      (6) NEPSE (2002) "Financial Statements of Listed Companies, FY 2000/01" Vol. VII
      (7) NEPSE (1997 to 2004) "Trading Report" For the Fiscal Years 1995/96 to 2002/03
      (8) SEBO/N (2003) "Annual Report, 2002/03."
      (9) SEBO/N (2004) "Annual Report, 2003/04.
     (10) AGM Reports of the respective company for various fiscal years.

Appendix- 8

Date:

……………………

……………………

Sub: Request for questionnaire fill up.

Dear Sir / Madam

I am a research scholar pursuing Ph.D degree at Tribhuvan University, Kathmandu, Nepal. The topic of my study is "Corporate Income Tax and Debt Financing of Nepalese Listed Manufacturing Companies". It is my pleasure to find you as an experienced and cooperative respondent for suggesting me especially in the aspects concerned with the topic of study. I hereby request you to kindly provide me with your opinions and suggestions in relation to the area as mentioned in the questionnaire enclosed herewith. I would like to give you full assurance that all the information obtained will be kept completely confidential and will be used for this thesis work only.

Your kind cooperation is highly appreciated.

Thanking You,

Sincerely Yours,   Thesis Advisor,

Gopi Nath Regmi   **Prof. Dr. Shalik Ram Koirala**

Lecturer, Management   Central Department of Management,

Tribhuvan Multiple Campus,   Tribhuvan University,

Tansen, Palpa.   Katmandu, Nepal.

An Opinion Survey Questionnaire

Name of respondent (optional):

Designation of respondent:

Name of the company:

Year established:

Address:

Total employees: Officers [   ] Nonofficers [   ]

Nature of business: Manufacturing [   ] Processing [   ]

 Size of the Company: Big [   ] Medium [   ] Small [   ]

Capital employed (Rs in Lacs): Share capital (………) Debt capital   (………)

(1) In your opinion, for financing the investment of a manufacturing company, which of the following sources of fund should be preferred? (Please rank them in order of your preference: '1' for the most preferred, '2'for secondly preferred and so forth).

      (a) Institutional loans   [ ]
      (b) Issue of debentures   [ ]
      (c) Internal Resources   [ ]
      (d) Issue of equity shares   [ ]
      (e) Issue of preference shares   [ ]
      (f) Trade dues and creditors   [ ]
      (g) Others, (If any, please specify)   [ ] … …. …. …. ….

(2) In your opinion, what are the important factors influencing financing preference of the manufacturing companies? (Please rank the following factors in order of their importance: '1' for the most important factor, '2' for secondly important factor, and so forth).

      (a) Interest vs. expected dividend   [ ]
      (b) Corporate income tax effects   [ ]
      (c) Seniority and residual status   [ ]
      (d) Level of retained earnings   [ ]
      (e) Debt servicing capacity   [ ]
      (f) Ownership and control   [ ]
      (g) Others (Please specify)   [ ].   …. ….

(3)Do you believe that borrowing is an important source of funds to manufacturing companies?

Yes [ ]   No [ ]

(4) If yes, please give reasons. (Please rank the following reasons in order of their importance, '1'for the most important reason, '2' for secondly important reason, and so forth).

(a) Positive attitude of managers on debt capital   [ ]
(b) Advantage of interest tax shields   [ ]
(c) Adequate earnings to serve debt   [ ]
(d) Lower rate of interest   [ ]
(e) Inadequate internal funds   [ ]
(f) Credibility of the company   [ ]
(g) Others (Please specify)   [ ]

(5) If not, please give reasons. (Please rank the following reasons in order of their importance, '1' for the most important reason, '2' for secondly important reason, and so forth).

(a) Company has to pay interest during loss suffering period also   [ ]
(b) Tax shields on depreciation substitute that on interest.   [ ]
(c) Complex lending procedure of financial institutions   [ ]
(d) Inadequate collateral value of corporate assets   [ ]
(e) Adequate internal resources   [ ]
(f) Uncertain future earnings   [ ]
(g) Others (Please specify)   [ ]

(6) In your opinion, has retained earnings become an important source of funds to manufacturing companies of Nepal?

Yes [ ]   No [ ]

(7)If yes, please give reasons why it is necessary to retain earnings. (Please rank the following reasons in order of their importance, '1' for the most important reason, '2'for secondly important reason, and so forth).

(a) Comparatively lower cost of capital   [ ]
(b) Tax advantage to the shareholders   [ ]
(c) Conveniently available of funds   [ ]
(d) Addition to owner's equity   [ ]
(e) Necessary to maintain stock price   [ ]
(f) Relatively lower capital gain tax rate   [ ]
(g) Others (Please specify)   [ ]

(8)Do you think that new equity share is an important source of funds to manufacturing companies of Nepal?

　　　　　　　Yes [　]　　　　　　　　　No [　]

(9) If yes, please give the causes. (Please rank the following causes in order of their importance, '1'for the most important cause and '2'for secondly important cause and so forth).

　　　　(a) Dividend can be distributed after interest and tax　[　]
　　　　(b) Negligible risk than debt　　　　　　　　　　　　[　]
　　　　(c) Nondebt tax shields substitute debt tax shields　　[　]
　　　　(d) Uncertain future profits　　　　　　　　　　　　[　]
　　　　(e) Lower collateral value of business assets　　　　[　]
　　　　(f) Desire to dilute control of limited owners　　　　[　]
　　　　(g) Others (Please specify) …　…　…　…　…　　[　]

(10) In your opinion, what could be the important factors that determine appropriate mix of debt and equity capitals of manufacturing company? (Please rank the following factors in order of their importance'1' for the most important factor, '2' for secondly important factor, and so forth).

　　　　(a) Profitability status of the company　　　　　　　[　]
　　　　(b) Tax benefits available under enacted tax laws　　[　]
　　　　(c) Assets structure of the company　　　　　　　　[　]
　　　　(d) Risk associated with debt financing　　　　　　[　]
　　　　(e) Cost of capital employed　　　　　　　　　　　[　]
　　　　(f) Size of the company　　　　　　　　　　　　　[　]
　　　　(g) Others (Please specify)　　　　　　　　　　　[　]

(11) In your opinion, to what extent does corporate income tax influence debt financing of following manufacturing companies? (Please tick on suitable box)

Types of Company	Fully Influence	Greatly Influence	Moderately Influence	Slightly Influence	Not at all Influence
a. Big Company					
b. Medium Company					
c. Small Company					
d. Profit-making Company					
e. Loss-making Company					

(12) Which could be the important tax factors that influence debt-equity mix of manufacturing company? (Please rank the following tax factors in order of their importance'1' for the most important factor, '2' for secondly important factor, and so forth).

      (a) Tax relief available on interest payment   [ ]
      (b) Corporate tax rate structure   [ ]
      (c) Allowability to write off specified capital expenditures   [ ]
      (d) Carry forward of business losses   [ ]
      (e) Capital gain tax rate structure   [ ]
      (f) Full allowability of operating expenses   [ ]
      (g) Others (Please specify)   [ ]

(13) Does corporate income tax influence operating cash flows?
                Yes [ ]   No [ ]

(14) If yes, how does it influence the operating cash flows? (Please tick one).

      (a) Corporate income tax liability reduces operating cash flows.   [ ]
      (b) Tax saving of interest increases operating cash flows.   [ ]
      (c) Tax saving of depreciation increases operating cash flows.   [ ]

(15) Do you think that corporate Income tax influences market price of the corporate equity?
                Yes [ ]   No [ ]

(16) If yes, please specify its influences (Please tick one).
   (a) Corporate income tax ultimately reduces the market price of equity. [ ]
   (b) Corporate income tax advantages are reflected in an increased market price of equity. [ ]

(17) Do you think that a change in related tax factor lead to the change in earlier financing decision?
                Yes [ ]   No [ ]
(18) If yes, please specify the important tax factors that lead to the change in earlier financing decision. (Please tick one).
      (a) Disallowance of interest   [ ]
      (b) Allowability of dividend   [ ]
      (c) Increase/decrease depreciation rate for income tax purpose   [ ]
      (d) Changes in statutory corporate tax rate   [ ]
      (e) Changes in interest tax rate   [ ]
      (f) Changes in dividend tax rate   [ ]
      (g) Offering additional tax incentives   [ ]
      (h) Others (Please specify).   …………   ………   [ ]

(19) Following are the general statements of observation relating to corporate income tax and debt financing of manufacturing companies. (Please indicate your opinion to these observations)

Statements of Observation	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
(a) The management of manufacturing companies considers the influence of corporate income tax while choosing suitable sources of funds.					
(b) The management prefers borrowing with a view of tax saving of interest.					
(c) Corporate income tax and debt-equity mix of manufacturing companies have a positive relationship.					
(d) Debt capital is cheaper than share capital because interest is deductible expenditure for income tax purpose.					
(e) Income tax saving due to depreciation deduction offsets the importance of income tax saving due to interest.					
(f) Income tax saving due to interest deduction has positive relation with market value of the firm.					

(20) Any other comments and suggestions regarding influence of corporate income tax on debt financing of manufacturing companies of Nepal. (Please use backside of this page)

Appendix 8.1
Inclination toward Sources of Funds
Number of Responses and Overall Rank

Q no. 1		a	b	c	d	e	f	Total
Ranks								
1	P	10	2	9	14	1	2	38
	L	12	4	3	11	3	5	38
	T	22	6	12	25	4	7	76
2	P	9	3	11	13	1	1	38
	L	12	5	7	10	1	3	38
	T	21	8	18	23	2	4	76
3	P	5	7	13	6	3	4	38
	L	5	8	9	8	4	4	38
	T	10	15	22	14	7	8	76
4	P	4	7	2	2	11	12	38
	L	3	6	10	5	6	8	38
	T	7	13	12	7	17	20	76
5	P	6	9	1	2	9	11	38
	L	2	6	6	3	14	7	38
	T	8	15	7	5	23	18	76
6	P	4	10	2	1	13	8	38
	L	4	9	3	1	10	11	38
	T	8	19	5	2	23	19	76
Weighted Value								
	P	153	104	171	184	87	99	798
	L	169	120	134	170	95	110	798
	T	322	224	305	354	182	209	1596
Mean Value								
	P	4.026	2.737	4.501	4.842	2.289	2.605	21
	L	4.447	3.158	3.526	4.474	2.501	2.895	21
	T	4.237	2.947	4.013	4.658	2.395	2.751	21
Overall Rank								
	P	3	4	2	1	6	5	21
	L	2	4	3	1	6	5	21
	T	2	4	3	1	6	5	21

χ^2	8.629
r_s	0.943
$r_{s\,(0.05,6)}$	0.823
$\chi^2_{(0.05,\,5)}$	11.07

Appendix-8.2
Factors Influencing Inclination toward Sources of Funds
Number of Responses and Overall Rank

Q no.2		a	b	c	d	e	f	Total
Ranks-1	P	1	10	3	8	14	2	38
	L	1	9	12	4	1	11	38
	T	2	19	15	12	15	13	76
2	P	3	9	4	6	10	6	38
	L	2	10	10	3	5	8	38
	T	5	19	14	9	15	14	76
3	P	5	8	6	6	7	6	38
	L	4	6	8	6	8	6	38
	T	9	14	14	12	15	12	76
4	P	5	5	9	5	2	12	38
	L	8	5	4	6	8	7	38
	T	13	10	13	11	10	19	76
5	P	11	2	8	7	3	7	38
	L	9	6	2	7	10	4	38
	T	20	8	10	14	13	11	76
6	P	13	4	8	6	2	5	38
	L	14	2	2	12	6	2	38
	T	27	6	10	18	8	7	76
Weighted Value								
	P	91	160	113	137	176	121	798
	L	88	157	172	107	113	161	798
	T	179	317	285	244	289	282	1596
Mean Value								
	P	2.395	4.211	2.974	3.605	4.632	3.184	21
	L	2.316	4.132	4.526	2.816	2.974	4.237	21
	T	2.355	4.172	3.751	3.211	3.803	3.711	21
Overall Rank								
	P	6	2	5	3	1	4	21
	L	6	3	1	5	4	2	21
	T	5	1	3	6	2	4	21
χ^2								31.579
r_s								0.029
$r_{s\ (0.05,6)}$								0.823
$\chi^2_{(0.01,\ 5)}$								15.086

Appendix 8.3
Reasons behind Borrowing:
Number of Responses and Overall Rank

Q.no.4		a	b	c	d	e	f	Total
Ranks-1	P	4	11	6	3	5	9	38
	L	3	9	4	5	10	7	38
	T	7	20	10	8	15	16	76
2	P	5	11	6	1	6	9	38
	L	3	10	6	1	8	10	38
	T	8	21	12	2	14	19	76
3	P	6	5	4	9	8	6	38
	L	7	5	6	9	6	5	38
	T	13	10	10	18	14	11	76
4	P	6	4	3	11	8	6	38
	L	6	6	5	9	6	6	38
	T	12	10	8	20	14	12	76
5	P	9	3	10	7	5	4	38
	L	9	3	9	8	3	6	38
	T	18	6	19	15	8	10	76
6	P	8	4	9	7	6	4	38
	L	10	5	8	6	5	4	38
	T	18	9	17	13	11	8	76
Weighted Value								
	P	117	163	120	113	132	153	798
	L	107	153	119	120	153	146	798
	T	224	316	239	233	285	299	1596
Mean Value								
	P	3.079	4.289	3.158	2.974	3.474	4.026	21
	L	2.816	4.031	3.132	3.158	4.052	3.842	21
	T	2.947	4.158	3.145	3.066	3.751	3.934	21
Overall Rank								
	P	5	1	4	6	3	2	21
	L	6	2	5	4	1	3	21
	T	6	1	4	5	3	2	21
χ^2								15.172
r_s								0.657
$r_{s\,(0.05,6)}$								0.823
$\chi^2_{(0.01,\,5)}$								15.086

Appendix 8.4
Reasons behind Retained Earnings:
Number of Responses and Overall Ranks

Q.no. 7		a	b	c	d	e	f	Total
Ranks-1	P	4	8	12	10	2	2	38
	L	3	7	9	8	1	2	30
	T	7	15	21	18	3	4	68
2	P	5	8	10	9	3	3	38
	L	4	7	9	7	2	1	30
	T	9	15	19	16	5	4	68
3	P	8	4	7	8	6	5	38
	L	7	3	6	6	4	4	30
	T	15	7	13	14	10	9	68
4	P	9	4	4	7	6	8	38
	L	8	2	3	6	5	6	30
	T	17	6	7	13	11	14	68
5	P	6	8	3	2	10	9	38
	L	4	6	2	2	9	7	30
	T	10	14	5	4	19	16	68
6	P	6	6	2	2	11	11	38
	L	4	5	1	1	9	10	30
	T	10	11	3	3	20	21	68

Weighted Value

		a	b	c	d	e	f	Total
	P	126	138	170	164	100	100	798
	L	102	112	137	130	74	75	630
	T	228	250	307	294	174	175	1428

Mean Value

		a	b	c	d	e	f	Total
	P	3.316	3.632	4.474	4.316	2.632	2.651	21
	L	3.401	3.733	4.567	4.333	2.467	2.501	21
	T	3.353	3.676	4.515	4.324	2.559	2.574	21

Overall Ranks

		a	b	c	d	e	f	Total
	P	4	3	1	2	6	5	21
	L	4	3	1	2	6	5	21
	T	4	3	1	2	6	5	21

χ^2	1.886
r_s	1.000
$r_{s\,(0.01,6)}$	0.928
$\chi^2_{(0.05,\,5)}$	11.07

Appendix 8.5
Reasons behind New Equity Issue:
Number of Responses and Overall Ranks

Q.no. 9		a	b	c	d	e	f	Total
Rank- 1	P	9	7	1	12	2	3	34
	L	8	7	2	11	2	2	32
	T	17	14	3	23	4	5	66
2	P	10	9	1	11	1	2	34
	L	10	8	1	10	2	1	32
	T	20	17	2	21	3	3	66
3	P	6	8	5	4	7	4	34
	L	5	7	4	4	6	6	32
	T	11	15	9	8	13	10	66
4	P	5	6	9	3	5	6	34
	L	6	6	7	2	5	6	32
	T	11	12	16	5	10	12	66
5	P	2	3	10	2	8	9	34
	L	2	3	9	1	7	10	32
	T	4	6	19	3	15	19	66
6	P	2	1	8	2	11	10	34
	L	1	1	9	4	10	7	32
	T	3	2	17	6	21	17	66
Weighted Value								
	P	149	144	86	158	87	90	714
	L	141	135	81	144	85	86	672
	T	290	279	167	302	172	176	1386
Mean Value								
	P	4.382	4.235	2.529	4.647	2.559	2.647	21
	L	4.406	4.219	2.531	4.501	2.656	2.689	21
	T	4.394	4.227	2.531	4.576	2.606	2.667	21
Overall Ranks								
	P	2	3	6	1	5	4	21
	L	2	3	6	1	5	4	21
	T	2	3	6	1	5	4	21

χ^2	4.922
r_s	1.000
$r_{s\,(0.01,6)}$	0.928
$\chi^2_{(0.05,\,5)}$	11.07

Appendix·8.6
Factors Influencing Debt-Equity Mix:
Number of Responses and Overall Ranks

Q. no. 10		a	b	c	d	e	f	Total
Rank-1	P	14	9	3	6	2	4	38
	L	8	8	5	12	3	2	38
	T	22	17	8	18	5	6	76
2	P	12	10	4	8	3	1	38
	L	10	9	5	9	3	2	38
	T	22	19	9	17	6	3	76
3	P	4	7	6	10	5	6	38
	L	7	9	4	6	5	7	38
	T	11	16	10	16	10	13	76
4	P	3	6	6	8	7	8	38
	L	7	9	4	5	7	6	38
	T	10	15	10	13	14	14	76
5	P	3	2	9	2	10	12	38
	L	3	1	9	2	10	13	38
	T	6	3	18	4	20	25	76
6	P	2	4	10	4	11	7	38
	L	3	2	11	4	10	8	38
	T	5	6	21	8	21	15	76
Weighted Value								
	P	177	158	108	148	99	108	798
	L	156	160	112	164	104	102	798
	T	333	318	220	312	203	210	1596
Mean Value								
	P	4.658	4.158	2.842	3.895	2.605	2.901	21
	L	4.105	4.211	2.947	4.316	2.737	2.684	21
	T	4.382	4.184	2.894	4.105	2.671	2.763	21
Overall Ranks								
	P	1	2	5	3	6	4	21
	L	3	2	4	1	5	6	21
	T	1	2	4	3	6	5	21

χ^2	12.904
r_s	0.601
$r_{s\,(0.01,6)}$	0.928
$\chi^2_{(0.05,\,5)}$	11.07

Appendix 8.7
Tax Factors Influencing Debt-Equity Mix:
Number of Responses and Overall Ranks

Q.no.12		a	b	c	d	e	f	Total
Rank-1	P	10	15	3	1	1	8	38
	L	11	14	3	1	1	8	38
	T	21	29	6	2	2	16	76
2	P	7	9	3	5	5	9	38
	L	7	9	5	4	5	8	38
	T	14	18	8	9	10	17	76
3	P	9	5	5	6	6	7	38
	L	7	4	4	6	9	8	38
	T	16	9	9	12	15	15	76
4	P	9	4	12	4	7	2	38
	L	8	4	13	2	7	4	38
	T	17	8	25	6	14	6	76
5	P	2	4	6	11	7	8	38
	L	3	4	6	12	6	7	38
	T	5	8	12	23	13	15	76
6	P	1	2	9	12	10	4	38
	L	2	2	8	12	11	3	38
	T	3	4	17	24	21	7	76

Weighted Value								
	P	163	177	110	101	100	147	798
	L	161	167	118	92	111	149	798
	T	324	344	228	193	211	296	1596

Mean Value								
	P	4.289	4.658	2.895	2.658	2.631	3.868	21
	L	4.237	4.395	3.105	2.421	2.921	3.921	21
	T	4.263	4.526	3.011	2.539	2.776	3.895	21

Overall Rank								
	P	2	1	4	5	6	3	21
	L	2	1	4	6	5	3	21
	T	2	1	4	6	5	3	21

χ^2			6.921
r_s			0.952
$r_{s\,(0.01,6)}$			0.928
$\chi^2_{(0.05,\,5)}$			11.07

Appendix 8.8
Respondents' Views on General Observations of Debt Financing and Income Tax
Number of Responses and Percentages

Q.no 19			a	b	c	d	e	f
1	P	N	3	2	3	5	2	4
		%	9	6	9	15	6	12
	L	N	1	2	3	4	3	5
		%	3	6	9	13	9	16
	T	N	4	4	6	9	5	9
		%	6	6	9	14	8	14
2	P	N	15	14	12	15	11	9
		%	44	41	35	44	32	26
	L	N	12	14	10	13	10	7
		%	38	44	31	40	31	22
	T	N	27	28	22	28	21	16
		%	41	42	33	42	32	24
3	P	N	10	10	12	12	15	8
		%	29	29	35	35	44	24
	L	N	11	9	13	13	14	9
		%	34	28	41	41	44	28
	T	N	21	19	25	25	29	17
		%	32	29	38	38	44	26
4	P	N	4	6	6	1	3	10
		%	12	18	18	3	9	29
	L	N	5	7	4	2	2	10
		%	16	22	13	6	6	31
	T	N	9	13	10	3	5	20
		%	14	20	15	4	8	30
5	P	N	2	2	1	1	3	3
		%	6	6	3	3	9	9
	L	N	3	0	2	0	3	1
		%	9	0	6	0	10	3
	T	N	5	2	3	1	6	4
		%	7	3	5	2	8	6
Total	P	N	34	34	34	34	34	34
		%	100	100	100	100	100	100
	L	N	32	32	32	32	32	32
		%	100	100	100	100	100	100
	T	N	66	66	66	66	66	66
		%	100	100	100	100	100	100
	χ^2		5.198	5.283	3.359	3.254	2.444	3.539

Appendix 8.9
Tax Influence on Debt Financing of Different Types of Companies
Number of Responses and Percentages

Q. No 11			a	b	c	d	e
1	P	N	5	2	3	7	1
		%	13	5	8	18	3
	L	N	4	2	3	6	0
		%	11	5	8	16	0
	T	N	9	4	6	13	1
		%	12	5	8	17	1
2	P	N	15	13	12	16	4
		%	39	34	31	42	11
	L	N	14	11	10	15	6
		%	38	29	26	39	16
	T	N	29	24	22	31	10
		%	38	32	29	41	13
3	P	N	12	9	12	10	12
		%	32	24	32	26	32
	L	N	14	10	13	11	11
		%	36	26	34	29	29
	T	N	26	19	25	21	23
		%	34	25	33	28	30
4	P	N	6	10	8	5	16
		%	16	26	21	14	42
	L	N	5	11	8	4	14
		%	12	29	21	11	37
	T	N	11	21	16	9	30
		%	14	28	21	11	40
5	P	N	0	4	3	0	5
		%	0	11	8	0	12
	L	N	1	4	4	2	7
		%	3	11	11	5	18
	T	N	1	8	7	2	12
		%	2	10	9	3	16
Total	P	N	38	38	38	38	38
		%	100	100	100	100	100
	L	N	38	38	38	38	38
		%	100	100	100	100	100
	T	N	76	76	76	76	76
		%	100	100	100	100	100
		χ^2	2.331	14.861	0.429	3.456	4.202