CHAPTER V

EFFECTS OF LEVERAGE ON FIRM VALUE IN NEPALESE ENTERPRISES

5.1 Introduction

The relationship between capital structure and firm value has been the subject of considerable debate, both theoretically and in empirical research. Throughout the literature, debate has centered on whether there is an optimal capital structure for an individual firm or whether the proportion of debt usage is irrelevant to the individual Modigliani and Miller (1958 and 1963) demonstrate that, in a firm's value. frictionless world, financial leverage is unrelated to firm value, but in a world with tax-deductible interest payments, firm value and capital structure are positively correlated to each other. Miller (1977) adds personal taxes to the analysis and demonstrates that optimal debt usage occurs on a macro level, but it does not exist at the firm level. Interest deductibility at the firm level is offset at the investor level. Further, the author incorporating the personal income tax along with the corporation income tax into their second modified model reported that leverage will have the positive effect on firm values if the personal marginal tax rate for capital gain is equal or greater than the personal marginal tax rates for dividends and interests. Ruland and Zhou (2005) and Robb and Robinson (2009) agree with Modigliani and Miller (1963) that the gains from leverage are significant, and that the use of debt increases the market value of a firm.

However, other theories such as the trade-off theory (Myers,1984), pecking order theory (Myers and Majluf,1984) and agency cost theory (Jensen and Meckling, 1976) argue that if capital structure decision is irrelevant in a perfect market, then, imperfection which exist in the real world may be adduce for its relevance. Such imperfections also include bankruptcy costs (Baxter, 1967, Kraus and Litzenberger, 1982; and Kim, 1998), gains from leverage-induced tax shields (De Angelo and Masulis, 1980) and information asymmetry (Myers, 1984) to the analysis and have maintained that an optimal capital structure may exist. Empirical work by Bradley, Jarrell and Kim (1984), Long and Malitz (1985) and Titman and Wessells (1985) largely supports bankruptcy costs or agency costs as partial determinants of leverage

and of optimal capital structure. Pandey (2004) concludes that the capital structure decision of a firm influences its shareholders return and risk. Consequently, the market value of its shares may be affected by the capital structure decision. The objective of a firm should therefore be directed towards the maximization of its value by examining its capital structure or financial leverage decision from the point of view of its impact on the firm value.

Under the agency costs hypothesis, a high leverage or a low equity/asset ratio reduces the agency costs of outside equity and increases firm value. It is agreed that the value of a leveraged firm is greater than that of an un-leveraged firm if one doesn't consider bankruptcy probability. If benefit and cost of debt is considered simultaneously, the leverage is positively related to the firm value before reaching firm's optimal capital structure.

The trade off theory suggests that firms would seek more debt as long as the present value of the tax shield is greater than the present value of bankruptcy, agency and all other costs associated with higher leverage. Based on the agency cost theory, as debt is sold, the agency costs of debt also increase with leverage, while the proportion of equity and agency costs of equity decreases. The result is a decrease in the total agency costs. Jensen and Meckling (1976) argue that there is an optimum amount of leverage that would be associated with a minimum amount of total agency costs. Besides, Jensen (1986) points out that debt may reduce the agency costs of free cash flow by reducing the amount of cash under management control. The optimal debt-equity ratio is the point at which firm value is maximized, the point where marginal costs of debt just offset the marginal benefits.

Grounded on the pecking order theory, Myers and Majluf (1984) argue that the firms prefer the debt finance to the equity finance when using external financing. The signaling theory (Ross, 1977; Heinkel, 1982) states that a firm with favorable prospects will raise new capital through debt financing, while a firm with unfavorable prospects will go through equity financing. Incentive-signaling model developed by Ross (1977) provides a theory for the determination of the financial structure of the firm. The manager of a firm maximizes his incentive return by choosing a financial package that trades off the current value of the signal given to the market against the incentive consequences on that return.

Proponents of management entrenchment theory argue that subjective reasons may determine leverage choices made by managers. However, different conclusions are drawn by Agrawal and Mandelker (1987), and Mehran (1992) on one hand, and Friend and Lang (1988), and Berger et al. (1997) on the other hand. Based on the market timing theory, Baker and Wurgler (2000) argue that when equity prices are too high, existing shareholders benefit by issuing overvalued equity, and when equity prices are too low, issuing debt is preferable. In a related study, Parrino and Weisbach (1999) empirically estimate that the agency costs of debt are too small to offset the tax benefits. However, debt not only can mitigates the manager-shareholder conflict, but also can reduce the agency costs of equity by means of the following methods: Firstly, it can reduce the agency costs of equity by raising the manager's share of ownership in the firm, Secondly, it can achieve the same goal by reducing the amount of free cash available to managers to engage in the pursuits (Jensen, 1986) because debt commits the firm to pay out cash. If high risk projects are done well, the debt holders may only gain regular returns, hence, all the other extra benefits are distributed to equity holders. On the contrary, if the project is break down, the debt holders must share the losses jointly with the equity holders. With a view to protecting themselves, debt holders must monitor the firm and impose covenants (Jensen & Meckling, 1976; Long & Malitz, 1985; Barnea, Haugen and Senbet, 1985). If management finds out that all the economic benefits derived from investment projects will be distributed to debt holders only, they will give up all the investment projects profitable to the firm (Barnea et al., 1985; Titman & Wessels, 1988). Both of case can be described as agency costs of debt, which may be resulted in reducing the value of the firm.

McConnell and Servaes (1995) argue that firm value and capital structure may be closely correlated. This is further clarified in Berger and di Patti (2003). On the one hand, high leverage may reduce the agency costs of outside equity and increase firm value by encouraging managers to act more in the interests of shareholders. Likely, there can be reverse causation from firm efficiency/performance to capital structure.

For example, more efficient firms may choose lower equity ratios than others, all else equal, because higher efficiency reduces the expected costs of bankruptcy and financial distress. More efficient firms may also choose higher equity capital ratios, all else equal, to protect the rents or franchise value associated with high efficiency from the possibility of liquidation (Berger and di Patti, 2003). While the former is known as the efficiency-risk hypothesis the latter is known as the franchise-value hypothesis. If leverage is relatively high, further increases may generate significant costs including bankruptcy cost and thus may lower firm value. Similarly, effects of firm value on leverage could be non-monotonic; at lower levels of firm value efficiency-risk could be greater than franchise-value but franchise-value could exceed efficiency-risk at a higher level of firm value.

Firm can maximize its value by choosing lower level of debt or zero debt (Kinsman and Newman, 1998). On the other hand, Ross (1977) suggests that the value of firms will rise with leverage, since increasing leverage increases the market's perception of value. Suppose there is no agency problem, i.e. management acts in the interest of all shareholders. The manager will maximize company value by choosing the optimal capital structure; highest possible debt ratio. High-quality firms need to signal their quality to the market, while the low-quality firms' managers will try to imitate. According to this argument, the debt level should be positively related to the value of the firm.

Moreover, financial supply decisions can directly affect two factors constituting stock return and its price variations and, therefore, shareholders wealth. Firms should look for a mix of financial supply resources (financial structure) to maximize stock market value or firms' value. Therefore, a financial manager should decide about firm financial structure, i.e. ratio of debt and capital which should be kept in the firm, to change capital costs and firm stock value to minimum and maximum level as much as possible, respectively. Such structure with minimum capital cost and maximum stock value is known as optimal capital structure. Realization of the goal convinces the financial managers to create the best capital optimal mix to maximize firm value considering quantitative parameters found in financial statements especially profitability, turnover, company size, liquidity, growth and business risk and available qualitative variables including industry type, public perspective, and ownership compound. Researches previously conducted in this regard have not reached a general acceptable result and some of them have attributed effects of leverage on firm value to growth opportunities of the firm. However, these studies have not considered leverage differences among industries in developing countries.

Managers often decide the capital structure to achieve long- run maximization of firm's value. Recent empirical literature found, using data from developed economies, that high debt to equity positively contributes to the firm's value since debt restricts managers to act in the interests of shareholders. However, do managers operating in different cultural, legal and financial contexts act in the same way, as the literature suggests for developed countries? This is the question that may be generally raised by practitioners and academician. The answer to this question can only be provided through careful investigation and evidence based research. Further capital structure choice (leverage) and firm value is really an untouched issue in Nepalese context and this study has attempted to throw some light on that issue.

5.2 Empirical evidence on leverage and firm value

There exists conflicting theories on the relationship between capital structure and the value of the firm. The empirical literature on the relationship between leverage and firm value is extensive, but inconclusive. A large number of studies tried to see if there is any empirical relation between leverage and firm value. Some of the relevant studies relating to capital structure decisions and the value of the firm are summarized as follows:

- I. Review of major literature before 2000
- II. Review of major literature during 2000s to date
- III. Concluding remarks

I. Review of major literature before 2000

Major findings of the studies relate to the effect of capital structure on firm value before 2000 have been presented in Table 5.1. Wippern (1966) examines the financial structure and the value of the firm. The author reports that existence of an optimal financial mix has not been established by the evidence. The optimum will occur at the

point where the marginal cost of debt funds is equal to the weighted average overall cost of capital. Another point which precludes conclusions regarding the point or range at which an optimum exists is that observations of the equity yield-leverage relationship will have to be made over the entire range of leverage levels, including extreme financial structures. The analysis reveals that a determination of the effects of capital structure on shareholder wealth is a problem of demand analysis. Normative analysis shows only that the use of fixed commitment financing by the firm can increase shareholder wealth, but in itself cannot prove that non-equity financing will or should improve the investor's position. The evidence of the effects of capital structure on the value of the firms included in the study provides support for the intermediate or traditional view that shareholder wealth is enhanced by the firm's judicious use of fixed commitment financing.

Sarma and Rao (1969) have tested the hypothesis of MM that, after allowing for the tax advantage from the interest paid on debt, the value of a firm is independent of its capital structure. All the coefficients of the leverage variable of their equation are significantly greater than the corporation income tax rates of the three years studied. Their result implies that debt has non-tax advantages also. They show the evidence in support of the conclusion that investors prefer corporate to personal leverage and, therefore, the value of a firm rises up to a leverage rate considered prudent.

Masulis (1980) has analyzed the impact of capital structure change announcements on security prices. Statistically significant price adjustments in firms' common stock, preferred stock and debt related to these announcements are documented and alternative causes for these price changes are examined. The evidence is consistent with both corporate tax and wealth redistribution effects. There is also evidence that firms make decisions which do not maximize stockholder wealth.

Franks and Pringle (1982) point out the role of financial intermediaries in the valuation of firms and projects. They show that security prices should reflect both used and unused debt capacity if some corporations can act as financial intermediaries and capture the tax benefits of debt capacity unused by the operating firm. They provide some reasons why the value of the firm might be increased if the financing

and operating risks of the firm are separated and financial intermediaries issue rather than the unit operating the asset.

Study	Major finding
Wippern (1966)	Normative analysis shows only that the use of fixed commitment financing by
	the firm can increase shareholder wealth.
Sarma and Rao (1969)	Investors prefer corporate to personal leverage and, therefore, the value of a
	firm rises up to a leverage rate considered prudent.
Masulis (1980)	Firms make decisions which do not maximize stockholder wealth.
Franks and Pringle	Security prices should reflect both used and unused debt capacity.
(1982)	
Masulis (1983)	Change in leverage is positively related to change in stock returns. Firm
	values are positively related to changes in firm debt level.
Jensen (1986)	Optimal debt-equity ratio is the point at which firm value is maximized.
Stulz (1990)	Debt can have both a positive and negative effect on the value of the firm.
Pandey (1992)	Initially, cost of capital and value of a firm are independent of the capital
	structure changes, but they rise after a certain level.
Hatfield, Cheng and	Market does not consider industry averages for leverage as discriminators for
Davidson (1994)	firms' financial leverage. Financial leverage is irrelevant to the value of the
	firm.
Berkivitch and Israel	Impact of debt on value of firms depends on the balance of power within a
(1996)	firm.
Fama and French	Firm value is positively related to dividends and negatively related to debt.
(1998)	
Kinsman and	Relationships between leverage and some of the measures of performance
Newman (1999)	such as a negative link with firm value and cash-flow.

Table 5.1Major studies on effect of capital structure on firm value before 2000

Masulis (1983) has developed a model based on current corporate finance theories which explains stock returns associated with the announcement of issuer exchange offers. The major independent variables are changes in leverage multiplied by senior security claims outstanding and changes in debt tax shields. He studied daily stock returns of all companies that have gone through pure capital structure changes. He showed that change in leverage is positively related to change in stock returns. Further his evidence indicates that changes in firm values are positively related to changes in firm debt level. Likewise he argues further that when firms which issue debt are moving toward the industry average from below, the market will react more positively than when the firm is moving away from the industry average.

Jensen (1986) points out that debt may reduce the agency costs of free cash flow by reducing the amount of cash under management control. The optimal debt-equity ratio

is the point at which firm value is maximized, the point where marginal costs of debt just offset the marginal benefits.

Stulz (1990) argues that debt can have both a positive and negative effect on the value of the firm (even in the absence of corporate taxes and bankruptcy cost). He develops a model in which debt financing can both alleviate the overinvestment problem and the under investment problem. He assumes that managers have no equity ownership in the firm and receive utility by managing a larger firm. The "power of manger" may motivate the self-interested managers to undertake negative present value project. To solve this problem, shareholders force firms to issue debt. But if firms are forced to pay out funds, they may have to forgo positive present value projects. Therefore, the optimal debt structure is determined by balancing the optimal agency cost of debt and the agency cost of managerial discretion.

Pandey (1992) observes that MM theory is not fully valid under Indian conditions. He concluded that, initially, cost of capital and value of a firm are independent of the capital structure changes, but they rise after a certain level.

Hatfield, Cheng and Davidson (1994) have examined the hypothesis that when firms which issue debt are moving toward the industry average from below, the market will react more positively than when the firm is moving away from the industry average prior to announcing a new debt issue. The authors tested whether this has an effect on market returns for shareholders. Their overall conclusion is that the relationship between a firm's debt level and that of its industry does not appear to be of concern to the market. The high debt firms had significant negative market reactions for several intervals; however, the difference between this group and the low debt firms was not statistically significant. These results suggest, overall, that the market does not consider industry averages for leverage as discriminators for firms' financial leverage. Their study shows that the market does not appear to consider the relationship between a firm's leverage ratio and the industry's leverage ratio important. Their finding is consistent with the original Modigliani and Miller (1958) proposition that financial leverage is irrelevant to the value of the firm.

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According to Berkivitch and Israel (1996) a firm's debt level and its value are positively related especially when shareholders have absolute control over the business of the firm and it is negatively related when debt holders have the power to influence the course of the business. The impact of debt on value of firms, therefore, depends on the balance of power within a firm. If shareholders have more power, a positive leverage will prevail and if debt holders have more power, a negative leverage would take place. He points out that the use of higher levels of debt in the capital structure leads to an increase or decrease in the return on shareholders' capital/ return on owner's equity.

Fama and French (1998) examine taxes, financing and firm value. They use crosssectional regressions to study how a firm's value is related to dividends and debt. They conclude that with a good control for profitability, the regressions can measure how the taxation of dividends and debt affects firm value. Simple tax hypotheses say that value is negatively related to dividends and positively related to debt. They find the opposite. They infer that dividends and debt convey information about profitability (expected net cash flows) missed by a wide range of control variables. This information about profitability obscures any tax effects of financing decisions.

Kinsman and Newman (1999) have used various measures of performance on this issue on a sample of US firms, based on accounting or ownership information (firm value, cash-flow, liquidity, earnings, institutional ownership and managerial ownership). They perform regressions of leverage on this set of performance measures. Their conclusion is the existence of robust relationships between leverage and some of the measures of performance such as a negative link with firm value and cash-flow. However, this work has been criticized due to the use of much contested performance measures such as liquidity, but also with their joint inclusion in regressions, mixing their influence.

II. Review of major literature during 2000s to date

The summary review of the major findings of the studies related to the capital structure and firm value during 2000s has been shown in Table 5.2. Black (2001) has collected data from Russia and has found that a firm's corporate governance behavior can have a huge effect on its market value. Gemmill (2001) points out that under

some conditions capital structure does not affect the value of the firm. Splitting a fund into some mix of shares relating to debt, dividend and capital directly adds value to the company.

Harvey, Lins and Roper (2001) have found that the type of debt that positively impacts shareholder value is the type that closely monitors management. The combination of a sample of firms with extreme expected agency problems and detailed information on the different types of debt allows constructing powerful tests of whether debt can mitigate the effects of agency and information problems. Among other results, they find that the abnormal returns resulting from syndicated terms loans are significantly related to the extent of the separation of ownership and control. The results are consistent with the idea that debt creates value because it reduces the agency costs associated with overinvestment.

Babenko (2003) examines the state tax effect on optimal leverage and yield spreads to find out the optimal capital structure at the time of financial distress. A negative relationship exists between the ownership of shareholders with large blocks, on the one hand, and the degree of control, on the other hand, with regard to firm value, the second relationship being significant. However, endogenous treatment of these variables then reveals a positive effect for the ownership of the major shareholders on firm value.

Gompers *et al.* (2003) have used incidence of 24 governance rules to construct a "Governance Index" to proxy for the level of shareholder rights at about 1,500 large firms from the USA during the 1990s. The authors have found that the firms with stronger shareholder rights had higher firm value; that is, strong corporate governance improves the value of the firm.

In sharp contrast to some recent findings, in an issue of whether financial structure influences economic growth or not, using heterogeneous panel (Arestis and Luintel, 2004) have found that those firms having lower debt have higher value than the firms, which have high debt. Mak and Kusnadi (2005) have collected data from Singapore

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and Malaysia, and have found a negative relationship between the board size and firm value.

Berger and Patti (2006) suggest that higher leverage, which is defined as total debts to total assets at book value, reduces the agency cost of outside equity and, therefore, increases firm value. Sharma (2006) suggests a direct correlation between financial leverage and firm value for firms in the manufacturing industry in India.

Aggarwal and Zhao (2007) have evaluated the relationship between leverage and value emphasizing on industry. The authors conclude that a portion of firm leverage related to leverage of that special industry has been considered and, in fact, effect of industry on leverage has been controlled in estimating the leverage-value relation. Finally, their results indicate a negative relationship between leverage and value in both high-growth and low-growth companies.

Qureshi (2007) concludes that financial structure with low leverage (debt) plays a significant role in maximizing firm value while short-term financial structure does not considerably affect value determination. Additionally, stable dividend policy is necessary to maximize firm value.

Ghosh and Ghosh (2008) have studied whether leverage affects dividend policy and profitability affects future firm value. They conclude that there is a non-linear relationship between leverage, profitability, and possibility of promoting future firm value. The higher the leverage, the lower the probability will be. While the higher the profitability rate and dividend payout ratio, the higher the probability.

Pattanayak (2008) has examined the effect of insider ownership on corporate value in India for the periods of 2000-2001 and 2003-2004, using 1833 Bombay stock Exchange listed firms. The author has found that firm value (measured by Tobin's Q) increases as ownership by insiders rises.

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Study	Major finding
Black (2001)	Firm's corporate governance behavior can have a huge effect on its market
Gammilla (2001	Value.
Harvoy Line and	Closely monitored debt positively impacts shareholder value. Debt creates
Harvey, Lins and $P_{oper}(2001)$	Closely monitored debt positively impacts shareholder value. Debt creates
Roper (2001)	Value because it feduces the agency costs.
$\frac{1}{2003}$	Strong corporate governance improves the value of the firm
Arastis and Luintal	Firms having lower debt have higher value then the firms, which have high
(2004)	debt.
Mak and Kusnadi (2005)	Negative relationship between the board size and firm value.
Berger and Patti (2006)	Higher leverage reduces the agency cost of outside equity and therefore, increases firm value.
Sharma (2006)	Direct correlation between financial leverage and firm value.
Aggarwal and Zhao	Negative relationship between leverage and value in both high-growth and
(2007)	low-growth companies.
Qureshi (2007)	Financial structure with low leverage (debt) plays a significant role in
	maximizing firm value.
Ghosh and Ghosh	Non-linear relationship between leverage, profitability, and possibility of
(2008)	promoting future firm value.
Pattanayak (2008)	Firm value (measured by Tobin's Q) increases as ownership by insiders
	rises.
Cheng, Liu and Chien	Relationship between leverage and firm value represents an inverted U-
(2010)	shape.
Chowdhury, and Chowdhury (2010)	Strong positively correlated association is evident between capital structure and firm value.
Muradoglu and	Capital structure is value relevant for equity investors. The optimal financial
Sivaprasad and (2010)	policy involves low leverage.
Adeyemi and Oboh (2011)	Market value of a firm is positively significantly influenced by its choice of capital structure.
Cheng & Tzeng (2011)	Leverage is significantly positively related to the firm value before reaching
	firm's optimal capital structure.
Gill and Mathur	Board size negatively impact of firm value, and CEO duality, firm size, and
(2011a)	return on assets positively impact the firm's value.
Rouf (2011)	Positive relationship between CEO duality and firm value.
Ruan, Tian, and Ma	Managerial ownership negatively impacts the ratio of total debt to total
(2011)	assets and the ratio of total debt to total assets negatively impacts firm value.
Ryu and Yoo (2011)	Positive relationship between firm value and inside management ownership.
Antwi, Mills and Zhao	Equity capital as a component of capital structure is relevant to the value of a
(2012)	firm, and Long-term-debt was also found to be the major determinant of a
	firm's value.
Collins, Filibus &	Firms' leverage positively influences their market values.
Clement (2012)	
Cuong and Canh	Optimal debt ratio (total debt to total assets ratio) of less than 59.27%
(2012)	enhances firm value.
Maxwell and Kehinde	Equity capital as a component of capital structure is irrelevant to the value of
(2012)	a firm, while Long-term-debt was found to be the major determinant of a
	firm's value.
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Table 5.2Major studies on effect of capital structure on firm value during 2000s to date

Cheng, Liu and Chien (2010) have used the advanced panel threshold regression model to examine the panel threshold effect of leverage on firm value among 650

Chinese-listed firms from 2001 to 2006. The empirical results strongly indicate that triple-threshold effect exists between debt ratio and firm value. Besides, the coefficient is positive when debt ratio is less than 53.97%, which implies that debt financing can improve firm value. They conclude that the relationship between leverage and firm value represents an inverted U-shape. Debt financing should not be used unlimitedly; however, there is an optimal level beyond which, the\ increased debt does not have a better proportional firm value.

Chowdhury and Chowdhury (2010) have analyzed the relationship between capital structure and firm value in Bangladesh. Their study considers share price as proxy for value and different ratios for capital structure decision. They report that long term debt to total asset has the highest positive coefficient among other explanatory variables. This indicates that capital structure is the most influential variable for firm value. Long term debt to total asset indicates the portion of long term liability or credit on total firm's fixed assets. Taking debt to its capital structure one firm can increase the market value of share. The authors further assert that the portion of or the mix of long term debt to total assets may widely vary from company to company. They conclude that that by changing the capital structure composition a firm can increase its value in the market.

Muradoglu and Sivaprasad and (2010) point out that the negative relation may be attributed to the fact that firms may try to keep their leverage ratios low, in order to prevent their profits being used for interest payments, thus, leading to returns declining in leverage. Since the firm's capital structure is endogenous, the optimal financial policy involves low leverage, in order to mitigate agency problems, while at the same time preserving financial flexibility. They prove that capital structure is value relevant for equity investors, though the effect doesn't always move in the same direction. They find different effects of leverage on returns at different levels of analysis.

Adeyemi and Oboh (2011) have taken a sample size of 90 firms from Nigeria and they pointed out that the market value of a firm is positively significantly influenced by its choice of capital structure (financial leverage).

Cheng & Tzeng (2011) have applied the least square dummy variable to estimate the effect of leverage on firm values and contextual variables influencing on this relationship. Their study is based on using 645 companies listed in Taiwan Securities Exchange from 2000-2009. The empirical results show as follows: Firstly, the values of leveraged firm are greater than that of an un-leveraged firm if bankruptcy probability is not considered. Secondly, if the benefit and cost of debt is simultaneously considered, the leverage is significantly positively related to the firm value before reaching firm's optimal capital structure. Thirdly, the positive influence of leverage to the firm value tends to be stronger when the firm financial quality is better (i e., the greater Z-score).

Gill and Mathur (2011a) have taken a sample of 91 Canadian manufacturing firms listed on the Toronto Stock Exchange (TSX) for a period of three years (from 2008-2010) and have found that board size negatively impact of firm value, and CEO duality, firm size, while return on assets positively impact the firm's value.

Rouf (2011) has examined Bangladeshi firms and found a positive relationship between CEO duality and firm value. Ruan, Tian, and Ma (2011) have used data of Chinese firms and have found that managerial ownership negatively impacts the ratio of total debt to total assets and the ratio of total debt to total assets negatively impacts firm value. Ryu and Yoo (2011) have collected data from Korea and have found a positive relationship between firm value and inside management ownership.

Antwi, Mills and Zhao (2012) have provided the evidence on the impact of capital structure on a firm's value. The analysis has been implemented on all the 34 companies quoted on the Ghana Stock Exchange (GSE) for the year ended 31st December 2010. The ordinary least squares method of regression was employed in carrying out this analysis. The result of the study reveals that in an emerging economy like Ghana, equity capital as a component of capital structure is relevant to the value of a firm, and long-term-debt has also been found to be the major determinant of a firm's value.

Collins, Filibus & Clement (2012) have empirically examined the effect of a firm's capital structure on its market value. Dataset from 39 non-financial listed companies for the period of 2005-2009 have been used for analysis. Results from the regression analysis show a significant and positive relationship between non-financial firms' market values and their debt-equity ratios. Whereas, a negative relationship exists between a firm's total-debt/total-capital ratio and its market value, its size positively affects its market value. They conclude that firms' leverage positively influences their market values.

Cuong and Canh (2012) have used a data set that includes a combination of seafood processing enterprises listed on two of Vietnam's stock exchange markets from 2005-2010. The authors have found that the optimal debt ratio (total debt to total assets ratio) of less than 59.27% enhances firm value.

Maxwell and Kehinde (2012) conclude that in an emerging economy like Nigeria, equity capital as a component of capital structure is irrelevant to the value of a firm, while Long-term-debt was found to be the major determinant of a firm's value. They also advise the corporate financial decision makers to employ more of long-term-debt than equity capital in financing corporate operations since it results in a positive firm value.

III. Concluding remarks

Financing decisions are one of the most critical areas for finance managers. It has direct impact on capital structure and firm value of the companies. It is a topic that continues to keep researchers pondering. Researchers continue to analyze capital structures and try to determine whether optimal capital structures exist. An optimal capital structure is usually defined as one that will minimize a firm's cost of capital, while maximizing shareholder's wealth. Hence, capital structure decisions can have great impact on the value of the firm.

Exactly how firms choose the amount of debt and equity in their capital structures remains an enigma. Are firms mostly influenced by the traditional capital structures of their industries or are there other reasons behind their actions? The answers to these

questions are very important, because the actions of managers will affect the value of the firm, as well as will influence how investors perceive the firm. Much of the theory in corporate sector is based on the assumption that the goal of a firm should be to maximize the wealth of its current shareholders.

Related to the issue on the effect of capital on firm value, some researchers like Masulis (1983), Chowdhury and Chowdhury (2010), Adeyemi and Oboh (2011), Cheng & Tzeng (2011), Collins Filibus & Clement (2012) have concluded that value of a firm is positively significantly influenced by its choice of capital structure. On the other hand Aggarwal and Zhao (2007) assert that value of the firm and leverage is negatively related. Mak and Kusnadi (2005) report the negative relationship between the board size and firm value. Cheng, Liu and Chien (2010) point out that relationship between leverage and firm value represents an inverted U-shape. Gemmille (2001) concludes that under some conditions capital structure does not affect the value of the firm. Further Chowdhury and Chowdhury (2010) report that firm value (price) and operating leverage has negative coefficient.

Early and recent empirical studies on the relationship between capital structure and firm value mainly focus on the developed capital market. All these studies have helped understand the dynamics of this crucial issue better but have not been able to come up with a definite conclusion as to how firms determine capital structure that maximize firm value. So the present study has been planned to make another attempt to resolve this contentious issue. Further, the relationship between firm value and capital structure has not been empirically resolved in the Nepalese context. In this study these conflicting hypotheses will be tested arising from the literature regarding the association between non-financial firms' capital structure and their firm value.

In addition to capital structure (leverage), firm value is likely to be affected by profitability, turnover, company size, liquidity, growth and business risk. It is theoretically supported that profitable firms are generally better managed and thus are expected to be more efficient then should have more firm value. Chowdhury and Chowdhury (2010) have also found that firm value (price) is positively correlated with fixed assets turnover and liquidity (current ratio) and negatively related to sales

growth and operating leverage (business risk). Firm size is expected to be negatively related to the firm value (q) as suggested by the literature of firm-size effect (Banz, 1981).

Based on the review of related empirical studies, a finalized conceptual model has been constructed. This model specifies that the firm value is a function of capital structure, profitability, turnover, company size, liquidity, growth and business risk. The conceptual framework has been depicted in Figure 5.1. This framework is taken as land mark for developing the model of the study.



Figure 5.1 Conceptual framework of capital structure and firm value

5.3 Research methodology

I. Selection of enterprises

For the purpose of this study, eighteen listed non-financial Nepalese companies have been selected for the period of 1998-2012. The selected enterprises are presented in Table 5.3.

Table 5.3 **Enterprises selected for the study**

secondary d	ata analysis.			
Ser. No	Name of the Company	Nature of Industry	Period Covered (Year in A.D)	Observations
1	Bottlers Nepal Limited (Balaju)	Manufacturing	2004-2012	9
2	Nepal Lube Oil Limited	Manufacturing	2005-2011	7
3	Bottles Nepal (Tarai) Limited	Manufacturing	2002-2012	11
4	Unilever Limited	Manufacturing	2003-2012	10
5	Gorakhkali Rubber Udyog Ltd.	Manufacturing	2005-2011	7
6	Himalayan Distillery Limited	Manufacturing	2003-2012	10
7	Bishal Bazaar Co Ltd.	Trading	2003-2011	9
8	Khadya Udyog Ltd.	Manufacturing	2005-2011	7
9	Nepal Bitumen & Barrel Udyog Ltd.	Manufacturing	2005-2011	7
10	Nepal Banaspati Ghieu Udyog Ltd.	Manufacturing	2005-2011	7
11	Salt Trading Corporation	Trading	1998-2011	14
12	Fleur Himalayan Ltd.	Manufacturing	2005-2011	7
13	Shree Ram Sugar Mills	Manufacturing	2005-2011	7
14	Shree Raghupati Jute Mills Ltd.	Manufacturing	2005-2011	7
15	Soaltee Hotel Ltd.	Hotel	2003-2012	10
16	Yak and Yeti Hotel Ltd.	Hotel	2005-2011	7
17	Oriental Hotels Ltd.	Hotel	2003-2012	10
18	Taragaun Regency Hotel Ltd.	Hotel	2003-2011	9
	Total			155

This table shows the details of the organizations selected, nature of industry, period covered and number of observations for

Out of eighteen enterprises, twelve are manufacturing, six are from nonmanufacturing (ie. four are from hotels and two are trading companies) enterprises listed in Nepal Stock Exchange. The sample enterprises are selected using stratified random sampling technique. Out of 155 observations available for the analysis, 96 observations are from manufacturing strata and 59 observations from nonmanufacturing strata. Firms relating to service sector and others like banking and finance, insurance, hydropower etc. are excluded in this study because of specific nature of their activities.

II. Nature and sources of data

Secondary data have been used in this study for measuring the effect of leverage on firm value. These data have been collected from the office of the Auditor General (Annual Reports), Nepal Stock Exchange (Financial statements of listed companies),

Ministry of Finance (Performance report of Government Corporation and Economic Survey) and Security Board of Nepal. Other relevant data have also been collected from concerned companies selected for the purpose of the study. Some of the valuable information about the leverage and corporate profitability has also been obtained from the concerned authorities of selected enterprises, asking and interacting with them individually.

III. Method of analysis

1. Descriptive statistics

This part of the study has used descriptive statistics to describe and understand the basic features of the data, because it provides simple summaries about the sample and the measures. The descriptive statistics include percentage, mean, median, standard deviation and quartile. The results in each variable have been described comprehensively. The significance of the results has been dwelt upon.

2. Correlation analysis

Correlation analysis is a statistical tool that has been used in this study to point out the degree to which one variable is linearly related to another. In this part, Pearson correlation coefficients for all variables are considered. This analysis tries to find out the relationship between firm value measures and the measures of leverage with control variables. The priori hypothesis in this analysis is that there is strong relationship between firm value and measures of leverage in Nepalese listed companies.

3. The Model

This section examines the effect of capital structure (leverage) on firm value using the approach adopted by Wippern (1966), Sarma and Rao (1969), Adelegan (2007) and Chowdhury and Chowdhury (2010). Leverage is used as explanatory variable and likely profitability, turnover, company size, liquidity, growth, and business risk are used as control variables, and firm value (LnTobin-q) is considered as the dependent variable. Although total assets and sales can be used for deflating the variables, but as in their study total assets were used as the deflator. The growth rate of total assets or of fixed assets or of earnings growth or sales growth could be used as the growth

variable. Unlike Sarma and Rao (1969), the total assets growth rate was chosen as the growth variable because this would take into account as precise growth of the firm in Nepalese Context. The main problem of choosing earnings growth as growth variable in Nepalese context is impractical because most of the firms are reporting loss (i.e. negative earnings). In the presence of negative earnings, growth of total assets, rather than earnings, gives a proper picture of growth potential of a firm. Like Sarma and Rao (1969), debt level (leverage) has been introduced as a separate independent variable. Since the purpose of this study is to examine the impact of leverage, with other covariates, on firm value the analysis is directed to test the following models:

$$LnTobin-q_{it} = B_0 + B_1 TL_{it} + B_2 PROF_{it} + B_3 TURN_{it} + B_4 Lnasset_{it} + B_5 LIQU_{it} + B_6 AGROW_{it} + B_7 BRISK_{it} + \varepsilon_{it}$$
(1)

$$LnTobin-q_{it} = B_0 + B_1 LTL_{it} + B_2 PROF_{it} + B_3 TURN_{it} + B_4 Lnasset_{it} + B_5 LIQU_{it} + B_6 AGROW_{it} + B_7 BRISK_{it} + \varepsilon_{it}$$
(2)

 $LnTobin-q_{it} = B_0 + B_1 STL_{it} + B_2 PROF_{it} + B_3 TURN_{it} + B_4 Lnasset_{it} + B_5 LIQU_{it} + B_6 AGROW_{it} + B_7 BRISK_{it} + \epsilon_{it}$ (3)

Where: LnTobin-q = Value of a firm = Natural logarithm of the market value of equity and the sum of the book value of long-term debt and total short-term or current liabilities to the book value of its net assets.

TL = Total leverage = Total debt divided by total assets

LTL = Long-term leverage = Long term debt divided by total assets

STL = Short-term leverage = Short-term debt divided by total assets

PROF = Profitability = Earnings before interest and taxes divided by total assets

TURN = Turnover = Sales divided by total assets

Lnasset = Company size = Natural logarithm of total assets.

LIQU = Liquidity = Current assets divided by current liabilities

AGROW = Assets growth = Annual growth rate in total assets

BRISK = Business risk = Percentage change in earnings before interest and taxes to percentage change in sales (degree of operating leverage).

4. Specification of variable and hypotheses

Studies embarking on analyzing the effect of capital structure on firm value do not seem to have reached conclusive results. Their findings are either contradictory, or statistically insignificant. For example, while the correlation of a factor can be positive in one study it can be negative in another. Furthermore, what could be applied to developed countries might not be applicable to less developed nations.

According to the Adeyemi and Oboh (2011), the market value of a firm is positively significantly influenced by its choice of capital structure. More specifically, there is a significant positive effect of long-term financial leverage on the market value of a firm as suggested by other research studies as in Modigliani and Miller (1963) and Mollik (2008) among others, but in sharp contrast to the pecking order theory as propounded by Donaldson (1961), which assumes a firm's capital structure as irrelevant to its market value and that a firm's choice of capital structure should follow a well defined order, starting with internal funds, then debt and finally equity capital.

This study has mainly examined the relationship existing between the choice of capital structure of a firm and its market value. To control for other factors that might affect firm value, a regression framework has been designed with several control variables that are plausibly related to differences in risk across firms. There are, apparently, many other factors that influence a firm's market value other than its choice of capital structure in the real world. Prior researches have shown that other factors have significant relationship with firms' market values. Other factors that as well influence firms' market values include: growth potential or future investment opportunity (Myers, 1984; Titman and Wessels, 1988; Harris and Raviv, 1991); dividend policy (Miller and Modigliani, 1961; Gordon, 1967); the size of a firm (Gordon, 1962); the kind of risk a firm is exposed to as well have some influence on its market valuation.

As argued by Titman and Wessels (1988) and Harris and Raviv (1991), the choice of the underlying explanatory variables is fraught with difficulty. This is why different researchers have considered different key variables in their respective studies. However, most of the published studies have considered leverage, profitability, turnover, company size, liquidity, assets growth and business risk as the determinants of the firm value. Moreover, the selection of the variables (dependent and independent) is primarily guided by the results of the previous empirical studies and the availability of data. The explanatory variable selected for this study is capital structure (leverage) and the control variables chosen are: profitability, turnover, company size, liquidity, assets growth and business risk.

A. Leverage

Capital structure (leverage) is represented by the ratio of long term debt to total assets. Leverage can also be measured as the ratio of total liabilities to total assets, and the book-to-market ratio, measured as the book value of equity divided by the market value of equity. As an alternative approach, leverage can be measured as the ratio of fixed charges to minimum expected income in order to avoid the conceptual and statistical biases of the debt: equity ratio measure. Rajan and Zingales (1995) have indicated that the most suitable debt ratio relies on the purpose of the analysis. For listed Nepalese firms, the decomposition of total debts into long-term and short-term debt may be desirable for the following reason as explained. Diamond (1991, 1993), Rajan (1992) and Demirguc- Kuniand and Maksimovic (1999) have indicated that firms in emerging countries rely mainly on short-term debt. Three measures of leverage will be used in this study. The first measure of leverage divides total liabilities by total assets. The second measure divides long-term debt by total assets. Third measure divides short-term debt to total assets. Short-term debt is defined as the portion of the company's total debt repayable within one year. This includes bank overdraft, bank loans payable within a year and other current liabilities. Long-term debt is the company's total debt repayable beyond one year. This includes long-term bank loans and other long-term liabilities repayable beyond one year such as directors' loans, hire purchase and leasing obligations. The total debt includes shortterm debt and long-term debt.

A principal undesirable effect of financial leverage referred to in the literature is that it increases the variability of the income stream to the stockholder. The degree of variability in the earnings stream before financing charges is consistently cited as a major determinant of the amount of fixed charge financing that may safely be undertaken by the firm.

Muradoglu and Sivaprasad (2010) have proved that capital structure is value relevant for equity investors, though the effect doesn't always move in the same direction. Masulis (1983) has shown that change in leverage is positively related to change in stock returns. Bhandari (1988) has also provided evidence that leverage has a significant positive effect on expected common stock returns.

In their seminal articles, Modigliani and Miller (1958 and 1963) demonstrate that, in a frictionless world, financial leverage is unrelated to firm value, but in a world with tax-deductible interest payments, firm value and capital structure are positively related. Miller (1977) adds personal taxes to the analysis and demonstrated that optimal debt usage occurs on a macro-level, but it does not exist at the firm level. Interest deductibility at the firm level is offset at the investor level. Myers (1984) suggests that as a firm's value related to intangible assets increases (decreases), the level of debt decreases (increases).

Ross's (1977) model suggests that the values of firms will rise with leverage, since increasing the market's perception of value. Leland and Pyle (1977) report that managers will take debt/equity ratio as a signal, by the fact that high leverage implies higher bankruptcy risk (and cost) for low quality firms. Since managers always have information advantage over the outsiders, the debt structure may be considered as a signal to the market. In the case of there being no agency problem, management acts in the interest of all shareholders. The manager will maximize company value by choosing the optimal capital structure; highest possible debt ratio. High-quality firms need to signal their quality to the market, while the low-quality firms' managers will try to imitate. According to this argument, the debt level should be positively related to the value of the firm.

Stulz (1990) argues that debt can have both a positive and negative effect on the value of the firm (even in the absence of corporate taxes and bankruptcy cost). He developed a model in which debt financing can both alleviate the overinvestment problem and the impact of capital structure on firm's value. Given these opposing theories, it is not surprising that the large empirical literature on leverage and firm value measured by performance has produced mixed results. For example, Kyerboach-Coleman (2007) points out that capital structure has a positive impact on performance of microfinance institutions. Berger and Bonaccorsi di Patti (2006) suggest that higher leverage, which is defined as total debts to total assets at book value, reduces the agency cost of outside equity and, therefore, increases firm value. These empirical results are also consistent with Abor (2005), Mollik (2005), Peterson and Rajan (1994) and Bos and Fetherston (1993), who have discovered that there is a positive association between leverage and performance. However, some studies have found a negative association between leverage and performance (value) such as Friend and Lang (1988), Barton *et al.* (1989), Michaels *et al.* (1999) and Booth *et al.* (2001).

Several studies like Masulis (1983), Chowdhury and Chowdhury (2010), Adeyemi and Oboh (2011), Cheng & Tzeng (2011), Collins Filibus & Clement (2012) provide the evidence that value of a firm is positively significantly influenced by its choice of capital structure. Consistent with the most of past empirical studies, it is hypothesized that relationship between capital structure (leverage) and firm value should be positive.

B. Profitability

Profitability is measured by the ratio of profits (EBIT) to total assets (e.g. Fama and French 2002, Titman and Wessels 1988). The earnings before interest and taxes divided total assets (PROF) ratio is a measure of the true productivity of the firm's assets, independent of any tax or leverage factors. Since a firm's ultimate existence is based on the earnings power of its assets. Furthermore, insolvency in a bankrupt sense occurs when the total liabilities exceed a fair valuation of the firm's assets with value determined by the earning power of the assets. It may also be viewed as the indicator of earnings gained from the total funds through debts and equities financing, the larger this ratio, the more effect on assets turnover and operation management. In general, more profitable firms are generally better managed and thus are expected to be more efficient then should have more value. Hence, profitable firms are more likely to have higher firm value than less profitable firms. Thus, it hypothesized that relationship between profitability and firm value should be positive.

C. Assets turnover

An asset turnover has been used in the model to show the effect of firm's efficiency

on firm value. The assets turnover can be computed as sales divided by total assets. However, Chowdhury and Chowdhury (2010) report that efficiency is measured through fixed asset turnover and they discover that firm value (price) is positively correlated with fixed assets turnover. In this study total assets turnover has been used as proxy for assets turnover. It is theoretically justified that higher efficiency leads to better profitability and higher profitability can eventually enhance firm value. Thus, consistent to the findings of Chowdhury and Chowdhury (2010), it is hypothesized that relationship between total asset turnover and firm value should be positive.

D. Company size

The size, according to which a firm is defined as a small and medium enterprise or as a large-sized enterprise, can be determined using a variety of variables (e.g. employment, sales volume, assets or qualitative categories such as independent ownership or management). Firm size can be represented by share capital. Size may be defined as the book value of net plant at the end of the cross-sectional year. Different measurements for firm size have been employed in most prior empirical studies. For instance, Hamson (1992) has used the natural logarithm of the sum of the fair value of equity and the book value of liabilities, the natural logarithm of total assets has been employed by Gul and Tsui (1998) and the natural logarithm of sales as used by Titman and Wesseles (1988).

In this study the natural logarithm of total assets (lnasset) has been employed as an indicator of size because it is reliable, accessible and can be used readily for comparison purposes. The size of the firms has been included in the regression model as a control variable in order to bring the study to a logical conclusion and natural logarithm of total assets are also employed to control for changes in firm size over time. Firm size is expected to be negatively related to the firm value (q) as suggested by the literature of firm-size effect (Banz, 1981). The negative relation is also supported by findings of McConnell and Servaes (1990). Based on past major studies, it is hypothesized that relationship between company size and firm value should be negative.

E. Liquidity

Liquidity is generally measured by current ratio. It is calculated as dividing current assets by current liabilities. Chowdhury and Chowdhury (2010) have also reported that liquidity is measured by current ratio. They have found that firm value (price) is positively correlated with liquidity (current ratio). In line with Chowdhury and Chowdhury (2010), it is hypothesized that relationship between liquidity and firm value should be positive.

F. Assets growth

Sarma and Rao (1969) take the earnings growth rate as the growth variable because this would take into account growth of earnings due both to the utilization of existing capacity and to the addition of new capacity. Chowdhury and Chowdhury (2010) report that growth rate is noted through sales growth rate. They discover negative relationship between firm value and sales growth but the coefficient is insignificant. Annual growth rate in assets, capital expenditures over total assets can also be used as a proxy for growth variable. While there are many alternative growth measures, annual growth rate in total assets has been chosen as growth variable because earnings growth and sales growth do not report significant change as compared to assets growth in Nepalese data. Jensen (1986) asserts that the issuance of debt by low growth firms provides a device for monitoring and controlling managers by determining the market reaction to debt issuance by firm's with different growth rates. It is expected to find a positive reaction in the market for low growth firms that announce a debt issue. Based on past empirical studies, a negative relationship is expected between growth rate and firm value. Thus, it is hypothesized that relationship between assets growth rate and firm value should be negative.

G. Business risk

A proxy risk variable has been admitted to the analysis as an adjustment for basic business risk, thus permitting tests of the firm value and leverage relationship among firms from different industries. The inclusion of this proxy risk measure made it unnecessary to adopt any assumptions about risk-equivalence within industry classes. Business risk of the firm is measured by its degree of operating leverage. This equals the percentage change in earnings before interest and taxes over the percentage change in sales. Chowdhury and Chowdhury (2010) report that firm value (price) and operating leverage has negative coefficient. Operating leverage shows the extent to which a firm has fixed burden. If any firm has high fixed cost or operating leverage then a little change in sales price will adversely affect the profitability of any firm. Low operating leverage gives any firm flexibility. So by reducing operating leverage any firm can increase its value. Thus, it is hypothesized that relationship between business risk and firm value should be negative.

Table 5.4 summarizes the capital structure (leverage) along with control variables affecting firm value and their expected relationships.

Effect of capit	tal structure on min value along with priori i	rypomesis		
Variables	Definitions	Relation with firm		
		value		
Leverage (TL, LTL,	TL: total debt to total assets; LTL: long-term debt to	Positive		
STL)	total assets; STL: short-term debt to the total assets.			
Profitability (PROF)	Earnings before interest and taxes divided by total	Positive		
Turnover (TURN)	Sales divided by total assets.	Positive		
Company Size	Natural logarithm of total assets.	Negative		
(Lnasset)				
Liquidity (LIQU)	Current assets divided by current liability.	Positive		
Growth (AGROW)	Change in total assets divided by total assets.	Negative		
Business Risk (BRISK)	Percentage change in earnings before interest and	Negative		
	taxes to percentage change in sales (degree of			
	operating leverage).			

 Table 5.4

 Effect of capital structure on firm value along with priori hypothesis

5.4 Data analysis and results

5.4. 1 Descriptive statistics

Table 5.5 gives the detail of descriptive statistics of the variables used in the analysis. The third column of table shows the mean of the variables including LnTobin-q, total leverage, long term leverage, short-term leverage, profitability, total assets turnover, Lnasset, liquidity, assets growth and business risk. The respective mean values are: 0.491, 0.937, 0.221, 0.715, 0.074, 0.868, 20.127, 0.876, 0.158 and -523.373. The debt to total assets ratio (TL) has been used as one of the proxy for capital structure in this study. The TL ratio of 0.937 shows that, on an average, Nepalese sample companies' finance 93.7 percent of total assets by debt capital. Implying that, most non-financial firms in Nepal are high-geared companies.

The fourth column of the table explains the standard deviation of the given variables. The fifth and sixth columns give details of the minimum and maximum values the given variables respectively. The percentile values of the variable have been shown at the last column of the table.

Descriptive statistics of dependent and independent variables (n=155)										
Variables	Scale	Mean	Std. Dev.	Minimum	Maximum]	Percentiles			
						25	50	75		
LnTobin-q	Ln	0.491	0.614	-0.538	2.429	0.027	0.405	0.793		
TL	Ratio	0.937	0.735	0.240	4.110	0.580	0.730	0.930		
LTL	Ratio	0.221	0.354	0.000	2.960	0.000	0.070	0.330		
STL	Ratio	0.715	0.721	0.100	3.790	0.360	0.530	0.730		
PROF	Ratio	0.074	0.132	-0.190	0.530	0.000	0.050	0.100		
TURN	Ratio	0.868	0.721	0.000	5.908	0.429	0.713	1.134		
Lnasset	Ln	20.127	1.188	17.681	22.331	19.139	20.337	20.883		
LIQU	Ratio	0.876	0.693	0.052	4.415	0.396	0.774	1.109		
AGROW	Ratio	0.158	0.795	-0.878	9.440	-0.031	0.065	0.197		
BRISK	Ratio	-523.373	6496.644	-80882.120	203.607	-1.272	0.702	3.068		

			Т	able 5.5					
Des	Table 5.5 Descriptive statistics of dependent and independent variables (n=155)								

Source: Annual report of sample companies

5.4. 2 Leverage and firm value-all sample A. Relationship between leverage and firm value

A part of the procedure for analysis in this study, a correlation was performed in order to establish relationship among all the variables of interest. Output of correlation analysis (Table 5.6) is represented in matrix of pair-wise Pearson correlation. It has been found that firm value (LnTobin-q) is significantly positively correlated with total leverage, short-term and profitability but it is significantly negatively correlated with size (Lnasset), liquidity. An examination of Table 5.6 shows that the highest correlated variable of the firm value (LnTobin-q) is profitability (PROF), having a correlation coefficient of 0.528 and it is significant at a 0.01 level of significance (P<0.01). The result indicates that firm value (LnTobin-q) is mostly depends on profitability. While the next correlated variable to the firm value (LnTobin-q) is the short-term leverage (STL) with a correlation coefficient of 0.3.66 and significant at a 0.01 level of significance. Firm value (LnTobin-q) and size (Lnasset) has significant negative correlation of -0.361. This means firm value (LnTobin-q) and size are inversely related.

Analysis among the independent variables shows that there is maximum correlation coefficient 0.882 between STL and TL. These two variables are individually used in the regression, thus it may not cause multicollinearity. With regard to the analysis among other independent variables, the correlation coefficients are found less than 0.531, hence indicating that there is an absence of multicollinearity. It can be inferred from the analysis that none of the variables are perfectly correlated or inversely correlated. Each and every variable has some relationship with each other.

Correlation coefficients of variables (n=155)										
Variables	Ln									
	Tobin-q	TL	LTL	STL	PROF	TURN	Lnasset	LIQU	AGROW	BRISK
LnTobin-q	1									
TI	.309**	1								
LTL	-0.104	.279**	1							
STL	.366**	.882**	206*	1						
PROF	.528**	267**	-0.137	204*	1					
TURN	0.04	-0.043	.188*	-0.135	.422**	1				
Lnasset	361**	383**	.287**	531**	0.111	-0.032	1			
LIQU	217**	339**	-0.026	332**	.191*	.256**	0.137	1		
AGROW	-0.075	-0.06	0.04	-0.081	0.014	0.017	0.115	.353**	1	
BRISK	-0.008	-0.038	-0.05	-0.013	0.119	0.007	-0.012	0.068	-0.011	1

 Table 5.6

 Correlation coefficients of variables (n=155)

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

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

B. Effect of leverage on firm value-all sample

Statistical analysis based on estimated least square regression identifies the relationship between capital mix and firm value, also considering the effect of the profitability, turnover, firm size, liquidity, assets growth and business risk. In Model - 1, debt to total assets ratio has a positive and significant relation with firm value i.e. as a firm's debt level increases its firm value is expected to increase. The regression results reported in the Table 5.7 Model-1, suggest that profitability is significantly positively related to firm value, whereas turnover, company size and liquidity are negatively related to firm value. Except company size and business risk, all the variables are significant at 1 percent level of significance. R-square value in the Model-1 explains about 66 percent of the variations in the dependent variable (LnTobin-q) can be explained by independent variables. Although debt to total assets

ratio (TL) is positively and significantly associated with firm value, its coefficient is smaller than profitability. This may be so due to a number of reasons including accounting practices of firms, smaller sample size and also the choice of sample period (1998 to 2012).

LnTobin-q= 5.559 + 0.314 LTL +3.607 PROF- 0.236 TURN - 0.250 Lnasset - 0.209 LIQU + 0.038 AGROW + 0.000 BRISK (2) LnTobin-q= 3.257 + 0.242 STL + 3.458 PROF - 0.169 TURN - 0.145 Lnasset - 0.163 LIQU + 0.029 AGROW + 0.000 BRISK (3)										
Predictors	M	odel-1		M	odel-2		Model-3			
	(LE	V =TL)		(LEV	V = LTL)		(LEV	' = STL)		
	Coefficient	p-	VIF	Coefficient	p-	VIF	Coefficient	p-	VIF	
		value			value			value		
Constant	3.492	0.000		5.559	0.000		3.257	0.000		
LEV	0.284	0.000	1.386	0.314	0.002	1.269	0.242	0.000	1.580	
PROF	3.706	0.000	1.339	3.607	0.000	1.385	3.458	0.000	1.279	
TURN	-0.216	0.000	1.313	-0.236	0.000	1.454	-0.169	0.001	1.297	
Lnasset	-0.161	0.000	1.190	-0.250	0.000	1.197	-0.145	0.000	1.435	
LIQU	-0.134	0.009	1.400	-0.209	0.000	1.281	-0.163	0.002	1.370	
AGROW	0.021	0.606	1.169	0.038	0.378	1.160	0.029	0.494	1.166	
BRISK	0.000	0.097	1.023	0.000	0.137	1.023	0.000	0.110	1.023	
	$R^2 = 0.660;$	Adj.R	= 0.644	$R^2 = 0.603;$ $Adj.R^2 = 0.584$			$R^2 = 0.628;$ Adj. $R^2 = 0.610$			
	$E_{-value} = 40.74$	6. E(sig	-0.000	E-value - 31.83	2. E(cia)	-0.000	E-value - 35 //	$\mathbf{S} \cdot \mathbf{F}(\operatorname{sign})$	- 0 000	

Table 5.7
Regression results of leverage and firm value-all sample
LnTobin-q= 3.492 + 0.284 TL +3.706 PROF- 0.216 TURN - 0.161 Lnasset -0.134 LIQU +0.021 AGROW + 0.000 BRISK

(1)

Significant at the 0.01 level (2-tailed). Significant at the 0.05 level (2-tailed).

In Model -2, long-term debt to total assets ratio (capital structure) has a positive and significant relationship with firm value. It is statistically significant at 1 percent level of significant. It indicates that long-term leverage significantly affects the firm value. In the same table Model-2, displays that profitability is also significantly positively related to firm value whereas turnover, company size and liquidity are negatively and significantly related to firm value. Assets growth and business risks are insignificant and thus they have no significant effect on firm value. R-square value in the Model-2 explains about 60 percent of the variations in the dependent variable (LnTobin-q).

In the third regression model (Model-3), short-term leverage (STL) and profitability have positive and statistically significant coefficients with firm value. The results indicate that profitable firm with higher leverage position should have higher firm value. Whereas turnover, company size, liquidity have negatively significant coefficients with firm value. These coefficients are significant at 1 percent level of significance. The results indicate that turnover, company size and liquidity negatively affect firm value. R-square value of 0.628 (Model-3) indicates that about 63 percent

of the variations in the dependent variable (LnTobin-q) can be explained by independent variables. VIF values in three models displayed in Table 5.7 are less than (i.e. VIF < 2). It indicates that the estimated regression equations are free of multicollinearity.

5.4.3 Leverage and firm value-manufacturing sample

A. Relationship between leverage and firm value-manufacturing sample

As displayed by the correlation matrices in Table 5.8, the dependent variable i.e. firm value (LnTobin-q) is significantly positively correlated with two leverage variables (total leverage, short-term leverage) and profitability but it is significantly negatively correlated with liquidity. The result indicates that these four variables out of nine are the influencing variables on firm value.

	Correlation coefficients of variables-manufacturing samples										
Variables	LnTobin-										
	q	TL	LTL	STL	PROF	TURN	Lnasset	LIQU	AGROW	BRISK	
LnTobin-q	1										
TI	.593**	1									
LTL	-0.011	0.114	1								
STL	.592**	.960**	-0.169	1							
PROF	.334**	333**	252*	259*	1						
TURN	-0.084	484**	-0.175	431**	.630**	1					
Lnasset	0.11	470**	.262**	541**	.505**	.281**	1				
LIQU	295**	674**	280**	590**	.371**	.220*	.274**	1			
AGROW	-0.053	-0.089	-0.053	-0.074	0.02	0.156	.235*	-0.027	1		
BRISK	-0.019	-0.03	-0.133	0.009	0.132	0.032	-0.053	0.126	-0.072	1	

 Table 5.8

 Correlation coefficients of variables-manufacturing samples

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

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

Inter-relationships between the independent variables, are not so high (i.e. r < 0.70) except for total leverage and short-term leverage (r = 0.960). This, however, does not pose any statistical problems since the models were specified separately for the three leverage variables (total leverage, long-term leverage and short-term leverage). This indicates the absence of a multicollinearity problem, which is good news for performing a multiple regression analysis.

An examination of Table 5.8 shows that the highest correlated variable of the firm value (LnTobin-q) is total leverage having a correlation coefficient of 0.593 and it is

significant at a 0.01 level of significance (P<0.01). The next correlated variable to the firm value (LnTobin-q) is the short-term leverage (STL) with a correlation coefficient of 0.592 and significant at a 0.01 level of significance. The significant relationship of two leverage variables with firm value indicates that capital structure affects positively to firm value. It can be asserted from the analysis that none of the variables are perfectly correlated or inversely correlated. Each and every variable has some relationship with each other but these variables are free from severe multicollinearity problem.

B. Effect of leverage on firm value- manufacturing sample

Table 5.9 reports the regression results on capital mix and firm value, while considering the effect of the profitability, assets turnover, firm size, liquidity, assets growth and business risk in manufacturing samples. As evidenced from the Model 1 and Model 3 total debt to total assets ratio (TL) and short-term debt to total assets ratio (STL) have positive and significant relation with firm value (LnTobin-q) i.e. as a firm's debt level increases its firm value is expected to increase. Unlike all sample the negative and insignificant coefficient is found for long-term leverage (LTL). It indicates that long-term leverage does not significantly affect firm value in manufacturing firms.

•										
LnTobin-q = 1.534 - 0.023 LTL + 2.877 PROF - 0.373 TURN - 0.023 Lnasset - 0.464 LIQU + 0.006 AGROW + 0.000 BRISK (2)										
LnTobin-q= -3.581 + 0.479 STL + 1.330 PROF - 0.040 TURN + 0.183 Lnasset - 0.022 LIQU - 0.170 AGROW + 0.000 BRISK (3)										
Predictors	М	odel-1		М	odel-2		М	Model-3		
	(LE	V=TL)		(LEV	V = LTL)		(LEV	V = STL)		
	Coefficient	p-	VIF	Coefficient	p-	VIF	Coefficient	p-	VIF	
		value			value			value		
Constant	-2.614	0.001		1.534	0.101		-3.581	0.000		
LEV	0.503	0.000	3.258	-0.023	0.902	1.581	0.479	0.000	3.131	
PROF	1.675	0.000	2.850	2.877	0.000	2.696	1.330	0.000	3.224	
TURN	-0.034	0.604	2.581	-0.373	0.000	1.751	-0.040	0.548	2.585	
Lnasset	0.124	0.000	1.974	-0.023	0.642	2.113	0.183	0.000	2.454	
LIQU	0.071	0.390	2.387	-0.464	0.000	1.317	-0.022	0.776	2.040	
AGROW	-0.080	0.463	1.136	0.006	0.969	1.193	-0.170	0.134	1.165	
BRISK	0.000	0.349	1.055	0.000	0.450	1.056	0.000	0.311	1.055	
	$R^2 = 0.729;$	Adj.R ²	= 0.708	$R^2 = 0.471;$	$R^2 = 0.471;$ $Adj.R^2 = 0.429$			$R^2 = 0.719;$ Adj. $R^2 = 0.696$		
	F-value = 33.89	93; F(sig	000.0 = 0.000	F-value = 11.20	00; F(sig) = 0.000	F-value = 32.134; $F(sig) = 0.000$			

Table 5.9Regression results of leverage and firm value-manufacturing sample

(1)

LnTobin-g= -2.614 + 0.503 TL +1.675 PROF- 0.034 TURN + 0.124 Lnasset + 0.071 LIQU - 0.080 AGROW + 0.000 BRISK

Significant at the 0.01 level (2-tailed). Significant at the 0.05 level (2-tailed). Profitability has been found with significant and positive coefficients in three model used. The coefficients are significant at 1 percent level of significance. The results indicate that profitability is one of the causes to increase firm value. This study suggests that by increasing profitability of any firm, financial manager can increase the value the firm.

Turnover has been found significant in Model 2 only. The coefficient is negative (-0.373) and statistically significant at 1 percent level of significance. The result indicates that where long-term leverage has no significant effect on firm value, assets turnover affects negatively on firm value. It indicates that if total asset turnover increases, firm value will decrease. This is somewhat surprising results in Nepalese companies. In the real world it could be seen that the more a company will be able to generate sales through total assets, the more efficient will be the firm and profit will be relatively higher and ultimately firm value may increase.

Firm size (Lnasset) variable has positive signs in Model 1 and Model 3 but negative and insignificant sign in Model 2. It is significant at 1 percent level of significance in Model 1 and Model 3. The results indicate that leverage and firm size are in same direction to affect firm value positively.

Liquidity has also been found significant in Model 2 only. The coefficient is negative (-0.464) and statistically significant at 1 percent level of significance. The result indicates that where long-term leverage has no significant effect on firm value, assets turnover affects negatively on firm value.

Assets growth and business risk are found insignificant in all three model used in manufacturing samples. It indicates that these two variables have no significant effect on manufacturing companies' value.

R-square value explains about 72.9 percent, 47.1 percent and 71.9 percent of the variations in the dependent variable (LnTobin-q) in Model-1, the Model-2 and the Model-3 respectively. VIF values in three models displayed in Table 5.9 are less than

4 (i.e. VIF < 4). It indicates that the estimated regression equations are free of multicollinearity.

5.4.4 Leverage and firm value-nonmanufacturing sample

A. Relationship between leverage and firm value-nonmanufacturing sample

Table 5.10 demonstrates matrix of pair-wise Pearson correlation. Firm value (LnTobin-q) was found significantly positively correlated with short-term leverage and profitability but it is significantly negatively correlated with size (Lnasset). An examination of Table 5.10 shows that the highest correlated variable of the firm value (LnTobin-q) is firm size (Lnasset). The correlation coefficient of size variable is -0.910, which is highly negatively correlated with firm value. The significant negative correlation with firm value indicates that firm value is mostly influenced the firm size and it further indicates that as firm size increases, the firm value decreases. The next correlated variable is profitability (PROF), having correlation coefficient is 0.817 and it is significant at a 0.01 level of significance (P<0.01). The result indicates that firm value (LnTobin-q) is also depends on profitability. The third correlated variable to the firm value (LnTobin-q) is the short-term leverage (STL) with a correlation coefficient of 0.403 and significant at a 0.01 level of significance. This means firm value (LnTobin-q) and short-term leverage are positively related and indicates that shortterm leverage is one of the influencing variable in firm's value in hotel and trading sample companies in Nepal.

	LnTobin-	TL	LTL	STL						
Variables	q				PROF	TURN	Lnasset	LIQU	AGROW	BRISK
LnTobin-										
q	1									
TI	0.008	1								
LTL	-0.181	.899**	1							
STL	.403**	.365**	-0.078	1						
PROF	.817**	0.033	-0.182	.463**	1					
TURN	0.150	.779**	.609**	.482**	.270*	1				
Lnasset	910**	-0.053	0.120	374**	785**	-0.185	1			
LIQU	-0.180	-0.030	0.090	-0.255	0.057	.296*	0.075	1		
AGROW	-0.093	-0.054	0.013	-0.150	-0.015	0.025	0.049	.445**	1	
BRISK	0.160	0.013	-0.092	0.224	0.140	0.104	-0.113	0.062	0.067	1

 Table 5.10

 Correlation coefficients of variables- nonmanufacturing sample

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

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

Analysis among the independent variables shows that there is maximum correlation coefficient of 0.899 between LTL and TL. These two variables are individually used in the regression, thus it may not cause multicollinearity. With regard to the analysis among other independent variables, the correlation coefficients are found less than 0.80, hence indicating that there is an absence of multicollinearity. The variables qualify to enter into regression equation because severe multicollinearity has not been found among the independent variables.

B. Effect of leverage on firm value- nonmanufacturing sample

The results of Model 1, Model 2 and Model 3 are presented in Table 5.11. Results reveal that variables included measures of leverage, profitability, assets turnover, size, liquidity, assets growth and business risk. The variable used to represent leverage (capital structure) was found insignificant in all three models used in the analysis. It indicates that leverage does not affect firm value in hotel and trading companies in Nepal. This result is contradictory to that of manufacturing samples. The variable representing profitability was significant and positive, as anticipated, indicating that firm value is dependent on profitability. The results for Model 1, Model 2 and Model 3 were very much similar with respect to profitability. The coefficients are significant at 1 percent level of significance. The results indicate that profitable firm should have higher firm value in hotel and trading companies in Nepal. This result is similar to that of manufacturing sample.

Table 5.11								
Regression results of leverage and firm value-nonmanufacturing san	nple							

LnTobin-q = 10.285 - 0.073 LTL + 2.021 PROF + 0.016 TURN - 0.474 Lnasset - 0.134 LIQU + 0.007 AGROW + 0.002 BRISK (2)									
LnTobin-q = 10.221 - 0.225 STL + 2.299 PROF + 0.015 TURN - 0.468 Lnasset - 0.152 LIQU + 0.006 AGROW + 0.002 BRISK (3)									
Predictors	Model-1 (LEV =TL)		Model-2 (LEV = LTL)			Model-3 (LEV = STL)			
	Coefficient	p-value	VIF	Coefficient	p-	VIF	Coefficient	p-value	VIF
					value				
Constant	10.398	0.000		10.285	0.000		10.221	0.000	
LEV	-0.179	0.245	3.613	-0.073	0.564	2.119	-0.225	0.412	2.191
PROF	1.973	0.001	2.964	2.021	0.001	3.160	2.299	0.000	3.112
TURN	0.084	0.401	4.313	0.016	0.836	2.409	0.015	0.817	1.771
Lnasset	-0.475	0.000	2.712	-0.474	0.000	2.719	-0.468	0.000	2.718
LIQU	-0.158	0.006	1.791	-0.134	0.010	1.465	-0.152	0.009	1.893
AGROW	0.010	0.784	1.286	0.007	0.853	1.277	0.006	0.855	1.274
BRISK	0.002	0.317	1.036	0.002	0.330	1.059	0.002	0.217	1.080
	$R^2 = 0.884;$	Adj.R ²	= 0.868	$R^2 = 0.881;$	Adj.R ²	= 0.865	$R^2 = 0.882;$	Adj.R ²	= 0.866
	F-value = 55.379; $F(sig) = 0.000$			F-value = 54.125; $F(sig) = 0.000$			F-value = 54.543; $F(sig) = 0.000$		

LnTobin-q = 10.398 – 0.179 TL + 1.973 PROF + 0.084 TURN – 0.475 Lnasset - 0.158 LIQU + 0.010 AGROW + 0.002 BRISK (1) LnTobin-q = 10.285 – 0.073 LTL + 2.021 PROF + 0.016 TURN – 0.474 Lnasset – 0.134 LIQU + 0.007 AGROW + 0.002 BRISK (2) LnTobin-q = 10.221 - 0.225 STL + 2.299 PROF + 0.015 TURN – 0.468 Lnasset – 0.152 LIOU + 0.006 AGROW + 0.002 BRISK (3)

Significant at the 0.01 level (2-tailed). Significant at the 0.05 level (2-tailed). Company size (Lnasset) variable has negative signs (but positive sign was expected) in three models (Model 1, Model 2 and Model 3). It is significant at 1 percent level of significance in three models. The results indicate that as firm size increases, firm value decreases. The different results has been observed for firm size as compared to manufacturing sample where firm size (Lnasset) variable has positive signs in Model 1 and Model 3 but negative and insignificant sign in Model 2.

Liquidity was found significant in three models estimated. The coefficients are - 0.158, -0.134 and -0.152 in Model 1, Model 2 and Model 3 respectively. The results are statistically significant at 1 percent level of significance. The negative signs of liquidity indicate that more liquid firms should have lower firm value. This result is different to that of manufacturing sample where liquidity was also found significant in Model 2 only.

Assets turnover, assets growth and business risk were found insignificant in three models used though their coefficients are positive with firm value. It indicates that these three variables have no significant effect on hotel and trading companies' firm value.

R-square value explains about 88.4 percent, 88.1 percent and 88.2 percent of the variations in the dependent variable (LnTobin-q) in Model-1, the Model-2 and the Model-3, respectively. VIF values in three models displayed in Table 5.11 are less than 5 (i.e. VIF<4). It indicates that the estimated regression equations are free of multicollinearity.

There are, apparently, many other factors that influence a firm's market value other than its choice of capital structure in the real world. Prior researchers have shown that other factors have significant relationship with firms' market values. This study mainly examined the relationship existing between the choice of capital structure of a firm and its market value. But other factors that as well influence firms' market values include; growth potential or future investment opportunity (Myers, 1984; Titman and Wessels, 1988; Harris and Raviv, 1991); Dividend Policy (Miller and Modigliani,

1961; Gordon, 1967); the size of a firm (Gordon, 1962); the kind of risk a firm is exposed to as well have some influence on its market valuation.

5.5 Discussion

In general, the market value of a firm is positively significantly influenced by its choice of capital structure. More specifically, there is a significant positive effect of total leverage, long-term & short-term leverage on the market value of a firm as suggested by other research studies as in Modigliani and Miller, 1963 and Mollik, 2008 among others, but in sharp contrast to the pecking order theory as propounded by Donaldson (1961), which assumes a firm's capital structure as irrelevant to its market value and that a firm's choice of capital structure should follow a well defined order, starting with internal funds, then debt and finally equity capital.

Capital structure was found to be the major determinant of firm's value in Nepal. Test result for Nepalese firms is found as per priori expectation that is capital structure positively affect firm value. The result is similar to the findings of Masulis (1983), Chowdhury and Chowdhury (2010), Adeyemi and Oboh (2011), Cheng & Tzeng (2011), Collins Filibus & Clement (2012) concluded that value of a firm is positively significantly influenced by its choice of capital structure. However, the finding of this study is inconsistent with the findings of Aggarwal and Zhao (2007) asserted that value of the firm and leverage is negatively related. Likely it is not in agreement with the capital structure irrelevancy theory of Modigliani and Miller (1958), which states that equity capital, is unrelated to firm value; and Millers (1977) hypothesis with corporate and personal income tax, which states that the capital structure of a firm does not impact on its market value. Also Miller (1977) opines that capital structure is unrelated to the value of a firm because the tax benefit which is adduced for the relevance of capital structure in relation to firm's value is offset by the fact that shareholders pay more tax than bondholders. This position of Miller (1977) is in consonance with that of Myers (1977) who opines that a firm with outstanding debt may have the incentive to reject projects that have positive NPV which may harm the firm's value.

The finding of this study is also inconsistent with the findings of Cheng, Liu and Chien (2010) who report that a triple-threshold effect does exist and show an inverted-U correlation between leverage and firm value. The authors conclude that it is possible to identify the definite level beyond which a further increase in debt financing does not improve proportional firm value.

Although the major concern of this study is to analyze the impact of capital structure on value of the firm in context of Nepalese non financial firms. In addition to capital structure, profitability positively affects firm value. On the other hand, assets turnover, company size, and liquidity negatively affect to firm value. Specifically, the test results compared with the priori expectation has been displayed in Table 5.12.

Comparison of test results with priori expectation for reverage and firm value									
Variables	Expected relationship	Test results for Nepalese firms							
	(Priori hypothesis)	(Dependent Variable = LnTobin-q)							
		Model-1	Model-2	Model-3					
		(TL)	(LTL)	(STL)					
Leverage (TL, LTL, STL)	+	+	+	+					
Profitability (PROF)	+	+	+	+					
Assets Turnover (TURN)	+	-	-	-					
Company Size (Lnasset)	-	-	-	-					
Liquidity (LIQU)	+	-	-	-					
Assets Growth (AGROW)	-	NS	NS	NS					
Business Risk (BRISK)	-	NS	NS	NS					

 Table 5.12

 Comparison of test results with priori expectation for leverage and firm value

+ indicates positive

- indicates negative NS= Not significant

The findings of this study suggest that maximizing the wealth of shareholders requires a perfect combination of debt and equity considering the effect of profitability, assets turnover, company size and liquidity. Specifically it can be concluded that by changing the capital structure composition a firm can increase its value in the market. Nonetheless, this could be a significant policy implication for finance managers because they can utilize debt to form optimal capital structure to maximize the wealth of shareholders. However the findings of this study suggest that financial policy or corporate leverage matters in a firm's market valuation. Consequently, the theory of a firm's optimal capital structure is justified on the ground that it has an empirical significant positive impact on the firm's market value. The study has also discovered from the analysis that, in Nepal, a firm's market value is positively significantly influenced by its choice of capital structure.