DETERMINANTS OF CAPITAL STRUCTURE: A CASE STUDY OF DEVELOPMENT BANK IN NEPAL WITH REFERENCE TO GBBL AND JBBL

A Dissertation Submitted to the office of the Dean, Faculty of Management in partial fulfillment of the requirement for the Master's Degree

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STATEMENT OF AUTHORSHIP AND ORIGINALITY

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I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the reference section of the thesis.

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APPROVAL SHEET

We, the undersigned, have examined the thesis entitled "**DETERMINANTS OF CAPITAL STRUCTURE: A CASE STUDY OF DEVELOPMENT BANK IN NEPAL WITH REFERENCE TO GBBL AND JBBL"** presented by Binita Dhungana candidate for the degree of **Master of Business Studies** (MBS) and conducted the viva voce examination of the candidate. We hereby certify that the thesis is worthy of acceptance.

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This thesis report entitled “DETERMINANTS OF CAPITAL STRUCTURE: A CASE STUDY OF DEVELOPMENT BANK IN NEPAL WITH REFERENCE TO GBBL AND JBBL” has been prepared for the partial fulfillment of the requirement of the Degree of Master in Business Studies (MBS). It is a matter of great delight and pleasure to complete this graduate research work.

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ABBREVIATIONS

ADB/N	Asian Development Bank Nepal
AD	Anno Domini
BAFIA	Banking and Financial Institutions Act
BFIs	Banking & Financial Institutions
CBE	Comprehensive Business Exam
CEO	Chief Executive Officer
CLRM	Classical linear regression model
DBs	Development Bank
GBBL	Garima Bikas Bank Limited
GDP	Gross Domestic Product
GNP	Gross National Product
GRP	Gross Rating Point
IFC	International Finance Corporation
JBBL	Jyoti Bikas Bank Limited
M&M	Modigilani and Miller
NEPSE	Nepal Stock Exchange Limited
NIDC	National Industrial Development Corporation
NRB	Nepal Rastra Bank
OLS	Ordinary Least Squares regression
SEBON	Securities Board of Nepal
&	And

EXCUTIVE SUMMARY

Although there have been many prior studies of the determinants of capital structure, the question of what determines the best financing mix that maximizes a firm's value is still the most debatable issue in corporate finance. Besides, a great deal of previous studies focused mainly on developed countries' non-financial firms paying little attention to developing countries and financial sector. Therefore, this study attempted to fill the gap by analyzing the relation of capital structure determinants factor of development banks in Nepal. This study test the hypothesis of the relation between the independent variable taken Profitability, Tangibility, Size, and Growth with the financial leverage. This paper approached the issues of capital structure by evidencing development banks in Nepal to uncover the firm level determinant factors of capital structure. To discover what determines capital structure, six firm level explanatory variables (Profitability, Tangibility, Size, and Growth) were selected and regressed against the appropriate capital structure measure (Debt to Equity Ratio).A Sampling Frame of the study is the all the development bank of Nepal and the population is the ten national level development bank where as sample of two development banks Jyoti Bikas Bank and Grima Bikas Bank of Nepal is selected on the basis of the more than the ten years of operation performance of the developing banking in Nepal and secondary data were collected. Consequently, multivariate regression analysis was made based on financial statement data of the selected Development banks over the study period of between five years. The major findings of the study indicated that profitability and size are the significant firm level determinants of capital structure in Nepalese development banks case. In addition to this, the two variables assets structure and economic growth also established positive relationship with the financial leverage. Far beyond this, it is also revealed that there is consistency between profitability and Pecking order theory, tangibility and Static Trade-off theory, Pecking order theory and Agency cost Theory; both variables size and growth and Static Trade-off theory and Agency cost Theory.

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CHAPTER- ONE
INTRODUCTION

1.1. Background of the Study

The modern theory of capital structure began with the celebrated paper of Modigliani and Miller published in 1958 (Harris and Raviv 1991). In this paper, they supported the net operating income approach and rejected the traditional theory of capital structure. They contend in their first proposition that the market value of any firm is independent to its capital structure and is given by capitalizing its expected return at the rate appropriate to the risk class (Modigliani and Miller 1958). This was theoretically very sound but was based on the assumptions of perfect capital market and no tax world, which were not valid in reality. So, this was corrected in 1963. In correction, they incorporated the effect of tax on value and cost of the capital of the firm (Modigliani and Miller 1963); and contend that, in the presence of corporate tax, the value of the firm varies with the variation of the use of the debt due to tax benefit on interest bill (Baral 2004).

In 1976, Miller propounded the next version of irrelevancy theory of capital structure. He pleaded in his presidential address to Annual Meeting of American Finance Association held on September 17, 1976 in Atlanta City, New Jersey that capital structure decisions of firms with both corporate and personal taxes are irrelevant (Miller 1977). In 1974, Myers and Pogue developed three theories-the lenders chickens out first, the managers' chickens out first, and the shareholders chickens out first-of debt capacity (Myers and Pogue 1974). The third theory-the shareholders chickens out first-pleads the optimal capital structure. In the 1970s, a number of scholars developed debt capacity theory. Among them, Scott's multi-period model of debt is considerable debt capacity theory. This theory pleads that the value of non-bankrupt firm is a function of expected earnings and the liquidating value of its assets and the optimal level of debt is an increasing function of liquidating value of the firm's assets, the corporate tax rate, and the size of the firm (Scott 1976). Martin and others 1988 summarized the debt capacity theories developed by different scholars during 1970s and concluded that the value of the firm is maximized when marginal benefit of debt is equal to the marginal cost of debt.

Jensen and Meckling developed the capital structure theory based on the agency costs in 1976. Firm incurs two types of agency costs-cost associated with the outside equity

holders and cost associated with the presence of debt in capital structure (Jensen and Meckling 1976). Total agency cost first decreases and after certain level of outside equity capital in capital structure, it increases. The total agency cost becomes minimal at certain level of outside equity capital. Thus, this theory pleads the concept of optimal capital structure.

Two sets of capital structure theories were developed during the latter half of the 1970s and first half of the 1980s. Ross developed one set of capital structure theories based on the asymmetric information in 1977, and Myers and Majluf developed the next set in 1984. The first set pleads that the choice of firm's capital structure signals to outside investors the information of insiders, and the second set contends that capital structure is designed to mitigate the inefficiency in the investment decision caused by the information asymmetry (Harris and Ravis 1991). In the course of the development of capital structure theory, Myers elaborated and brought out the Pecking order theory in 1984 originally developed by Donaldson in 1961. According to this theory, management strongly favors internal generation as a source of new funds even to the exclusion of external sources except for occasional unavoidable bulge in the need for funds (Donaldson 2000). This theory explains the negative relation between profitability and debt ratio and contends that there is no target debt-equity ratio. In financing, first, management prefers the internal equity financing, and then debt financing and finally external equity financing (Martin and others 1988). Thus, this theory explains the financing behavior of management.

The capital structure decision is one of the most important decisions made by financial managers in this modern era. The capital structure decision is at the center of many other decisions in the area of corporate finance. One of the many objectives of a corporate financial manager is to ensure low cost of capital and thus maximize the wealth of shareholders. Hence, capital structure is one of the effective tools of management to manage the cost of capital. An optimal capital structure is reached at a point where the cost of the capital is minimal. But, what are the potential determinants of such optimal capital structure? This is the key question that has been answered by this research in the case of development banks in Nepal.

For the past sixty years, after the influential irrelevance theory of Modigliani and Miller (1958) on capital structure, capital structure choice has inspired and fascinated many researchers. Therefore, many studies theoretically and empirically investigated and explained firms' capital structure choices. But, there still remains no clear answer

to Myer's 25 years old question (Myers, 1984) "How do firms choose their capital structure?" Different theories answer this question from different points of view. For instance, Static trade-off theory postulates the existence of an optimal capital structure, which indicates the optimal choice of capital structure by firms, is a balance of corporate tax-shield against the bankruptcy cost and agency cost.

Research on the determinants of capital structure was initially directed mainly to firms in the developed countries specifically in United States. One of the classical researches was carried out by Titman and Wessels (1988); where they studied the theoretical determinants of capital structure. The theoretical attributes namely; asset structure, non-debt tax shields, growth, uniqueness, industry classification, firm size, earnings volatility and profitability were tested to see how they affect a firm's choice of debt-equity mix. To broader the understanding of capital structure models, Rajan and Zingales (1995) have attempted to find out whether the capital structure choices in other countries are made based on factors that similar to those capital structure influencing ones in U.S firms. Four factors; tangibility of assets, growth, firm size and profitability were tested to see their influences on leverage.

However, there were not many researches directed towards developing countries that saw the applicability of the theories of capital structure developed from the developed nations. Maghyereh (2005), Amidu (2007), Abor (2005), and Bas, T., Muradoglu, G., & Phylaktis, K. (2009) were among the scholars who have studied the capital structure issues in the developing nations. They have undertaken an interesting study by taking secondary data from the International Finance Corporation (IFC) for the largest companies in 10 developing countries. Several variables were tested and analyzed to explain capital structure determinants by considering the impact of taxes, agency conflicts, financial distress and the impact of informational asymmetries. The variables mentioned include tax, business risk, asset tangibility, sales, return on assets and market-to-book ratio. On the other side, one of the latest studies was conducted by Bas, T., Muradoglu, G., & Phylaktis, K. (2009) in developing countries. This paper examined the determinants of capital structure decisions of firms in developing countries collecting secondary data for 11, firms from World Bank of 25 developing countries.

Regardless of the fact that how a firm defines capital structure, in accordance with the capital structure theories, the importance of firm level variables, such as tangibility and profitability, in determining capital structure decision is confirmed. However, the

research scholars have identified some systematic differences in the way debt ratios were affected by GDP growth rates, inflation rates and the development of capital markets.

In general, there are a large number of empirical papers on the determinants of capital structure. Nevertheless, understanding the determinants of capital structure is as important for banks as for non-banking firms. Diamond and Rajan (2000) found that a bank's capital structure affects its stability as well as ability to effectively provide liquidity and credits to debtors and borrowers, respectively. Given that a well-functioning and well-developing banking system plays a crucial role in promoting growth of an economy, it is imperative to understand the factors which drive the capital structure decision of banks. One of the well-known researches was carried out by Gropp and Heider (2007) evidencing banks from developed countries (US and 15 EU members, for 14 years) to study capital structure determinants of banks. Their results provided strong support for the relevance of standard determinants of capital structure on bank capital by testing the significance of size, profitability, market-to-book ratio and asset tangibility. Another study by Octavia and Brown (2010) investigated whether the standard determinants of capital structure can be applied to banks in developing countries. The results of Octavia and Brown suggested that the standard determinants of capital structure do have power in explaining leverage of banks in developing countries.

Multivariate ordinary least square (OLS) regression method is used to run the analysis of the pooled cross-sectional data collected from the Nepal Rastra Bank of 5 years financial statement of 2 development banks. The powerful and full-featured statistical programming language, SPSS software, is used to test the reliability of the data, to test validity of the specified model and to analyze it. As a result, this research presents an empirical analysis of determinants of capital structure of development banking sector in Nepal with most recent available data.

- **Concept of Development Bank**

Development banks are specialized financial institutions. They provide medium and long-term finance to the industrial and agricultural sector. They provide finance to both private and public sector. Development banks are multipurpose financial institutions. They do term lending, investment in securities and other activities. They even promote saving and investment habit in the public.

There is no precise definition of the development bank. William Diamond and Shirley Bosky consider industrial finance and development corporations as 'development banks' Fundamentally a development bank is a term lending institution.

Development bank is essentially a multi-purpose financial institution with a broad development outlook. A development bank may, thus, be defined as a financial institution concerned with providing all types of financial assistance to business units, in the form of loans, underwriting, investment and guarantee operations, and promotional activities economic development in general, and industrial development, in particular. "In short, a development bank is a development-oriented bank."

The definition of the term 'development banks' can be stated as follows:

"Development banks are those financial institutions whose prime goal is to finance the primary needs of the society. Such funding results in the growth and development of the social and economic sectors of the nation. However, needs of the society vary from region to region due to differences were seen in its communal structure, economy and other aspects."

- **Development Bank in Nepalese Context**

Development banks are 'B' type Financial Institution. On the basis of geographical coverage and activity level, the development banks are three types and these are

a) 1- 3 districts type

b) 4- 10 districts type and

c) National type.

As per the NRB rules the new paid up capital requirement for these development banks are respectively NRs.500 million, 1.2 billion and 2.5 billion and it was previously NRs.100, 200 and 640 million respectively.

As a result of changed requirement to increase paid up capital, many of them operating development banks have merged or restructured the organization to establish a stronger financial institution. In the process, some development banks acquired finance companies and improved their positions and some merged with other stronger finance company or development bank or with the Development bank.

At present there are 33 development banks (As of mid-April 2018). The development banks are presented here on alphabetical order stating their classification types. Navigation links are gradually being developed for all banks and it is not given for all the development banks.

Figure- 1 List of National level Development Banks in Nepal

S.N.	**Name**	**Estd**.	**Headoffice**	Paidup Capital **(Rs in Crore)**
1	Joyti Bikas Bank Ltd.	2016/08/2015/16	Kamaladi, Kathmandu	259.36
2	Garima Bikas Bank Ltd.	2016/09/20	Lazimpat, Kathmandu	253.49
3	Om Development Bank Ltd.	2017/06/16	Pokhara, Kaski	251.52
4	Mahalaxmi Bikas Bank.	2017/07/02	Durbarmarga,Kathamandu	263.38
5	Gandaki Bikas Bank Ltd.	2017/07/05	Pokhara, Kaski	275
6	Lumbini Bikas Bank Ltd.	2017/07/09	Dillibazar, Kathmandu	214.96
7	Kamana Sewa Bikas Bank Ltd.	2017/08/04	Gyneshwor, Kthamandu	235.71
8	Sangrila Development Bank Ltd.	2014/07/13	Baluwatar, Kathamandu	244.53
9	Deva Development Bank Ltd.	2015/07/10	Laldurbar, Kathmandu	208.46
10	Kailash Bikas Bank Ltd.	2016/04/04	Putalisadak, Kathmandu	252.06

Source- NRB Annual Reports mid July 2020

1.2. Statement of the Problem

Over the previous years, numerous studies on capital structure theory have appeared. However, based on the research made by Myers (1984), it is stated that each of the theories on capital structure applied are based on certain circumstances. As such, the theories are not designed to be general rather they are conditional theories of capital

structure; each of which emphasizes on certain costs and benefits of alternative financing strategies.

Most capital structure studies to date are based on data from developed countries' firms and very few studies provide evidence from developing countries. The capital structure of development banks has not also been investigated; there is no clear understanding on how banks construct their capital structure and what internal factors influence their corporate financing decision. Therefore, given the unique financial features of banks and the environment in which they operate, there is a strong ground to conduct separate study on capital structure determinants in development banks.

This study, therefore, tried to examine determinants of capital structure of the Nepalese development banking environment by using its internal determining factors. Nepal is differs from other developing countries previously studied in such a way it has no strong secondary capital market which makes things easier for firms to raise funds and choose the best mix of debt and equity sources. In general, the researcher is fascinated to conduct this study because of the following motives:

I. What are the determinants of capital structure of Jyoti Bikas Bank and Grima Bikas Bank In Nepal?

II. What is the relationship between the financial leverage with determinants of capital structure of Jyoti Bikas Bank and Grima Bikas Bank of Nepal?

Therefore, this paper fills the stated gap by identifying the factor that determines capital structure decision evidencing development bank in Nepal.

1.3. Objective of the Study

- **General Objective**

The general objective of this study is to analyze the factors determining capital structure decision of Development Banks in Nepal.

- **Specific Objectives**

This study attempted to achieve the following specific objectives:

i. To measure the effect of change in profitability on the financing mix (leverage) of development banks in Nepal,

ii. To determine the consequence of change in the tangibility of assets held by development banks of Nepal on the debt to equity ratio,

iii. To find out the extent to which variations in bank size explain the variations in debt to equity ratio of development banking business in Nepal,

iv. To determine the effect of a change in growth of development banks on their leverage,

1.4. Hypothesis Development

A major purpose of this paper is to estimate the factors that determine the choice of capital structure in Ethiopian Development banks. Previous capital structure theories and empirical results identify a number of variables that influence firm's debt position in the context of firm-specific (Titman and Wessels, 1988; Harris and Raviv, 1991; Rajan and Zingales, 1995; Benito 2003). To achieve the intended goal, the researcher has formulated six hypotheses. The developed hypotheses and their rationale are discussed below.

I. PROFITABILITY

Profitability is a strong point of dissent between the two theories of capital structure i.e. Pecking order theory and Static trade-off Theory. For the Static trade-off theory, the higher the profitability of the firm, the more are the reasons it will have to issue debt, reducing its tax burden.

On the other hand, Pecking order theory assumes that larger earnings lead to the increase of the main source of capital firms choose to cover their financial deficit: retained earnings. Therefore, the Static trade-off theory expects a positive relationship between profitability and leverage, whereas the pecking order theory expects exactly the opposite.

Hypothesis 1:

H_0 = There is a negative relationship between profitability and leverage ratio.
H_1 = There is a positive relationship between profitability and leverage ratio.

II. TANGIBILITY

A firm having a large amount of fixed assets can easily raise debt at cheaper rates because of the collateral value of those fixed assets (tangibility). Firms with a higher ratio of tangible assets have an incentive to borrow more because loans are available to them at a relatively cheaper rate. Therefore a positive relationship between tangibility of assets and firm’s leverage is expected.

Titman and Wessels (1988) and Harris and Raviv (1991) argue that tangibility might be the major factor in determining the firm's debt levels. If debt is secured against assets, borrower is restricted to using loaned funds for a specific project, and creditors have an improved guarantee of repayment. Thus, firms with high level of fixed assets would have higher level of debt.

Hypothesis 2:

H_0 = There is a positive relationship between tangibility and leverage ratio.
H_1 = There is a negative relationship between tangibility and leverage ratio.

III. SIZE

Size is one of the most widely accepted determinants in research on capital structure. Relationship between size and leverage is mixed. For the Static trade-off approach, the larger the firm, the greater is the possibility that it can issue debt there by resulting in an existence of a positive relationship between debt and size. One of the reasons for this is that the larger the firm the lower is the risk of bankruptcy (Titman and Wessels, 1988).

With respect to the Pecking order theory, Rajan and Zingales (1995) argued that this relationship could be negative. There is less asymmetrical information about the larger firms, reducing the chances of undervaluation of the new equity issue, encouraging large firms to use equity financing. This means that there is a negative relationship between size and leverage of the firm.

Hypothesis 3:

H_0 = There is a positive relationship between the firm's size and its leverage ratio.
H_1 = There is a negative relationship between the firm's size and its leverage ratio.

IV. GROWTH

The relationship between growth opportunities and the debt ratio is also quite conflicting. The Static trade-off theory predicts that firms with more growth opportunities will have less debt as there is less need for the role of debt. Firms that have growth opportunities would prefer to retain debt capacity as they might need to borrow in the future. Further, growth opportunities are capital assets that add value to a firm but cannot be collateralized and do not generate current taxable income

(Titman and Wessels, 1988). For this reason, the arguments put forth suggest a negative relationship between debt and growth opportunities.

However, Benito (2003) proposes the opposite. If firms have growth opportunities, then they require more funds to grow. Given that internal resources are not sufficient, firms would then turn to external sources of finance, which would lead to a higher debt level in firms.

Hypothesis 4:

H_0 = There is a positive relationship between growth and leverage ratio.
H_1 = There is a negative relationship between growth and leverage ratio.

1.5. Significance of the Study

Since banking industry is emerging and flourishing in the Nepalese economy, assessing the factors determining capital structure decision will help concerned parties innovate actions that can fortify their competitive position in the industry. This study, therefore, apart being a step for the researcher's educational career, has the following immense importance:

First, even though research studies related to the area of capital structure decisions are plenty, those that are concerned in the financial system of developing countries are few. This study, therefore, attempts all its best to contribute to the literature by assessing the capital structure decision determining firm-specific factors of development banks in the developing countries like Nepal.

Second, the study will have great importance to external investors and shareholders, bank managers, lenders and policy makers in making knowledgeable decisions and regulations considering the financing patterns of the banking sector in Nepal.

Last but not least, the study notably contributes to other studies to be made in different economic sectors by providing the picture of the firm level factors determining capital structure decisions of development banks in Nepal by serving as a reference point.

1.6. Scope of the study

In any study area, it is expected to encounter numerous issues such as the concentration of field study, data collection and others which are constrained by available resources like timeframe, financial and availability of information. This study is of no exceptions where the scope is delimited to the study of determinants of

capital structure in the field of corporate finance, the sample size and lastly the time horizon of the study. The details of the scope of this study are as follows:

- This research project is limited to the sample of two development banks that are selected from the population of 33 development banks where 10 national level and represents 20 percent of the existing national level development banks. More specifically, the entire population of development banks that have been operating, at least for the last five years in operation (2015-2020), was considered and secondary data was collected from their 5 years' financial statements.
- The study considered only firm-specific determinants of capital structure. External factors such as macroeconomic determinants of capital structure (Inflation, GDP growth, Interest rate, etc.) which are beyond the control of the firm are not included the study.

1.7. Limitations of the Study

There is nothing a study that can be made without constraints. Therefore, there are four main limitations in this study.

a) Due to framework of the research project, the researcher could not include suspected macroeconomic (external) factors in Nepal which may have a certain contribution to the determination of the financing mix of a firm.
b) Due to the unavailability of highly developed secondary market, the researcher was limited to take only determinant factors that can be measured only by taking data from the banks financial statements.
c) The state owned, namely Development Bank of Nepal, is not comparable to the other banks in the sample since it is more than a large as Development of the other banks in the Nepal. Therefore, the analysis, based on the observations from all the banks, may be subjective to some extent.
d) The researcher didn't include the primary data such as interview of the banks' CEOs and financial managers to analyze their knowledge on capital structure and their financing decision practices. The study would have been much better had it been able to encompass the exiting practices of their financing decisions.

1.8. Structure of the Research Project

The research project comprises five chapters as follows:

Chapter-1 Introduction

Introduces the research subject briefly and outlines the research background, incorporating the problems and results from past studies. The problem statement is given and research objectives have been clearly described and based on which, hypotheses are formed and model is specified. Apart from this, it also identifies the significance, scope and limitations of the study.

Chapter-2 Literature of Related Review

Present the review of related empirical literatures. It is divided into several areas as follows; general overview, definition, theories, theoretical determinants, empirical evidence, features of capital structure, bank capital structure, and overview of Development banking in Ethiopia.

Chapter-3 Research Methodology

Highlight the methodology of the study. The chapter comprises study design, sampling design, data source and collection, method of data analysis and model specification. Here, the definitions and measurements of the variables are well defined.

Chapter-4 Result and Discussion

Present the results of the multivariate regression model. This chapter analyzes the collected secondary data, the results and explains the determinants of capital structure in the selected case.

Chapter-5 Conclusion and Recommendation

Summarizes the findings of the study, concludes the results and forwards recommendations based on the findings of the study. And the end of the research work included the reference list and appendix of the research work.

CHAPTER- TWO

REVIEW OF RELATED LITERATURE

2.1. General Overview

Corporate sector growth is vital to economic development. The issue of finance has been identified as an immediate reason why businesses in developing countries fail to start or to progress. It is imperative for firms to be able to finance their activities and grow over time if they are ever to play an increasing and predominant role in providing employment as well as income in terms of profits, dividends and wages to households. So, a path to development could not be realized without enabling to evaluate the business environmental factors particularly factors affecting access to finance. Consequently, managerial decisions related to finance are at the center of the economic or business activities, which are the subject matter of financial management discipline.

Financial management discipline has three major decision functions/activities:

I. Capital budgeting (Investment) Decision: deal with the efficient utilization of capital or funds to acquire assets. It is more concerned with the size, type and percentage composition of assets of a firm.

II. Capital structure (financing) decisions: emphasize on the proper selection of mix of capital i.e. debt vs. equity. It deals mainly with the size, type and percentage composition of capital sources.

III. Asset management decision: is the other decision area that deal with efficient utilization of assets, being acquired through investment decision.

Definition of Capital Structure

There are many definitions given to capital structure of companies. Brealey and Myers (1991) defined capital structure as comprising of debt, equity or hybrid securities issued by the firm. Capital structure is the proportion of debt to the total capital of the firms. Pandey (2005) defined capital structure as a choice of firms between internal and external financial instruments.

From the definitions given by many previous researchers, capital structure of a firm describes the way in which a firm raise capital needed to establish and expand its business activities. It is a mixture of various types of equity and debt capital a firm maintains, resulting from the firm's financing decisions. The amount of debt that a firm uses to finance its assets is called leverage. A firm with a lot of debt in its capital structure is said to be highly levered. A firm with no debt is said to be unlevered. For

example, a firm that sells Rs.20 million in equity and Rs. 80 million in debts is said to be 20 percent equity-financed and 80 percent debt-financed. The firm's ratio of debt to total capital is 80 percent and is referred to as the firm's leverage.

The term capital structure is used to represent the proportionate relationship between debt and equity. Debt represents the creditors' claim i.e. liabilities or borrowings. Equity includes paid-up share capital, share premium, and reserve and surplus (retained earnings).

Managers, in the extent to pursue wealth maximization objective of a firm, should examine the set of theories and at least major factors affecting the decision that help them choose the optimal capital structure. Normally firms have option of choosing debt financing, equity financing, or combination of the two, with the other option of internal financing mainly from the retained earnings. Such dealings of financing decisions are, in fact, termed as Capital Structure Decisions.

2.2. Capital Structure Theory

Beginning from Modigliani and Miller (1958)'s irrelevance proposition, capital structure puzzle has drawn a lot of attention. How do firms choose their capital structure? What are the determinants of firm capital structure decisions? Numerous researches study in these questions, however, the results are still ambiguous. This Section starts with the capital structure irrelevancy theory. Following subsections give the overview of theories and empirical studies that suggest that capital structure affects firm's value.

A. Capital Structure Irrelevancy Theory

(Modigliani – Miller Theorem)

In the 1950s, two financial economists, Franco Modigliani and Merton Miller, made significant contribution to the corporate finance and were rewarded decades later with a Noble Prize in economics. They came up with the new propositions to explain the capital structure theory and here starts the birth of modern capital structure theory. Their contribution was to show that, under certain assumptions (known as the MM assumptions and MM theory), the capital structure, or mix of debt and equity, does not have an impact on the overall value of the firm. Theory of irrelevancy was presented in an era when research was dominated by assumption that there is no interaction between a firm's investment and financial decisions of the firm.

Modigliani and Miller (1958) demonstrated that the market value of a firm is determined by its earning power and the risk of its underlying assets, and independent

of the way it chooses to finance its investments or distributes dividends. Moreover, a firm can choose between three methods of financing: issuing shares, borrowing or spending profits (as opposed to disbursing them to shareholders as dividends). The theorem gets much more complicated, but the basic idea is that under certain assumptions, it makes no difference whether a firm finances itself with debt or equity.

Five years later, Modigliani and Miller (1963) introduced corporate taxes into their earlier model by setting free the first assumption of no taxes. They argued that optimal capital structure can be obtained for firms with 100 percent debt financing by having the tax shield benefits of using debt. With tax introduced the value of levered firm becomes higher. This was their correction model. Some researchers felt that Modigliani and Miller failed to discuss in their article on the practical applications of their theory to individual firms and on how well the theory explains observed facts, such as debt ratios, market reactions to security issues and so on.

Thereafter, several empirical researches were conducted on the concept developed by Modigliani and Miller. In most of the later studies, researchers like Durand (1989) accepted the importance of financial leverage in affecting the overall cost of capital, the return to the shareholders and the value of a firm. They criticized the hypothesis of MM theory, and maintained that several factors such as existence of imperfectness in the market, the differences, existence of transaction cost and institutional restrictions and preferences for the present income over the future to affect the capital structure study. These have relevance in affecting the value of a firm and were ignored by MM.

Accordingly, if capital structure is irrelevant in a perfect market, then imperfections which exist in the real world must be the cause of its relevance. In the next section we look at how, when assumptions in the M&M model are relaxed, imperfections arise and how they are dealt with. Subsequent literatures placed much emphasis on relaxing the assumptions made by Modigliani and Miller, in particular considering agency costs (Jensen and Meckling, 1976; Myers, 1977; Harris and Raviv, 1990), signaling (Ross, 1977), asymmetric information (Myers and Majluf, 1984; Myers, 1984), product/input market interactions (Brander and Lewis, 1986; Titman, 1984), corporate control considerations (Harris and Raviv, 1988) and taxes (Bradley, M., Jarrell, G. A., & Kim, E. H. (1984)

The current state of capital structure comprises a wide variety of theoretical approaches but no theory is universally accepted and practically applied (Myers, 1984; Harris and Raviv, 1991). According to Myers 1984 “There is no universal

theory of the debt-equity choice, and no reason to expect one. There are several useful conditional theories however".

The major reason why financing matters include taxes, differences in information and agency costs. The different theories of optimal capital structure depend on which economic aspect and firm characteristic we focus on.

B. Capital Structure Relevancy Theories

According to Buferna, F. M., Bangassa, K., & Hodgkinson, L. (2005), in the literature of capital structure, three important and popular but conflicting capital structure relevancy theories have been developed, which includes the Static trade-off theory, Pecking order theory and Agency costs theory. These theories are explained below:

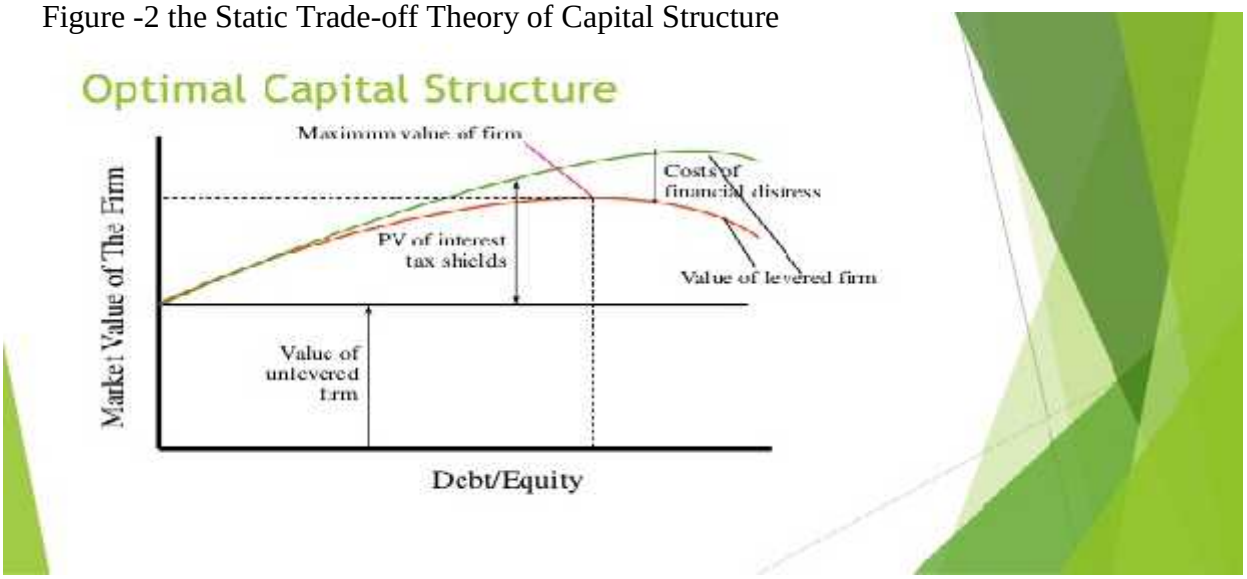
I. Static Trade-off Theory

The Static trade-off theory (STT) came as a reaction on the Miller and Modigliani theory, presenting the benefits of debt financing via debt related tax shields. Doubts were raised over the fact that there was no offsetting cost to debt. Therefore, a discussion followed saying that the optimal leverage should be found where a trade-off between tax shield benefits of debt and costs of financial distress was found (Shyam-Sunder and Myers, 1999). Debt enables the possibility to deduct interest charges raising incentive for higher leverage in order to maximize the tax shield. By doing this the firm value increases with the value of the tax shield (Graham, 2000). Damodaran, A. (1999) stretches the increased financial discipline for managers as a consequence of higher debt levels. However there have been raised concerns on increasing risks of bankruptcy with increasing debt levels and likelihood of raising agency costs occurring between owners and managers. An underlying reason for this is a conflict of interests generated by debt (Myers, 1984). Therefore, according to the tradeoff theory, an optimal debt level which maximizes the value of the firm does exist, when attaining a trade off as balancing the benefits of debt against the cost of financial distress.

As indicated in Figure- 2, the straight line AB shows the value of a firm under all-equity financing. When a firm undertakes debt it has to pay interest. Interest payments are generally tax deductible, thus when a firm takes debt; it is able to increase its value. This is called the interest tax shield of debt. Debt almost literally shields the firm from paying out more in taxes. Therefore, as curve AC shows, initially as the firm undertakes more debt, the value of the firm increases. However, after a certain

level (the optimum level) of debt, the value of the firm starts falling as shown by the falling portion of curve AC. After a certain level of debt, the costs of debt start outweighing the benefits of debt. This is illustrated by the curve AD, which shows that the costs of financial distress rise significantly at higher levels of debt. At higher levels of debt, firms have to pay more interest and if they are unable to repay the debt and interest, then they are likely to go bankrupt. As costs of financial distress rise, firms would prefer to stick to a 'reasonable' level of debt. This is illustrated in the diagram above where the optimum market value of the firm is achieved where the present value of the interest tax shield is at a maximum. The trade-off model assumes that companies have an optimal capital structure and they aim to attain this through a target debt level. This is the reason why the Trade-off Theory is often referred to as the 'Static Trade-off Theory' in the literature.

Figure -2 the Static Trade-off Theory of Capital Structure



Debt has the disadvantage that it increases the probability of firms becoming financially distressed. The costs of debt include potential bankruptcy costs. Repayment of interest on debt is an obligation that a firm has to fulfill whatever its financial state. Hence, if a firm is unable to undertake its debt obligation it will obviously face bankruptcy.

Another cost of debt is the agency conflicts that can arise between stockholders/shareholders and bondholders/debt holders (Fama and French, 2002). This can be explained by the fact that if an investment pays off equity holders are the ones to benefit as they are entitled to the residual profits after interest on debt has been repaid. Risky investments are the ones that normally have higher returns and therefore equity holders will prefer these types of investment. Debt holders on the

other hand, are only concerned with their interest payments. They would prefer firms to choose less profitable but safe investments. This explains the conflict that may arise between stockholders and bondholders.

The benefits of debt include the tax deductibility of interest payments (Benito (2003). As argued by Benito firms use debt as a means of limiting the interest of managers which may diverge from the interests of shareholders. In fact, debt reduces free cash flow problems as excess cash is used to repay debt, rather than managers using it to consume bonuses (Fama and French, 2002; Harris and Raviv, 1991).

II. Pecking Order Theory

Firm managers or insiders are assumed to possess private information about the characteristics of firm's returns and the investment opportunities available to them (Harris and Raviv, 1991). Various theories have been developed that have attempted to explicitly model this private information which has consequently given rise to theories other than the Trade-off Theory. The Pecking Order Theory (POT) is one such theory that attempts to explain capital structure decisions by formally taking into account the inherent information asymmetry that exists between different parties. The pioneers that have explicitly accounted for asymmetric information in their work have been Ross (1977) and Leland and Pyle (1977). However, the first ones to actually take into account asymmetric information in the area of capital structure have been Myers (1984) and Myers and Majluf (1984). They showed that the choice of capital structure mitigates inefficiencies in the firm's investment decisions that are caused by information symmetry.

According to the Pecking Order theory, firms have a strong preference for internal finance (Myers, 1984) as it is believed to have a cost advantage over new debt and equity. If external finance is required, firms first issue debt and when all other "safe" options are exhausted; they issue equity as a last option. The literature regarding the Pecking Order theory has been dormant since its inception in the early 1980's when it was first proposed by Myers (1984) and Myers and Majluf (1984).

The Pecking Order Theory proposed by Myers (1984), prescribes a strict ordering or hierarchy of finance: firms use internal finance first then debt and only when such options are exhausted, equity finance is used. This is explained by the fact that internal and external finance are not perfect substitutes.

Figure 3: Pecking Order of Financial Hierarchy

The Pecking Order Theory is diagrammatically illustrated above. The hierarchy shown in Figure 3 above can be explained by number of factors. These factors include the costs associated with each form of finance which are related to the degree of information asymmetry, the "safeness" of each form of finance or the signal that the issuance of some form of finance gives to the market. Internal finance is believed to be the cheapest source of finance followed by debt and equity. The availability of internal funds allows firms to undertake investment without having to resort to external finance which is relatively more expensive due a number of factors.

Additionally, Myers (1984), explains this hierarchy by the fact that firms follow the rule of "issue debt when investors undervalue the firm and issue equity or some other security when they over-value it." Investors are aware of this and do not buy securities unless they are convinced that the firm has exhausted its "debt capacity". Hence, investors typically ensure that firms follow a pecking order.

Also the issuance of debt or equity can cause agency problems to arise. The issuance of debt can cause conflicts to arise between managers and debt holders while the issuance of equity can cause conflicts to arise between debt holders and equity holders. Furthermore, the issuance of external finance namely debt, involves repayment of capital and interest which the firm has to pay whatever its financial state. This increases the risk of financial distress. All these factors explain why a firm would prefer internal finance over external finance.

Another explanation for the pecking order is provided by Myers and Majluf (1984) that draws from an asymmetric information framework. The management is assumed

to know more about the firm's value than the potential investors. Only insiders know the quality of a firm or its investment projects. Therefore outsiders require a premium if they are asked to fund these projects. The degree of information asymmetry regarding equity is higher when compared to debt. Financial intermediaries are able to monitor the firm and gain access to information that outside investors cannot get. Outsiders are normally not able to monitor firms and thus require a much higher premium on equity finance than debt since they are in the dark regarding the growth prospects of firms.

Asymmetric information increases the cost of debt but, on the other hand, tax advantages have an opposing effect, which reduce the cost of debt relative to equity issues (Myers, 1984). The most expensive source of finance is believed to be equity finance due to various costs associated with new equity issues. These costs include underwriting discounts, registration fees, taxes and selling and administrative expenses. Also, firms tend to issue 'safe' securities first, namely in the form of debt rather than equity. Here 'safe' implies that the terms are not affected by managers inside information (Shyam- Sunder and Myers, 1999). Debt cannot be regarded as a 'safe' security as there are costs of financial distress associated with it, but it is still considered 'safer' than equity.

III. Agency Costs Theory

The next important theory mentioned in the literature is the agency cost theory. This theory was developed by Jensen and Meckling in their 1976 publications. This theory considered debt to be a necessary factor that creates conflict between equity holders and managers. Both scholars used this theory to argue that the probability distribution of cash flows provided by the firm is not independent of its ownership structure and that this fact may be used to explain optimal capital structure. Jensen and Meckling recommended that, given increasing agency costs with both the equity-holders and debt-holders, there would be an optimum combination of outside debt and equity to reduce total agency costs.

Ryen, G. T., Vasconcellos, G. M., & Kish, R. J. (1997) provide a theoretical summary of agency cost theory. According to Ryen, G. T., Vasconcellos, G. M., & Kish, R. J. (1997) two sets of agency problems were faced by firms, conflict between managers and stockholders and conflict between stockholders and bondholders. For the managers and stockholders conflict, managers usually overspend or take less leverage and these are seen not benefiting the stockholders. Managers take lesser leverage in

order to avoid total risk, which comprises of risk of losing job, reputation and wealth. On the other hand, overspending by managers to make opportunity loss of firms' cash flow, this could be used on the activities that benefit stockholders.

Therefore, many studies had been diverted to find out the ways to reduce this agency costs between managers and stockholders. The conflict of shareholders and bondholders is another area of agency cost problem, whereby shareholders have better incentives to maximize their wealth at the expense of the bondholders by the increases in dividend rate, claim dilution, asset substitution and underinvestment. The only way bondholder can limit the action to benefit shareholders is to draft a bond covenants, an agreement to limit the firm on investment, financing, production, dividend payout and etc.

2.3. Theoretical Determinants of Bank Capital Structure

Following from the above theoretical standpoints, a number of empirical studies have identified firm-level characteristics. As a result of these studies, some broad categories of capital structure determinants have emerged. Titman and Wessels (1988), and Harris and Raviv (1991), however, point out that the choice of suitable explanatory variables is potentially debatable. In this study, to identify the determinant factors and which of the capital structure theories is applicable in the Nepalese Development Banking context, the researcher have concentrated on 6 (six) key variables as identified in studies by Titman and Wessels (1988) in USA, Ashenafi (2005) in Ethiopia, Buferna et al (2005) in Libya, Rajan and Zingales (2006) in G7 countries, Gropp and Heider (2007) in developed countries, Octavia and Brown (2010) in developing countries. The selected six variables are Profitability, Collateral value (Tangibility), Size, Growth, Age of the Firm and Tax. However, there is significant disagreement among the capital structure theories, in particular, between the trade-off and the pecking order theories about the influence of some factors on the firm's capital structure. In this section, therefore the discussion involves the viewpoints of the capital structure theories about the effect of these attributes on leverage ratio from the view of different prior empirical researches.

I. PROFITABILITY

One of the main theoretical controversies is the relationship between leverage and profitability of a firm. Profitability is a measure of earning power of a firm. The earning power of a firm is the basic concern of its shareholders. The effect of profitability on leverage was well explained by the "pecking order" theory that was

suggested by Myers (1984). According to this theory, firm has an ordered preference for financing whereby they prefer retained earnings as their main source of funds for investment which is followed by debt. The last resort sought by a firm would be external equity financing. The reason for this ranking was that internal funds were regarded as 'cheap' and not subject to any outside interference. External debt was ranked next as it was seen cheaper and having fewer restrictions than issuing equity and the issuance of external equity is seen as the most costly way of financing a firm. Therefore, when firms which was profitable is seen to have more retained earnings and choose to have lower leverage, hence a negative relationship between profitability and leverage is expected.

However, according to the static trade-off theory, high profitability level gives high level of borrowing capacity. This situation promotes the use tax-shield. Firms normally have to pay taxes on their profits. To avoid this, they prefer to take more debt in their capital structure as interest payments on debt are generally tax deductible. Agency costs theories also predict that profitable firms would take more debt in their capital structure to control the activities of managers. Hence, the more profitable a firm is, the more debt it will have in its capital structure. Thus, the trade-off theory hypothesizes a positive relationship between profitability and debt level (Frank and Goyal, 2003).

II. COLLATERAL VALUE OF ASSETS

Collateral value of assets, also known as Asset Composition or Tangibility; are those assets that creditors can accept as security for issuing the debt. In an uncertain world, with asymmetric information, the asset structure of a firm has a direct impact on its capital structure since a firm's tangible assets are the most widely accepted sources for the bank borrowing and secured debts. If banks have imperfect information regarding the behavior of the firm, firms with few tangible assets find it difficult to raise funds via debt financing. The type of assets the firm holds plays a significant role in determining that firm's capital structure. The reason can be that when a large fraction of the firm's assets is tangible, assets can serve as collateral, which diminishes the risk of the lender suffering agency costs of debt.

Harris and Raviv (1991) predicts that firm with higher liquidation value will have more debt. On the other hand, based on the previous research by Titman and Wessels (1988) argue that the ratio of fixed to total assets (tangibility) should be an important factor for leverage. The tangibility of assets represents the effect of the collateral

value of assets of the firm's gearing level. As such, firms with a higher proportion of tangible assets are more likely to be in a mature industry thus less risky, which affords higher financial leverage.

Findings by Rajan and Zingales (1995) are consistent with the Static trade-off theory saying that tangible assets are appropriate for the purpose of raising debt since it act as good collateral. It also seems to reduce the cost of financial distress. Concluding this, firms with large ratios of tangible assets would be expected to raise more debt. On the other hand, the pecking order theory stretch that firms with few tangible assets faces larger asymmetric information problems and will therefore tend to raise more debt over time and become more levered (Frank and Goyal 2003).

III. SIZE OF THE FIRM

Size is one of the most widely accepted determinants in research of capital structure. Relationship between size and leverage is mixed. Researchers who focus on bankruptcy cost (static trade-off theory), they justify the positive relationship between size and financial leverage like this: as large firms are more diversified, have low transaction costs for issuing new equity, and probability of bankruptcy for large firms is less than smaller firms therefore size positively relate to leverage.

Theories based on asymmetric information, state that large firms have to inform more to their investors therefore they prefer equity over debt. Therefore size and leverage holds negative relationship between them. Pecking order theory also agrees on negative relationship.

Furthermore, in the research made by Rajan and Zingales (1995), indicate that including size in their cross sectional analysis, they found that the effect of size on equilibrium leverage is more ambiguous. Thus, larger firms tend to be more diversified and because of that, size may then be inversely related to the probability of bankruptcy.

IV. GROWTH

The relationship between growth opportunities and the debt ratio is also quite conflicting. The Trade-off theory predicts that firms with more growth opportunities will have less debt as there is less need for the disciplining role of debt. Firms that have growth opportunities would prefer to retain debt capacity as they might need to borrow in the future. Further, growth opportunities are capital assets that add value to a firm but cannot be collateralized and do not generate current taxable income (Titman and Wessels, 1988). For this reason, the arguments put forth suggest a

negative relationship between debt and growth opportunities. However, Benito (2003) proposes the opposite. If firms have growth opportunities, then they require more funds to grow. Given that internal resources are not sufficient, firms would then turn to external sources of finance, which would lead to a higher debt level in firms.

Generally, according to the trade-off theory, firms experiencing large growth would raise less debt since the value of their growth opportunities in case of bankruptcy is close to zero. On the other hand, the pecking order theory stretches that small firms faces larger information asymmetries and therefore raise more debt. In order to minimize such asymmetries, firms with high growth will seek to issue debt. Since high growth firms traditionally have higher market-to-book ratios this measure will be used as a proxy (Frank and Goyal, 2003).

2.4. Empirical Evidence of Determinants of Capital Structure

- **In Developed Country**

After the influential introductory paper on capital structure by Modigliani and Miller, there were quite a number of researches directed towards finding the determinants of capital structure choice. Research on the determinants of capital structure initially was aimed at mainly in the United States' firms. One of the classical researches was carried out by Titman and Wessels (1988); where they studied the theoretical determinants of capital structure by examining them empirically. The theoretical attributes namely; asset structure, non-debt tax shields, growth, uniqueness, industry classification, firm size, earnings volatility and profitability were tested to see how they affect the firm's debt-equity choice. The results indicated consistencies with the theories of capital structure for the factors affecting capital structure choices of firms. One of the few interesting conclusion drawn from the studies in US include the negative relationship of debt to "uniqueness" of a firm's line of business. The short-term debt ratio was negatively related to firm size. Besides that, a strong negative relationship was noted between debt ratios and past profitability. The study of Titman and Wessels(1988), however, did not provide strong empirical support on variables like non-debt tax shields, volatility, collateral value and future growth.

As stated previously, there were many papers written by research scholars on capital structure choices that are mostly based on empirical data of firms in the United States only. To broader the understanding of capital structure models, Rajan and Zingales (1995) have attempted to find out whether the capital structure choices in other countries is based on the similar factors of those influencing capital structure of U.S

firms. For this purpose, the accounting data and monthly stock prices for five years, from 1987 till 1991 were collected from the international financial database all the G7 countries; namely the U.S, Japan, Germany, France, the U.K, Italy and Canada. Banks and insurance companies were eliminated from the sample collected as their leverages are affected by government regulations.

Four factors; tangibility of assets, growth, firm size and profitability were tested to see its influences on leverage. A cross–sectional basic regression model of leverage was developed with four of the factors mentioned above as independent variables. Rajan and Zingales (1995) noted that across the countries, the asset tangibility was positively correlated with leverage for all the countries as theory supported the notion that firms having more fixed assets in their assets mix will use that as collateral to get more loans or debt. The market to book ratio seemed to be negatively correlated with leverage except for Italy. Having high market value of the stocks would enable firms to issue more stocks and not seeking debt. Size of firm was positively correlated while profitability was negatively correlated with leverage in all countries except Germany. As a conclusion, this paper found that at an aggregate level, firm leverage was fairly similar across the G-7 countries. This study also pointed out some avenue for future research especially on the unbiased sample selection, the actual determinants of capital structure and deeper consideration of institutional influences.

After Rajan and Zingales, (1995) there were several research papers made on capital structure by testing the applicability on other countries apart from United States alone. One of the prominent researches was carried out by Gropp and Heider (2007) approached the issue of Bank Capital Structure using banks from developed countries (US and 15 EU members, for 14 years). They specifically tested the significance of size, profitability, market-to-book ratio, asset tangibility, and dividend paying status in determining bank leverage. Their results provided strong support for the relevance of standard determinants of capital structure on bank capital.

- **In Developing Country**

There were many empirical researches undertaken by scholars on capital structure choices in the developed nations. But, there were not many research directed towards developing countries that saw the applicability of the theories of capital structure generated from the developed nations. Maghyereh (2005), Amidu (2007), Abor (2005), and Bas, T., Muradoglu, G., & Phylaktis, K. (2009) were among the scholars who have studied the capital structure issue in the developing nations. They have

undertaken an interesting study to see whether the capital structure theory could also be applicable in the developing countries irrespective of different institutional structures. The readily available balance sheets and income statements were collected by the researchers from the International Finance Corporations (IFC) for the largest companies in 10 developing countries, namely; India, Pakistan, Thailand, Malaysia, Turkey, Zimbabwe, Mexico, Brazil, Jordan and Korea. Several variables were tested and analyzed to explain capital structure determinants by considering the impact of taxes, agency conflicts, financial distress and the impact of informational asymmetries. The variables mentioned include tax, business risk, asset tangibility, sales, return on assets and market-to-book ratio. A basic cross regression model of three different measures of firm's debt ratio against those variables was developed.

From their analysis, the authors have concluded that the variables that explained the capital structures in developed nations were also relevant in the developing countries irrespective of differences in institutional factors across these developing nations. The same types of variables, which affect developed nations, were significant in developing nations too. This research supports the argument of asset tangibility in financing decisions which indicates that firm's long-term debt ratio increases while total-debt ratio decreases as more tangible the asset mix becomes. It is interesting to note that the estimated empirical average tax rate does not affect the financing decisions except for becoming as a proxy for profitability. The research also indicated that knowing the nationality of the firm is at least important as knowing the size of independent variables for both the total and long-term book debt ratios. The authors have outlined their recommendation for further studies or research in this area with an increase in the quality international database. They too suggested that a theoretical model to be developed to study the direct link between profitability and capital structure choices.

One of the latest studies was conducted by Bas, T., Muradoglu, G., & Phylaktis, K. (2009. This paper examined the determinants of capital structure decisions of firms in developing countries collecting secondary data for 11 firms from World Bank for 25 developing countries. They discussed about capital structure decisions of firms in developing markets covering countries from different regions. They analyzed whether the determinants of capital structure show differences among small, medium and large firms. Bas, T., Muradoglu, G., & Phylaktis, K. (2009) draw the following major conclusions from the results. Regardless of how the firm defines, in accordance with

the capital structure theory, the importance of firm level variables, such as tangibility and profitability is confirmed. According to the results, private, small, medium and large firms follow the pecking order on their debt financing decisions. But listed firms prefer equity financing to long term debt financing. Moreover, internal funds do not have an impact on the debt financing decisions. Another major finding was the size effect. They saw different responses from small and large firms towards debt financing. As firms become larger, they become more diversified and risk of failure is reduced as a result of that they can have higher leverage. According to their results, small and large companies have different debt policies. Due to the information asymmetries, small firms have limited access to finance; therefore, they face higher interest rate costs. Also, they are financially more risky compared to large firms. As a result of that, small companies have restricted access to debt financing which may influence their growth.

2.5. Features of Appropriate Capital Structure

The board of directors or the Chief Financial Officer of any business firm should develop appropriate capital structure which is most advantageous for the company. This can be done only when all those factors, discussed above, which are relevant to the capital structure decision are properly analyzed and balanced. Thus, the capital structure should be planned generally keeping in view the interest of the equity share holders and the financial requirements of the company.

As stated by Pandy (2005); an appropriate capital structure should have the following features:

- **Return**: the capital structure of the company should be most advantageous. Subject to other considerations, it should generate maximum returns to the shareholders without additional coat.
- **Risk:** the use of excessive debt threatens the solvency or liquidity of the company. To the point debt does not add significant risk it should be used as source of capital; or its use should be avoided.
- **Flexibility**: the capital structure should be flexible. It should be possible for a company to adapter its capital structure with a minimum cost and delay if warranted by a changed situation. It should also be possible for the company to provide funds whenever needed to finance its profitable activities (projects).

- **Capacity:** the capital structure should be determined within the debt capacity of the company, and this capacity should not be exceeded. The debt capacity of a company depends on its ability to generate future cash flows.
- **Control:** the capital structure should involve minimum risk of loss to control of the company. The owners of closely held companies are particularly concerned about dilution of control.

2.6. Capital Structure of Banks

Banks are one of the financial intermediaries that operate in the financial system of the economic system. They act as intermediaries to transfer and allocate money from the savers to needy borrowers. Banks are back bone of the economy and to all business activities. Development banks can thus fill the diverse desires of both the ultimate borrowers and lenders of capital. Capital is a fundamental and vital part of the Development banking industry. Bank capital plays important role in the establishment of the banking entity by providing the necessary funds, and also critical to the perpetuation of the entity in its capacity as ongoing concern. A Development bank mainly obtains funds from creditors i.e. debt (deposits) ownership (equity) sources. As a result, the basic objective of bank management should be to maximize the value of the owner's investment in the banks.

The capital structure of banks is, however, still a relatively under-explored area in the banking literature. Currently, there is no clear understanding on how banks choose their capital structure and what factors influence their corporate financing behavior. Gropp and Heider (2007) approached the issue of Bank Capital Structure using banks from developed countries; they specifically tested the significance of size, profitability, market-to-book ratio, asset tangibility, and dividend paying status in determining bank leverage. Their results provided strong support for the relevance of standard determinants of capital structure on bank capital. Octavia and Brown (2010) investigate whether the standard determinants of capital structure apply to banks in developing countries, whereas Gropp and Heider (2007) examine banks from the USA and Europe. The results of Octavia and Brown (2010) suggested that the standard determinants of capital structure do have power in explaining both book capital and market leverage. In their study, they examined whether the standard determinants of capital structure are significant factors in determining the level of bank capital in developing countries. Using a sample of 56 Development banks from

ten developing countries they found the standard determinants of capital structure do have explanatory power in explaining variation in bank capital.

2.7. Overview of Development Banks in Nepal

Nepal has a short history of the modern banking practices that starts from the establishment of Nepal Bank Limited as a first formal banking institute in 1937 AD. The establishment of Nepal Rastra Bank in 1956 as a central bank gave new dimension to Nepalese financial system. Nepal adopted financial sector liberalization process during 1980s. With the introduction of economic liberalization policy in 1984, banking sector got opportunity to expand, grow, add new facilities and introduce modern technology in banking service. As a result, many joint-venture and private banks entered into the financial market. Along with Development bank, NRB allowed to open development banks, finance companies and financial institutions with the objective to increase people's access to financial institution. NRB has categorized licensed banks and financial institutions (BFIs) in four categories namely, Development Banks as 'A class', Development Banks (DBs) as 'B Class', Finance Companies as 'C Class' and Micro Credit Financial Institutions as 'D Class' respectively. These institutions are regulated, supervised and monitored by Nepal Rastra Bank (NRB) as per Nepal Rastra Bank Act 2058.

The history of DBs in Nepal commence with an establishment of Industrial Development Bank with total government ownership. It was converted into Nepal Industrial Development Corporation (NIDC) in 1959 AD. Nine years later, Agricultural Development Bank Nepal (ADB/N) was established with a motive to develop and support agricultural growth of the country. Bank and Financial Institution Act (BAFIA) 2006, an umbrella act enacted in unified form which abolished five other acts related to bank and financial institutions. Till 1995 AD, the development banking industry was still in a passive stage with few players in operation. However, after 1999 AD, there had been a steady increase in the number of DBs along with other financial institutions for next 13 years. The year 2015/16 AD reported all time highest 88 DBs. Opening of banks and financial institution however was not enough to address the NRB's motive to promote financial inclusion and development. Majorities of bank and financial institution were concentrated in urban area and are having ruthless competition to same chunk of small market. The overcrowding presence of BFIs in urban area lead to unproductive lending, severe banking offence activities and results to collapse of some BFIs. NRB realized the situation and stopped

licensing to 'A','B' & 'C' category institutions in 2016/17 AD. For the same objective, NRB also launched Merger Bylaw 2011, Acquisition Bylaw in 2013 which was introduced after in a united form as Merger and Acquisition Bylaw 2016. The objective of merger and acquisition was to resize and adjust the number of BFIs to the efficient and strong by consolidating the existing BFIs effectively and efficiently. In the recent years, the number of DBs is decreasing due to the merger and acquisition as per the NRB expectation. As of mid-July 2016, there were total 67 DBs in Nepal, with 22 'National Level' DBs, 9 'Ten Districts Level', 25 'Three Districts Level' and 11 'One District Level' operating within their jurisdictions.

Currently, there are 8 national level development banks in Nepal as per 2020 mid-july NRB reports. The 'B' class financial institutions have been providing banking services in various areas of the country. The services of the banks are being relayed through the well-managed branch count.

Table -1 Capital and Branch Network of development banking in Nepal

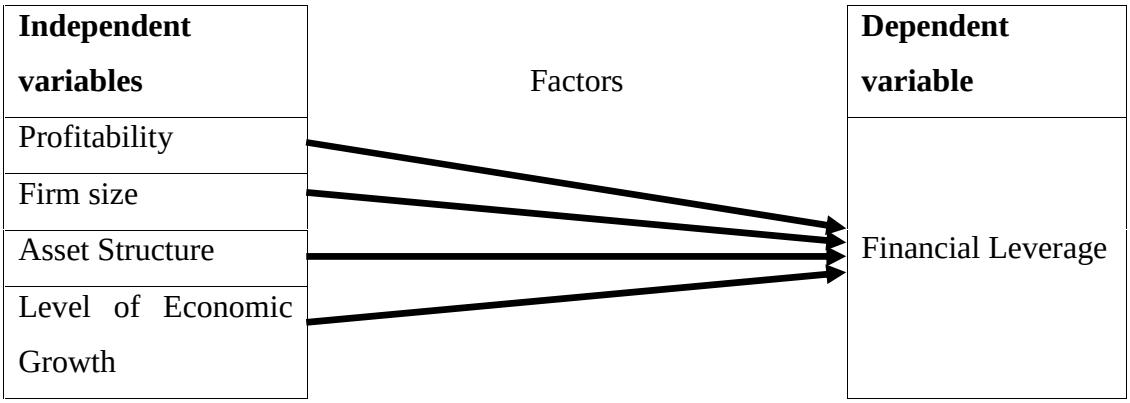
S.N.	Name	Paid Up Capital (in core.)	No. of Branch	No. of ATM
1	Muktinath Bikas Bank Limited	**432.50**	**102**	**20**
2	Mahalaxmi Bikas Bank Limited	**307.21**	**89**	**35**
3	Jyoti Bikas Bank Limited	**349.53**	**84**	**17**
4	Shine Resunga Development bank	**301.63**	**82**	**31**
5	Shangrila Development Bank Limited	**260.66**	**77**	**23**
6	Garima Bikas Bank Limited	**323.87**	**66**	**15**
7	Lumbini Bikas Bank Limited	**271.63**	**66**	**13**
8	Kamana Sewa Bikas Bank Limited	**254.02**	**62**	**17**

Source- Nepal Rastra Bank Annual Reports 2020 mid July

2.8. Conceptual Frame work

The schematic diagram of the relationship between financial leverage and factors is shown below.

Table - 2 Diagrams of Factors Influencing Financial Leverage



As shown in the diagram the variation in financial leverage can be explained by the factors relating to the variables. The diagram shows the theoretical framework of the study. The studies report no unanimous view in relation to major determinants of capital structure. With reference to various models developed for determining capital structure and as well as understand the link between the variables, the self-model was developed for this study purpose to determine the financial leverage. The major factors affecting financial leverage are profitability, size, asset structure and level of economic growth. The proxy variables used under this study are:

Profitability (Net Profit)

Net profit is the total earnings of the company. Net profit is calculated by subtracting a company's total expenses from total revenue, thus showing what the company has earned (or lost) in a given period of time (usually one year). This is also referred as net income or net earnings. Net profit has been used as proxy variable for profitability under this study.

Size (Paid up Capital)

Paid up Capital is the total amount of shareholder capital that has been paid in full by shareholders. Paid-up capital is essentially the portion of authorized stock that the company has issued and received payment for. Paid up capital has been used as a proxy variable for size under this study.

Asset Structure (Risk Weighted Asset)

The idea of risk-weighted assets is a move away from having a static requirement for capital. Instead, it is based on the riskiness of a bank's assets. For example, loans that are secured by a letter of credit would be weighted riskier than a mortgage loan that is secured with collateral. Risk weighted asset is used as a proxy variable for the asset structure under this study.

Level of Economic Growth (Economic Growth)

An increase in the capacity of an economy to produce goods and services, compared from one period of time to another. Economic growth can be measured in nominal terms, which include inflation, or in real terms, which are adjusted for inflation. For comparing one country's economic growth to another, GDP or GNP per capita should be used as these take into account population differences between countries. Economic growth has been used as proxy variables for the level of economic growth under this study.

2.9. Research Gap

Although the some of the international studies have a tremendous contribution to the theory of capital structure, they were limited to the non-banking institutions of the countries. Among all types of firms banks in developing countries are working in such not well-developed financial system, hence they may pay little attention to practice capital structure theory for their related decision. So that, given the unique financial features of Nepalese development banks and the environment in which they operate, there is a strong ground for separate study on capital structure determinants of development banks in Nepal. There are chosen the independent four independent variables which are the Profitability, Firm size, Asset Structure and the Level of Economic Growth. And the measurement of the independent variables impact on the dependent variable which is financial leverage. Some previous works are included the some more independent variable. Tangibility, Profitability, Growth, Age, Uniqueness, Size, Earnings Volatility, and Non-Debt Tax Shields, and were regressed against dependent variables: Total Debt Ratio, Long-Term Debt Ratio and Short-Term Debt Ratio. After analyzing the data he came up with this result: Tangibility, Firm Growth, Age of the Firm, Firm Size, Earnings Volatility and Non Debt Tax Shields variables are the significant determinants of capital structure in at least one out of the three models for capital structure employed. Whereas in this study researcher used Multivariate Ordinary Least Square (OLS) regression analysis for determine whether

there exists a relationship between the multiple independent variables (Determinants = Profitability, Tangibility, Size, Growth) and the dependent variable. Thus this study is to clear about the different determinants of capital structure and significant relation the financial leverage with determinants of capital structure in development banks of Nepal with reference to sample bank JBBL and GBBL.

CHAPTER -THREE
RESEARCH METHODOLOGY

3.1. Study Design

This research presents an empirical analysis of determinants of capital structure of development banking sector in Nepal with most recent available data. It is an explanatory research and has employed a quantitative method. A multivariate regression model was used to analyze the data collected from the financial statements of development banks operating in Nepal which have an age more than 10 years. Based on the regression outputs, test of the data used and hypotheses; and analysis of the result were made. The analyses are presented by using descriptive approach.

3.2. Sampling Design

For fair and uniform comparison and to obtain valid results, only development banks are selected. In other words, the reason why development banking sector is chosen is: Firstly, development banking business is emerging and also flourishing in Nepalese economy where the literature on determinants of capital structure is limited. Secondly, the development banks share common attributes in accounting practices, corporate governance and corporate control. As a result, Construction and Business (CBE) and other banks are not considered due to their specialized business objectives.

Sample of 2 development banks are selected from the population of 10 development banks. It represents 20 percent of the existing development banks. In other words, the entire population of development banks that exists, at least, for the last five years (2015-2020) is selected and secondary data was collected from their 5 years' financial statements. Therefore, pooling the cross sectional data of 5 years for 2 development banks, there are total 10 observations in the regression analysis. For this reason, using purposive sampling, the selected banks are Development Bank of Nepal. The sample bank is Joyti Bikas Bank and Garima Bikas Bank of Nepal.

3.3. Data Source and Collection

The researcher has approached exclusively secondary sources of data, audited financial statements (Balance sheets and income statements), of two total no of development bank in Nepal development banks aged ten years and above and have been operating in the Nepalese economy for the specified time period.

Though some of the sampled development banks have an experience of greater than ten years, the researcher has taken secondary data from their financial statements that

belong or correspond to only the past ten consecutive years. On top of this, the data gathered is reliable in that it is collected from a supervisory bank, the Nepal Rastra Bank. Furthermore, selected explanatory attributes and used regression model have taken from most prominent and recent research studies in the area of capital structure.

3.4. Method of Data Analysis

Multivariate Ordinary Least Square (OLS) regression is employed to determine whether there exists a relationship between the multiple independent variables (Determinants = Profitability, Tangibility, Size, Growth) and the dependent variable (Leverage = Debt to Equity Ratio). One regression equation is used to test the hypotheses constructed in relation to firm-specific determinants (Profitability, Tangibility, Size, and Growth) and the leverage (Debt-Equity Ratio). Data were regressed using SPSS application software and the resulted (or obtained) regression outputs are analyzed. On top of this, Ms Excel was also used to compute and feed convenient data into the SPSS employed.

Data used and hypotheses are tested and analysis of the result is made based on the multivariate regression output. First, data is tested to ensure the validity of classical linear regression model (CLRM) assumptions. Second, test of the hypotheses that are previously developed in chapter one were made based on the general estimated model which examined the relationship between the leverage ratio and its determinants for the Development banks in Nepal.

3.5. Model Specification

Most of the existing empirical studies on capital structure use linear regression techniques with proxies for the determinant factors used to explain the variation in leverage ratios across firms. The following multivariate ordinary least square (OLS) regression model is specified and used to test the relationship between the financial leverage and its determinate factors in the selected Development banks.

The Model

The theoretical statement of this model is that the debt-equity ratio of a firm is influenced by firm's size, profitability, asset structure and level of economic growth. The log has been taken both sides to minimize the variation in the data. Following multiple regression models has been used to test the theoretical relation between the financial leverage and characteristics of the firm.

$$\ln Y_{i,t} = \beta_0 + \beta_1 \ln P_{i,t} + \beta_2 \ln S_{i,t} + \beta_3 \ln AS_{i,t} + \beta_4 \ln EG_{i,t} + e_{it} \quad \text{.....(i)}$$

Where

Y- Financial Leverage

P_{it} - Profitability

S_{it} - size

AS_{it} - Asset Structure

EG_{it}- Level of Economic Growth

e_{it} - error term

i - Firm

t - Time

The above model states in simple terms that financial leverage of i^{th} firm at time t is linearly dependent on the profitability of the i^{th} firm at time t (P_{it}), size of i^{th} firm at time t (S_{it}), asset structure of the i^{th} firm at time t (AS_{it}), and level of economic growth of the i^{th} firm at time t(EG_{it}). A, b_1, b_2, b_3 and b_4 are the coefficients and e_{it} being the error term. The error term represents the variation in the dependent variables which is not explained by the independent variables. A common log transformation was applied to variables to improve normality and to avoid the problem of heteroscedasticity of the distribution.

3.6. Instrumentation

At the beginning, a comprehensive data file was created. Then, variables and their labels were defined. Data were entered and commands were operated by using user friendly menu of SPSS program. Few statistical tools such as Mean, Standard Deviation were used for primary data. The mean and standard deviation is computed for primary data analysis. The formula for calculating the mean from a frequency distribution equation is:

$$X = \frac{\Sigma fx}{\Sigma f} \quad \text{..... (I)}$$

3.7. Reliability and Validity

The internal consistency method provides a unique estimate of reliability for the given test administration. The most popular internal consistency reliability estimate is given by Cronbach's alpha. It is expressed as follows:

$$\text{Alpha} = \frac{N}{(N-1)\,[1-\Sigma\sigma 2\,(Yi)/\,\sigma 2X]} \quad \text{..... (II)}$$

Where, N equals the number of items; $\Sigma\sigma^2$ (Y_i) equals the sum of item variance and σ^2X equals the variance of the total composite. Using the above equation the reliability and validity was tested from the collected data through questionnaire. The value of Cronbach's alpha of collected primary information is presented in Table 3

Table- 3 Coefficient of Cronbach's Alpha

Cronbach's Alpha	Cronbach's Alpha on Standardized items	Number of Items
0.825	0.83	10

Source: Researcher's own computation based on the financial statements

The reliability and validity results in the Table 3 showed that the instrument was both reliable and valid since the variable coefficient is 83%.Which indicates that the instrument is both reliable and valid.

3.8. Time Frame

The research was prepared within the time period of four months. All together it took 3 weeks to visit various places to fill-up the questionnaires and collect them back from the respondents. Until primary data were collected side by side the secondary data related to stock return and variables were extracted from annual reports of various Development banks and NEPSE websites. Table 4 shows the outline of different activities performed with time allocation.

Table- 4 Time Allocation for Completion of the GRP

Activities Performed	Time Allocated
Topic Finalization	1 week
Study On Research Methodology	1 week
Data Collection and Literature Review	3 weeks
Data Entry and Analysis	3 weeks
Preparation of Report	8 weeks

3.9. Analysis Plan

The analysis begins with the computation of the correlation coefficients between the company specific factors, and between these factors and annual stock returns. It is especially crucial to know about the correlations between the factors that serve as independent variables in the regression to take care of possible multi co linearity problems. The correlation coefficients have been calculated for the eleven year aggregate cross sectional data on profitability, size, asset structure and level of economic growth. The methods of data analysis used in the study are divided into three subsections. First section deals with the methods of secondary data analysis. This includes descriptive statistics, correlation analysis, analysis by forming portfolios and cross-sectional regression analysis. Second section describes different statistical tests of significance for validation of model such as t-test, F-test. Third section presents the methods used for primary data analysis. The main purpose of data analysis is to explore the impact and relationship between fundamental variables and financial leverage in context of developing country with special reference of Nepalese Development banks. Therefore, this section deals with statistical and econometric models used for the purpose of analysis of both primary and secondary data.

CHAPTER-FOUR
RESULTS AND DISCUSSION

4.1. Presentation of Results

Data Presentation and Analysis is the fourth chapter of this research study. It is an important phase of the research study. The data collecting activity consist of taking ordered information from reality and transferring it into some recording system so that it can later be examined and analyzed for patterns. Research as a media can be interpreted as having a content of data and a process of methodology without the data, methodology cannot be utilized to bring us to the conclusion.

After completion of data collecting process, the data will be in what researcher call “the raw firm”. The data will still be on questionnaire, data collecting forms and note cards. It is necessary to arrange the data so that it makes some sense to the researcher and so that it can later be presented to the readers of the thesis. Different type of data requires different methods of summary and presentation. There are a number of methods, which can be used to simplify the data. The easiest way to understand data is by examining it in charts, graphs and tables. But even before one can arrange data in tables, it is necessary to rearrange the raw data. The main purpose of analyzing the data is to change it from an unprocessed form to an understandable presentation. The analysis of data consists of organizing, tabulating and performing statistical analysis.

In order to accomplish the objectives, analytical and explorative research methodology has been followed. This has been described in chapter three. Now in this chapter, the effort has been made to deal with research problems mentioned in chapter one.

4.1.1. Pattern of Capital Structure and its Determinants

This section accomplishes the first objective of this study. The pattern and movement of the profitability, size and asset structure are shown in this section. Table 5 depicts the pattern of the net profit of the Development banks for the study period. The figures of the net profit are expressed in million Rupees.

Table-5: Pattern of Net Profit of Development Banks

Banks	2015/16	2016/17	2017/18	2018/19	2019/20	Avg	St.dev
JBBL	152	228	296	531	448	331	156.1
GBBL	222	349	442	594	577	436.8	156.7
Average	187	288.5	369	562.5	512.5		
St. dev	49.4	85.5	103.2	44.5	91.2		

Source: Researcher's own computation based on the financial statements

Table-5 is the pattern analysis of the bank's net profit over the five years study period. It shows that JBBL banks net profit was 152 million in 2015/16 and rose to 448 million in 2019/20 and whereas GBBL banks net profit was 222 million in 2015/16 and rose to 577 million in 2019/20then, overall average growth rate is 174.06 %. This indicates an upward trend. However, in 2017/18, average net profit in individual year is decline due to the effect of the year after of the national election, the standard deviation decline to 44.5 percent and rose to its peak to 91.2 percent in 2019/200. The table shows the overall trend increasing trend of the total amount of both taken sample of both bank.

Table 6: Pattern of Asset Structure of Development Banks

Banks	2015/16	2016/17	2017/18	2018/19	2019/20	Avg	St.dev
JBBL	8917	13188	23347	36460	42361	24854.6	14435.6
GBBL	10578	17662	25237	38749	50293	28503.8	16041.2
Avg	9747.5	15425	24292	37604.5	46327		
St.dev	1174.5	3163.5	1336.4	1618.5	5608.77		

Source: Researcher's own computation based on the financial statements

Table-6 is the pattern analysis of the bank's total assets over the five years study period. It shows that JBBL bank total assets was 8917 million in 2015/16 and rose to 42361 million in 2019/20on balance sheet, whereas GBBL bank total assets was 10578 million in 2015/16 and rose to 50293 million in 2019/20 on balance sheet then, overall growth rate is 78.95 %.on average and This indicates an upward trend. The table shows the overall trend increasing trend of the total amount of both taken sample bank.

Table-7: Pattern of Paid up capital of Development Banks

Banks	2015/16	2016/17	2017/18	2018/19	2019/20	Avg	St. dev
JBBL	1031	2350	2594	3100	3495	2514	940.5
GBBL	1031	2535	2788	2788	3238	2476	846.5
Avg	1031	2442	2691	2944	3366.5		
St.dev	0	130.8	137.1	220.6	181.72		

Source: Researcher's own computation based on the financial statements

Table- 7 is the pattern analysis of the banks paid up capital over the five years study period. It shows that JBBL banks total paid up capital in balance sheet was 1031 million in 2015/16 and rose to 3495 million in 2019/20 and whereas GBBL banks paid-up capital in balance sheet was 1031 million in 2015/16 and rose to 3238 million in 2019/20 then, overall average growth rate is 226.52 %. This indicates an upward trend. However, in each year, average paid up capital in individual year is increasing due to the effect of the NRB restriction, right share issued and bonus share issued. The table shows the overall trend increasing trend of the total amount of both taken sample of both bank.

4.1.2. Analysis of Secondary Data

This section is devoted to analysis and presentation of secondary data. The secondary data have been obtained from data base maintained by office of the Security Board of Nepal (SEBON), NEPSE and other selected Nepalese banks. The purpose of this section is to evaluate the effects of profitability, size, asset structure and level of economic growth in the banking capital structure.

a. Descriptive Statistics

The descriptive statistics used in this study consists of mean, standard deviation, and minimum and maximum values associated with variables under consideration. Table 8 summarizes the descriptive statistics of firm specific variables used in this study during the period 2015/16 from 2019/20 associated with 2019/20 sample banks listed in NEPSE. Table 8 indicates that banks differ significantly in terms of Size. Size has the minimum value of 5.96 and 7.51 as the maximum value with the mean of 6.63 and standard deviation of 0.53. The Financial Leverage has the minimum value of 0.01 and 0.03 as the maximum value with a mean and standard deviation of 0.017 and 0.006 respectively. Similarly Profitability has the 6.07 and 6.89 as the maximum and minimum value respectively and mean of 6.48 and 0.32 as standard deviation.

Table- 8 Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
FL	10	.01	.03	.0172	.00656
P	10	6.07	6.89	6.4826	.32182
Size	10	5.94	7.51	6.6364	.53982
AS	10	2.38	2.85	2.6279	.11709
EG	10	13.00	14.26	13.5204	.42967

Source: Researcher's own computation based on the financial statements

Table 8 indicates that the banks also differ significantly in terms of Asset Structure, which has 2.38 of minimum value and 2.85 of maximum value with 2.62 and 0.11 as mean and standard deviation. Similarly Level of Economic Growth has the minimum value of 13 and maximum value of 14.26 with mean of 13.52 and 0.42 as standard deviation.

b. Correlation Analysis

Table 9 reports the correlations between the variables under study in the form they are use in the regression analysis. The values in parentheses show the level of significance for the correlation coefficients. Data covers a period from 2015/16 to 2019/20 while the accounting figures are derived from annual report for the same period. It reveals that financial leverage is positively correlated with profitability, size and level of economic growth. Among the independent variables profitability and size are negatively correlated with asset structure, asset structure is negatively correlated with all the other variables. Similarly, level of economic growth is positively correlated with profitability and size, negatively correlated with asset structure.

Table- 9 Correlation Matrix

	FL	P	Size	AS	EG
FL	1	.34	.10	-.4350	.056
		(.140)	(.487)	(.079)**	.432
P		1	.896	-.220	.897
			(.000)*	(.246)	(.000)*
Size			1	-.271	.994
				(.197)	(.000)*
AS				1	-.323
					(.153)
EG					1

Source: Researcher's own computation based on the financial statements

Notes: 1. Figures in parentheses are p-values

2. The signs * and ** denote that the results are significant at 1 percent and 10 Percent level of significant respectively

Table 9 indicates t-test where correlations among different pairs of explanatory variables are statistically significant at 1% and 10% level of significant. Among firm related fundamental variables, the highest positive correlation coefficient is recorded at 0.994 between economic growth and size and the highest negative correlation accounted at -0.4350 between financial leverage and asset structure. The other correlations are relatively lower although most of them are statistically significant.

c. Analysis of Portfolios Formed on One-Way Sorts

Properties of Capital Structure with respect to firm specific variables have been analyzed in this subsection by forming four equal percentiles portfolios based on one-way sorts of Profitability, Size, Asset Structure and Level of Economic Growth. The characteristics of average returns and standard deviations associated with each of these univariate sorts of portfolios are described below.

i. Properties of Portfolios Sorted on Profitability

For the purpose of analyzing and examining the relationship of Profitability with Capital structure and other firm specific variables, four equal percentiles group portfolios were sorted. The descriptive statistics (mean and standard deviation)

associated with each of these four portfolio groups corresponding to each of the firm specific variables are reported in Table 10.

Table 10 presents portfolios sorted by Profitability. It shows the relationship between the independent variable profitability with the dependent variable financial leverage and other independent variable. The financial leverage increases with the increase in profitability when it moves from lowest percentile group portfolio 1 to the highest percentile group portfolio 4. The financial leverage on the lowest portfolio is 0.016 and its shows the clear pattern of increment with profitability that reaches 0.0269 in the highest portfolio. Profitability in the lowest portfolio is 394.201 which also shows the increasing trend and reaches to 1903.25 in the highest portfolio. The result indicates that there is positive relationship between the dependent variable financial leverage and independent variable profitability. As the profitability increases financial leverage increases as well. Similarly, size in the lowest portfolio is 716.90 which is also shows the increasing trend and reaches to 1088.62 in the highest portfolio. This result also shows the positive relationship between the profitability and the size of the financial institutions.

Table- 10 Properties of Portfolios Formed on Profitability

Portfolios Bases of portfolio	1(Low or Smallest) <500	2 500-1000	3 1000-1500	4(High or Largest) >1500
Profitability	394.201 (4.52)	735.2486 (4.91)	1307.575 (4.72)	1903.256 (6.15)
Financial Leverage	0.016905 (0.02)	0.017502 (0.01)	0.013393 (0.01)	0.026931 (0.01)
Size	716.9087 (6.20)	839.5053 (6.25)	1701.656 (6.59)	1088.621 (6.29)
Asset Structure	16.67611 (9.35)	11.74132 (7.89)	14.91688 (4.01)	29.18786 (13.59)
Level of Economic Growth	726032 (10.68)	818960.7 (1067)	1678516.9 (10.75)	942505.1 (10.68)

Source: Researcher's own computation based on the financial statements

From this analysis what can be conclude is that as the profitability of the institutions increases the size also increases as well. Similarly, asset structure of the financial institution in lowest portfolio is 16.67 which also shows the increasing trend and reaches to 29.18 in the highest portfolio. This also indicates that as the profitability increases the asset structure of the firm increases as well. The level of economic growth also shows the increasing trend which has 726032 in the lowest portfolio and reaches to 942505.1 to the highest portfolio. Hence, from the above analysis what can be concluded is that profitability has the positive relationship between all the dependent and independent variable.

ii. Properties of Portfolios Sorted on Firm Size

In order to examine the properties of movement in financial leverage and other firm specific variables with respect to firm size, four equal percentile group portfolios were formed on the basis of univariate sorts by firm size. The descriptive statistics (mean

and standard deviation) associated with these portfolios for firm specific variables are shown in Table 11.

Table 11 presents the portfolios sorted by size. It shows that larger firms have higher financial leverage. The firm size shows the increasing trend which reaches 394.14 in the lowest portfolio and reaches to 1903.25 in the highest portfolio. As the size of the firm increases, the financial leverage of the firm increases as well. The financial leverage of the firm increases in the second and third portfolio but decreases in the highest portfolio. Similarly, as the size of the firm increases the profitability of the firm also increases. The profitability in the lowest portfolio is 620.06 which shows the increasing trend and reaches to 1080.69 in the highest portfolio. The result shows the positive relationship between the size and profitability.

Table 11 also indicates the patterns of movement in other firm specific variables with firm size. The asset structure in the lowest portfolio is 14.24 and reaches to 26.38 in the third portfolio.

Table- 11 Properties of Portfolios Formed on Firm Size

Portfolios **Bases of portfolio**	**1(Low or Smallest)** **<500**	**2** **500-1000**	**3** **1000-1500**	**4(High or Largest)** **>1500**
Size	394.1459 (4.52)	735.2486 (4.91)	1307.575 (4.72)	1903.256 (6.15)
Financial Leverage	0.021537 (0.02)	0.015965 (0.02)	0.018791 (0.01)	0.014032 (0.01)
Profitability	620.0667 (6.32)	477.9171 (5.76)	890.4208 (6.55)	1080.696 (5.97)
Asset Structure	14.24519 (5.96)	8.359143 (8.89)	26.38417 (14.52)	10.4448 (2.59)
Level of Economic Growth	588038.2 (10.05)	742155.7 (11.80)	1047845.4 (11.79)	1366733.1 (10.33)

Source: Researcher's own computation based on the financial statements

The result also shows the positive relationship between the size and the asset structure of the firm. The level of economic growth also ranks 588038.2 in the lowest portfolio

and reaches to 1366733.1 in the highest portfolio. This also shows the increasing trend with the size of the firm which establish a positive relationship between the two independent variables.

iii. Properties of Portfolios Sorted on Asset Structure

Four equal percentile groups of portfolios were formed in order to examine the pattern of movement firm specific variables with respect to the movement in asset structure. Table 12 shows financial leverage in the lowest portfolio is 0.0087 and shows an increasing trend and reaches to 0.023 in the highest portfolio which increases with the increase in asset structure which has 4.04 in the lowest portfolio and reaches to 46.81 in the highest portfolio. This shows the positive relationship between the dependent variable asset structure and independent variable financial leverage.

Table- 12 Properties of Portfolios Formed on Asset Structure

Portfolios **Bases of portfolio**	**1(Low or Smallest)** **<10**	**2** **10-20**	**3** **20-30**	**4(High or Largest)** **>30**
Asset Structure	4.041481 (8.13)	2015/16.91432 (2.04)	27.64889 (2.35)	46.8204 (5.14)
Financial Leverage	0.008773 (0.01)	0.018896 (0.02)	0.017564 (0.02)	0.023824 (0.019)
Profitability	363.5444 (6.05)	659.0737 (5.94)	1417.61 (6.62)	1199.44 (6.84)
Size	631.5148 (6.03)	947.7558 (6.45)	816.8333 (6.13)	435.567 (5.52)
Level of Economic Growth	683474.93 (13.66)	863067.77 (14.80)	864832.5 (14.93)	640599.9 (12.03)

Source: Researcher's own computation based on the financial statements

The independent variable profitability also shows the increasing trend with the asset structure. Profitability in the lowest portfolio is 363.52 which increases and reaches to

1199.44 in the highest portfolio. From this table what can be conclude is that as the asset structure of the firm increases the profitability of the firm increases as well.

Table 12 shows a clear pattern of movement of variables with respect to asset structure of the firm. Size in the lowest portfolio ranks 631.51 and reaches to 947.75 in the highest portfolio. Which is shows the positive relationship between the asset structure and the size of the firm. Similarly level of economic also shows the increasing trends in the second and third portfolio which are 863067.77 and 864832 respectively.

iv. Properties of Portfolios Sorted on Level of Economic Growth

Four equal percentile groups of portfolios were formed in order to examine the pattern of movement of firm specific variables with respect to the movement in level of economic growth.

Table-13 Properties of Portfolio Formed on Level of Economic Growth

Portfolios **Bases of portfolio**	1(low or smallest) <500000	**2** **500000-1000000**	**3** **1000000-1500000**	**4(High or Largest)** **>1500000**
Level of Economic Growth	464397.7 (9.96)	714286.2 (11.87)	131458380 (11.40)	1558174 0
Financial Leverage	0.015732 (0.02)	0.01954 (0.02)	0.020036 (0.01)	0.010702 (0.01)
Profitability	483.9733 (6.07)	732.4967 (6.38)	953.985 (6.29)	923.27 (6.27)
Size	456.0267 (5.6)	729.85 (5.92)	1413.86 (6.26)	1782.38 (6.32)
Asset Structure	15.63467 (10.30)	15.678 (11.47)	14.1695 (4.65)	13.654 (4.7)

Source: Researcher's own computation based on the financial statements

Four equal percentile groups of portfolios were formed in order to examine the pattern of movement of firm specific variables with respect to the movement in level of economic growth. Table 13 reports that level of economic growth is 464397.7 in the lowest portfolio which shows the increasing trend and reaches to 1558174 in the highest portfolio. Where financial leverage is 0.015 in the lowest portfolio and reaches to 0.02 in the third portfolio. Which clearly states that as the level of

economic growth increases the financial leverage increases as well. Similarly, profitability also shows the increasing trend which increases from 483.97 from lowest portfolio to the highest portfolio of 923.27, which also shows the positive relationship between the profitability and economic growth.

Table 13 also shows the relationship between all the dependent variables with the independents variable. Size in the lowest portfolio is 456.02 which also shows the increasing trend and reaches to 1782.38 in the highest portfolio. The economic growth has the positive relationship with the size of the firm. Similarly, the asset structure shows the increasing trend in lowest and second portfolio and decreases in the third and highest portfolio. Asset structure in the lowest portfolio is 15.63 which increase to 15.67 in the second portfolio.

v. Properties of Portfolio Sorted on financial leverage

In an attempt to describe the characteristics of movement firm specific variables with respect to financial leverage, four equal percentile groups of portfolios were formed. Table 14 indicates financial leverage in the lowest portfolio is 0.0021 which shows the increasing trend and reaches to 0.048 in the highest portfolio.

Table 14 also shows the increasing trends of economic growth from the lowest portfolio to the highest portfolio. Level of economic growth in the lowest portfolio is 764013.5 and reaches to 792534.7 in the highest portfolio. That shows the positive relationship between the levels of economic growth with the financial leverage. Similarly, profitability also shows the positive relation with the financial leverage. The profitability in the lowest portfolio is 583.95 and reaches to 854.66 in the highest portfolio.

Table- 14 Properties of Portfolio Formed on Financial Leverage

Portfolios Bases of portfolio	1(low or smallest) <0.01	**2 0.01-0.02**	**3 0.02-0.03**	**4(High or Largest) >0.03**
Financial Leverage	0.002105 (0.002)	0.014361 (0.002)	0.024859 (0.002)	0.048477 (0.01)
Level of Economic Growth	764013.5 (13.79)	854544.6 (14.75)	969798.7 (14.87)	792534.7 (13.63)
Profitability	583.9529 (6.23)	689.4429 (5.84)	769.84 (6.22)	854.6677 (6.61)
Size	857.9235 (6.33)	957.0714 (1.87)	1140.433 (1.89)	717.12 (6.10)
Asset Structure	13.24176 (2.32)	10.74536 (6.97)	13.79133 (8.46)	18.51097 (11.84)

Source: Researcher's own computation based on the financial statements

Table 14 also shows the increasing trends of economic growth from the lowest portfolio to the highest portfolio. Level of economic growth in the lowest portfolio is 764013.5 and reaches to 792534.7 in the highest portfolio. That shows the positive relationship between the levels of economic growth with the financial leverage. Similarly, profitability also shows the positive relation with the financial leverage. The profitability in the lowest portfolio is 583.95 and reaches to 854.66 in the highest portfolio.

Table 14 also shows that size has the positive relationship with the financial leverage. Size in the lowest portfolio is 857.92 which shows the increasing trends and reaches to 1140.43 in the third portfolio. Asset structure in the lowest portfolio is 13.24 which also shows the increasing trends and reaches to 18.51 in the highest portfolio. Which

as establish a positive relationship between the financial leverage and the asset structure of the banks.

d. Regressions Results

To better understand the empirical validity of the model described in the previous section and the effect of financial leverage and other factors, the coefficient of regressions are described via multiple regressions. The analyses help to gauge the explanatory power of the various factors. For this purpose, this study utilizes multiple regressions analysis. The regression results of profitability, size, asset structure and the level of economic growth are presented in Table 15.

Table- 15 Estimated Relationships between Financial Leverage and Independent Variables

Model	Intercept	Regression coefficients of				Adj. R^2	F	D-W stat	p-value
		lnP	lnS	lnAS	lnEG				
1	0.087	1.703	2.282	0.471	0.644				
		[-4.359]*	[-1.32]	[-2.281]**	[0.361]	0.68	6.86	2.16	0.014

Source: Researcher's own computation based on the financial statements

Notes: 1. Figures in parentheses are t-values

2. The signs * and ** denote that the results are significant at 5 percent and 10 Percent level of significant respectively

Table 15 reveals that multiple regression results of financial leverage on independent variables. In model 1, when all the independent variables are simultaneously included, the t-statistics of Profitability and asset structure has been found to be significant. The result indicates that 68 percent variations in leverage are captured by independent variables. Overall, the model is significant at 5% level of significant. The overall test significance, F- test i.e. 6.68 is accepted at 5% level of significance in the equation.

As argued by Durbin and Watson (1951), the Durbin-Watson statistic lies in the range 0 - 4. A value of 2 or nearly 2 indicates that there is no first-order autocorrelation. An

acceptable range is 1.50 - 2.50. Where successive error differences are small, Durbin-Watson is low (less than 1.50); this indicates the presence of positive autocorrelation. Positive autocorrelation is very common. Where successive error differences are large, Durbin-Watson is high (more than 2.50); this indicates the presence of negative autocorrelation. The Durbin Waston value is 2.16 which lie within the range. So, there is no chance for autocorrelation.

Overall, size and level of economic growth have been observed as poor predictor of leverage because their effects have been subsumed by profitability and asset structure in multiple regressions. Profitability variable has a coefficient (-4.359) and t statistics is significant at 5 % level of significant in the above estimates and it continues to remain a dominant variable to explain stock return. Table 16 also reports that the t statistics of asset structure is significant at 10% level of significant and it remains as a second variable to explain the financial leverage.

Table-16 Unstandardized Coefficient Statistics

Variables	**unstandardized coefficients**		**t-value**	**p-value**
	B	std. error		
(Constant)	-0.087	0.242	-0.362	0.728
P	0.035	0.008	4.359	0.003
size	-0.028	0.021	-1.327	0.226
AS	-0.026	0.020	-2.281	0.057
EG	0.01	0.027	0.361	0.729

Source: Researcher's own computation based on the financial statements

Table 15 reveals the co-linearity statistics related with financial leverage. The coefficient of profitability is (0.035) which depicts that the relationship is strong. It means a (1.703) increase in profitability will result in an increase of 1 point of financial leverage. 16shows the relationship of the size is found negative and insignificant with leverage. The coefficient is -0.028 which depicts that the relationship might be very weak. It means a (-2.282) decrease in size will result in a decrease of 1 point of financial leverage. Similarly, the relationship of asset structure is found to be negative and insignificant with leverage. The coefficient is -0.471 which depicts that the relationship might be very weak. It means a (-0.471) decrease in asset structure will result in a decrease of 1 point of leverage. Further, the relationship of level of economic growth is found to be very strong. The coefficient is

(0.01) which depicts that relation to be positive. It means that a (0.644) increase in economic growth will result in an increase of 1 point in leverage.

4.2. Discussion

The results documented in this study support the findings and theories of the previous study. With respect to the role of profitability, the result demonstrated consistently strong explanatory power of financial leverage. Profitability showed the positive relationship with the financial when portfolios were formed on one way sorts of size. In multiple regressions, the coefficient of profitability is significant and explains variation of financial leverage. Thus, the result of testing first hypothesis of the study as there is no positive relationship between profitability and financial leverage is not accepted.

The firm size showed persistently a positive relation with financial leverage when portfolios were formed on one-way. Firm size displays positive and statistically significant correlations with leverage. But in multiple regressions, the coefficient of firm size is not significant and do not explains the variations of financial leverage. Thus, the result of this study support the second hypothesis there is no positive relationship between the firm size and the financial leverage.

The asset structure of the firm also showed persistently a positive relation with financial leverage when portfolios were formed on one-way. It also displays positive and statistically significant correlations with leverage. And similarly, in multiple regressions, the coefficient of asset structure is significant and explains variation of financial leverage. Thus, the result of testing third hypothesis of the study as there is no positive relationship between asset structure and financial leverage is not accepted.

(Antoniou, A., Guney, Y., & Paudyal, K. (2002),Buferna, F. M., Bangassa, K., & Hodgkinson, L. (2005), The study showed that Profitability, size of the firm, book-to-market ratio, tangibility of assets, term-structure of interest rates and prior changes in share price etc. seem to play pivotal role in determining the capital structure of a firm. The capital structure decision of a firm is not only the product of its own characteristics but also the result of environment and tradition in which it operates. Buferna, F. M., Bangassa, K., & Hodgkinson, L. (2005), Hall, Hutchinson and Michaelas, (2004), Song, (2005) size is positively related to both total debt and short-term debt ratio; it is negatively correlated with long-term debt ratio.

Similarly, the level of economic growth showed persistently a positive relation with financial leverage when portfolios were formed on one-way. Firm size displays

positive and statistically significant correlations with leverage. But in multiple regressions, the coefficient of level of economic growth is not significant and do not explains the variations of financial leverage. Thus, the result of this study supports the fourth hypothesis there is no positive relationship between the level of economic growth and the financial leverage.

CHAPTER- FIVE
SUMMARY AND CONCLUSIONS

5.1. Summary

A number of theories have been advanced in explaining the capital structure of firms. Despite the theoretical appeal of capital structure, researchers in financial management have not found the optimal capital structure. The best that academics and practitioners have been able to achieve are prescriptions that satisfy short-term goals. For example, the lack of a consensus about what would qualify as optimal capital structure has necessitated the need for this research. A better understanding of the issues at hand requires a look at the concept of capital structure and its effect on firm profitability. The major findings of this study are summarized as under:

1. On one way sorting of portfolio analysis, there exist a positive relationship between profitability and financial leverage (0.34). Similarly, the relationship between size and financial leverage is also positive (0.10); this indicates that as the profitability and size increases the financial leverage also increases.
2. Further, the one way sorting of portfolio analysis by asset structure and level of economic growth also found to be positively related (-0.323) with financial leverage.
3. In multiple regression analysis, profitability and asset structure found (0.471) to be significant factor affecting financial leverage. Whereas, size and level of economic growth does not have any power in explaining financial leverage ratio.
4. The overall model is significant at 5% level of significance. The adjusted R square 0.68, indicates that 68% of variation are captured by the independent variables (profitability, size, asset structure, and level of economic growth).
5. Among the independent variables, profitability is regarded dominant variable that explains financial leverage ratio with coefficient 4.359.
6. With respect to correlation analysis, the dependent variable financial leverage is positively correlated with the independent variables profitability, size and level of economic growth and negatively correlated with asset structure. Profitability is positively correlated with variables like financial leverage, size and level of economic growth but negatively correlated with asset structure.

7. Similarly, the size is also positively with all the variables except the asset structure. Asset structure has negative correlation with all the variables and level of economic growth is also positively correlated with profitability, size and financial leverage and negatively correlated with asset structure.
8. The study revealed that bigger the size of the company greater the capacity to take the risk and higher would be the financial leverage
9. Use of debt lowers the cost and increases the profit.
10. As Capital Fund to Risk Weighted Assets ratio increases, the debt level in capital structure should decrease.
11. The study revealed that the firms with stable sales have higher debt ratio.
12. Floatation cost also affected the debt level in a bank.
13. The study also showed that, higher the level of economic growth means more debt or lower the level of economic growth means less debt.

5.2. Conclusion

The major conclusion of this study is that out of the tested variables, profitability has been found most significant for whole sample. Size stood as the second important predictor of capital structure that is found significant for whole sample. Similarly, asset structure does not seem to be a good predictor for the capital structure.

The study also concluded that, on one way sorting of portfolio analysis, there exist a positive relationship between profitability and financial leverage. Similarly, the relationship between size and financial leverage is also positive; this indicates that as the profitability and size increases the financial leverage also increases. Further, the one way sorting of portfolio analysis by asset structure and level of economic growth also found to be positively related with financial leverage. In multiple regression analysis, profitability and asset structure found to be significant factor affecting financial leverage. Whereas, size and level of economic growth does not have any power in explaining financial leverage ratio. The overall model is significant at 5% level of significance. The adjusted R square 0.68, indicates that 68% of variation are captured by the independent variables (profitability, size, asset structure, and level of economic growth).

5.3. Recommendation

1. The present work has been conducted on limited sample. In view of this, the large samples can be taken to examine the determinants of capital structure.

2. In the present study, only four explanatory variables have been analyzed. Some more explanatory variables may also be examined.
3. A shift in the determinants of capital structure with the passage of time may be ascertained by carrying out a study of year-wise determinants of capital structure.
4. As the study results revealed that profitability is the dominant variable, the capital structure of the firm should be designed in such a way that the firm can derive maximum profitability.
5. The size of the company must be large because bigger the size of the company, greater the capacity to take the risk and higher would be the leverage ratio.
6. The capital structure also depends on the level of economic growth, so if the level of economic growth is high the capital structure must contain more debt in firm.
7. If the asset structure increases the company must lower debt ratio to minimize the risk of loss of control for the shareholders.
8. The capital structure should be planned keeping in view of the shareholders because the shareholders are the owners of the firm.
9. Lastly, the capital structure should be designed in such a way that it has the features of sound capital structure, such as, profitability, size, asset structure and the level of economic growth, though specific may vary from one firm to another firm.

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Appendix (A)

Model Summary R Square and Adjusted R Square exact from SPSS

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Change Statistics					D- W Stat
					R Square Change	F Change	df1	df 2	Sig.F Change	
1	.893(a)	.797	.681	.00371	.797	6.864	4	7	.014	2.167

Regression Coefficient exact from SPSS

Model	Intercept	Regression coefficients of				Adj. R^2	F	D-W stat	sig
		lnP	lnS	lnAS	lnEG				
1	0.087	1.703	2.282	0.471	0.644				
		(-4.359)*	(-1.32)	(-2.281)**	(0.361)	0.681	6.86	2.16	0.014

Correlations exact from SPSS

		FL	P	size	AS	EG
Pearson Correlation	FL	1.000	.340	.010	-.435	.056
	P	.340	1.000	.896	-.220	.897
	Size	.010	.896	1.000	-.271	.994
	AS	-.435	-.220	-.271	1.000	-.323
	EG	.056	.897	.994	-.323	1.000
Sig. (1-tailed)	FL	.	.140	.487	.079	.432
	P	.140	.	.000	.246	.000
	Size	.487	.000	.	197	.000
	AS	.079	.246	.197	.	.153
	EG	.432	.000	.000	.153	.
N	FL	5	5	5	5	5
	P	5	5	5	5	5
	Size	5	5	5	5	5
	AS	5	5	5	5	5
	EG	5	5	5	5	5

Five Year Financial Statement of Jyoti Bikas Bank and Garima Bikas Bank