THE EFFECT OF CAPITAL STRUCTURE ON PROFITABILITY
(Reference to manufacturing company in Nepal)

A Dissertation submitted to the Office of the Dean, Faculty of Management in partial fulfillment of the requirements for the Master's Degree

by

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **"The Effect of Capital Structure on Profitability (Reference to manufacturing company in Nepal)"**. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

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We, the undersigned, have examined the dissertation entitled **"The Effect of Capital Structure on Profitability (Reference to manufacturing company in Nepal)"** presented by Ganga Kumari Acharya a candidate for the degree of master of Business Studies (MBS Semester) and conducted the Viva voce examination of the candidate. We hereby certify that the dissertation is worthy of acceptance.

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Ganga Kumari Acharya
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ABBREVIATIONS

CV	:	Coefficient of Variation
DAR	:	Debt to Assets Ratio
DER	:	Debt to Equity Ratio
DNL	:	Dabur Nepal Limited
EBIT	:	Earnings before Interest & Tax
FEM	:	Fixed Effect Model
GDP	:	Gross Domestic Products
HDL	:	Himalayan Distillery Limited
LSIZE	:	Natural Logarithm of Size or Total Assets
Ltd.	:	Limited
LTL	:	Long-term Debt Ratio
NI	:	Net Income
NIM	:	Net Interest Margin
NOI	:	Net Operating Income
OLS	:	Ordinary Least Square
RAROA	:	Risk Adjusted Return on Assets
RAROE	:	Risk Adjusted Return on Equity
REM	:	Random Effect Model
ROA	:	Return on Assets
ROE	:	Return on Assets
SCP	:	Structure Conduct Performance
SD	:	Standard Deviation
STD	:	Short-term Debt Ratio
TU	:	Tribhuvan University
UNL	:	Unilever Nepal Limited

ABSTRACT

The main objective of the study was to analyze the effect of capital structure on profitability with reference to manufacturing company in Nepal. This study is based on secondary data was gathered from financial annual report of manufacturing companies of Nepal for ten year periods (2013/14-2022/23). Descriptive statistics correlation and multiple regression analysis are used for data analysis. This study reveals that manufacturing companies have great contribution to investors fund and strong capital adequacy position due to high debt to equity ratio. Moreover, in this study, manufacturing companies shows a large share of financing by the insurers relatively to the owners and there is risky for the investors due to the high leverage ratio or debt equity ratio. Profitability is the measurement of efficiency. Manufacturing companies have high value of ROA and ROE means there is efficient utilization of its total assets. Investors are getting more return from their investment and also company performance is good. The correlation analysis shows that debt to equity ratio (DER) and debt to total assets have significant negative relation with profitability (ROA and ROE) of manufacturing companies in Nepal. Moreover, firm size has significant negative relationship with profitability (ROA and ROE) of the manufacturing companies. The regression result reveals that debt to equity ratio has insignificant negative effect on ROA but it has significant negative effect on ROE of the manufacturing companies while debt to assets ratio has insignificant positive effect on profitability (ROA and ROE) of manufacturing companies. Further, firm size has significant negative effect on profitability (ROA and ROE) of the manufacturing companies in Nepal. Hence, this study concluded that capital structure has insignificant effect on profitability of manufacturing companies in Nepal

Keywords: *Return on assets, return on equity, debt to equity ratio, debt to assets ratio and firm size.*

CHAPTER I
INTRODUCTION

1.1 Background of the Study

The term "manufacturing sector" refers to all commercial endeavors involving the fabrication of goods, the relatively large-scale assembly of components into completed items, or the creation of goods through industrial processes. It is an important industry in all economic sectors. In order to achieve wealth, create jobs, reduce poverty, encourage commerce, and accelerate national progress, the manufacturing sector must increase. The performance of Nepalese manufacturing companies is lacking. Numerous sizable businesses have shut down, and some more are set to follow suit. While most businesses are able to turn a profit, the profit margin is typically quite narrow. Due to a number of factors, including a long-standing lack of ability to adapt new technologies, inadequate infrastructure, a lack of electricity, a delayed political process, challenging trading conditions, intense competition worldwide, and the global economic slump, this industry has had unequal growth over time. Furthermore, Nepal's industrial sector relies heavily on labor and locally produced raw materials. For many years, the government of Nepal has implemented various policy initiatives and regulatory measures with the aim of bolstering the manufacturing sector (Dhodary, 2019).

The day-to-day performance and operations of a firm are significantly influenced by financial decisions in the competitive and dynamic business environment of today. Almost every move a firm makes on finances has an impact on all of its operations. The choice of capital structure is the most contentious topic in corporate finance, according to all scholars and researchers. A company's financial success is often assessed based on three key factors. The firm's productivity comes first, followed by profitability a point at which earnings from its regular operations must exceed the costs of those activities and market premium the point at which the firm's book value falls short of its market value (Francis, 2002).

The process via which a company raises money to launch and grow its commercial operations is outlined in its capital structure. It is a combination of several kinds of

debt and equity capital that a company keeps as a result of its financing choices. Finance is a necessary component of all corporate activities. Businesses could not function without funding to support their fixed assets and working capital needs. The capital structure decision is the most important one when it comes to capital investment decisions since it has a direct impact on an enterprise's profitability. As such, careful consideration must be paid while choosing a capital structure (Bhattarai, 2005).

The company's two primary decision-making domains are funding and investing. The capital structure decision-making process is the method by which the business is financed by a combination of debt and equity. The directors are interested in selecting the ideal capital structure for their company while making funding decisions for the company. Choosing how much leverage to use is another crucial decision that the administration of the organization makes. The concepts of capitalization, leverage ratio, capital structure, and financial structure are all the same and are connected to the types of sources and sums of money that the company has employed to build them and purchase assets (Barges, 2009).

The ratio of debt to equity that a company utilizes to fund its operations is known as its capital structure. A company's capital structure is made up of a variety of securities. A company's capital structure describes how it finances its activities. It can use debt, equity, or a combination of the two (Brigham & Gapenski, 2004). The percentage of debt and equity on a company's balance sheet is referred to as capital. Business enterprises typically find it challenging to determine the ideal debt to equity ratio. A company has a variety of options for capital structures. It has the option of issuing either a lot of debt or not at all. It can execute forward contracts, utilize warrants, issue convertible bonds, arrange leasing finance, and trade bond swaps. It can issue a wide range of different securities in an infinite number of combinations, but it looks for the one that will maximize its total market value (Brigham & Gapenski, 2004).

The following theories can be used to analyze a firm's capital structure decision: trade-off theory, pecking order theory, and Modigliani-Miller theory. The capital structure irrelevance proposition proposed by Modigliani and Miller in 1958 serves as

the foundation for contemporary company finance theory. There was no widely accepted theory of capital structure prior to them. When Modigliani and Miller (1958) published their well-known arbitrage argument demonstrating that a firm's market value is independent of its capital structure, the discussion surrounding how and why businesses chose their capital structure got underway. In order to begin their hypothesis, Modigliani and Miller assume that the company has a specific set of anticipated cash flows. The company must allocate the cash flows among investors after deciding on a specific ratio of debt to equity to fund its assets. Because it is believed that businesses and investors have equal access to the financial system, homegrown leverage is permitted. Therefore, the firm's market value is unaffected by its level of leverage.

The capital structure decision is one of the most important ones a financial management takes. This is because the optimal capital structure maximizes shareholder wealth while lowering the overall cost of capital. Prior to comprehending the capital structure, one must grasp the financial structure (Gautam & Thapa, 2004).

A company's capital structure, often known as its capitalization, is its long-term debt, preferred stock, and shareholder equity. The capital structure of a company is therefore merely its financial structure. The capital structure of a company has a role in determining its level of liquidity as well as its potential to achieve long-term profitability. Only long-term debt and the entire investment made by stockholders are included in the term. Some businesses don't design their capital structure; instead, it emerges organically from the finance manager's judgment call without any official preparation. These businesses might succeed in the near term, but in the long run, they might have a lot of trouble raising money to support their operations. Unplanned capital structures can also prevent these businesses from using their money as efficiently as possible. The finance manager need to, in theory, design his company's ideal capital structure. When the market value per share reaches its maximum, the ideal capital structure is achieved. Determining the ideal capital structure in practice is a difficult task that requires thinking beyond the box (Barges, 2009).

Sharma (2019) discovered that the capital structure, which is the ratio of total debt to total assets at book value, affects the firm's riskiness and profitability. According to

the definitions provided by numerous earlier scholars, capital structure is the mix of debt and equity used to finance a corporate entity. Equity is created when businesses sell a portion of their ownership stake in order to raise money for operations and capital projects. A contractual arrangement known as debt requires businesses to borrow money and return it with interest within a predetermined period of time. A united capital structure will prevent most businesses from using their assets as efficiently as possible. Because capital structure has a direct bearing on a company's performance, choosing the right debt to equity ratio is still crucial.

Though some financial experts believe that a business's value may increase by adding more and more leverage to its capital structure, others believe that the value of the firm may be maximized by adopting an optimal capital structure. Several hypotheses have been put out regarding how capital structure decisions relate to and impact the firm's profitability and performance. MM theory (1958 and 1963), Agency cost theory (1976), Trade-off theory (1977), and Pecking order theory (1984) are a few notable theories.

Profitability ratios are critical metrics for assessing a company's financial performance. An endeavor's ability to turn a profit determines its eventual success or failure and is a critical sign of efficiency. To maximize profit, financial organizations need to properly balance equity and debt. The purpose of this study was to determine how capital structure affects the profitability of manufacturing enterprises in Nepal, with a focus on the profitability of key business activities. Financial managers will benefit from this by having help determining the ideal level of capital structure to reach the highest possible degree of business profitability and, consequently, maximize shareholder value. Additionally, it will provide them a realistic understanding of potential issues with profitability and capital structure.

1.2 Problem Statement

The choice of capital structure is also an empirical matter. As a result, a large body of academic research studies public businesses' funding decisions both conceptually and experimentally. The majority of research projects in corporate finance have attempted to investigate capital structure by taking into account a variety of factors within distinct conceptual frameworks. Nevertheless, given the variations in the sample

characteristics, methodology, and data set employed throughout the research, the conclusions drawn from them are incoherent. Capital markets are ideal in the MM strategy. It is predicated on the existence of uniform expectations, a frictionless market, rational investors, and no corporation taxes. Accordingly, this theory claims that the profitability of the company is unaffected by the capital structure.

Ramadan and Ramadan (2015) revealed that the long-term debt to capital ratio, total debt to capital ratio and total debt to total assets ratio had statistically significant adverse relationship with performance and capital structure. Revathy and Santhi (2016) found that there was a direct correlation between capital structure variables and profitability and debt-to-equity ratio had a negative impact on manufacturing companies' profits. Pokharel (2016) showed that while size had a favorable and significant impact on company performance, the ratios of total debt to assets, long-term debt to assets, and short-term debt to assets all had a negative impact on performance.

Anarfo and Appiahene (2016) asserted that the capital structures of banks have an impact on their profitability. Other significant determinants of bank profitability are size, growth, physical assets, taxation, and interest rates. Olusuyi and Felix (2017) concluded that the debt-to-equity ratio had a statistically significant negative impact on financial performance. Kalyani and Mathur (2018) found that log sales, the degree of operating leverage, and the growth of the asset were significant variables in determining profitability.

Dhodary (2019) concluded that asset tangibility, profitability, liquidity, and interest coverage ratio are the major factors of profitability. Jaishi and Poudel (2019) found leverage was significantly influenced by size, tangibility, profitability, and growth. Mouna et al. (2019) found that size had significant positive impact on performance and that the debt-to-equity ratio had a negative and significant impact on profitability. Rahman et al. (2019) stated that the debt to equity ratio significantly impacted ROA negatively, but the debt ratio and equity ratio significantly impacted ROA positively.

Ayange et al. (2021) showed that Nigerian businesses are heavily dependent on short-term debt financing, which lends credence to the pecking order theory. Ngoc et al.

(2022) examined that debt to assets significantly reduced ROA. However, ROA was significantly improved by tangibility and liquidity. Ngoc, Tien and Thu (2022) revealed that debt to assets significantly reduced ROA. However, ROA was significantly improved by tangibility and liquidity. Huong (2023) discovered that the profitability of businesses is significantly impacted by both the short- and long-term debt ratios. Shrestha (2023) found that return on equity was not significantly impacted by the debt to equity, debt to assets, or equity to total assets ratios. However, there aren't many studies in the specific field of manufacturing companies, thus this study fills a need in the sector. The study's goal was to investigate how capital structure affects the profitability of Nepalese manufacturing businesses. More specifically this study seeks to solve the answer of following question:

- What is the existing situation of capital structure practices of manufacturing companies in Nepal?
- What is the relationship between capital structure variables and profitability of manufacturing companies in Nepal?
- What is the effect of debt to equity ratio, debt to assets ratio and firm size on profitability of manufacturing companies in Nepal?

1.3 Objectives of the Study

The main objective of this study is to analyze the effect of capital structure on profitability in in manufacturing companies in Nepal. The specific objectives are given below:

- To assess the existing position of capital structure of manufacturing companies in Nepal.
- To examine the relationship between capital structure variables and profitability of manufacturing companies in Nepal.
- To analyze the effect of debt to equity ratio, debt to assets ratio and firm size on profitability of manufacturing companies in Nepal.

1.4 Research Hypothesis

The researcher expected with better capital structure management with high return on asset (ROA). With the help of data the study was established and tested the following hypothesis:

Hypothesis 1 (H_0): Debt to equity ratio has an effect on the profitability of manufacturing companies in Nepal.
Hypothesis 2 (H_1): Debt to equity ratio has no effect on the profitability of manufacturing companies in Nepal.
Hypothesis 3 (H_0): Debt to assets ratio has as an effect on the profitability of manufacturing companies in Nepal.
Hypothesis 4 (H_1): Debt to assets ratio has no effect on the profitability of manufacturing companies in Nepal.
Hypothesis 5 (H_0): Firm size has an effect on the profitability of manufacturing companies in Nepal.
Hypothesis 6 (H_1): Firm size has no effect on the profitability of manufacturing companies in Nepal.

1.5 Rationale of the Study

Nepal's manufacturing industry is growing every day. The country has been dealing with several challenges lately, and as a result, the manufacturing sector is operating slowly. In this case, the study will help the companies manage their capital structure overview and develop future strategies to perform significantly better in the long run. This study will benefit all companies in the population, not just the ones that were sampled. Additionally, this study may aid concerned academics, professionals, investors, and scholars. Additionally, this study will assist in educating decision-makers on the value of capital structure management for their continued success.

Research and studies on capital structure and its impact on a company's performance, particularly in the context of manufacturing firms, are scarce in Nepal. Decisions about the application, investment, and hiring of the company's capital fund are crucial for the financial managers to make since they impact the capital structure of the business. One of the most crucial elements of a business is its capital structure, which has a long-term impact on both the profitability and sustainability of the enterprise.

The research's conclusions and suggestions assist investors in making wise financial choices. It also supports the financial management in making critical strategic choices about the company's debt-to-equity ratio. From an academic standpoint, it adds value

for the researchers because it provides a foundation for future studies on capital structures and how they affect the manufacturing industries' profitability.

The findings of this study give managers, business advisors, and investors the financial know-how they need to combine debt and equity and optimize corporate success.

1.6 Limitations of the Study

The limitations of the study are as follows;

- Only three manufacturing companies are taken into consideration in this study namely; Unilever Nepal Limited, Dabur Nepal Privated Limited and Himalayan Distillery Limited.
- The study covers only the latest ten fiscal years i.e. 2013/14 to 2022/23.
- This study only focuses on capital structure and profitability and ignores other aspects.
- The whole study is based on secondary data.
- Only selected financial and statistical tools are used in this study.

CHAPTER- II
LITERATURE REVIEW

Review of literature is an integral and necessary process in any research work. It means reviewing research studies or other relevant propositions in the related area of the study so that all the past studies, their conclusions and deficiencies may be known and further research can be conducted. This chapter is related to examine and review of some related books, article, published and unpublished different economic journals, magazines, newspapers, yearly published balance sheet of respective banks on related subject and subject related website search. Therefore, this chapter is divided into two parts such as theoretical review and empirical review.

2.1 Theoretical Review

2.1.1 Concept of Capital Structure

Capital is a collection of goods and funds that may be utilized to create revenue in the future. In economic theory, consumer goods and money spent on pleasure and urgent needs are often not included in the concept of capital. As a result, a company views its readily available stocks, bonds, bank accounts, real estate, equipment, machinery, inventories, and raw materials as its capital. Traditionally, homes, furniture, cars, and other goods bought for personal use are not considered capital (Barges, 2009).

Different professionals and academics use different terms while addressing capital. While businessmen define wealth as net assets or stockholders' interest as shown by the balance sheet or the net worth of shareholders' equity, economists define wealth as total assets. It's referred to as capital stock by lawyers. Capital, no matter how it is referred to, is the money set aside to fund various assets, both short- and long-term. Therefore, a combination of short- and long-term financial resources make up capital (Bhattarai, 2005).

Capital structure planning, which ensures the lowest feasible cost of capital and the best possible rate of return to equity holders, is essential to achieving the goal of profit maximization. Just as important as the total amount of capital needed by the organization is the mix of capital that forms a company's financial foundation.. How

much of the equity money will be used to represent the investors' funds in the businesses? The ratio of debt to equity securities that would optimize stock value is determined by a financial manager. An ideal capital structure is needed in order to reduce the opportunity cost of capital and maximize shareholder wealth. Debt is a crucial component of capital structure since it establishes the leverage company. When a company has a high operational income, it boosts shareholder returns; nevertheless, when the company has a low operating income, it worsens shareholder returns (Gautam & Thapa, 2004).

Capital is often referred to as funds or money because without it, nothing gets done. Because capital has characteristics that are related to both risk and reward, it is necessary to have the proper balance of money in order to achieve a high return at a manageable level of risk. Capital structure management is the process used to maintain this ideal capital composition. The sources of capital include debentures, long-term debt, preference shares, equity shares, and short-term debt that also includes reserves, surplus, and retained earnings. All funds are not without risk. They have different needed rates of return. Common stock has a greater required rate of return and a higher risk than debt. This means that the business needs to accumulate a portfolio of these assets, which have a lower cost of capital and a higher return. The business must also generate at least adequate cash flow to pay its investors, preference shareholders, and debt holders. Therefore, the corporation should generate more cash flow than only match investor expectations in order to increase shareholder value. It should also attempt to obtain the necessary funding as soon as possible at the lowest possible cost (Brealey & Myers, 2003).

Capital structure refers to the combination of several securities held by the company. Choosing a capital structure is essentially a marketing decision. The company can issue dozens of different securities in an infinite number of combinations, but it looks for the one that will maximize its total market worth. Both current and fixed assets are financed through several sources. Although the sources of funding can be both short- and long-term, they are often divided into debt and equity, which define the capital structure of the company (Pradhan, 2003).

Since a variety of factors affect a company's decision regarding its capital structure, there is significant variance in capital structure across industries and even across individual companies within any given industry. A key factor is the decision-maker's judgment when it comes to capital structure. These are qualitative and highly psychologically complex aspects that don't always follow conventional wisdom because financial markets aren't flawless and decisions must be made with imperfect information and risk (Francis, 2002).

The combination of debt and equity that will optimize the company's market value is known as the optimal capital structure. If there is an optimal state, it has two aspects. First off, it increases the company's worth and, consequently, the owners' wealth. It also lowers the company's cost of capital, which makes it easier for it to identify new investment opportunities that can generate wealth. The permanent financing of the company is reflected by its capital structure, which is mostly made up of long-term debt, preferred stock, common stock, capital surplus, and cumulative retained earnings. Similar to cost of capital and, thus, capital budgeting decision, leverage and capital structure are closely related concepts. Leverage is the outcome of using fixed-cost assets to increase the owners' return on investment for the company. Leverage changes impact the level of return and related risk. Leverage typically translates into higher risk and returns. The degree of leverage in a company's capital structure, as well as the proportion of long-term debt and equity that the company maintains, can have a big impact on its value by influencing risk and return. When trying to design the optimal capital structure, the finance team needs to be aware of how to monitor and assess leverage due to its impact on value (Gitman, 2001).

Long-term debt and equity are combined to form the capital structure. It is a component of equity, long-term debt, and financial stock. The whole combination of preferred stock, common stock, long-term debt, and current obligations makes up this component of the financial structure. We obtain the capital structure when we subtract current obligations from it (Mathur, 1997).

Expected profit margin is often increased by financial leverage; nevertheless, as the debt-to-assets ratio rises, so does the interest rate on debt and the needed rate of return on equity. Leverage therefore has two opposing effects: it raises EPS, which raises

stock price, but it also increases risk, which lowers stock price. Nonetheless, there is a debt-to-assets ratio that achieves the best possible balance between these conflicting consequences. This ratio, which optimizes the price of the company's stock, is known as the optimal capital structure (Weston & Brigham, 1995).

Typically, financial and capital structure are distinguished. All sources, both short- and long-term, used to finance all of a company's assets are referred to as its financial structure. However, the capitalization portion of a firm's total is considered its capital structure. which solely consists of long-term resources like stock and debt as a result, the financial structure includes the capital structure. The capital structure composition varies throughout companies and is subject to direct guidance and control by the management. However, by taking into account pertinent factors and examining how alternative financing plans affect earnings per share, an acceptable and satisfactory capital structure can be established (Chandra, 1985).

2.1.2 Assumption of Capital Structure

To properly comprehend the capital structure and company value in connection to the cost of capital dispute, it requires the following assumptions (Baker & Martin, 2011):

- Only two forms of capital are used by businesses: debt and equity.
- The firm's whole asset count is disclosed. Selling debt to buy back shares or selling shares to pay off debt can alter the amount of leverage.
- The subjective probability distributions of investors' projected future operational earnings for a particular company are the same.
- The company pays out dividends in full each and every time.
- There is no expectation of growth in the company's operating earnings.
- It is expected that business risk is continuous and unaffected by capital structure.
- There is no exit for the personal and corporate income taxes. Later on, this presumption is eased.

Definitions

The following symbols are used in the capital structure theoretical analysis.

B = Total market value of debt.

S = Total market value of stock.

V = Total market of firm (B+S).

K_e =Equity capitalization rate.

K_d = Before tax cost of debt.

K_o = Overall capitalization rate.

I = Total amount of capital interest.

NI = Net income

EBIT or NOI = Earnings Before Interest & Tax or Net Operating Income.

a) Cost of debt (K_d) = $\frac{\text{Interest}}{\text{Debt}} = \frac{I}{B}$

b) Cost of equity (K_e) = $\frac{\text{EBIT - I}}{S} = \frac{\text{NOI - I}}{S} = \frac{NI}{S}$

c) Overall Cost of Capital (K_o) = K_d (B /V) + K_e(S /V)

d) Value of the Firm (V) = B + S = $\frac{I}{K_d} + \frac{\text{EBIT - I}}{K_e}$

2.1.3 Approaches to Capital Structure

Various methods have been established about the capital structure's relevance to the firm's value and cost of capital. The following methods are used to illustrate how capital structure, cost of capital, and company value are related:

a. Net income approach
b. Net operating income approach
c. Traditional approach
d. Modigliana- Miller (M-M) approach
    i. Without taxes
    ii. With taxes

a) Net Income (NI) Approach

This approach is a useful capital structure theory. Using this method, the cost of equity and debt capital stays constant despite changes in the leverage ratio. Consequently, when the leverage ratio rises, the weighted average cost of capital decreases. This is due to the fact that when the leverage ratio rises, the average cost of capital climbs more in favor of debt, which has a lower cost than equity. The following are the presumptions of this approach:

- Because investors' perceptions of risk are unaffected by the usage of debt, changes in leverage have no effect on the equity capitalization rate (Ke) or the debt capitalization rate (Kd).
- Kd>Ke indicates that the debt capitalization rate is lower than the equity capitalization rate.
- Taxes do not apply.
- The net operating income doesn't change.

According to the aforementioned assumptions, if Ke and Kd are constant, then rising debt will raise shareholder earnings and enhance the firm's value through equity. As a result, the total cost (Ko) will go down.

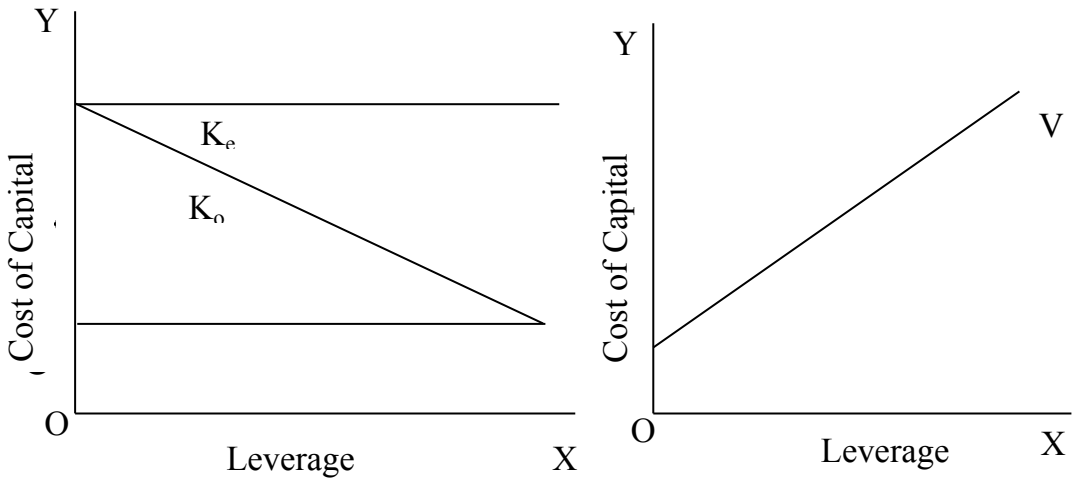

Figure 1 Net Income (NI) Approach

Source: Mathur (1997)

The y-axis in the given chart represents cost of capital, and the x-axis represents leverage. In the NI approach, Ke and Kd are taken for granted. The weighted average cost of capital decreases as the share of debt increases in the capital structure because it is less expensive. At the intersection of the firm's maximal value and its lowest total cost of capital would be the ideal capital structure. Assuming Ke and Kd to be constants and Kd to be less than Ke, the NI approach's overall premise is that Ko will decrease as B/V grows. Also, S=V and Ke= Kd. Moreover, Ko= Ke–(Ke-Kd) B/V.

b) Net Operating Income (NOI) Approach

David Durand identified this hypothesis. The cost of equity is supposed to rise linearly with leverage in the NOI method. Because of this, even while leverage varies,

the weighted average cost of capital stays constant, and the firm's overall worth likewise stays constant. Under the net operating income (NOI) concept, the following are assumed:

- The firm's overall value is capitalized by the market. The proportion of debt to equity is therefore meaningless.
- The net operating income is capitalized by the market using an overall capitalization rate (K_o). K_o is dependent upon the business risk, which is taken to be constant. K_o never changes.
- A rise in the usage of less expensive debt funds. Therefore, the benefit of debt is precisely compensated by the rise in the equity capitalization rate, or K_e.
- K_d, the debt capitalization rate, is a fixed value.
- There are no business income taxes.

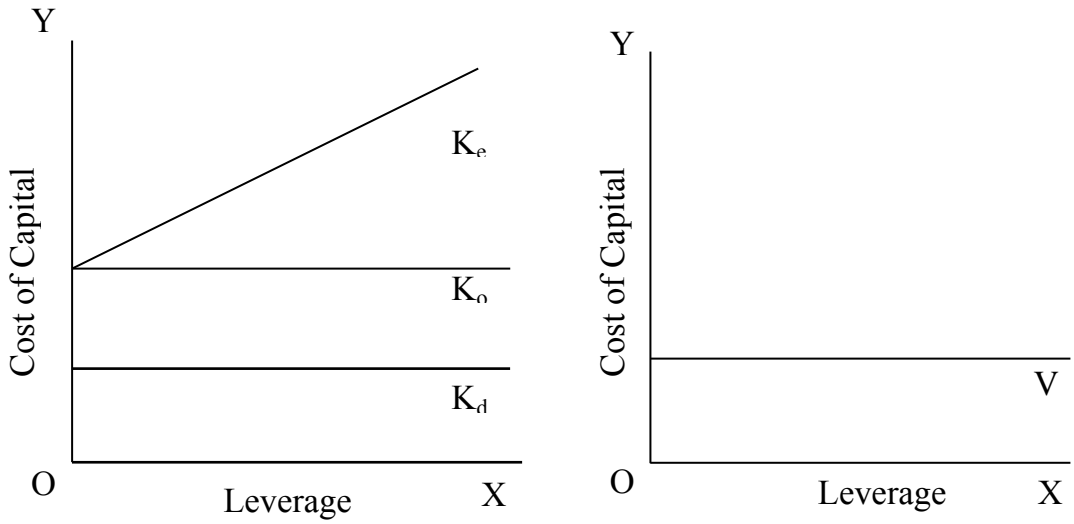

Figure 2 Net Operating Income (NOI) Approach

Source: Mathur (1997)

There may infer from the foregoing premise that the firm's choice of leverage and capitalization structure is meaningless. Since the total cost of capital is independent of leverage, changes in leverage will not affect the firm's overall worth or the market price of its shares. The aforementioned graphic illustrates how Ke is always increasing while Ko and Kd remain constant.The fixed fee rises in tandem with the firm's increased leverage, which raises the financial risk as well. Ke is a constant line function of the debt to equity ratio as long as Kd stays constant. It is implied by the NOI method that there isn't a single ideal capital structure.

The cost of equity capital is given by:

$K_e = K_o + (K_o + K_d)\ B/S$

Also $K_e = \frac{NOI - I}{V - B}$

c) Traditional Approach

Another term for it is an intermediate strategy.It consists of two approaches: operational income approach and net income approach. We therefore know that a company's worth can be determined by carefully balancing its debt and equity. Because debt capital is less expensive than equity capital up to an acceptable debt limit, the cost of capital decreases with leverage. The claim that debt funds are less expensive than equity funds clearly implies that, on a weighted basis, the cost of debt plus the additional cost of equity will be lower than the cost of equity that existed on equity prior to debt financing (Barges, 2009).

The market value of the company's debt is added to the market value of its equity to establish the firm's worth. The total cost of capital, also known as the overall capitalization rate, may be computed once market value has been established (Gitman, 2001).

Lastly, it is apparent from the traditional approach that using debt financing will result in a lower overall cost of capital. According to the conventional method, there are three stages that may be distinguished in the ways that the total cost of capital responds to charges in the capital structure:

Stages-1:

At this stage, the cost of stock is either unchanged or marginally lower with debt. However, even at that point, the benefit of low-cost debt is not enough offset by the rise in fact. Kd either stays the same or slightly increases since the market considers using debt as a prudent course of action. Consequently, the overall cost of capital, Ko = X/V, or the value of the business 'V' rises.

So, $K_o = K_e\ (S/V) + K_d\ (B/V)$

Stage: - 2:

The firm's leverage has reached a certain point. Leverage increases have very little impact on the firm's cost of capital or value. This is the case because the benefit of low cost of financing was outweighed by the rise in equity costs brought about by the increased financial risk. The firm's value will be at its highest or the total cost of capital will be at its lowest within the range of that particular moment (Pandey, 2003).

Stage: - 3:

In this stage, leverage either causes the cost of capital to grow or the firm's value to drop. This occurs as a result of investors' perception of a high level of financial risk, which drives up the cost of debt and negates its benefit. From the step mentioned above, everyone learn that:

- A higher valuation and a lower total cost of capital.
- The best possible valuation and total cost of capital.
- Falling valuation and rising capital costs.

The combined result of these three phases is to imply that leverage affects the cost of capital. It decreases with leverage and begins to rise until it reaches a minimal point or range. An illustration of the relationship between cost of capital and leverage may be found below.

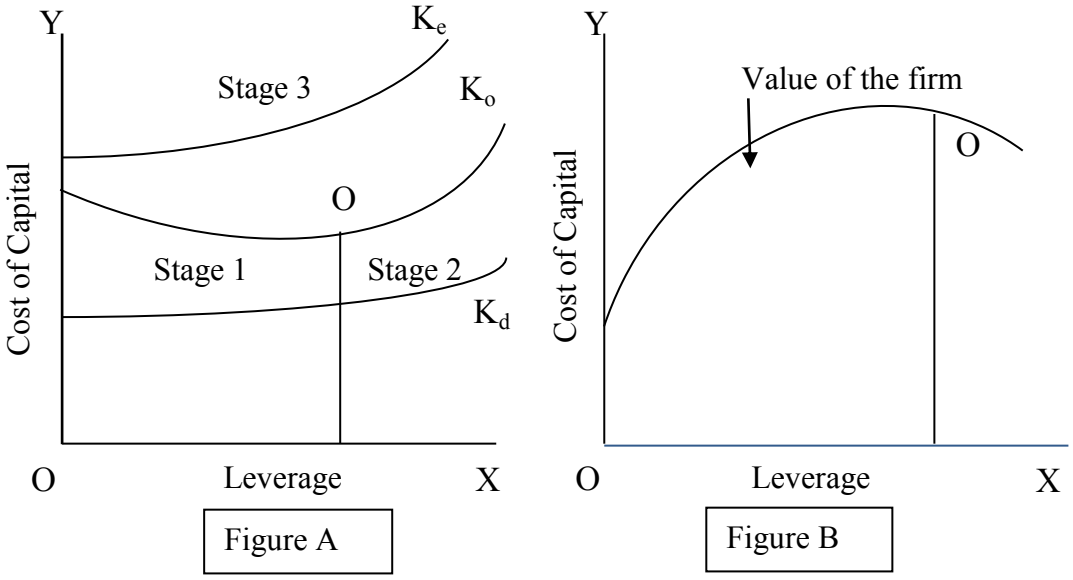

Figure 3 Traditional Approach

Source: Weston and Brigham (1995)

As leverage rises, Figure A illustrates that the cost of equity (K_e) rises far faster than the cost of debt. When leverage rises, the cost of debt won't change until a certain threshold at which lenders start to perceive the company as becoming more financially hazardous. The cost of debt (K_d) will rise at this time. The best total cost is reached between points O and ten, following K_o's rising trend. Figure B shows that the firm value is at its best until it reaches point O, at which time it starts to fall.

a. Modigliani- Miller (MM) Model:

i. MM without corporate tax:

Prior to 1958, all managers held the view that a prudent combination of debt and equity capital made up the capital structure. A company with an optimal capital structure has a lower total cost of capital and a higher firm value. Franco Modigliani and Miller (MM), two well-known financial researchers, made the argument in 1958 that a firm's market value and cost of capital are unaffected by changes in the capital structure when taxes are not present. The premise that underpins the M-M theory is as follows.

Prefect capital market: This expressly means that: (a) investors can purchase or sell stocks at any time; (b) they can borrow money at the same terms as the company; and (c) they act sensibly. Additionally, it is inferred that there are no transaction costs associated with purchasing and selling stocks.

Classes of homogeneous risk: Organizations can be categorized into these types of risk. If a company's predicted earnings remain the same within the same industry, it is deemed to be part of a homogenous risk class.

Risk: The fluctuation of net operating income is the basis for defining investor risk. Investors are exposed to both the chance that the actual value of the variable will differ from their best estimate and the random variation of the predicted NOI.

Full Payout: Businesses give shareholders their entire net profit, or a 100% payout.

No Taxes: In MM hypothesis, it is assumed that no corporate income taxes exist. Terminology and notation in used in MM Model are given below:

Terminology

- Leveraged: A company is referred to as levered if it has both debt and equity in its capital structure.

- Unlevered: A company is referred to as unlevered if its capital structure consists solely of equity.

Risk premium: It is the anticipated higher return that stock holders want in exchange for taking a chance on an investment.

Notation

K_s = Equity capitalization rate of an unlevered firm.

K_{el} = Equity capitalization rate of a levered firm.

K_d = Debt capitalization rate.

K_{ou} = Overall capitalization rate of unlevered firm.

V_u = Value of an unlevered firm.

V_l = Value of a levered firm.

T = Corporate tax-rate.

BT = Present value of tax-shied benefits of debt/ PV of interest tax-shield

Basic Propositions

Proposition I

According to this theory, the firm's value (V) and total cost of capital (Ko) are unaffected by its capital structure. For any leverage level, the Ko and V remain constant. By capitalizing the anticipated stream of operational earnings at a discount rate suitable for its risk class, the entire value is obtained. The following is an expression for this preposition:

For levered firm, V= EBIT (NOI)/K_o

For unlevered firm, K_o =K_e

S V_o = NOI/K_{ou} = NOI/K_{eu}

The MM theory deduces that the financing mix has no bearing on the firm's overall market value based on the aforementioned claim. As a result, the capital structure and cost capital are unrelated.

This proposal discusses how propositions affect how investors make decisions. Because the financing decision has no effect on the average cost of capital, it highlights the idea that decisions about investments and financing are independent.

Proposition II

According to this notion, the K_e is equivalent to the capitalization rate of a pure equity stream plus a premium for financial risk equal to the product of the debt-to-equity ratio times the difference between the pure equity capitalization rates (K_e and K_d). Put otherwise, K_e rises in a way that precisely balances the usage of a less costly source of funding, which is represented by debt. For a levered business (K_{el}), the cost of equity capital is equal to the cost of equity for an unlevered firm (K_{eu}) plus a risk premium that is calculated by multiplying the debt-to-equity ratio by the difference between Keu and K_d.

$K_{el} = K_{eu} + (K_{eu} – K_d)\ B/S$

Since $K_{eu} = K_{ou}$ So, $K_{el} = K_{ou} + (K_{ou} – K_d)\ B/S$

This claim illustrates how financial leverage affects equity costs. The company gains from lower loan costs as a result of increased leverage, but these benefits are precisely offset by rising equity costs in the form of shareholder risk premium demands.

ii) MM with corporate taxes:

According to this theory, the firm's worth is unaffected by its debt. The fundamental premise of policy is the nonexistence of corporate income taxes. In actuality, interest paid to debt holders is deductible, and there are corporate income taxes. On the other hand, dividends given to stockholders are not tax deductible.

As a result, in contrast to dividends, the return to debt holders is exempt from corporation taxes. Debt financing is beneficial because of this. In their 1963 paper, MM demonstrates how debt will raise a company's worth since interest payments are deductible for tax purposes, making a levered company more valuable than an unlevered one. As a result, the value of the leveraged company is determined by adding the present value of the interest tax shield to the value of the unlevered company, as illustrated below:

Value of a levered firm = Value of an unlevered firm + PV of interest tax-shield.

i.e. $V_l = V_u + BT$

The value of an unleveled firm when corporate taxes exist is given by

Where NI = Net income after taxes.

Also when a firm is unlevered, $K_{ou} = K_{eu}$

Thus V_i =

The aforementioned formula suggests that the value of the leveraged company will rise steadily with debt when the corporation tax rate T is positive (T > 0). Therefore, in theory, the firm's worth will be at its highest when it uses all debt.

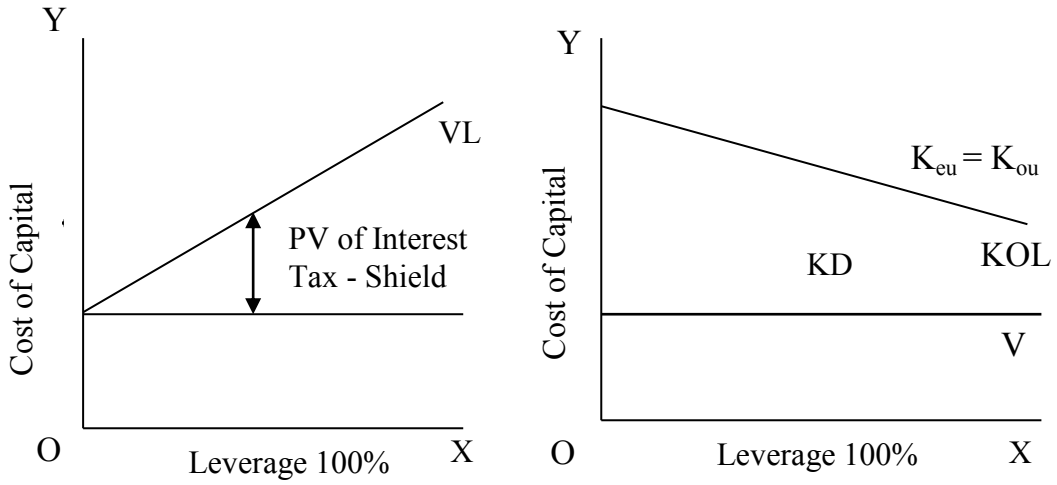

Figure 4 MM with corporate taxes

Source: Weston and Brigham (1995)

Figure 2.4 illustrates how a company can continuously use leverage to cut its cost of capital or improve its value due to interest charges being tax deductible. Thus, when a company uses 100% debt, it reaches the ideal capital structure. In reality, neither businesses nor lenders are willing to lend more than a specific sum. Why doesn't the corporation actually use an extraordinary amount of debt? Two scenarios could occur: First, we must take into account how company borrowing is affected by both corporate and personal taxes. The benefits of the interest tax shield may be countered by personal income taxes. Second, borrowing may result in additional expenses related to financial distress (on top of the contractual interest cost), which could counteract the interest rate shield (Pandey, 2003).

2.1.4 Determinants of Capital Structure Decision

Capital structure is the combination of long-term funding sources that optimizes the value of the company and its stockholders. The primary idea of an ideal capital structure is provided by the concept and definition of capital structure. The finance manager need to, in theory, design his company's ideal capital structure. When the market value per share reaches its maximum, the ideal capital structure is achieved. When the marginal costs of all the funding sources are equal, the values will be maximized. Finding the ideal capital structure is a difficult undertaking that requires

using more than just theory in real-world situations. In terms of capital structure, industries and individual enterprises within an industry differ significantly from one another. The judgment of the individual making the capital structure choice is vital since many factors affect a company's capital structure decision (Weston & Brigham, 1995).

Asset structure

The company that uses debt extensively is usually one whose assets make good collateral for loans. Therefore, manufacturing firms that heavily invest in specialized machinery and work-in-progress tend to utilize less debt than real estate companies, which tend to be highly leveraged.

Operating leverage

If everything else stays the same, a company with lower operating costs can use financial leverage more effectively since operational and financial leverage work together to determine how much a company's sales will fall overall in terms of operating income and net cash flows.

Sale stability

Compared to a company with erratic revenues, one with generally constant sales may afford to pay greater fixed charges and take on more debt. Because of their consistent demand, utility companies have generally been able to use more financial leverage than industrial corporations (Gautam & Thapa, 2004).

Profitability

It's well knowledge that companies with extremely high rates of return on investment employ comparatively low levels of debt. Although there is a theoretical explanation for this, it appears that very successful companies like IBM and KODAK can get by without doing much debt financing. They are able to finance the majority of their operations mostly from retained earnings due to their greater rates of return.

Growth Rate

If all else stays the same, faster-growing companies tend to rely more on outside funding. Moreover, the floatation expenses related to debt sales are lower than those

of ordinary stock sales. Therefore, in order to reduce financing expenses, fast-growing enterprises typically take on a little bit more debt than slower-growing ones (Barges, 2009).

Taxes

Dividends are not deductible, although interest is. Hence, the benefit of employing debt increases with a company's corporate tax rate.

Controls

When raising money, a management that is worried about control could rather issue debt than (voting) common stock. A company may sell non-voting equity shares or make a preemptive sale, allowing each shareholder to retain proportionate ownership, if certain conditions are met. Typically, a substantial worry in the process of deciding on capital structure arises only in closed-held companies or companies that are in danger of being taken over (Bhattarai, 2005).

Market Condition

Long- and short-term fluctuations in the stock and market environment can have a significant impact on a company's ideal capital structure. For instance, there was just no market for new long-term bonds at any "reasonable" interest rate during the credit crunch in the winter of 1982. When a low-rated company needed money, it had little choice except to go to the stock or short-term debt markets. Such actions are short detours from aims rather than long-term modifications to the desired capital structure.

Lenders and Rating Agency Attitude

The attitudes of lenders and rating agencies are undoubtedly significant variables in determining financial structure, even when managers analyze the appropriate leverage ratios for their companies. Most of the time, the company talks to lenders and rating agencies about its financial structure and takes their advice very seriously. However, when management is so optimistic about the future that it aims to employ leverage above and above what is customary for its sector. Such debt increases may not be accepted by lenders, or they may only be accepted at a steep cost (Pandey, 2003).

Management Attitude

Management is free to use its own discretion when determining the best capital structure to use if there is no evidence that one will result in a better stock price than another. Certain management styles lean more conservatively than others, using less debt relative to the industry norm; for other management styles, the opposite is true.

The Firm's Internal Condition

The target capital structure of a company may also be impacted by its internal circumstances. Let's say, for instance, that a company has just finished a successful R&D program and anticipates increased profits soon. Nevertheless, investors have not yet priced in the new earnings, which is why the stock price does not reflect them. This firm would like to finance itself with debt rather than issue stock until its greater earnings become apparent and are reflected in the stock price. At that point, it may choose to sell its common stock, pay off its debt, and revert back to its ideal capital structure (Bhattarai, 2005).

Cash Flow

When contemplating a new capital structure, the company's primary focus should be on ensuring it can produce the required cash flows to cover its obligations. Any change in the capital structure must be supported by a cash forecast that shows the ability to pay down debt and preferred shares.

Contractual Obligation

Contractual restrictions may apply to the kind or source of cash that a company is able to raise in the future. A document that outlines the terms of a previous bond issue, for instance, can forbid the company from selling more debt unless the holders' interests are made subordinate to the debt that already exists. There may also be contractual restrictions on the ability to distribute stock dividends and sell new stock (Gautam & Thapa, 2004).

Timing

In a volatile market, timing decisions must be made based on anticipated developments. In the event that the company's equity stock price is now low but is anticipated to increase in response to improved performance and/or positive market

developments. Utilizing debt financing initially and equity financing thereafter could be beneficial. However, in the event where the equity stock price of the company is balanced, it might be preferable to use equity financing initially and debt financing afterwards. These variables should be taken into account while formulating a financing goal regarding debt and shares. The company's management may decide to set its capital structure close to the top of such ranges in order to take full use of advantageous leverage. For further information, subject to the additional requirements listed below (Pandey, 2003).

- **Profitability:** A corporation should have the most advantageous capital structure. Leverage should be used as much as possible at the lowest possible cost given the limitations.
- **Solvency:** The company's solvency is threatened by the usage of excessive debt. If debt does not pose a substantial risk, it should be utilized; if not, it should be avoided.
- **Flexibility:** The capital structure shouldn't be rigid in order to accommodate evolving circumstances. If a scenario warrants it, a company should be able to implement its capital structure with the least amount of expense and delay necessary. Additionally, the business should be able to supply money as needed to support its lucrative endeavors.
- **Capacity:** The company's debt capacity should be taken into consideration while determining the capacity structure, and it should not be exceeded. The ability of a business to create cash flows determines how much debt it can take on. It ought to possess sufficient funds to cover interest and principal payments to creditors.
- **Control:** The capital structure should have the lowest possible risk of losing the company's control. Dilution of control is a significant worry for closely held company owners. The general characteristics of a suitable capital structure are as follows. Certain extra specific aspects may be reflected in a company's unique characteristics. When the company is first being promoted, it will need to plan its capital structure. Consequently, a capital structure decision is needed whenever money needs to be raised for financial investment.

2.1.5 Company Profitability

This is an effect or outcome of the business operations of the company, and the performance and profit of the company are directly related to the management of different financial resources and the effective use of those resources in the financing, investment, and operational activities. Since every company wants to maximize its profit, profitability has always been ranked first in the literature on finance and accounting. This is because it is the main objective of financial management. In fact, getting the best return on investment for stockholders is thought to be a moral imperative (Jensen, 2002).

Only a very lucrative business can provide its owners with a substantial return on their investment; an unprofitable business cannot endure. The ability of a business to make money is known as profitability, while the absence of income is known as a loss. Additionally, he claims that if income is created more than input costs, it is simply profitable, but if income is less than input costs, it indicates subpar performance (Hall & Weiss, 1967).

The effectiveness of businesses is crucial for stakeholders, investors, and the economy as a whole. A profitable firm can yield significant long-term profits for investors, who place a high value on the return on their investment. Increased financial profitability for a company can lead to higher employee wages, higher-quality products for customers, and more environmentally friendly production facilities. Additionally, increased profit will raise people's incomes and create job chances.

2.1.6 Theories of Capital Structure

The theories that are reviewed in this study are: the Modigliani and Miller (MM) theory, trade off theory, agency cost theory and peaking order theory.

2.1.6.1 Trade-Off Theory

According to the trade-off theory of capital structure, a business weighs the costs and advantages of using different levels of debt and equity financing to choose how much of each to employ. The traditional version of the theory took into account striking a balance between the tax benefits of debt and the deadweight costs of bankruptcy. It

claims that there are costs associated with financing with debt, such as the expenses of financial difficulty, as well as benefits associated with debt, such as tax advantages (Kraus & Litzenberger, 1973).

Anticipated expenses linked to financial difficulties significantly reduce a company's worth, acting as a counterbalance to the tax benefits of taking on more debt. Conversely, there is a claim that capital is extremely expensive. In order to offset the higher bankruptcy risk linked to the likelihood of financial difficulties and a correspondingly low capital ratio, investors seek a premium. Commercial banks must take on greater risk in order to earn a larger risk premium on their investments in order to produce a "adequate" return on equity. This risk premium increases as capital levels rise. Therefore, in order to avoid an inefficient cost of capital, more risk calls for higher percentages of equity in the company's capital structure. It is unclear what the buffer effect and this negative incentive effect will ultimately result in. It's feasible that when capital levels rise, the default risk will rise as well (Brealey & Myers, 2003).

2.1.6.2 Pecking Order Theory

Myers and Majluf (1984) introduced the pecking order hypothesis, which is predicated on the idea of asymmetric information. It makes the case that managers are more knowledgeable than outside investors about the potential, dangers, and worth of their organization. In this instance, management's selection of a capital source that accords greater weight to sources that disclose the least amount of information influences the capital structure decision. The decision to issue debt or stock and to choose between internal and external finance is thus influenced by asymmetric information. When management decides to issue fresh shares to fund a new project, external investors may see this as a signal that the company is overpriced, which could lead to a decline in the share price and a reduction in the firm's value (Brigham & Erhhardt, 2005). Conversely, fresh debt is seen as a positive indication of the company's future potential.

According to the theory, there is a hierarchy or sequence for financing new initiatives. Businesses would rather employ retained earnings, or internal finance, first and external funding second. Retained earnings don't come with flotation fees and don't

need outside oversight from the capital source. This theory, which takes a behavioral approach to capital structure, is predicated on the idea that finance decisions are made in a way that makes management's job easier and less complex. It is common for managers to take the path of least resistance and finance their operations at the lowest possible cost. Pecking order theory predicts that highly profitable organizations will be less leveraged than less profitable firms because they will have more internal funds available as retained earnings to finance their deficits (Shyam-Sunder & Myers, 1999). A company that requires outside funding will turn to debt rather than stock since debt is thought to be less expensive than equity. As a result, changes in a company's debt ratio are determined by its requirement for outside funding rather than by its desire to achieve the ideal capital structure.

2.1.6.3 Modigliani and Miller (MM) Theory

The groundbreaking research on capital structure done by Modigliani and Miller in 1958 served as a foundation for the construction of the theoretical framework that would eventually house a number of different ideas related to corporate finance. The well-known idea of "capital structure Irrelevance," which holds that financial leverage has no bearing on a firm's value, was reached by Modigliani and Miller in 1958. Their hypothesis, however, was predicated on extremely narrow premises that are untrue in practice. These presumptions include ideal capital markets, homogeneous expectations, no taxes, and no transaction costs. The concept of a "optimal" capital structure, which optimizes the firm's worth and hence lowers its overall cost of capital, is brought about by the existence of bankruptcy costs and tax advantages associated with interest payments.

In 1958, Modigliani and Miller reexamined their previous stance by including tax benefits as factors influencing a firm's capital structure. The fact that interest is a tax-deductible expense is the main characteristic of taxes. A company that pays taxes gets a "tax-shield" in the form of decreased taxes paid, which partially offsets the interest. Therefore, Modigliani and Miller (1963) suggested using as much loan capital as possible to boost profitability and thereby optimize enterprises' value.

2.1.6.4 Agency Cost Theory

According to agency theory, a firm is a "nexus of contracts" made up of several resource providers. The two main players in agency theory are agents, who run the day-to-day operations of the company, and principals, who provide funding. The organization incurs agency costs because the agents' interests aren't always the principal's. These costs include the cost of keeping an eye on agents' behavior, which includes budgetary constraints, pay policies (such as stock options, bonuses, and other incentives), and the loss of earnings as a result of operating regulations and management limits.

The expenses of sub-optimal decisions described as choices that are made with the interests of agents rather than principals as well as the bonding costs of the agents are also included. According to agency theory, managerial decisions in the modern firm, whose share ownership is widely held, deviate from those necessary to maximize returns to shareholders (Berle & means 1932; Pratt & Zeckhauser, 1985). Agency theory outlines ways to minimize agency loss, such as manager incentive programs that pay them for maximizing the interests of shareholders.

2.2 Empirical Review

2.2.1 Review in International Context

Yensu et al. (2024) investigated how does capital structure impact on profitability of listed firms of Ghana stock exchange? The primary objective of the research were to precisely examine the capital structures of a subset of the listed companies, determine the correlation between capital structure and profitability, and explore the impact of capital structure on the profitability of the listed companies in Ghana. The study used regression and correlation analysis to achieve its objectives. The correlation study's findings showed a strong positive relationship between equity and both ROA and NPM. However, there was a negative correlation found between profitability and long-term debt. The regression analysis predicts that when long-term debt rises, ROCE, ROA, and NPM would all decrease. An increase in equity will cause ROA and NPM to grow.

Huong (2023) investigated effect of capital structure on the profitability of plastic and packaging companies listed in Vietnam. Analysis of the effect of capital structure on

the profitability of plastic and packaging companies listed on the Vietnam Stock Exchange was the main objective of the study. Both qualitative (synthetic methods, statistical methods, descriptive methods, inductive and interpretive methods) and quantitative (linear regression methods) research techniques were used in this study. This study discovered that the short-term debt ratio (STD) and the long-term debt ratio (LTL), two independent variables that reflect a capital structure, have a significant impact on the profitability of businesses. Based on the study's findings, the author provides financial solution ideas meant to increase businesses' profitability along with a number of debates and evaluations on the crucial function that capital structure adjustments play for plastic and packaging industries.

Ngoc et al. (2022) examined the impact of capital structure on financial performance of logistic service providers listed on Ho Chi Minh City Stock Exchange. This article's primary objective was to ascertain how capital structure affected the financial performance (measured by ROA and ROE) of logistics companies listed on HOSE between 2012 and 2019. utilizing a quantitative approach (using models of Pool OLS, FEM, REM, and FGLS) and data from 30 logistics companies registered on HOSE between 2012 and 2019. According to this study, debt to assets significantly reduced ROA. On the other hand, liquidity and tangibilty significantly increased ROA. Additionally, this study discovered that tangibility, growth, and debt to assets all had little positive effects on ROE. However, the companies' ROE was negatively impacted by their size and liquidity. Thus, the study's findings demonstrated that capital structure has a detrimental effect on profitability.

Ayange et al. (2021) analyzed effect of capital structure on firm’s performance in Nigeria. This study looked at the impact of capital structure metrics on the performance of Nigerian manufacturing firms. Using annualized panel data for fifteen listed companies from various sectoral groupings between 1999 and 2018. excluding the financial institutions because of the special nature of their capital structure and the stringent legislative constraints imposed on their options for funding. The non-financial firms are the subject of this investigation. The firm's market and book values are measured by capital structure. The findings show that while ROA has a negative impact on LDTA, D/E, and TDTA, performance proxy measured by ROE and Tobin's Q strongly influences SDTA, SIZE, LDTA, and TDTA. When compared to other

book values, the results showed a strong correlation between Tobin's Q and financial performance. A more accurate indicator of performance throughout the review period is Tobin's Q. According to the study, Nigerian businesses are eager to finance themselves with short-term debt, which validates the Pecking Order Theory. It's important to remember that the impact of capital structure on company performance cannot be adequately explained by a single hypothesis.

Rahman et al. (2019) examined the impact of capital structure on the profitability of publicly traded manufacturing firms in Bangladesh. This study looked at how capital structure affected Bangladeshi publicly traded manufacturing companies' profitability. In order to determine the association between the independent variables (debt ratio, equity ratio, and debt to equity ratio) and the dependent variables (return on asset, return on equity, and earnings per share), this study used fixed effect regression. From 2013 to 2017, a sample of 50 observations from ten manufacturing companies that were chosen and listed on the Dhaka Stock Exchange were examined. According to this study, ROA was significantly impacted positively by both the debt and equity ratios, but negatively by the debt to equity ratio. This analysis also reveals that while the debt to equity ratio significantly lowers ROE, the equity ratio significantly increases it. Lastly, the debt to equity ratio significantly reduces earnings per share. The research's conclusions will support listed manufacturing companies in maintaining an ideal capital structure, which will maximize stockholder wealth.

Mouna et al. (2019) examined the impact of capital structure on firm’s performance in Morocco. The primary objective of the study was to find out how capital structure affected Moroccan enterprises' performance. The fixed effect model was used to analyze the link between capital structure and firm performance because it fit the first model better based on the Haussmann test results. The annual data, which spans three years from 2014 to 2016 and includes 53 Moroccan companies, was gathered from the official websites of the Casablanca Stock Exchange and the Moroccan Authority of Capital Market. Three explanatory variables were found to have a significant effect in the research results: size had a significant positive impact on firm performance using return on equity (ROE) as a proxy; debt ratio (DR) had a negative significant impact on return on asset (ROA); and debt equity ratio (DER) had a negative and significant impact on return on equity (ROE). Because Moroccan companies had very high

financial risk, their profitability decreased as their level of leverage increased. This meant that decreasing external financing was necessary to improve their financial performance, as the trade-off theory which assumed a positive relationship between capital structure and firm performance was rejected.

Kalyani and Mathur (2018) examined impact of capital structure on profitability: with reference to select companies from oil and natural gas industry of India. The primary objective was to determine how a firm's capital structure affected its overall profitability. For this study, financial data from seven selected companies that are listed on the NSE and BSE between 2005 and 2015 was used. In this study, the non-random sampling method known as judgment sampling was used to choose the sample. The functions linking to profitability as determined by return on assets and net profit ratio with capital structure metrics were estimated using correlations and regression analysis. Log sales, the amount of operating leverage, and asset growth are important factors in determining profitability when ROA and log assets are the dependent variables. The study also found that the degree of financial leverage, log sales, the amount of operating leverage, and asset growth have a significant relationship with the net profit ratio of the chosen companies from India's oil and gas industry.

Olusuyi and Felix (2017) analyzed the effect of capital structure on the financial performance of manufacturing firms in Nigeria. The impact of capital structure on the financial performance of Nigerian manufacturing companies was examined in this study. Ten manufacturing enterprises that were sampled used the secondary data from the published annual reports for the years 2008-2014 as their primary source of data. Panel data was used to assess the relationship between capital structure and financial performance. Returns on equity and return on assets were used to gauge financial performance, and the debt-to-equity ratio, asset turnover, and age of the company were used to gauge capital structure of the manufacturing firms in the sample. Multiple regression analysis was performed in this study to examine the data. This study found that the age of the firm had a negative, insignificant effect on the financial performance of the sampled manufacturing firms as measured by return on assets. In addition, asset turnover had a positive and significant effect on financial performance. Finally, the debt-to-equity ratio had a negative, statistically significant

effect on financial performance. The study did find, however, that the age of the firm had a negative but statistically significant effect on the financial performance of the sampled manufacturing firms as measured by return on equity, and that the debt-equity ratio had a positive but insignificant effect on financial performance. Additionally, asset turnover had a positive but significant effect on financial performance.

Anarfo and Appiahene (2016) examined the impact of capital structure on banks profitability in Africa. This study looked into how capital structure affected African banks' profitability. The Debt Ratio (DR) was used in the study as a measure of capital structure using dynamic panel regression robust analysis and data from 37 SSA countries; banks' profitability was assessed using Risk Adjusted Return on Asset (RAROA), Risk Adjusted Return on Equity (RAROE), and Net Interest Margin (NIM). According to the research, banks' capital structures influence their profitability. The profitability of banks is also highly influenced by other factors such as size, growth, physical assets, taxation, and interest rate.

Revathy and Santhi (2016) analyzed impact of capital structure on profitability of manufacturing companies in India. In order to determine the hypothesised relationship between capital structure variables and profitability, this study looked at the effect of capital structure on the profitability of Indian manufacturing companies. It also attempted to determine how much a company's revenue is affected by its capital structure variables. After dividing the chosen manufacturing enterprises into three groups according to two characteristics stages and period this study is conducted. First, manufacturing companies are divided into three stages: pioneering, growth, and consolidation. Secondly, these companies are categorized as pre- and post-merger. The purpose of this study is to verify the hypothesis that the profitability of Indian manufacturing companies was significantly impacted by capital structure characteristics. Multi-stage sampling approaches were used to choose a sample of seventy organizations. Multiple regression analysis was performed in this study to examine the data. The study finds that the capital structure variable and profitability have a strong one-to-one relationship, and that an increase in the debt-to-equity ratio has an adverse effect on the profits of manufacturing companies listed on the Indian Bombay Stock Exchange.

Ramadan and Ramadan (2015) investigated capital structure and firm's performance of Jordanian manufacturing sector. The purpose of this study was to determine how capital structure affected the performance of Jordanian industrial companies listed on the Amman Stock Exchange between 2005 and 2013. The study was conducted on all 72 Jordanian industrial companies that were listed at ASE as of December 2013. The imbalanced cross sectional pooled Ordinary Least Square (OLS) regression model was employed in order to accomplish the current study's goal. Pecking-order theory, which states that there is an inverse relationship between borrowing and a company's profitability, is consistent with the study's findings, which indicated a statistically significant inverse effect of capital structure, as expressed by long-term debt to capital ratio, total debt to capital ratio, and total debt to total assets ratio, on the performance of the Jordanian industrial companies listed at ASE as expressed by return on asset ratio (ROA). This means that the most profitable companies rely less on borrowing to finance their cash needs.

Table 1

Summary of Empirical Review in International Context

S.N.	Author/ Date	Title	Objective	Methodology	Major Findings
1	Yensu, J., Asumadu, G., Atuilik, D. A., & Peprah, E. O. (2024).	How does capital structure impact on profitability of listed firms of Ghana stock exchange?	The main objective of the study was to specifically analyze the capital structure of selected listed companies	In order to accomplish its goals, the study used regression and correlation analysis.	The correlation study's findings showed a strong positive relationship between equity and both ROA and NPM. However, there was a negative correlation found between profitability and long-term debt.
2	Huong, H. D. (2023).	Effect of capital structure on the profitability of plastic and packaging companies listed in Vietnam.	The study aimed to analyze the impact of capital structure on the profitability of plastic and packaging companies listed on the Vietnam Stock Exchange.	This study used statistical methods, description; inductive, interpretive methods and linear regression methods.	This study discovered that the long-term debt ratio (LTL) and the short-term debt ratio (STD) are two independent factors that indicate a capital structure that significantly influences the profitability of businesses.
3	Ngoc, N. M., Tien, N. H., & Thu, T. H.	The impact of capital structure on	The main research objective of this article was to	This study used quantitative method (with	According to this study, debt to assets significantly reduced ROA. However, ROA was significantly improved by

	(2022).	financial performance of logistic service providers listed on Ho Chi Minh City Stock Exchange.	determine the impact of capital structure on financial performance (ROA and ROE) of logistics enterprises listed on HOSE.	models of Pool OLS, FEM, REM and FGLS).	tangibility and liquidity. Additionally, this study discovered that tangibility, growth, and debt to assets had negligible beneficial effects on ROE. However, the companies' ROE was negatively impacted by their size and liquidity.
4	Ayange, A., Emmanuel, N. C., Rosemary, I. H., Ndudi, U. C., & Samuel, U. E. (2021).	Effect of capital structure on firms performance in Nigeria.	This study examined capital structure measures on manufacturing firm's performance in Nigeria.	This study used the multiple regression analysis to analyze the data.	The findings showed that while ROA has a negative impact on LDTA, D/E, and TDTA, performance proxy measured by ROE and Tobin's Q strongly influences SDTA, SIZE, LDTA, and TDTA. When compared to other book value, the results showed a strong correlation between Tobin's Q and financial performance.
5	Rahman, M. A., Sarker, M. S. I., & Uddin, M. J. (2019).	The impact of capital structure on the profitability of publicly traded manufacturing firms in Bangladesh.	This research explored the impact of capital structure on the profitability of publicly traded manufacturing firms in Bangladesh.	This study applied the fixed effect regression to find out the correlation among independent variables and dependent variables	According to this study, ROA was significantly impacted positively by both the debt and equity ratios, but negatively by the debt to equity ratio. This analysis also reveals that while the debt to equity ratio significantly lowers ROE, the equity ratio significantly increases it. Lastly, the debt to equity ratio significantly reduces earnings per share.
6	Mouna, A., Jianmu, Y., Havidz, S. A. H., & Ali, H. (2019).	The impact of capital structure on Firms performance in Morocco.	The main objective of study was to investigate the impact of capital structure on firm's performance in Morocco.	Based on the result of Haussmann test, fixed effect fit the first model to analyze the data.	Using return on equity (ROE) as a proxy, the research findings indicated that size had a positive significant impact on firm performance and that the debt ratio (DR) had a negative significant impact on return on asset (ROA), the debt equity ratio (DER) had a negative and significant impact on return on equity (ROE), and the research findings indicated a significant effect of all three explanatory variables.
7	Kalyani, S., & Mathur, N. (2018).	Impact of capital structure on profitability: With reference to select	The main objective was to find out impact of capital structure on overall profitability of a firm.	The correlations and regression analyses were used to estimate the functions	The study discovered that when ROA and log assets are used as dependent variables, the degree of financial leverage, log sales, degree of operating leverage, and growth of asset have a significant relationship with the net profit ratio of the chosen

		companies from oil and natural gas industry of India.		relating to profitability and capital structure.	firms. These factors are important in determining profitability.
8	Olusuyi, A. E., & Felix, A. E. (2017).	The effect of capital structure on the financial performance of manufacturing firm's in Nigeria (2008-2014).	This research work investigated the effect of capital structure on the financial performance of manufacturing firms in Nigeria.	This study used multiple regression analysis to analyze the data.	The results of this study showed that the age of the company had a negative, insignificant effect on the financial performance of the sampled manufacturing firms as measured by return on assets. In addition, asset turnover had a positive, significant effect on financial performance. The debt-to-equity ratio had a negative, statistically significant effect on financial performance.
9	Anarfo, E. B., & Appiahene, E. (2016).	The impact of capital structure on banks' profitability in Africa.	This study looked into how capital structure affected African banks' profitability.	Using data from 37 SSA countries and dynamic panel regression robust analysis	The study found that banks' profitability is impacted by their capital arrangements. Other significant determinants of bank profitability are size, growth, physical assets, taxation, and interest rates.
10	Revathy, S., & Santhi, V. (2016).	Impact of capital structure on profitability of manufacturing companies in India.	This study examined the impact of capital structure on profitability of the manufacturing companies in India.	This study used multiple regression analysis to analyze the data.	The study discovered that the capital structure variable and profitability had a strong one-to-one relationship, and that an increase in the debt-to-equity ratio had an adverse effect on the profits of the Indian manufacturing companies listed on the Bombay Stock Exchange.
11	Ramadan, Z. S., & Ramadan, I. Z. (2015).	Capital structure and firm's performance of Jordanian manufacturing sector.	This study aimed to identify the effect of capital structure on the performance of the industrial Jordanian Companies listed on Amman Stock Exchange	In order to achieve the objective of the current study the unbalanced cross sectional pooled Ordinary Least Square (OLS) regression model was used.	The study's findings demonstrated a statistically significant unfavorable relationship between capital structure and the performance of Jordanian industrial companies listed at ASE. This relationship was measured by three different ratios: long-term debt to capital, overall debt to capital, and total debt to total assets.

2.2.2 Review in National Context

Thapa et al. (2023) analyzed impact of capital structure on the profitability of manufacturing companies in Nepal: a case study of Sarbottam cement Nepal. Using Sarbottam Cement Nepal as a case study, the study examined the effect of capital structure on the profitability of manufacturing firms in Nepal. In this study regression analysis was conducted to look at the connections between these factors. The debt-to-assets and debt-to-equity ratios did not significantly affect return on equity, according to the results of the regression study. In the same way, the return on assets was not substantially impacted by these ratios. Additionally, there were no statistically significant correlations found between liquidity and size and return on assets and return on equity. There was no discernible correlation between the independent variables and the profitability indicators of the Sarbottam Cement manufacturing company.

Bashyal and Bhandari (2023) analyzed dffect of capital structure on financial Performance of insurance companies in Nepal. The main objective of the study was to quantify the effect of capital structure on the financial performance of insurance companies in Nepal. The data were analyzed using three models: pooled OLS, random effect, and fixed effect. Descriptive statistics, Pearson & correlation analysis, and multiple regression models were also used in the study. After the model diagnostic, the random effect model was found to be a fitted model using the Eviews-12 program. The regression model indicated that ROA was statistically considerably and positively impacted by ETTA, while ROA was statistically significantly and negatively impacted by TDR. Conversely, ROA was positively and statistically insignificantly impacted by business size. The negligible Assets tangibility result suggests that Assets tangibility cannot be considered an important determinant for Insurance performance. Insurance profitability is thereby increased by strong insurance companies and wide financial success. The analysis concluded that asset tangibility, leverage, and equity to total assets all affected the financial performance of insurance companies in Nepal.

Chalise and Adhikari (2022) analyzed the impact of capital structure and firm size on financial performance of commercial banks in Nepal. The purpose of this study was to investigate how Nepalese commercial banks' financial performance was affected by

their capital structure and company size. The study included secondary sources of data with a sample of 14 commercial banks that included government-owned, joint venture, and private banks throughout the years 2013/2014–2018/2019. Functions linking the Return on Assets (ROA) and Earnings per Share (EPS) with indicators of capital structure and business size (total assets) were derived using regression analysis. The findings showed that ROA and EPS had a negative relationship with capital structure (debt/equity). On the other hand, it demonstrated that ROA and EPS increased with size (total assets). The results offered proof for the high-level equity capital used in Nepalese commercial banks' capital structures.

Oli (2021) analyzed financial leverage and performance of Nepalese commercial banks. This study used secondary sources to analyze data from 20 Nepalese commercial banks from 2011–12 and 2016–17, specifically focusing on return on assets, net profit margin, and earnings per share. To evaluate the impact of leverage on the bank's performance, OLS regression models are estimated. The results of the study showed that while board size and Tobin's q had a negative relationship with return on assets, the debt to assets ratio, long term debt ratio, debt to equity ratio, interest coverage ratio, and liquidity ratio had a positive relationship with return on assets, net profit margin, and earning per share. Similarly, there was a positive correlation between net profit margin and earnings per share and the debt to assets ratio, debt to equity ratio, interest coverage ratio, and board size. On the other hand, net profit margin and earnings per share are negatively impacted by long-term debt ratio, debt to equity ratio, bank size, and Tobin's q. The study also revealed that the interest coverage ratio has the greatest impact on return on assets, and that it is followed by the debt to equity, debt to assets, and liquidity ratios.

Timilsina (2020) investigated determinants of capital structure in Nepalese commercial banks. This study looked at the variables affecting the capital structure of Nepalese commercial banks. In order to investigate the significance and impact of characteristics unique to individual banks on the capital structure of commercial banks in Nepal, regression models and Pearson's correlation coefficients are computed. The results showed that there is a negative correlation between total debt to total assets and return on assets, asset growth, and liquidity; nevertheless, there is a positive correlation between bank size and asset tangibility. The relationship between

total debt to total equity, return on assets, bank size, asset tangibility, asset growth, and liquidity is also negatively correlated.

Bhatt and Jain (2020) investigated capital structure and profitability of commercial banks in Nepal. The purpose of this study was to investigate the connection between the Nepalese commercial banks' profitability and capital structure. Return on Equity served as a measure of profitability, and the control variables of bank size and asset growth were combined with short- and long-term debt, deposits, and the ratio of total debt to assets as a stand-in for capital structure. Multiple regression analysis and correlation were utilized in this study to examine the data. The results showed that about 40 percent of the bank performance as measured by return on equity could be anticipated by the explanatory capital structure characteristics. Furthermore, it was demonstrated that return on equity had a negligibly negative relationship with total debt and short-term debt but an insignificantly positive association with deposits and long-term debt. All regression models showed a significant positive correlation between profitability and bank size, indicating that larger banks would provide a higher return to shareholders.

Bhattarai (2020) investigated effects of capital structure on financial performance of insurance companies in Nepal. The study looked at how capital structure affected Nepali insurance firms' financial results. Information was gathered from the websites of the corresponding insurance firms' annual reports. 14 Nepalese insurance firms' panel data from 2007–08 to 2015–16 yielded 126 observations in total. Three models were used to examine the data: fixed effect, random effect, and pooled OLS. The dependent variable in this study is return on assets, whereas the independent factors are company size, leverage, equity to total assets, liquidity ratio, and assets tangibility. As a consequence, it was determined that the ratio of equity to total assets, leverage, and the tangibility of assets all affected the financial performance of insurance businesses in Nepal.

Jaishi and Poudel (2019) investigated capital structure and firm efficiency of non-financial institutions in Nepal. The study looked at the connection between non-financial companies' efficiency and leverage in Nepal. The basic structure of leverage and efficiency, as well as their relationship, were examined in this study using both a

descriptive and informal research design. The study used secondary data, which were taken from the annual reports of the relevant companies and included 60 observations spread between two to fourteen years. Regression analysis and descriptive analysis were both utilized to evaluate the relationship between the variables. To test the hypothesis, many models were employed. Higher leveraged enterprises were inefficient, while lower leveraged firms are more productive. The expansion of non-financial institutions in Nepal, their investment in intangible assets, and their profitability do not always translate into increased productivity. The hypothesis that increased investment in tangible assets boosts a firm's efficiency is supported by the positive association between tangibility and efficiency. The main finding of this study was that the key variables influencing the efficiency and leverage of non-financial Nepalese enterprises were size, tangibility, profitability, and growth. Higher leveraged enterprises are inefficient, while lower leveraged firms are more productive.

Dhodary (2019) analyzed determinants of capital structure on trading and manufacturing enterprises: a case of Nepal. The primary objective of this study was to investigate the factors that influence capital structure in Nepalese manufacturing and trading companies. Secondary sources provided the data that were needed to complete the study. Financial information for ten fiscal years, from F/Y 2005/2006 to F/Y 2015/2016, for each enterprise. The study came to the conclusion that the main factors influencing corporate capital structure in Nepalese trading and manufacturing companies are asset tangibility, profitability, liquidity, and interest coverage ratio.

Pokharel (2016) examined capital structure and corporate performance: a case of Nepalese commercial bank. The purpose of this study was to analyze the factors related to capital structure that affect the financial performance of Nepal's commercial banks. The 133 observations from a pooled cross-sectional data analysis of 19 commercial banks registered in NEPSE between 2007 and 2008 form the basis of this study. This study used correlation and regression analysis to look at the data. The analysis found that while credit risk was favorably correlated with returns on assets, the ratios of total debt to total assets, long-term debt to total assets, short-term debt to total assets, and size were all adversely correlated with returns on assets. The results of this study showed that while size and credit risk had a favorable and significant impact on company performance, the ratios of total debt to total assets, long term debt

to total assets, and short term debt to total assets all had a negative impact on performance. Accordingly, this study came to the conclusion that, in the context of Nepal, the two main determinants influencing the financial performance of commercial banks are size and credit risk.

Table 2

Summary of Empirical Review in National Context

S.N.	Author/ Date	Title	Objective	Methodology	Major Findings
1	Thapa, A., Thapa, D. M., & Khadka, D. M. (2023).	Impact of capital structure on the profitability of manufacturing companies in Nepal: A case study of Sarbottam cement Nepal.	The study investigated the impact of capital structure on the profitability of manufacturing companies in Nepal.	Regression analysis was employed to examine the relationships between these variables.	The debt-to-assets and debt-to-equity ratios did not significantly affect return on equity, according to the results of the regression study. In the same way, the return on assets was not substantially impacted by these ratios. Additionally, there were no statistically significant correlations between liquidity and size and return on assets and return on equity.
2	Bashyal, J., & Bhandari, N. (2023).	Effect of Capital Structure on financial Performance of insurance companies in Nepal.	The main objective of the study was to quantify the effect of capital structure on the financial performance of insurance companies in Nepal.	Descriptive statistics, Pearson & correlation analysis, and multiple regression models were also used in the study	The regression model indicated that ROA was statistically considerably and positively impacted by ETTA, while ROA was statistically significantly and negatively impacted by TDR. Conversely, ROA was positively and statistically insignificantly impacted by business size. The negligible assets tangibility result suggests that assets tangibility cannot be considered an important determinant for Insurance performance.
3	Chalise, D. R., & Adhikari, N. R. (2022).	The impact of capital structure and firm size on financial performance of commerci	The purpose of this study was to investigate how Nepalese commercial banks' financial performance was affected by their capital structure and	The estimation of functions related capital structure and profitability was done using	The findings showed that ROA and EPS had a negative relationship with capital structure (debt/equity). On the other hand, it demonstrated that ROA and EPS increased with size (total assets). The results offered proof for the high-level equity capital used in

		al banks in Nepal.	company size	regression analysis.	Nepalese commercial banks' capital structures.
4	Oli, S. K. (2021).	Financial leverage and performance of Nepalese commercial banks.	This study examined the determinants of return on assets, net profit margin, and earnings per share in Nepalese commercial banks	The OLS regression models are estimated to test the significance and importance of leverage on the bank's performance.	The results of the study showed that while board size and Tobin's q had a negative relationship with return on assets, the debt to assets ratio, long term debt ratio, debt to equity ratio, interest coverage ratio, and liquidity ratio had a positive relationship with return on assets, net profit margin, and earning per share.
5	Bhattarai, B. P. (2020)	Effects of capital structure on financial performance of insurance companies in Nepal.	The study looked at how capital structure affected Nepali insurance firms' financial results.	Three models were used to examine the data: fixed effect, random effect, and pooled OLS.	The result concluded that the ratio of equity to total assets, leverage, and the tangibility of assets all affected the financial performance of insurance businesses in Nepal.
6	Bhatt, S., & Jain, S. (2020).	Capital structure and profitability of commercial banks in Nepal.	The purpose of this study was to investigate the connection between the Nepalese commercial banks' profitability and capital structure	Multiple regression analysis and correlation were utilized in this study to examine the data	The results showed that about 40 percent of the bank performance as measured by return on equity could be anticipated by the explanatory capital structure characteristics. Furthermore, it was demonstrated that return on equity had a negligibly negative relationship with total debt and short-term debt but an insignificantly positive association with deposits and long-term debt.
7	Timilsina, L. P. (2020).	Determinants of capital structure in Nepalese commercial banks.	This study looked at the variables affecting the capital structure of Nepalese commercial banks	The influence and relevance of bank-specific factors on the capital structure are evaluated using regression models and Pearson's correlation coefficient estimates.	The results showed that there was a negative correlation between total debt to total assets and return on assets, asset growth, and liquidity; nevertheless, there is a positive correlation between bank size and asset tangibility. The relationship between total debt to total equity, return on assets, bank size, asset tangibility, asset growth, and liquidity is also negatively correlated.
8	Dhodary, S. (2019).	Determinants of capital	This study mainly aimed at	This study used multiple	The study discovered that the primary factors influencing

		structure on trading and manufacturing enterprises: A case of Nepal.	examining the determinants of capital structure in Nepalese trading and manufacturing firms.	regression analysis to analyze the data.	corporate capital structure in Nepalese trading and manufacturing enterprises are asset tangibility, profitability, liquidity, and interest coverage ratio.
9	Jaishi, B., & Poudel, R. L. (2019).	Capital structure and firm efficiency of non financial institutions in Nepal. .	The study examined the relationship between leverage and efficiency of non-financial firms in Nepal.	Descriptive as well as regression analysis was used to assess the relationship among the variables.	The main finding of this study was that the key variables influencing the efficiency and leverage of non-financial Nepalese enterprises were size, tangibility, profitability, and growth. Higher leveraged enterprises are inefficient, while lower leveraged firms are more productive.
10	Pokharel, K. (2016).	Capital structure and corporate performance: A case of Nepalese commercial banks.	The purpose of this study was to analyze the factors related to capital structure that affect the financial performance of Nepal's commercial banks	This study used correlation and regression analysis to look at the data.	The analysis found that while credit risk was favorably correlated with returns on assets, the ratios of total debt to total assets, long-term debt to total assets, short-term debt to total assets, and size were all adversely correlated with returns on assets. The results of this study showed that while size and credit risk had a favorable and significant impact on company performance.

2.2.3 Review of Previous Thesis

Maharjan (2023) examined capital structure of commercial banks in Nepal. This research set out to examine the capital structure and how it affected the NABIL, HBL, SBL, SRBL, and SANIMA's profitability. The publicly available annual reports of the chosen commercial banks are where the data is gathered. Descriptive analysis, correlation analysis, and multiple regression analysis were used in this study. According to the study, there is a significant positive relationship between bank size and profitability (ROA and ROE). However, there is a significant detrimental impact of capital adequacy ratio on ROE and ROA. On the other hand, the debt to equity ratio has a significant positive effect on the banks' ROE but a little positive impact on their ROA. This study concludes, in summary, that the main determinants influencing

the capital structure and profitability of the Nepalese commercial banks are bank size, capital adequacy ratio, and debt to equity ratio.

Lamichhane (2022) researched impact of capital structure on firm's profitability of listed manufacturing companies. The main objective of the study was to examine capital structure and how it affected the firm's profitability of three listed industrial enterprises. In this study, the data were analyzed using correlation and multiple regression analysis. This study discovered a mixed relationship between the profitability indicators and the characteristics of the capital structure. Significantly, ROA is positively correlated with total debt to assets and negatively correlated with total debt to equity. The association between total debt to equity and total debt to assets and ROE is statistically significant negative. Total debt to equity and total debt to assets have a negative correlation with ROS.

Bhandari (2021) examined the effect of capital structure on profitability of insurance companies in Nepal. The impact of capital structure on Nepali insurance firms' profitability. The impact of capital structure on the profitability of Nepali insurance businesses that are listed was investigated in this study. The statistical association between capital structure ratios and profitability was estimated using regression analysis. The examination revealed a statistically significant and favorable correlation between the capital structure of insurance companies and their financial success. The result additionally showed how lucrative insurance companies rely more on debt. Additionally, a favorable and statistically significant correlation between firm size and financial performance is shown by the results.

Bhatta (2020) analyzed capital structure and profitability of manufacturing and hydro companies in Nepal. This study looked at the link between listed industrial and hydropower businesses' profitability and capital structure in Nepal. In a sense, the sample of five listed manufacturing and five listed hydropower enterprises serves as the starting point for the current study on capital structure and profitability. The performance of the company was measured by net profit margin, return on equity, and return on assets; the capital structure was measured by the ratio of total debt to total equity and total debt to total assets. The approach of judgmental sampling was applied. Regression analysis, correlation, and descriptive statistics are among the

statistical tests that were performed. The results showed that the hydropower companies, AVHCL and BPCL, had solid capital structure and profitability, as did the manufacturing companies, UNL, SHIVAM, and HDL. Profitability and capital structure have an insignificant and negative correlation.

Khadka (2019) examined the effect of capital structure on profitability of financial firms listed at Nepalese stock exchange. This study looked at how capital structure affected financial performance in relation to these variables. For the aforementioned objectives of the study, information was obtained by looking through documents, annual reports from businesses, and reports from the Nepal Stock Stock Exchange. The data was examined using Statistical Packages for Social Sciences (SPSS), which produced a descriptive analysis. The research's debt and return on equity regressions' conclusions showed that capital structure and performance had a negative association. The findings showed that Nepal's listed financial institutions rely more on debt than equity capital. This has brought attention to the fact that banks are very leveraged businesses. It was discovered that there was a negative correlation between interest and debt to equity in the co-efficient values. This indicates that when debt financing levels rise, interest payments rise as well, leading to a drop in profitability.

Basnet (2018) investigated capital structure decision and profitability: a study of nepalese manufacturing companies. The main objective of the study was to look at how capital structure affected the profitability of Nepalese manufacturing companies that were listed on NEPSE. The obtained data was analyzed using tests of descriptive statistics, correlation, regression analysis, and analysis of variance. Furthermore, the examination revealed a negative relationship between ROE, ROA, NPR, and OPR and the debt ratio. Similarly, there was a significant negative relationship found between the debt-to-equity ratio and ROA, NPR, and OPR, as well as a negative correlation with ROE. Furthermore, it was shown that return on equity (ROE) was not significantly impacted by either a rise or fall in the debt-to-equity ratio. On the other hand, while a drop in equity causes a decrease in ROA, a rise in debt boosts ROA since it offers tax sheltering, which increases return to equity shareholders. Taxes have a notably favorable influence on return on assets. The investigation also found

that, whereas ROA changed as a function of company size, ROE, NPR, and OPR did not.

Pokhrel (2017) studied impact of capital structure on profitability of commercial banks. The main objective of this research was to ascertain how capital structure affects the Nepalese commercial banks' profitability. Data spanning five years are used as sample years, and various analytical techniques such as descriptive analysis, regression analysis, and correlation analysis are applied. The debt to equity ratio, debt ratio, and business size do not statistically significantly affect GIBL's return on assets (ROA). Subsequently, the outcome demonstrates that both the debt to equity ratio and the debt ratio lower EBL's ROA. It is intended that these independent factors have an insignificant impact on ROA and have a negative connection with one another. It's interesting to note that these research have demonstrated insignificant impact and a negative association between the debt ratio and ROE of both banks. Nonetheless, the debt to equity ratio and ROE, as well as the log size and ROE of both banks, have a positive correlation with negligible effects. This suggests that the sample banks' profitability is not impacted by the general debt to equity ratio, which means that issues influencing capital structure must be carefully watched.

Shrestha (2016) analyzed impact of capital structure on company profitability of industrial companies listed on the Nepal Stock Exchange. This study investigates the effect of capital structure on profitability through empirical means. The impact of capital structure on profitability was estimated using the multiple regression model. According to this study, the profitability of the entire sample is adversely and considerably impacted by both total debt and long-term debt. Regarding small and large businesses, the findings show a statistically significant negative correlation between ROA and debt ratios in small businesses, whereas large businesses show a significant negative impact on profitability. Total and long-term debt had a negative impact on the profitability of all sectors; however, the only one where this effect was most noticeable was ROA. Although the effects of short-term debt on other sectors are not uniform, they are positive for the ROA and NPR of the building and materials subsectors.

2.3 Research Gap

"Research gap" refers to the discrepancy between this investigation and earlier research. Firstly, there is a temporal research gap between this study and previous ones. Although they had previously researched earlier eras, their analysis covers the years 2022–2023. Subsequently, whereas earlier research likewise employed a limited time frame of no more than five years, this study covered ten years. Aside from that, the results of earlier research on the relationship between capital structure and manufacturing enterprises' profitability were few and general. In order to examine the effects of capital structure on the profitability of Nepalese manufacturing companies, this study looks at a variety of explanatory variables, including debt ratio, debt to equity ratio, and company size, as well as dependent variables like profitability (return on equity and return on assets). This study attempted to apply the t-test and the multicollinearity test in addition to using descriptive, correlation, and multiple regression analyses that were not examined for data analysis. Furthermore, since those manufacturing businesses were left out by the previous researchers, this study has focused on three manufacturing companies: Unilever Nepal Limited, Dabur Nepal Privated Limited, and Himalayan Distillery Limited. For this reason, this work makes a significant effort to close the research gap.

CHAPTER – III
RESEARCH METHODOLOGY

Research methodology is the methodical process of resolving a problem by systematic information recording, analysis, interpretation, and reporting of the numerous facets of phenomena under study. The research methodology for this paper describes the steps and techniques employed in each phase of the inquiry. Research design is divided into five sections: research design, population and sample and sampling design, nature and method of analysis and sources of data, data collection tool research framework, variable definitions.

3.1 Research Design

Research design is a plan of structure and strategy of investigation conceived so as to obtain answer to research questions and to control variances. To achieve the specific objective of the study, descriptive and causal comparative research design have been carried out in terms of impact capital structure on profitability of manufacturing companies in Nepal. Descriptive research design is adopted for analyzing position of capital structure whereas causal comparative research design is followed to analyze the relationship and effect of capital structure on profitability of manufacturing companies.

3.2 Population and Sample, and Sampling Design

Nowadays a number of manufacturing companies have been emerging rapidly. Some have already been established and others are in the process of establishment. There are all together 118 manufacturing companies operating in Nepal (Ministry of Industries, 2022-23). In this study, all the manufacturing companies are population of the study. Among them Unilever Nepal Limited, Dabur Nepal Private Limited and Himalayan Distillery Limited are selected as sample on the basis of purposive sampling method because these three companies are top three in profitability in the present context.

3.3 Nature and Sources of Data, and Instruments of Data Collection

Only secondary data were used in this investigation. The information was obtained from linked manufacturing companies' websites and annual reports. Secondary data are those that have previously been gathered or utilized by another party and are made public in the form of statistics. Therefore, the primary sources and data kinds are these published sources, which include books, journals, articles, annual reports of manufacturing companies, various theses connected to this subject, and NRB reports.

3.4 Method of Analysis

Arithmetic Mean

The simple mean, or arithmetic mean, of a set of data is calculated by dividing the total number of observations by the sum of all the observations. The arithmetic mean of a variable is the best value that represents the group as a whole. Arithmetic mean of a series is given by:

$$\text{Mean } (\bar{X}) = \frac{\Sigma X}{n}$$

Where,

$\bar{X}$ = denotes arithmetic mean, n denotes the no. of periods and x_1, x_2 …… x are the individual observations.

Standard Deviation

The positive square root of the mean squared of the departure from the arithmetic mean is the definition of the standard deviation. It displays the ranges and magnitudes of deviations from the mean or center. It gauges the dispersion in absolute terms. The variability will increase with a higher standard deviation and vice versa. Dispersion quantifies how much the data deviate from the central value. Put differently, it is beneficial to examine the data's quality in terms of its variability. It is calculated as:

$$\text{Standard Deviation (SD)} = \sqrt{\frac{\Sigma(X - \bar{X})^2}{n}}$$

Co-efficient of Variation

The standard deviation represents the dispersion in absolute terms. The measurement of the coefficient of standard deviation is the relative measure of dispersing depending on the standard deviation. Coefficient of variation is the percentage measure of co-efficient of so. More homogeneity and consistency with fewer CVs, and vice versa. Standard deviation alone is inappropriate when comparing two sets of data; nevertheless, CV can also compare two variables separately based on their variability. It is calculated as under:

$$\text{Coefficient of Variation (C.V.)} = \frac{\sigma}{\bar{X}} \times 100$$

Coefficient of Correlation

The correlation coefficient describes the relationship between the independent and dependent variables. It is a method for determining the relationship between these two variables. When there is a substantial correlation between the two variables—that is, when changes in the value of the independent variable also have an impact on the value of the dependent variable there is a correlation coefficient.

$$\text{Correlation Coefficient (r)} = \frac{n\Sigma XY - \Sigma X\Sigma Y}{\sqrt{n\Sigma X^2 - (\Sigma X)^2}\sqrt{n\Sigma Y^2 - (\Sigma Y)^2}}$$

Test of Significance

W.S. Grosset (student with the pen name) created it in 1908. R.A. Fisher then provides an explanation of this distribution. The t-test is used to determine if the study's assumptions about small samples are correct. The t-values are first calculated and compared with the crucial values at a particular level of significance for a specific degree of freedom in order to apply the t distribution. A difference is considered significant at the five percent significance level if the calculated value of ‖t‖ surpasses the table value, such as t 0.05. However, if t-values are smaller than the corresponding critical of the 't' distribution, the difference is not considered significant. The t statistic under H0 is:

$$t = \frac{r}{\sqrt{1 - r^2}} \times \sqrt{n - 2}$$

Where,

t=calculated value of t

r= correlation of coefficient between the variables.

n= number of sample.

Regression Analysis

Regression analysis is a collection of statistical procedures used in statistical modeling to estimate the relationships between variables. When examining the link between a dependent variable (ROA and ROE) and one or more independent variables (debt ratio, debt to equity ratio, and firm size), it encompasses a variety of modeling and analysis methodologies. More precisely, regression analysis clarifies how, when any one of the independent variables is changed while the other independent variables are kept constant, the usual value of the dependent variable also known as the "criterion variable" changes.

Model Specification

The capital structure and profitability ratios are linked via a straightforward linear regression function in the model. The general regression formula looks like this:

Model 1

In this model, ROA is dependent variable whose value is affected by the value of other independent variables.

$ROA = \alpha + \beta_1 DR + \beta_2 DER + \beta_3 SIZE$

Where,

ROA = Return on Assets

DR = Debt Ratio

DER = Debt equity Ratio

SIZE = Firm size (Total Assets)

α = Constant

β = Parameters of the ROA

Model 2

In this model, ROE is dependent variable whose value is affected by the value of other independent variables.

$ROE = \alpha + \beta_1 DR + \beta_2 DER + \beta_3 SIZE$

Where,

ROE = Return on Equity

DR = Debt Ratio

DER = Debt equity Ratio

SIZE = Firm size (Total Assets)

α = Constant

β = Parameters of the ROE

3.5 Research Framework and Definition of Variables

The researcher develops the following conceptual framework for the study based on reviews of the theoretical and empirical literature.

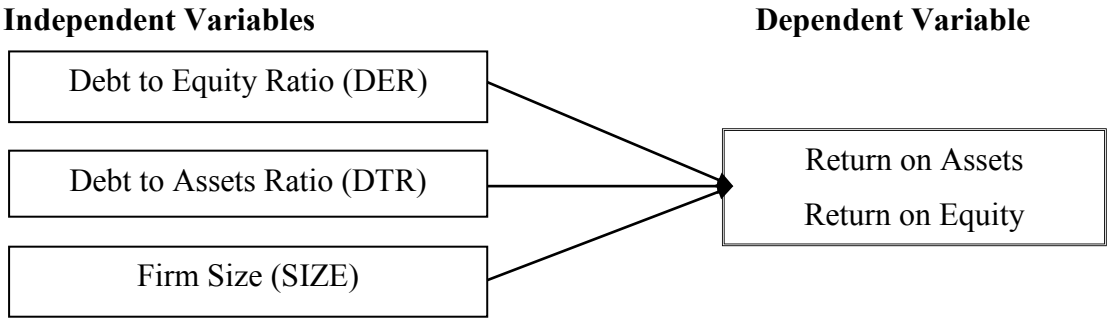

Figure 5 Research Framework of the Study

Source: Revathy and Santhi (2016); Olusuyi and Felix (2017); Mouna, Jianmu, Havidz and Ali (2019); Rahman, Sarker and Uddin (2019) and Ayange et al. (2021)

Independent Variables

Debt to Equity (D/E) ratio

It shows the percentage of long-term debt financing a company's equity. It's a debt ratio meant to gauge the financial leverage of an organization. It shows the ratio of a company's debt to equity held by shareholders in relation to the amount of debt used to finance its assets. A higher debt-to-equity ratio indicates that the business has used debt financing aggressively. Excessive risk is frequently linked to aggressive leveraging strategies. The extra interest payment could cause earnings to fluctuate as a result. Ayange et al. (2021) found that debt to equity ratio had insignificant negative effect on ROA of manufacturing companies. Likewise, Rahman et al. (2019); Mouna et al. (2019) found debt to equity ratio had negative impact on ROA.

$$\text{Debt-equity ratio} = \frac{\text{Total Debt}}{\text{Total Shareholder's equtiy}}$$

Debt to Asset (D/A) ratio

It is the percentage of long-term debt used to finance an organization's assets. An organization is more leveraged and therefore at more risk financially if its debt to asset ratio is higher. Better financial performance with less or moderate reliance on debt is indicated by a smaller debt to asset ratio, whereas a larger ratio shows a greater reliance on debt. Rahman et al. (2019) debt to assets ratio (DTR) had positive impact on ROA. At the same time, Revathy and Santhi (2016) found that debt to assets ratio had positive impact on ROA.

$$\text{Debt-total assets ratio} = \frac{\text{Total Debt}}{\text{Total assets}} \times 100$$

Size of Companies (SIZE)

One control variable that could have an impact on a firm's value that isn't determined by its leverage is its size. The proxy for the size of the company was the logarithm of total assets. Huong (2023); Ngoc et al. (2022) concluded that size of companies had positive impact on ROA. However, Mouna et al. (2019); Kalyani and Mathur (2018) had significant negative impact on profitability of manufacturing companies in Nepal.

Size of companies (SIZE) = Log of total asset

Dependent Variables

Return on Asset (ROA)

Return on assets is first dependent variable in this study. It was used by Kalyani and Mathur (2018); Rahman et al. (2019); Mouna et al. (2019). A financial ratio called return on asset (ROA) indicates the percentage of profit an organization makes in comparison to its total resources. ROA provides a solution to the query: what can you accomplish with the resources at your disposal? The management is better when the ROA is higher. Managers, investors, or analysts might use return on assets (ROA) to gauge how effectively a company's management is generating profits from its assets.

$$\text{Return on Asset (ROA)} = \frac{\text{Net Profit}}{\text{Total Assets}}$$

Return on Equity (ROE)

The amount of net income returned as a percentage of shareholder equity is known as return on equity. Revathy and Santhi (2016); Sarker and Uddin (2019); Mouna et al. (2019) used ROE is dependent variables in their studies. It assesses a company's profitability by disclosing the amount of profit it makes on the capital that shareholders have contributed. In light of this, how Nepalese manufacturing businesses operate and how the factors included in this study relate to one another, as well as how much profit a company earns for every share of equity held by its shareholders.

$$\text{Return on Equity (ROE)} = \frac{\text{Net Profit After tax}}{\text{Total Equity}}$$

CHAPTER - IV
RESULTS AND DISCUSION

The main objective of this study is to ascertain how capital structure affects the profitability of Nepalese manufacturing enterprises, as the researcher covered in the earlier chapters. Consequently, the three sections that make up this chapter are devoted to the outcomes and analysis of the findings. Descriptive and correlation analyses of the study's variables were reported in the first section; the assumptions of the linear regression model were fulfilled in the second; and the regression's findings were presented in the third. For additional statistical analysis, the ratio of the designated dependent and independent variables, as well as the ratio scale measurement, were computed using data analysis techniques. The collected data was analyzed by the aid of the statistical software SPSS version 26.

4.1 Results

4.1.1 Descriptive Statistics of Variables

The descriptive statistics of the variables used in the study have been presented in Table 3. The result shows that the minimum and maximum of performance measure in terms of profitability indicators ROE and ROA along with other independent variables of manufacturing companies in Nepal.

Table 3

Descriptive Statistics of Variable of Manufacturing Companies

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Independent Variables:					
DER	30	.09	1.43	.6773	.31897
DTR	30	8.57	58.90	38.2550	12.04298
LSIZE	30	3.98	5.15	4.5502	.33837
Dependent Variables:					
ROA	30	2.92	45.08	20.9050	12.80930
ROE	30	6.71	62.12	32.5860	17.69867

Source: Appendix –II

Table 3 shows the descriptive statistics of dependent and independent variables used in the study. The first independent variables debt to equity ratio, the average ratio is 0.6773 times and standard deviation of 0.31897 over the study period with the maximum ratio at 1.43 percent and the minimum this ratio being positive 0.0.09

percent. Likewise, the second independent variables debt to assets ratio shows that this ratio varies from a minimum of 8.57 percent to a maximum of 58.90 percent with an average of 38.2550 percent and standard deviation of 12.04298. The last independent variables firm size shows that this ratio varies from a minimum of 3.98 to a maximum of 5.15 with an average of 4.5502 and standard deviation of 0.33837. The summary of ROA shows that the average return on assets over the study period is 20.9050 percent and standard deviation of 12.80930, the maximum return on assets is 45.08 percent and the minimum of 2.92 percent. The return on assets shows how efficient the manufacturing companies are using its assets to generate profit measured by profit before interest and tax divided by total assets. ROE mean is 32.5860 percent from the range to minimum 6.71 to maximum 62.12 percent. Then, standard deviation for ROE is 17.69867.

4.1.2 Correlation Analysis

A correlation matrix is a table that shows the correlation coefficients between variables. Each table cell shows the correlation between two matched variables. A correlation matrix is a useful tool for summarizing data. This provides us with a brief summary of the variables that exhibit varying degrees of importance and correlation. The absence of a linear relationship between the two variables is indicated by a correlation value of 0. A perfect positive relationship is represented by a correlation coefficient of +1, while a perfect negative relationship is represented by a correlation coefficient of -1. In Table 4, the correlation matrix is displayed as follows.

Table 4

Pearson Correlation Coefficients of Study Variables

	DER	DTR	LSIZE	ROA	ROE
DER	1				
DTR	.960**	1			
LSIZE	.056	.087	1		
ROA	-.628**	-.594**	-.366*	1	
ROE	-.450*	-.381*	-.373*	.962**	1

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

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

Source: Appendix-III

Table 4 reveals the correlation test between both dependent and independent variables using correlation coefficient matrix. The correlation test shows that debt equity to

equity ratio (DER) has significant negative relation with ROA in 5 percent level of significance with correlation coefficients -0.628. At the same time, debt to equity ratio has also significant negative relation with ROE. Similarly, there is significant negative correlation between debt to total assets ratio and ROA and also significant negative relationship between debt to total assets ratio and ROE. Further, firm size has significant negative relationship with ROA and it has also significant negative relationship with ROE of the manufacturing companies.

4.1.3 Regression Analysis

It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between dependent variables (ROA and ROE) and independent variables (debt to equity ratio, debt to total assets ratio, and firm size). Ordinary least square regression (OLS) of panel data analysis is used as a major tool of analysis.

4.1.3.1 Analysis of Return on Assets Regression

ROA is the dependent variable and independent variables are debt to equity ratio, debt to total assets ratio, and firm size to analyze the effect of capital structure on profitability of manufacturing companies.

Table 5

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.713[a]	.509	.452	9.47869

a. Predictors: (Constant), LSIZE, DER, DTR

Source: Appendix-IV

The R square is 0.509. The implication therefore is that, 50.90 percent of the variation in the dependent variable (ROA) is explained by the independent variables (debt to equity ratio, debt to total assets ratio, and firm size). The R statistic in this study, which is 0.713, shows that the study variables have a high association with one another. This suggests that the independent variables have a significant impact on return on equity. Regression analysis is perfectly correlated with standard error of estimate.

Table 6

Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2422.281	3	807.427	8.987	.000[b]
	Residual	2335.983	26	89.845		
	Total	4758.264	29			

a. Dependent Variable: ROA
b. Predictors: (Constant), LSIZE, DER, DTR

Source: Appendix-IV

An examination with ANOVA (F–value) indicates that explains the most possible combination of predictor variables that could contribute to the impact of dependent variables. Results show significant impact of ROA indicator. On the F-values of 8.987 ($p = 0.000 < 0.05$) for LSIZE, DER, DTR as ROA proxy, it clearly shows that there is a significant relationship between the dependent variable (ROA) and the independent variables.

Table 7

Regression Coefficient of Independent Variables with ROA

Variables	Coefficients	t-statistics	Sig. or p-value
(Constant)	92.242	3.802	.001
DER	-34.442	-1.737	.094
DTR	.276	.523	.605
LSIZE	-12.867	-2.453	.021

Source: Appendix-IV

Table 7 presents the regression coefficient of independent variables debt to equity ratio, debt to total assets ratio, and firm size and the intercept value of dependent variable ROA. The regression result of debt to equity ratio (DER) has a negative relationship with ROA by a coefficient estimate of -34.442. This means that holding other independent variables constant and when one times increases in debt to equity ratio (DER), consequently it decreases ROA of the manufacturing companies by -34.442 percent and the p value of debt to equity ratio (DER) is 0.094 reveal that it is statistically insignificant at 5 percent level of significance. Accordingly, the result supports the working hypothesis that debt to equity ratio (DER) has insignificant negative effect on ROA of manufacturing companies.

The results of regression model indicated that the relationship between debt to assets ratio (DTR) has a positive relationship with ROA by a coefficient estimate of 0.276. This means that holding other independent variables constant and when one percent increases in debt to assets ratio (DTR), as a result it increases ROA of the manufacturing companies by 0.276 percent and the p value of debt to assets ratio (DTR) is 0.605 discloses that it is statistically insignificant positive effect on ROA of manufacturing companies at 5 percent level of significance.

The result of regression shows that the relationship between firm size (SIZE) has a negative relationship with ROA by a coefficient estimate of -12.867. This means that holding other independent variables constant and when one percent increases in firm size (SIZE), as a result it decreases ROA of the manufacturing companies by -12.867 percent and the p value of firm size (SIZE) is 0.021 discloses that it is statistically significant at 5 percent level of significance. This means firm size has significant negative impact on ROA of manufacturing companies in Nepal.

4.1.3.2 Analysis of Return on Equity Regression

ROE is the dependent variable and independent variables are debt to equity ratio, debt to total assets ratio, and firm size to analyze the effect of capital structure on profitability of manufacturing companies.

Table 8

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612[a]	.375	.302	14.78132

a. Predictors: (Constant), LSIZE, DER, DTR

Source: Appendix-V

The R square is 0.375. The implication therefore is that, 37.50 percent of the variation in the dependent variable (ROE) is explained by the independent variables (debt to equity ratio, debt to total assets ratio, and firm size). The R statistic in this study, which is 0.612, shows that the study variables have a moderate association with one another. This suggests that the independent variables have a moderate impact on return on assets. Regression analysis is perfectly correlated with standard error of estimate.

Table 9

Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3403.376	3	1134.459	5.192	.006[b]
	Residual	5680.672	26	218.487		
	Total	9084.048	29			

a. Dependent Variable: ROE
b. Predictors: (Constant), LSIZE, DER, DTR

Source: Appendix-V

An examination with ANOVA (F–value) indicates that explains the most possible combination of predictor variables that could contribute to the impact of dependent variables. Results show significant impact of ROE indicator. On the F-values of 5.192 ($p = 0.006 < 0.05$) for LSIZE, DER, DTR as ROE proxy, it clearly shows that there is a significant relationship between the dependent variable (ROE) and the independent variables.

Table 10

Regression Coefficient of Independent Variables with ROE

Variables	Coefficients	t-statistics	Sig. or p-value
(Constant)	121.820	3.220	.003
DER	-66.964	-2.166	.040
DTR	1.191	1.451	.159
LSIZE	-19.653	-2.402	.024

Source: Appendix-V

Table 10 presents the regression coefficient of independent variables debt to equity ratio, debt to total assets ratio, and firm size and the intercept value of dependent variable ROE. The regression result of debt to equity ratio (DER) has a negative relationship with ROE by a coefficient estimate of -66.964. This means that holding other independent variables constant and when one times increases in debt to equity ratio (DER), consequently it decreases ROE of the manufacturing companies by -66.964 percent and the p value of debt to equity ratio (DER) is 0.040 reveal that it is statistically significant at 5 percent level of significance. Hence, debt to equity ratio (DER) has significant negative effect on ROE of manufacturing companies.

The results of regression model indicated that the relationship between debt to assets ratio (DTR) has a positive relationship with ROE by a coefficient estimate of 1.191.

This means that holding other independent variables constant and when one percent increases in debt to assets ratio (DTR), as a result it increases ROE of the manufacturing companies by 1.191 percent and the p value of debt to assets ratio (DTR) is 0.024 discloses that it is statistically significant positive impact on ROE of manufacturing companies at 5 percent level of significance.

The result of regression shows that the relationship between firm size (SIZE) has a negative relationship with ROE by a coefficient estimate of -19.653. This means that holding other independent variables constant and when one percent increases in firm size (SIZE), as a result it decreases ROE of the manufacturing companies by -19.653 percent and the p value of firm size (SIZE) is 0.024 discloses that it is statistically significant at 5 percent level of significance. This means firm size has significant negative impact on ROE of manufacturing companies in Nepal.

4.2 Discussion

The main objective of this study is to examine the effect of capital structure on profitability of manufacturing companies. Capital structure has effect on return on assets and returns on equity, the two main parameters for measuring profitability of the manufacturing companies in Nepal. The correlation analysis shows that debt equity ratio (DER) has significant negative relation with ROA in 5 percent level of significance. This finding is similar with the previous study of Rahman, Sarker and Uddin (2019). This result is also consistent with the finding of Kalyani and Mathur (2018); Ramadan and Ramadan (2015) mentioned that debt to equity ratio had negative relationship with ROA. At the same time, debt to equity ratio has also significant negative relation with ROE which is consistent with the finding of Rahman, Sarker and Uddin (2019); Kalyani and Mathur (2018).

Then, there is significant negative correlation between debt to total assets ratio and ROA which is similar with the finding of Rahman, Sarker and Uddin (2019); Ramadan and Ramadan (2015). Likewise, debt to total assets ratio has also significant negative relationship between debt to total assets ratio and ROE. This is similar with the finding of Rahman, Sarker and Uddin (2019) which observed that debt to assets ratio had significant negative relationship with ROE. Moreover, firm size has significant negative relationship with ROA which is similar with the finding of

Kalyani and Mathur (2018); Anarfo and Appiahene (2016) and it has also significant negative relationship with ROE of the manufacturing companies which is similar with the finding of Kalyani and Mathur (2018); Anarfo and Appiahene (2016).

The multiple regression analysis found that debt to equity ratio (DER) has insignificant negative effect on ROA of manufacturing companies which is similar with the finding of Ayange et al. (2021); Rahman, Sarker and Uddin (2019); Mouna, Jianmu, Havidz and Ali (2019); Olusuyi and Felix (2017); Revathy and Santhi (2016); Ramadan and Ramadan (2015). Then, debt to assets ratio (DTR) has an insignificant positive effect on ROA at 5 percent level of significance which is similar with the finding of Rahman, Sarker and Uddin (2019); Revathy and Santhi (2016). In addition, firm size has significant negative effect on ROA of manufacturing companies in Nepal which is consistent with the finding of Mouna, Jianmu, Havidz and Ali (2019); Kalyani and Mathur (2018).

On regression ROE, debt to equity ratio (DER) has significant negative effect on ROE of manufacturing companies. This is similar with the finding of Ayange et al. (2021) mentioned that debt to equity ratio had significant negative effect on ROE of the companies. This is also consistent with the finding of Rahman, Sarker and Uddin (2019); Mouna, Jianmu, Havidz and Ali (2019); Anarfo and Appiahene (2016); Revathy and Santhi (2016).

The debt to assets ratio (DTR) has statistically insignificant positive effect on ROE at 5 percent level of significance. This is similar with the finding of Ngoc, Tien and Thu (2022) Ayange et al. (2021); Rahman, Sarker and Uddin (2019); Mouna, Jianmu, Havidz and Ali (2019). The result of regression also shows that firm size has significant negative effect on ROE of manufacturing companies in Nepal. This is similar with the finding of Ngoc, Tien and Thu (2022; Kalyani and Mathur (2018); Anarfo and Appiahene (2016).

On the other hand, the correlation analysis shows that debt equity ratio (DER) has significant negative relation with ROA which is dissimilarities of Anarfo and Appiahene (2016). Likewise, debt to equity ratio has also significant negative relation

with ROE which is inconsistent with the finding of Anarfo and Appiahene (2016) concluded that debt to equity ratio had positive relationship with ROE. Then, there is significant negative correlation between debt to total assets ratio and ROA. This finding is dissimilarities of the previous study Anarfo and Appiahene (2016).

Further, debt to equity ratio (DER) has insignificant negative effect on ROA of manufacturing companies which is dissimilarities with the finding of Kalyani and Mathur (2018). At the meantime, debt to assets ratio (DTR) has an insignificant positive effect on ROA which is not consistent with the prior study of Huong (2023) found that debt to assets ratio had significant negative effect on ROA. This finding is also inconsistent with the finding of Ayange et al. (2021) Ngoc, Tien and Thu (2022); Mouna, Jianmu, Havidz and Ali (2019); Ramadan and Ramadan (2015). However, firm size has significant negative effect on ROA of manufacturing companies in Nepal which is dissimilarities to the finding of Huong (2023) concluded that firm size had positive effect on ROA. This is also opposite to the finding of Ayange et al. (2021) Ngoc, Tien and Thu (2022).

On regression ROE, debt to equity ratio (DER) has significant negative effect on ROE of manufacturing companies. This is not similar with the finding of Kalyani and Mathur (2018); Olusuyi and Felix (2017). The debt to assets ratio (DTR) has statistically insignificant positive effect on ROE which is dissimilarities to the finding of Huong (2023) found that debt to assets ratio had significant negative effect on ROE. This is also inconsistent with the finding of Revathy and Santhi (2016). The result of regression also shows that firm size has significant negative effect on ROE of manufacturing companies in Nepal which is dissimilarities to the finding of Huong (2023); Ayange et al. (2021); Mouna, Jianmu, Havidz and Ali (2019).

CHAPTER – V
SUMMARY AND CONCLUSION

5.1 Summary

Manufacturing businesses must make critical decisions about their capital structure in order to optimize shareholder value since these decisions should have an impact on the companies' capacity to compete. Selecting the best mix of debt and equity to maximize value while lowering financing costs is a crucial decision for today's business managers. Without a question, the financial sector contributes significantly to the economic growth of every nation. As a result, corporate success is essential to a country's overall financial stability as well as to maximizing value for its owners. To attain an ideal capital structure, manufacturing companies must select and modify their strategic financing mix to optimize value and make sure their operations are not excessively geared or under geared. Since achieving value maximization and risk minimization is not unique to Nepalese manufacturing businesses, the focus of this study is on determining how capital structure and profitability are related.

The main objective of this study is to analyze the effect of capital structure on profitability in in manufacturing companies in Nepal. The specific objectives are to analyze the existing position of capital structure of manufacturing companies in Nepal, to examine the relationship between capital structure variables and profitability of manufacturing companies in Nepal and to assess the effect of debt to equity ratio, debt to assets ratio and firm size on profitability of manufacturing companies in Nepal. Relevant journals, articles, related websites etc. are also used for this research. To achieve the specific objective of the study, descriptive and casual comparative research design has been carried out. Descriptive design is used to analyze the position of capital structure and profitability. Causal comparative research design is used to measure the effect of capital structure on profitability of manufacturing companies in Nepal. Out of total population of 118 manufacturing companies in Nepal, only three manufacturing companies are taken as sample on the basis of purposive sampling method because these companies are top three in terms of profitability in the present context as well as availability of data. Annual reports and other publications from the basis of secondary data are used. The secondary data has been collected mainly through the loan department and the annual reports of the

manufacturing companies, covering ten year periods, i.e. from the fiscal year 2013/14 to 2022/23. In this study, descriptive analysis, correlation analysis and multiple regressions are applied by using SPSS version 26. This study used ROA and ROE as dependent variables and debt to equity ratio, debt to total assets ratio and firm size are as explanatory variables.

This study reveals that manufacturing companies have great contribution to investors fund and strong capital adequacy position due to high debt to equity ratio. Moreover, in this study, manufacturing companies shows a large share of financing by the insurers relatively to the owners and there is risky for the investors due to the high leverage ratio or debt equity ratio. Profitability is the measurement of efficiency. Manufacturing companies have high value of ROA and ROE means there is efficient utilization of its total assets. Investors are getting more return from their investment and also company performance is good. The correlation analysis shows that debt to equity ratio (DER) and debt to total assets have significant negative relation with profitability (ROA and ROE) of manufacturing companies in Nepal. Moreover, firm size has significant negative relationship with profitability (ROA and ROE) of the manufacturing companies. The regression result reveals that debt to equity ratio has insignificant negative effect on ROA but it has significant negative effect on ROE of the manufacturing companies while debt to assets ratio has insignificant positive effect on profitability (ROA and ROE) of manufacturing companies. Further, firm size has significant negative effect on profitability (ROA and ROE) of the manufacturing companies in Nepal. Hence, this study concluded that capital structure has insignificant effect on profitability of manufacturing companies in Nepal.

5.2 Conclusion

Based on this analysis, this study concluded that that manufacturing companies' success in exploiting debts to the high profitable assets due to the high debt to assets ratio and owners of the companies always prefer a high debt ratio. It is meant that manufacturing companies have great contribution to investors fund and strong capital adequacy position. Moreover, in this study, manufacturing companies shows a large share of financing by the investors relatively to the owners and there is risky for the insurers due to the high leverage ratio or debt equity ratio. Profitability is the measurement of efficiency. It indicates the degree of success in achieving desired

profit. It shows entire performance of companies. Manufacturing companies have high value of ROA and ROE means there is efficient utilization of its total assets. Investors are getting more return from their investment and also company performance is good. So, it can be concluded that manufacturing companies has strong capital adequacy position and strong profitability position.

The correlation analysis shows that debt to equity ratio (DER) has significant negative relation with profitability (ROA and ROE) of manufacturing companies in Nepal. Likewise debt to assets ratio has also significant negative relation with ROA and ROE. Further, firm size has significant negative relationship with profitability (ROA and ROE) of the manufacturing companies. So, it can be said that there is significant negative relationship between capital structure and profitability of manufacturing companies in Nepal.

The regression result shows that debt to equity ratio has insignificant negative effect on ROA but it has significant negative effect on ROE of the manufacturing companies. However, debt to assets ratio has insignificant positive effect on profitability (ROA and ROE) of manufacturing companies. Moreover, firm size has significant negative effect on profitability (ROA and ROE) of the manufacturing companies in Nepal. Therefore, it can be concluded that capital structure has insignificant effect on profitability of Nepalese manufacturing companies.

5.3 Implications

The investigation has led to the following conclusions about how to improve the capital structure's influence on the profitability of Nepalese manufacturing companies.

- This study found that debt to equity ratio has insignificant negative effect on ROA but it has significant negative effect on ROE of the manufacturing companies. However, debt to assets ratio has insignificant positive effect on profitability (ROA and ROE) of manufacturing companies. Moreover, size of companies has significant negative effect on profitability (ROA and ROE). In this regard, the outcomes of this study are expected to provide additional and valuable information regarding the effect of capital structure on profitability. As a result, it signals to policymakers and manufacturing company management to make every financial decision feasible.

- Some of the most recent information, statistics, and concerns about capital structure and profitability may be found in this research. As a result, investors or stockholders should find this study important.
- The study's conclusions are beneficial to investors and future researchers. This paper is a valuable resource for future researchers.
- This study suggests that more research be done on this topic over the course of more than ten years, using a sample size of more than three manufacturing companies and other financial institutions like commercial banks, finance companies, development banks, and microfinance, insurance companies among others. If done correctly, this could yield stronger results for the goal of implementing policy. Furthermore, only three independent variables the debt to equity ratio, the size of the companies, and the debt to assets ratio were examined in this study. Therefore, further research needs to be done by including other specific factors such as liquidity ratio, long term debt to equity ratio, equity to total assets ratio, tangible assets and macroeconomic variables such as GDP growth rate and inflation rate etc.

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APPENDICES

APPENDIX – I

Raw Data of Sample Manufacturing Companies

Co.	Year	DER	DTR	SIZE	ROA	ROE
HDL	2013/14	0.89	47.12	9497	13.76	26.03
	2014/15	1.34	57.20	11310	7.18	16.77
	2015/16	0.57	36.12	9593	25.95	40.62
	2016/17	0.76	43.02	10179	4.80	8.43
	2017/18	0.51	33.66	12007	24.49	36.92
	2018/19	0.42	29.57	14036	38.26	54.32
	2019/20	0.59	37.24	19956	23.40	37.28
	2020/21	0.13	11.48	23097	45.08	50.93
	2021/22	0.12	10.89	31924	33.11	37.15
	2022/22	0.09	8.57	36693	18.00	19.69
UNL	2013/14	0.58	36.88	23577	39.21	62.12
	2014/15	0.57	36.11	28135	38.58	60.38
	2015/16	0.61	37.96	30464	36.65	59.07
	2016/17	0.49	32.74	32031	36.82	54.74
	2017/18	0.60	37.55	33218	29.06	46.53
	2018/19	0.66	39.81	38302	31.60	52.50
	2019/20	0.66	39.74	38572	27.62	45.84
	2020/21	0.89	47.01	47376	9.88	18.65
	2021/22	0.82	45.19	58047	18.11	33.05
	2022/22	0.59	37.08	64951	26.56	42.22
DNL	2013/14	0.49	32.86	37583	28.24	42.06
	2014/15	1.43	58.90	44959	9.98	24.28
	2015/16	1.30	56.49	45592	2.92	6.71
	2016/17	1.00	50.07	49707	10.18	20.38
	2017/18	1.00	50.09	92862	8.29	16.61
	2018/19	0.81	44.68	92549	7.40	13.38
	2019/20	0.60	37.59	93963	5.79	9.28
	2020/21	0.68	40.40	109629	6.11	10.25
	2021/22	0.59	36.98	124058	10.35	16.43
	2022/22	0.53	34.65	140606	9.77	14.96

Source: Annual Report of Sample Manufacturing Companies

APPENDIX -II

Descriptive Analysis

	N	Minimum	Maximum	Mean	Std. Deviation
DER	30	.09	1.43	.6773	.31897
DTR	30	8.57	58.90	38.2550	12.04298
LSIZE	30	3.98	5.15	4.5502	.33837
ROA	30	2.92	45.08	20.9050	12.80930
ROE	30	6.71	62.12	32.5860	17.69867
Valid N (listwise)	30				

Source: SPSS version 26

APPENDIX -III

Pearson Correlation Coefficients

		DER	DTR	LSIZE	ROA	ROE
DER	Pearson Correlation	1	.960**	.056	-.628**	-.450*
	Sig. (2-tailed)		.000	.768	.000	.013
	N	30	30	30	30	30
DTR	Pearson Correlation	.960**	1	.087	-.594**	-.381*
	Sig. (2-tailed)	.000		.649	.001	.038
	N	30	30	30	30	30
LSIZE	Pearson Correlation	.056	.087	1	-.366*	-.373*
	Sig. (2-tailed)	.768	.649		.047	.042
	N	30	30	30	30	30
ROA	Pearson Correlation	-.628**	-.594**	-.366*	1	.962**
	Sig. (2-tailed)	.000	.001	.047		.000
	N	30	30	30	30	30
ROE	Pearson Correlation	-.450*	-.381*	-.373*	.962**	1
	Sig. (2-tailed)	.013	.038	.042	.000	
	N	30	30	30	30	30

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

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

Source: SPSS version 26

APPENDIX -IV

Multiple Regression Analysis of Sample Banks (On ROA)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.713[a]	.509	.452	9.47869

a. Predictors: (Constant), LSIZE, DER, DTR

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2422.281	3	807.427	8.987	.000[b]
	Residual	2335.983	26	89.845		
	Total	4758.264	29			

a. Dependent Variable: ROA
b. Predictors: (Constant), LSIZE, DER, DTR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	92.242	24.263		3.802	.001
	DER	-34.442	19.827	-.858	-1.737	.094
	DTR	.276	.526	.259	.523	.605
	LSIZE	-12.867	5.246	-.340	-2.453	.021

a. Dependent Variable: ROA

Source: SPSS version 26

APPENDIX -V

Multiple Regression Analysis of Sample Banks (On ROE)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612[a]	.375	.302	14.78132

a. Predictors: (Constant), LSIZE, DER, DTR

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3403.376	3	1134.459	5.192	.006[b]
	Residual	5680.672	26	218.487		
	Total	9084.048	29			

a. Dependent Variable: ROE
b. Predictors: (Constant), LSIZE, DER, DTR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	121.820	37.836		3.220	.003
	DER	-66.964	30.919	-1.207	-2.166	.040
	DTR	1.191	.821	.810	1.451	.159
	LSIZE	-19.653	8.181	-.376	-2.402	.024

a. Dependent Variable: ROE

Source: SPSS version 26

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