

CAPITAL STRUCTURE AND PROFITABILITY OF NEPALI MANUFACTURING COMPANIES

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled “**CAPITAL STRUCTURE AND PROFITABILITY OF NEPALI MANUFACTURING COMPANIES**”. The work of this dissertation has not been submitted previously for the purpose of conferral of any degree nor has it 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 declared that all information sources and literature used are cited in the reference section of the dissertation.

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August 2024

REPORT OF RESEARCH COMMITTEE

Mr. Ashok Raj Bista has defended research proposal entitled “**CAPITAL STRUCTURE AND PROFITABILITY OF NEPALI MANUFACTURING COMPANIES**” Successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Asso. Prof. Dr. Kapil Khanal and submit the thesis for evaluation and viva voce examination.

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We have examined the dissertation entitled “**CAPITAL STRUCTURE AND PROFITABILITY OF NEPALI MANUFACTURING COMPANIES**” presented by Mr. Ashok Raj Bista for the degree of Masters of Business Studies. We hereby certify that the dissertation is acceptable for the award of degree.

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Any remaining errors are mine.

Ashok Raj Bista

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ABBREVIATIONS

| | | |
|-------|---|---|
| ANOVA | : | Analysis of Variance |
| AT | : | Assets Tangibility |
| DER | : | Debt equity ratio |
| L | : | Leverage |
| Li | : | Liquidity |
| NRB | : | Nepal Rastra Bank |
| ROA | : | Return on Assets |
| ROE | : | Return On equity |
| S | : | Size (log of total assets) |
| S.D | : | Stander Deviation |
| SDC | : | Shanker Dev campus |
| SPSS | : | Statistical Package for the Social Sciences |
| TDTA | : | Total Debt to Total Assets |
| TU | : | Tribhuvan University |

ABSTRACT

The objectives of research are set and they are; To assess the current status of total debt to total assets, total debt to equity ratio, leverage, liquidity, assets tangibility, size, return on assets and return on equity of Nepali manufacturing companies, to examine the relationship of total debt to total assets, total debt to equity ratio, leverage, liquidity, assets tangibility and size to the return on assets and return on equity of Nepalese manufacturing companies and to analyze the total debt to total assets, total debt to equity ratio, leverage, liquidity, assets tangibility and size impact to the return on assets and return on equity of Nepalese manufacturing companies. Descriptive and casual comparative research design has been employed. The descriptive statistics, correlation and regression analysis are conducted. The achievement of the objectives. The data are collected from annual report of the manufacturing companies. Sample are selected three sample manufacturing and secondary data of each 10 years from 2014-2023. The finding of the study is that the result the data flow of descriptive statistics the standard deviation seem higher and higher standard deviations means the higher level of fluctuation in the data flow. The return on equity, return on assets, and total debt to total assets, debt equity ratio, leverage, liquidity, assets tangibility and size are fluctuating in nature. The relationship of total debt to total assets, debt to equity ratio, leverage, liquidity, assets tangibility is significant to the return on assets. The total debt to total assets is significant relationship to the return on equity. The assets tangibility and size has not significant relationship to the return on equity. The debt to equity, leverage, liquidity, assets tangibility and sig have not significant relationship to the return on equity. The impact of total debt to total assets, debt to equity ratio, leverage and liquidity is significant to the return on assets and return on equity. The assets tangibility and size have not significant impact to the return on assets and return on equity.

Keywords: *total debt to total assets, debt to equity, leverage, liquidity, assets tangibility, size and profitability*

CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Capital structure is a crucial component of a company's financial framework, encompassing the mix of debt and equity employed to fund its operations and investments. Companies must strategically balance debt and equity to optimize their financial structure, taking into account factors such as risk, cost of capital, and shareholder value. Debt represents borrowed funds that a company is obligated to repay over time, typically with interest. Short-term debt, such as commercial loans and accounts payable, is often used to cover immediate expenses, while long-term debt, including bonds and term loans, is utilized for larger investments like infrastructure and expansion projects. While debt offers tax advantages through deductible interest payments, excessive leverage can heighten financial risk and strain cash flow, potentially leading to bankruptcy (Ngoc et al., 2021).

Equity, in contrast, signifies ownership in the company. Common equity holders possess voting rights and are entitled to a share of profits, but they also bear the highest risk, as they are the last to be paid in case of liquidation. Preferred equity offers a fixed dividend but does not grant voting rights. The cost of equity is generally higher than that of debt, reflecting the increased risk assumed by equity investors. Hybrid instruments, such as convertible bonds and preferred shares, combine features of both debt and equity. These instruments provide flexibility in financing arrangements, allowing companies to tailor their capital structure to specific needs and market conditions (Ombuh et al., 2024).

Several factors influence a company's capital structure decisions, including its business risk profile, tax implications, market conditions, and strategic goals. For example, companies with stable cash flows may choose higher levels of debt to take advantage of tax shields, while those in more volatile industries may prioritize equity to minimize the risk of default. Ultimately, achieving a well-balanced capital structure is vital for ensuring financial stability, reducing costs, and maximizing shareholder value. Given the importance of capital structure in determining a firm's financial health and performance, careful consideration is required when deciding on the appropriate mix of debt and equity. Capital structure is not only a key

component of a company's balance sheet but also a fundamental element of its overall financial strategy, involving the combination of long-term debt, equity, and preference shares (Kim et al., 2023).

Hirtle and Stroh (2007) argue that Miller and Modigliani's theory is only applicable in specific theoretical scenarios and lacks empirical evidence. Other studies suggest that the link between capital structure and the performance of retail banks is significantly influenced by factors such as industry, country, growth, and strategy (Carlson, 2018; Kothari, 2018). Contrary to Miller and Modigliani's perspective, some researchers believe that capital structure is a strategic tool used by retail banks, and these strategies are adaptable rather than static (Barstow, 2019; Deesomak & Thomas, 2007).

Many studies have investigated how capital structure influences the financial performance of retail banks, revealing some conflicting results. This variability in findings has led to ongoing research into the effects of capital structure decisions on financial performance within retail banking. Fitzsimmons (2017) emphasized the importance of financing choices, pointing out that effective financial strategies can help mitigate various risks faced by retail banks, ultimately supporting organizational growth and goal achievement.

Capital structure ratios are closely linked to profitability ratios. Firms that utilize short-term debt often achieve higher shareholder and market value, whereas those that depend on long-term debt may experience lower profitability. For Nepalese manufacturing companies, understanding the impact of different financing options on profitability is vital for financial decision-making. Given that manufacturing is a crucial sector in Nepal, this understanding is essential for sustainable growth and competitiveness (Anozie et al., 2023). Nepalese manufacturers face unique challenges in obtaining financing, with fewer debt and equity options compared to more developed markets. Consequently, their capital structure decisions significantly affect their profitability. Optimal capital structure decisions can enhance profitability by taking advantage of tax shields and reducing capital costs. Conversely, excessive debt can elevate financial risk and interest expenses, impacting profitability. Therefore, finding the right balance between debt and equity financing is crucial for Nepali manufacturing firms to maximize profitability, ensure financial stability, and support long-term growth in a dynamic economic landscape.

1.2 Problem Statement

Pinto et al. (2017) have explored the impact of capital structure on the financial performance of retail manufacturing, an area of empirical research within finance administration. The equity owners typically exist in large numbers, though a significant portion of retail shares is controlled by a relatively small group of shareholders. This concentration of ownership often leads to a reduced incentive for these shareholders to monitor management closely. As a result, managers may pursue objectives that diverge from those of the equity owners. Retail banks in Nepal present unique characteristics that make them particularly interesting for study. Significantly, these banks benefit from substantial asset backing, which contributes to the stability of their operations (Hawaldar et al., 2016). Financing decisions and equity performance are tightly connected to the assets, which are appraised and reported at prevailing market values on financial statements (Amadeo, 2020). Moreover, the banking sector in Nepal is regarded as a safe investment area for investors. The study poses the following research questions.

- i. What is the current status of the total debt to total assets ratio, total debt to equity ratio, leverage, liquidity, asset tangibility, size, return on assets, and return on equity for Nepali manufacturing companies?
- ii. Is there a relationship between the total debt to total assets ratio, total debt to equity ratio, leverage, liquidity, asset tangibility, and size with the return on assets and return on equity of Nepali manufacturing companies?
- iii. Do the total debt to total assets ratio, total debt to equity ratio, leverage, liquidity, asset tangibility, and size affect the return on assets and return on equity of Nepali manufacturing companies?

1.3 Objective of the Study

The main objective of the research is to analysis the impact of the capital structure to the profitability of the Manufacturing Companies in Nepal. More objectives are mention below they are on the basis of problem question.

- i. To assess the current state of total debt to total assets, total debt to equity ratio, leverage, liquidity, asset tangibility, size, return on assets, and return on equity in Nepali manufacturing companies.

- ii. To investigate how total debt to total assets, total debt to equity ratio, leverage, liquidity, asset tangibility, and size are related to the return on assets and return on equity in Nepali manufacturing companies.
- iii. To analyze the impact of total debt to total assets, total debt to equity ratio, leverage, liquidity, asset tangibility, and size on the return on assets and return on equity in Nepali manufacturing companies.

1.4 Hypotheses of the study

The hypothesis statement of the research are following.

Hypothesis 1

A significant relationship exists between total debt to total assets, total debt to equity ratio, leverage, liquidity, asset tangibility, and size with the return on assets and return on equity of Nepali manufacturing companies.

Hypothesis 2

Total debt to total assets, total debt to equity ratio, leverage, liquidity, asset tangibility, and size significantly impact the return on assets and return on equity of Nepali manufacturing companies.

1.5 Rationale of the study

By analyzing the link between capital structure and profitability, I identified the optimal mix of capital that could enhance manufacturing performance in terms of profitability, shareholder returns, and other benefits. The study examined independent variables related to capital structure, such as preferred stock, secured debt, and common stock equity, and assessed their effects on the dependent variables. These dependent variables included market share, survival, liquidity, deposits, and working capital ratio, which were statistically measurable. I utilized a quantitative approach and a causal-comparative research design. Capital structure was defined by comparing the ratio of secured debt to common stock equity with the ratio of preferred stock to common stock equity. Financing strategies that promote higher dividend growth and lower capital costs are expected to be effective if administrators and shareholders in the retail banking sector are disciplined and well-informed.

A company is considered to have strong corporate value when its debt level is lower than its equity. Increasing equity by expanding the company's share base can signal to investors that

the company is performing well, thereby attracting more investment. Investors tend to prefer high-quality companies, which boosts the company's equity and overall value. Hence, a higher capital structure value is associated with a higher company value. According to signaling theory, providing complete, relevant, and accurate information about a company's capital structure is crucial for investors' decision-making, which ultimately impacts the company's value and contributes to maximizing shareholder welfare.

1.6 Limitations of the Study

- (i) The findings from the manufacturing sector may not be generalizable to other sectors of the Nepali economy due to industry-specific factors.
- (ii) The manufacturing sector in Nepal is not as extensive as in larger economies, which might result in a limited number of companies available for study and they are only three sample companies.
- (iii) Data are collected from annual report of the manufacturing companies and they are only of ten year data from 2014-2023.

CHAPTER-II

LITERATURE REVIEW

This chapter focuses on reviewing previous studies, including both theoretical and empirical perspectives. The empirical review encompasses an analysis of articles and theses within both national and international contexts. The final section addresses the research gap, highlighting the differences between the current research and earlier studies.

2.1 Theoretical Review

Profitability

The decision to pay dividends begins with profitability, making it logical to consider profitability as a key threshold factor and profit level as one of the most crucial elements influencing decisions on dividend payments and stock prices. The theory suggests that dividends are typically paid from annual profits, reflecting the company's capacity to distribute dividends. Consequently, it is unlikely that companies experiencing losses would issue dividends. The pecking order hypothesis posits that companies prioritize internal financing for investments and, if external financing is necessary, they prefer debt over equity to minimize costs associated with asymmetric information and other transaction expenses (Myers, 1984).

Capital Structure Theories

Capital structure theories examine how firms finance their operations and growth through a combination of debt and equity. These theories aim to understand the effects of capital structure decisions on a company's value and overall financial performance. Here are the key capital structure theories:

1. Modigliani-Miller Theorem (M&M Proposition)

Without Taxes (1958)

The value of a firm is unaffected by its capital structure. This means that under certain conditions, whether a firm is financed by debt or equity, its total value remains the same.

$$V_L = V_U$$

V_L = Value of a levered firm (with debt)

V_U = Value of an unlevered firm (without debt)

The cost of equity increases linearly with the firm's debt-equity ratio. As a firm takes on more debt, equity investors require a higher return due to increased risk.

$$R_E = R_A + (R_A - R_D) \frac{D}{E}$$

R_E = Cost of equity

R_A = Cost of capital of an all-equity firm

R_D = Cost of debt

D = Debt

E = Equity

With Taxes (1963)

Proposition I with Taxes: The value of a firm increases with leverage due to the tax shield on debt. Interest payments are tax-deductible, reducing taxable income and increasing firm value.

$$V_L = V_U + T_C D$$

Where:

T_C = Corporate tax rate

2. Trade-Off Theory

The Trade-Off Theory proposes that firms strive to balance the advantages and disadvantages of debt to establish their optimal capital structure. The primary benefit is the tax shield provided by interest payments, while the associated costs include the risk of bankruptcy and financial distress (Ayalew, 2021).

Optimal Capital Structure \Rightarrow Tax Shield Benefits = Bankruptcy Costs

3. Pecking Order Theory

The Pecking Order Theory asserts that firms prioritize internal financing, such as retained earnings, over external sources. When external financing is necessary, firms favor debt over equity because of lower issuance costs and the effects of adverse selection (Ali & Faisal, 2020).

Order of financing preference:

Internal funds (retained earnings)

Debt

Equity

4. Agency Costs Theory

This theory examines the conflicts of interest among various stakeholders, particularly between shareholders and debt holders, as well as between managers and shareholders. These conflicts give rise to agency costs, which play a significant role in shaping capital structure decisions (Noreen, 2019).

Debt as a disciplinary mechanism: Debt can limit managerial discretion and reduce agency costs by imposing mandatory interest payments.

Equity dilution: Issuing new equity can dilute existing shareholders' control, leading to potential agency conflicts.

5. Market Timing Theory

The Market Timing Theory proposes that firms make financing decisions based on current market conditions. Specifically, they tend to issue equity when stock prices are high and opt for debt when interest rates are low (Boshnak, 2023).

Comparison and Applications

M&M Theorem: Establishes a theoretical basis for capital structure but is based on unrealistic assumptions, such as the absence of taxes, bankruptcy costs, and perfect markets.

Trade-Off Theory: Acknowledges the practical effects of taxes and bankruptcy costs, proposing that there is an optimal level of debt.

Pecking Order Theory: Emphasizes practical financing preferences driven by information asymmetry and issuance costs.

Agency Costs Theory: Examines the conflicts among stakeholders and their effects on capital structure decisions.

Market Timing Theory: Highlights how market conditions impact financing choices.

Practical Implications

Optimal Debt Levels: Firms aim to balance the tax advantages of debt against the potential costs of bankruptcy and agency issues.

Financing Hierarchy: Companies typically adhere to a pecking order, starting with internal funds, then using debt, and resorting to equity only when necessary.

Market Conditions: Firms may adjust their financing strategies based on market conditions, taking advantage of favorable circumstances to enhance their capital structure.

2.2 Empirical Review

2.2.1 Articles Review in International Context

Ombuh et al. (2024) investigated how capital structure affects the financial performance of non-bank financial institutions listed on the Indonesia Stock Exchange in 2022. The study concentrated on two main dependent variables: Return on Assets (ROA) and Return on Equity (ROE). Independent variables related to capital structure included the debt-to-assets ratio and the debt-to-equity ratio. The regression analysis highlighted a significant negative impact of capital structure on financial performance, particularly affecting ROE. This suggests that non-bank financial institutions need to manage their debt levels carefully to avoid increased financial strain and reduced profitability, emphasizing the importance of prudent capital management for long-term success.

Nuraeni (2024) explored the interplay between capital structure, net profit margin, and company value within the Indonesian manufacturing sector. The study aimed to uncover how these factors interact and influence overall company value. Employing quantitative methods and analyzing financial data from 30 manufacturing firms in Indonesia, the research utilized statistical analysis and linear regression modeling with SPSS version 26. The results revealed that capital structure and net profit margin significantly impact company value in the manufacturing industry, with capital structure amplifying the effect of net profit margin on company value.

Handini (2024) examined the impact of financial ratios, capital structure, and economic value added (EVA) on the financial performance of food and beverage manufacturers listed on the Indonesia Stock Exchange. Analyzing data from 14 companies using secondary financial statements from the IDX website, the study employed descriptive statistics, classical

assumption tests, multiple linear analysis, and hypothesis tests (t-tests, F-tests, and coefficient of determination tests). The findings indicated that financial ratios negatively affect financial performance, while capital structure and EVA do not significantly impact the financial performance of these companies, suggesting that these factors do not markedly influence the profitability of food and beverage firms on the IDX.

Haekal and Tannady (2023) assessed how the financial structure of publicly traded mining companies on the IDX affects their profitability. Using the debt-to-equity ratio (DER) as the independent variable and profitability, measured by Return on Equity (ROE), as the dependent variable, the study analyzed secondary data from the financial reports of 21 mining companies over three years (2020-2022) with purposive sampling and multiple linear regression. The results indicated that financial structure significantly influences profitability, with DER having a notable impact on ROE.

Kim et al. (2023) evaluated the financial value (FV) of ICT companies in terms of profitability efficiency using data envelopment analysis. The study also applied Tobit regression and Kruskal-Wallis one-way ANOVA to explore how leverage, liquidity, and firm size—key components of capital structure—affect FV. The findings revealed three key insights: small and medium-sized ICT companies generally exhibit better profitability efficiency compared to larger firms; only small and medium-sized ICT manufacturing firms see positive impacts on profitability efficiency from the current ratio; and mid-sized service companies experience positive effects from the debt-to-equity ratio on profitability efficiency. These results provide valuable implications for enhancing ICT companies' FV.

Demiraj et al. (2023) investigated the influence of capital structure on the profitability of the tourism industry across Europe. Analyzing data from all European-listed tourism firms using the Thomson Reuters (Refinitiv) database for 2010-2019, the study employed panel data regression to assess the effect of the debt-to-assets ratio on Return on Assets (ROA). The results demonstrated a significant negative impact of the debt ratio on ROA, although there was no notable effect on Return on Equity (ROE).

Nguyen et al. (2023) explored how capital structure affects the profitability of plastic and packaging companies listed on the Vietnam Stock Exchange. Utilizing a mix of qualitative research methods (including synthetic, statistical, descriptive, inductive, and interpretive

approaches) and quantitative methods (linear regression), the study identified two key capital structure variables short-term debt ratio (STD) and long-term debt ratio (LTL) that significantly impact profitability.

Boshnak (2023) analyzed the effect of capital structure on the performance of firms listed on the Saudi Stock Exchange (Tadawul). Employing the generalized method of moments (GMM) to address issues of autocorrelation, the study found that short-term debt, long-term debt, total debt, and debt-to-equity ratios negatively affect operational performance (ROA). Additionally, long-term debt, total debt, and debt-to-equity ratios also negatively impact financial performance (ROE) and market performance (Tobin's Q). Conversely, factors such as sales growth, insider ownership, firm size, and age generally had a positive effect on performance, while asset tangibility and liquidity showed mixed effects.

Anozie et al. (2023) investigated the impact of capital structure on the financial performance of Nigerian oil and gas companies. Using an ex-post facto research approach, the study examined variables such as short-term debt to total assets, long-term debt to total assets, total debt to total equity, and Return on Assets as proxies for capital structure and financial performance. Descriptive statistics and panel regression analysis revealed that while long-term debt to total assets negatively affects Return on Assets, short-term debt to total assets and total debt to total equity have positive but insignificant effects.

Habibniya et al. (2022) analyzed the effect of capital structure on profitability within the U.S. telecommunications industry. Examining unbalanced panel data from 2012 to 2020, including 421 firm-year observations from 72 firms, the study used pooled panel regression, univariate analysis, correlation, and descriptive statistics. The results indicated that the ratio of total liabilities to total assets significantly impacts return on assets (ROA), and the ratio of total equity to total assets also affects ROA. However, neither TLsTAs nor TETAs significantly influences Return on Equity (ROE).

Olusola et al. (2022) explored the impact of capital structure on firm performance in Hong Kong, a previously underexplored area in financial management. Utilizing a panel data model with Return on Assets (ROA) as the performance proxy and total debt ratio (TDR) as the capital structure proxy, the study found a slight negative effect, leading to inconclusive results regarding the impact of capital structure on performance. The unique economic

environment in Hong Kong, marked by distinct consumer behaviors, spending habits, and saving patterns, suggests that cultural, political, and institutional factors should be considered when evaluating the effects of capital structure on firm performance.

Ngoc et al. (2021) examined the effect of capital structure on profitability, measured by ROA and ROE. Applying quantitative methods, including Pool OLS, FEM, REM, and FGLS models, and the study found a negative impact of capital structure on ROA. However, there was no statistical evidence supporting the impact of capital structure on ROE for logistics enterprises during the study period.

Ayalew (2021) analyzed the relationship between capital structures measured by total and short-term debt ratios and profitability in private banks in Ethiopia. Using panel fixed effects, the study reviewed 16 private banks and found that capital structure variables, along with certain bank-specific characteristics, significantly explain variations in bank profitability. Higher Return on Assets (ROA) and net interest margins were associated with higher total and short-term debt ratios, loan-to-deposit ratios, and credit risks. Older banks performed better in terms of profitability compared to younger ones, while larger banks had a significantly negative impact on ROA, suggesting they operate below optimal capacity. Mixed results were observed for the cost-income ratio and employee productivity coefficients.

Ayaz et al. (2021) investigated the link between leverage and firm performance in Malaysia, analyzing it through trade-off theory and agency cost theory. The study, which utilized fixed effects and system two-step GMM models, reviewed data from 528 non-financial firms listed on Bursa Malaysia over a 12-year period. The results revealed a positive impact of leverage on firm performance, suggesting that leverage helps manage managerial behavior and provides benefits that outweigh the costs of debt. However, excessive leverage can turn the positive impact into a negative one, highlighting a nonlinear relationship between debt and firm performance.

Ngoc et al. (2021) analyzed the effect of capital structure on the performance of 25 real estate companies listed on the Ho Chi Minh City Stock Exchange. Using correlation and regression analysis, the study found that capital structure negatively affects business performance. Conversely, tangible assets were shown to positively influence performance across all three

regression models using FGLS. The study also controlled for variables such as firm size, liquidity, asset growth, economic growth, and inflation rate but found no clear evidence of their impact on business performance.

Fekadu Agmas (2020) explored the impact of capital structure on the profitability of construction firms in Ethiopia. By using time series data from 30 top-grade construction companies for the years 2011–2015, the study employed random effect multiple regression models. The findings indicated a significant positive relationship between capital structure (measured by debt-to-equity and long-term debt-to-total assets ratios) and return on equity and return on assets. Conversely, the debt-to-assets ratio showed a significant negative correlation with both ROE and ROA in the sample.

Nguyen and Nguyen (2020) studied the effect of capital structure on firm performance in Vietnam, focusing on both state-owned and non-state enterprises listed on the Vietnam stock market. Analyzing panel data from 488 non-financial companies over six years (2013–2018) and using Generalized Least Squares to refine regression coefficients, the study measured firm performance by ROE, ROA, and EPS. The results revealed a statistically significant negative impact of capital structure on firm performance, with this effect being more pronounced in state-owned enterprises compared to non-state ones.

Ali and Faisal (2020) assessed how capital structure, profitability, and financial performance influence business success in Saudi Arabia's petrochemical sector. Using secondary data from petrochemical companies' websites and analyzing financial ratios with Financial Ratio Variability and Trend Indices of financial ratios the study found unexpected performance issues attributed to underutilization of resources caused by low demand and fluctuating product prices. Key factors impacting the industry's growth include company size, demand, production costs, product profitability, and access to low-cost external capital.

Noreen (2019) explored the impact of capital structure on the profitability of Islamic versus conventional banks. The study, covering ten banks from 2006 to 2016, used independent samples T-tests and regression analysis to assess the effect on profitability. The results showed that, although capital structures were similar for both bank types, Return on Assets had a negative correlation with capital structure for both, while Return on Equity showed a positive correlation. The study also identified positive correlations between two explanatory

variables and earnings per share, while two others had negative correlations, supporting the relevance of pecking order and trade-off theories in Pakistan.

Singh and Bagga (2019) investigated the impact of capital structure on profitability among Nifty 50 companies listed on the National Stock Exchange in India. The study employed descriptive statistics, correlation, and multiple panel data regression models to analyze the data. Four regression models were used to examine the effects of total debt and total equity ratios on return on assets and return on equity.

Chang et al. (2019) examined the relationship between capital structure and profitability across firms in the Four Asian Tiger economies. Using correlation and regression analysis on data from 2003 to 2016, the study found a significant negative relationship between leverage and profitability. It also discovered a positive relationship between growth and leverage in Taiwan, Korea, and Hong Kong, and a positive link between firm size and leverage in each country.

Ghayas and Akhter (2018) analyzed the impact of capital structure decisions on the profitability of 35 Indian pharmaceutical companies listed on the Bombay Stock Exchange (BSE) over five years (2012–2016). Using regression analysis, the study found a positive effect of short-term and total debt ratios on Return on Equity, while the long-term debt ratio had a weak-to-no effect on ROE. Firm size and sales growth were also considered as control variables.

Revathy and Santhi (2016) investigated how capital structure affects the profitability of manufacturing companies in India. The study aimed to understand the impact of capital structure variables on business revenue and profitability, categorizing companies into pioneering, growth, and consolidation stages, as well as pre and post-merger phases. Using a sample of seventy companies selected through multi-stage sampling, the research revealed a significant inverse relationship between capital structure variables, particularly the Debt-Equity Ratio, and profitability. An increase in the Debt-Equity Ratio negatively affected profitability.

Ahmad (2014) studied the effect of capital structure on the profitability of the cement sector in Pakistan. The analysis utilized panel data from 16 firms listed on the Karachi stock exchange over six years (2005–2010). Capital structure variables included debt/equity ratio,

debt ratio, interest coverage ratio, short-term debt to assets, and long-term debt to assets, with profitability measured by return on equity. Using fixed and random effects models with Stata 11, the study found a significant negative relationship between profitability and debt levels, indicating that higher debt is associated with reduced profitability.

Shubita et al. (2012) analyzed the impact of capital structure on the profitability of industrial companies listed on the Amman Stock Exchange over a six-year period. The study sought to determine whether capital structure affects Jordanian industrial companies. With a sample of 39 companies, the analysis using correlations and multiple regression revealed a significant negative relationship between debt and profitability, suggesting that more profitable firms tend to rely more on equity financing.

Table 1

Summary of Empirical Review in International Context

| Author/ date | Methodology | Findings and conclusions |
|---------------------|--|--|
| Ombuh et al. (2024) | The study concentrates on two primary dependent variables: the Return on Assets ratio and the Return on Equity (ratio). The independent variables, which reflect the capital structure, include the debt-to-assets ratio and the debt-to-equity ratio. | The regression analysis results reveal a substantial negative effect of the capital structure on financial performance, with a particularly pronounced impact on the return on equity. |
| Nuraeni (2024) | This analysis employs quantitative methods utilizing financial data and pertinent metrics from a sample of 30 manufacturing companies in Indonesia. | The results revealed that both capital structure and net profit margin have a significant impact on the company's value in the manufacturing industry. Additionally, the capital structure enhances the influence of the net profit margin on the company's value. |

- Handini (2024) The study analyzed 14 companies using financial statements obtained from the Indonesia Stock Exchange website as secondary data. The data analysis included descriptive statistical tests, classical assumption tests, multiple linear regression analysis, and hypothesis testing using t-tests, F-tests, and the coefficient of determination. The study discovered that financial ratios have a negative impact on the financial performance of food and beverage companies listed on the Indonesia Stock Exchange. However, capital structure variables do not have a significant effect on the financial performance of these companies. Additionally, Economic Value Added does not significantly influence the financial performance of food and beverage companies listed on the Indonesia Stock Exchange.
- Haekal and Tannady (2023) The study utilized purposive sampling to select the sample, gathering 63 data points over three years from 21 mining companies listed on the Indonesia Stock Exchange to meet the criteria. Multiple linear regression analysis was employed to examine the relationships between the variables. The regression analysis results indicate that both components of the financial structure significantly influence profitability overall. However, the Return on Equity is specifically and significantly affected only by the debt-to-equity ratio component.
- Kim et al. (2023) Additionally, the study utilizes Tobit regression and Kruskal-Wallis one-way ANOVA to examine how leverage, liquidity, and firm size, as key factors of capital structure, influence financial value (FV). The analysis reveals three key findings: First, in the ICT industry, small and medium-sized companies generally exhibit better profitability efficiency compared to companies of other sizes. Second, the profitability efficiency of small and medium ICT manufacturing companies is positively influenced by the current ratio. Third, only mid-sized service companies show a positive impact on profitability efficiency from the debt-equity ratio.
- Demiraj et al. (2023) The study is driven by the significant role of the tourism industry in the economic growth of European countries. It encompasses a sample of all European-listed firms within The findings indicate that the debt ratio significantly negatively affects return on assets but does not have a significant impact on return on equity.

the tourism sector.

- Nguyen et al. (2023) Utilizing both qualitative research methods (including synthetic methods, statistical techniques, and inductive and interpretive approaches) and quantitative research methods (such as linear regression analysis). The study identified two key independent variables related to capital structure that significantly impact enterprise profitability: (1) Short-term debt ratio and (2) Long-term debt ratio.
- Boshnak (2023) A generalized method of moments (GMM) estimation is used to model the data, facilitating hypothesis testing and addressing issues such as autocorrelation. The results show that short-term debt, long-term debt, total debt, and debt-to-equity ratios all significantly negatively affect a firm's operational performance (return on assets). Additionally, long-term debt, total debt, and debt-to-equity ratios also have a significant negative impact on the firm's financial performance (return on equity) and market performance.
- Anozie et al./ (2023) Employing an ex-post facto research methodology, the study examined short-term debt to total assets, long-term debt to total assets, total debt to total equity, and return on assets as indicators for capital structure and financial performance. The analysis reveals that long-term debt to total assets has a significant negative effect on return on assets, while short-term debt to total assets and total debt to total equity have positive but insignificant effects.
- Habibniya et al. (2022) Utilizing pooled panel regression, univariate analysis, correlation analysis, and descriptive statistics models. The results indicate that the ratio of Total Liabilities to Total Assets and Total Equity to Total Assets significantly affects Return on Assets. However, neither TLsTAs nor TETAs has any effect on Return on Equity.
- Olusola et al. (2022) Ultimately, a panel data model was used for both capital structure and performance analysis. In the empirical model, Return on Assets served as the performance proxy, while total debt represented the capital structure proxy. The results revealed a minor negative effect, making the impact of capital structure on performance inconclusive. However, it's important to consider that Hong Kong's unique economic system and its distinct characteristics, such as consumer consumption patterns, spending behaviors, and saving habits, may influence firms and individuals

differently compared to other countries.

- Ngoc et al. (2021) Using quantitative methods, including models such as Pool OLS, Fixed Effects Model, Random Effects Model, and Feasible Generalized Least Squares. The research results demonstrate that capital structure negatively affects profitability as measured by Return on Assets, However, for Return on Equity, there was no statistical evidence found to support a significant impact of capital structure on profitability for logistics enterprises during this period.
- Ayalew /(2021) Employing panel fixed effects, the study included a survey of 16 private banks. Capital structure variables, along with certain bank-specific characteristics, account for a significant portion of the variations in bank profitability. Higher profitability, as indicated by ROA and net interest margin, is generally associated with higher total and short-term debt ratios, loan-to-deposit ratios, and credit risks. Additionally, older banks tend to be more profitable compared to their younger counterparts.
- Ayaz et al. (2021) Drawing from existing literature, the study utilized fixed effects and system two-step GMM models to explore the proposed relationship between leverage and performance. It analyzed data from 528 non-financial firms listed on the Bursa Malaysia Stock Exchange over a 12-year period. The results indicate that leverage enhances firm performance, aligning with the idea that leverage effectively limits managerial excesses, providing Malaysian firms with greater benefits relative to the cost of debt financing. However, the study also finds that the positive impact of leverage on performance turns negative once leverage exceeds an optimal level. This shift from positive to negative suggests that debt has a nonlinear, twofold effect on firm performance.

| | | |
|--------------------------|---|---|
| Ngoc et al./ (2021) | Correlation and regression analyses were performed to derive the research findings. | The research results indicate that capital structure negatively affects business performance. Additionally, the study found that tangible assets positively impact the performance of real estate firms, a finding consistent across all three regression models used in the FGLS analysis. This suggests that real estate firms with more tangible fixed assets tend to have better business performance. |
| Fekadu Agmas (2020) | Multiple regression models were used. | The study shows that capital structure, as indicated by the debt-to-equity ratio and long-term debt-to-total-assets ratio, has a significant positive correlation with both return on equity and return on assets for the construction companies sampled. |
| Nguyen and Nguyen (2020) | The paper explores how capital structure impacts firm performance differently in state-owned versus non-state enterprises listed on the Vietnam stock market. | The Generalized Least Squares method is used to tackle econometric issues and enhance the precision of regression coefficients. This study measures firm performance through return on equity, return on assets, and earnings per share. Capital structure is represented by the ratios of short-term liabilities, long-term liabilities, and total liabilities to total assets. The analysis also includes control variables such as firm size, growth rate, liquidity, and the ratio of fixed assets to total assets. |
| Ali and Faisal (2020) | Correlation and regression analysis is conducted. | The study identifies that factors such as company size, demand, production costs, profitable product streams, and low-cost external capital contribute to the overall growth and development of Saudi Arabia's petrochemicals industry. |

- Noreen (2019) An independent samples T-test was employed to compare the capital structure of Islamic and conventional banks, while regression analysis using the Fixed Effects model was utilized to evaluate the effect of capital structure on profitability. The results indicated that the capital structures of both bank types were similar, with the exception of bank size, which differed significantly. The Return on Assets was found to have a negative correlation with the capital structure for both conventional and Islamic banks. Conversely, the Return on Equity was positively correlated with the capital structure in both types of banks.
- Singh and Bagga (2019) The data was analyzed using descriptive statistics, correlation analysis, and multiple panel data regression models. Various regression models have been employed to explore the relationship between capital structure and profitability. These models examine the individual impact of total debt and total equity ratios on profitability measures, such as ROA and ROE.
- Chang et al. (2019) To analyze the relationship between capital structure and profitability, they utilize correlation and regression analysis. The study reveals a significant negative relationship between leverage and profitability, a significant positive relationship between growth and leverage in Taiwan, Korea, and Hong Kong, and a significant positive relationship between size and leverage in each of these countries.
- Ghayas and Akhter (2018) Regression Analysis is used to measure the extent and nature of the relationship. The results indicate that SDA and DA have a positive impact on ROE, whereas LDA shows little to no effect on ROE.
- Revathy and Santhi (2016) This study is conducted by categorizing the selected manufacturing companies into three groups based on two attributes: stages and periods. First, the manufacturing companies are classified into the pioneering stage, growth stage, and consolidation stage. The study shows a strong one-to-one relationship between capital structure variables and profitability, indicating that an increase in the Debt-to-Equity Ratio negatively impacts the profits of manufacturing companies listed on the Bombay Stock Exchange in India.
- Ahmad (2014) The variables were analyzed using Fixed and Random effect methodology by using STATA 11. The results indicated a significant relationship between profitability and capital structure. Specifically, profitability was negatively related to the level of liabilities in a company's capital structure, meaning that as a firm
-

takes on more debt, its earnings are adversely affected.

2.1.2 Articles Review in National Context

Khadka and Pradhan (2023) examined how firm-specific and macroeconomic factors influence the profitability of Nepalese insurance companies. The study utilized Return on Assets (ROA) and Return on Equity (ROE) as dependent variables and included firm size, liquidity, and asset tangibility, dividend per share, premium growth, inflation, GDP, and money supply as independent variables. The regression analysis revealed that increased liquidity negatively impacts both ROA and ROE, suggesting a decline in profitability with higher liquidity. Conversely, asset tangibility positively affects ROA and ROE, indicating that greater asset tangibility enhances profitability. Additionally, higher dividends per share and premium growth were found to positively influence ROA.

Chalise and Adhikari (2022) investigated the impact of capital structure and firm size on the financial performance of Nepalese commercial banks. The study, which included 14 banks of various ownership types, used secondary data and regression analysis to link Return on Assets and Earnings per Share with capital structure and firm size. The results showed a negative relationship between the debt/equity ratio and both ROA and EPS, while a positive relationship was observed between firm size and ROA and EPS. This supports the recommendation for higher equity capital in the capital structure of Nepalese commercial banks.

Pradhan and Kafle (2021) explored how capital structure affects the profitability of Nepalese commercial banks, focusing on ROA, ROE, and Net Interest Margin (NIM) as dependent variables. Independent variables included the capital adequacy ratio, bank size, and various debt ratios. Data from Nepal Rastra Bank and annual reports were analyzed using regression models. The study found that higher short-term debt-to-assets ratios negatively affect ROE, ROA, and NIM, while increases in total debt-to-assets and total debt-to-equity ratios also negatively impact ROA and ROE.

Bhattarai (2020) analyzed the effects of capital structure on the financial performance of Nepalese insurance companies using panel data from 14 firms and 126 observations. Employing pooled OLS, random effects, and fixed effects models with ROA as the dependent variable, the study identified that the equity-to-total-assets ratio, leverage, and asset tangibility significantly impact financial performance.

Jaishi (2020) explored the relationship between capital structure and profitability among 18 Nepalese commercial banks. Data from 2010 to 2019 were analyzed using ROE as the profitability indicator and various capital structure proxies, such as short-term debt, long-term debt, deposits, and total debt-to-assets ratio. The study found that over 40% of ROE could be explained by capital structure variables. ROE was insignificantly positively related to long-term debt and deposits and insignificantly negatively related to short-term debt and total debt. Bank size was significantly positively related to profitability, indicating that larger banks tend to achieve higher returns.

Neupane (2020) investigated the determinants of profitability in Nepalese commercial banks using descriptive statistics, correlation analysis, and panel data regression models (Fixed and Random Effects). The study found that external factors, such as concentration ratio, sector development, GDP growth, inflation, and exchange rate, significantly affect ROA. Internal factors like bank size, capital base, deposits, loans, and branches had no significant impact on ROA. However, NIM was significantly influenced by capital adequacy, branch numbers, and inflation rate.

Hamal (2020) examined how liquidity ratio, leverage ratio, firm size, firm age, and total debt affect the profitability of non-life insurance companies in Nepal, using ROA as the profitability measure. The study, based on secondary data from nine companies over ten years, found that higher liquidity increases profitability, while higher leverage decreases it. Firm size, firm age, and total debt did not show a significant relationship with profitability. The study recommends that non-life insurance companies focus on managing liabilities effectively to boost profitability.

Table 2*Summary of Empirical Review in Nepalese Context*

| Author/ date | Methodology | Findings and conclusions |
|-----------------------------|---|--|
| Khadka and Pradhan (2023) | Regression models are used to evaluate the significance and impact of firm-specific and macroeconomic factors on the profitability of Nepalese insurance companies. | The study found that the liquidity ratio negatively affects both Return on Assets (ROA) and Return on Equity (ROE), meaning that an increase in the liquidity ratio results in a decrease in ROA. In contrast, asset tangibility has a positive effect on both ROA and ROE. |
| Chalise and Adhikari (2022) | Regression analysis was employed to estimate the relationships between Return on Assets (ROA) and Earnings per Share (EPS) with measures of capital structure and firm size (total assets). | The results indicated a negative relationship between ROA and EPS with capital structure (Debt/Equity), while a positive relationship was observed between ROA and EPS with firm size (total assets). The findings support the use of higher levels of equity capital in the capital structure of Nepalese commercial banks. |
| Pradhan and Kafle. (2021) | Regression models are used to assess the impact of capital structure on the profitability of Nepalese commercial banks. | The study found that the short-term debt-to-total-assets ratio negatively affects Return on Equity (ROE), Return on Assets (ROA), and Net Interest Margin (NIM), suggesting that an increase in this ratio leads to a decrease in these profitability measures. Additionally, the total debt-to-total-assets ratio also negatively impacts ROA. |
| Bhattarai (2020) | Data was gathered from the annual reports available on the websites of the respective insurance companies. The study used panel data from 14 Nepalese insurance companies, resulting in a total of 126 observations. The data were analyzed using pooled OLS, random effects, and fixed effects models. | The study used Return on Assets (ROA) as the dependent variable, with total debt ratio, equity-to-total-assets ratio, leverage, firm size, liquidity ratio, and asset tangibility as independent variables. The results concluded that equity-to-total-assets ratio, leverage, and asset tangibility significantly affect the financial performance of Nepalese insurance companies. |

| | | |
|----------------|--|---|
| Jaishi (2020) | Return on Equity (ROE) was used as the measure of profitability, while short-term debt, long-term debt, deposits, and the total debt-to-assets ratio served as proxies for capital structure. Additionally, bank size and asset growth were included as control variables. | The results indicated that over 40 percent of bank profitability, as measured by Return on Equity (ROE), is explained by the capital structure variables. Additionally, ROE showed an insignificant positive relationship with long-term debt and deposits, while it had an insignificant negative relationship with short-term debt and total debt. |
| Neupane (2020) | This study uses descriptive statistics to outline the profitability of Nepalese banks and its determinants. Additionally, it assesses the correlation between various profitability indicators and their determinants by calculating correlation coefficients. | The analysis shows that the profitability of Nepalese commercial banks, measured by Return on Assets (ROA), is significantly influenced by external factors such as concentration ratio, banking sector development, GDP growth, inflation, and exchange rate, often in opposite directions. In contrast, internal factors like bank size, capital base, deposits, loans, off-balance sheet activities, and number of branches do not significantly impact profitability. |
| Hamal (2020) | Descriptive statistics, correlation analysis, and regression models have been utilized | The effects and significance of the chosen independent variables on return on assets. |

2.3 Research Gap

This study explores how capital structure affects the profitability of manufacturing companies in Nepal. It employs both descriptive and causal-comparative research methods to thoroughly examine this relationship. Using secondary data from a sample of three manufacturing firms over a ten-year span, the research applies various analytical techniques. These include descriptive statistics to describe key data features, correlation analysis to uncover relationships between variables, and regression models to assess how capital structure impacts profitability. The goal is to offer a detailed understanding of how different aspects of capital structure influence the financial performance of these firms.

In contrast, earlier studies often examined a single manufacturing firm and covered industries other than manufacturing. These studies generally spanned five years and utilized only descriptive research design and statistical methods.

Future research might concentrate on a single manufacturing company or broaden the sample to encompass the entire industry. Researchers could explore different numbers of dependent and independent variables, potentially using more or fewer than three. Incorporating primary data and applying different research designs beyond descriptive and causal-comparative methods could also be considered.

CHAPTER-III

RESEARCH METHODOLOGY

Research methodology encompasses the particular methods and procedures used to gather, choose, process, and analyze data on a specific subject. The methodology section of a research paper allows readers to evaluate the study's validity and reliability. This chapter offers a detailed outline of the research approach and process.

3.1 Research Design

This study employs both descriptive and causal-comparative research designs to explore capital structure and profitability issues. The descriptive research design is used to assess the current state of capital structure and profitability, whereas the causal-comparative research design facilitates the comparative analysis of independent and dependent variables using correlation and regression techniques.

3.2 Population and Sample

Sampling for this study was conducted using purposive sampling. The purposive sampling was used because the research required a specific set of companies and data that directly aligned with the research objectives analyzing the financial performance of three manufacturing companies in Nepal over ten fiscal years. Additionally, financial statements from three manufacturing companies spanning ten fiscal years, from FY 2014 to FY 2023, were chosen for analysis.

Table 3

Sample of the Manufacturing

| S.N. | Manufacturing Companies | Sample |
|------|-------------------------|--------|
| 1 | Bottlers Nepal (balaju) | 1 |
| 2 | Bottlers Nepal (Terai) | 1 |
| 3 | Himalayan Distillery | 1 |
| | Total | 3 |

As of mid-July 2023, NEPSE features 18 listed manufacturing companies. For this study, four companies were chosen: Bottlers Nepal (Balaju), Bottlers Nepal (Terai), Himalayan Distillery, and Unilever.

3.3 Nature and Sources of Data

This research employs secondary data to explore the connections and causal links between capital structure and profitability. It also assesses the predictive power of these variables using secondary sources. Data specific to the firms are collected from the annual reports available on the companies' official websites and from databases maintained by NEPSE and SEBON.

3.4 Instrument of Data Collection

In research, the term "instrument" denotes the methods or tools utilized to gather data. For collecting primary data, a variety of instruments are used, such as surveys, observations, interviews, laboratory experiments, quasi-experiments, and rating scales. In contrast, secondary data is sourced from official company websites, including their annual reports. Additional sources include economic reports, published statistical data, and informal discussions or procedures to obtain supplementary information.

3.5 Methods of Analysis

To achieve the study's objectives, a range of financial and statistical tools and methods have been employed. Data analysis is conducted based on the structure and pattern of the available data.

3.5.1 Financial Analysis

Return on Assets

Return On equity

Total Debt to Total Assets

Debt equity ratio

Leverage

Liquidity

Assets Tangibility

Size (log of total assets)

Return on Assets

Return on Assets (ROA) is a financial ratio that reflects a company's profitability in relation to its total assets. It assesses how effectively a company utilizes its assets to produce profit. ROA is determined by dividing the company's net income by its total assets. The formula is:

$$\text{ROA} = \frac{\text{net profit after tax}}{\text{total assets}}$$

Return On equity

Return on Equity is a financial ratio that gauges a company's profitability relative to shareholders' equity. It shows how effectively a company is utilizing the equity investments made by its shareholders to generate profits. The formula for calculating ROE is:

$$\text{ROE} = \frac{\text{Net profit after Tax}}{\text{return on equity}}$$

Total Debt to Total Assets

The Total Debt to Total Assets ratio is a financial metric that shows the percentage of a company's assets funded through debt. It offers insight into the company's financial leverage and risk profile. A higher ratio implies that a greater portion of the company's assets is financed by debt, potentially indicating increased financial risk.

$$\text{Total Debt to Total Assets} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

Debt equity ratio

The Debt to Equity Ratio is a financial metric that compares a company's total debt to its shareholders' equity. It measures the company's financial leverage and reveals the extent to which debt is used to finance the company's assets in relation to its equity.

$$\text{Debt to equity Ratio} = \frac{\text{Total Debt}}{\text{total Equity}}$$

Leverage

In finance, leverage refers to the use of borrowed funds to boost the potential return on an investment. By employing different financial instruments or borrowed capital, companies and investors can enhance their investment potential. However, leverage also raises risk, as debt can magnify both gains and losses.

$$\text{Leverage} = \frac{\text{total assets}}{\text{total equity}}$$

Liquidity

Liquidity describes how swiftly and easily an asset or security can be converted into cash without causing a substantial impact on its price. It is an essential element of financial health, reflecting an entity's capacity to fulfill its short-term obligations.

$$\text{Current ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Assets Tangibility

Assets tangibility refers to the proportion of a company's assets that are physical and measurable, as opposed to intangible assets. Tangible assets are concrete items used in a company's operations, such as machinery and real estate, whereas intangible assets, like patents, trademarks, and goodwill, do not have physical substance.

$$\text{Assets Tangibility} = \frac{\text{total fixed assets}}{\text{total assets}}$$

Size (log of total assets)

Utilizing the logarithm of total assets as a measure of company size is a standard approach in financial and economic research. This method helps normalize the distribution of company sizes, facilitating comparisons between companies of varying scales and managing skewed data distributions. It is especially beneficial when working with datasets where company sizes vary widely.

$$\text{Size} = \log(\text{total assets})$$

3.5.2 Statistical Analysis

Descriptive Analysis

Descriptive analysis involves examining the mean, standard deviation, minimum, and maximum values of data related to specific variables.

Arithmetic Mean

The arithmetic mean, commonly known as the average, is determined by dividing the total sum of all values by the number of observations in the sample. This measure represents the central value of the data, typically lying between the highest and lowest values. Often referred to as a measure of central tendency, the average provides a central point around which the data clusters. In this study, it is utilized to analyze data from sample banks across ten fiscal years. The calculation is performed as follows:

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

Where, \bar{X} = Mean

$\sum X$ = Sum of all the variable X

n = Variable involved

Standard Deviation (σ)

Standard deviation quantifies the extent of variation or dispersion within a set of values. It is computed as the square root of the variance, which involves measuring each data point's deviation from the mean. It is denoted by (σ).

$$\text{Standard Deviation } (\sigma): \text{S.D} = \sqrt{\frac{\sum(X - \bar{X})^2}{N}}$$

Where,

X=variables

= mean

N= No. of Period

Minimum

The minimum denotes the lowest value within a given data set, representing the smallest value for a specific variable in the research. It is the data point that is less than or equal to all other values in the set. When the data is sorted in ascending order, the minimum value appears as the first number in the sequence. While the minimum value may occur multiple times in the data set, it is considered unique because it represents the smallest value. There cannot be two distinct minimums, as one must always be smaller than the other.

Maximum

The maximum refers to the highest value within a given data set, representing the largest value for a particular variable in the research. It is the data point that surpasses or equals all other values in the set. When the data is arranged in ascending order, the maximum value is the final number in the sequence. While the maximum value may appear more than once in the data set, it is regarded as unique because there can be only one maximum value. There cannot be two distinct maximums, as one would inherently be greater than the other.

Correlation Analysis

It is a statistical tool designed to ascertain both the direction and strength of the relationship between two sets of variables. This method elucidates how two variables interact with each other, demonstrating whether they move in tandem or in opposition, and quantifies the

degree of their association. The relationship between the variables is measured using the Pearson correlation coefficient, a metric that ranges from -1 to +1. A correlation coefficient of -1 signifies a perfect negative correlation, indicating that the variables move in precisely opposite directions when one variable increases, the other decreases in a perfectly predictable manner. On the other hand, a coefficient of +1 denotes a perfect positive correlation, meaning that the variables move together in the same direction an increase in one variable corresponds with a proportional increase in the other. The Pearson correlation coefficient thus provides a clear, numerical measure of the linear relationship between two variables, offering valuable insights into their interdependence.

Multiple Regression Model

The regression models employed in this study are designed to analyze and assess the relationships between dependent and independent variables. These models aim to elucidate how various independent variables impact the dependent variable, thereby offering a thorough understanding of their interactions. Specifically, the study will detail how the dependent variable, which serves as the outcome or response measure, relates to one or more independent variables believed to influence or predict changes in the dependent variable. Through these regression models, the study will estimate both the strength and direction of each independent variable's effect on the dependent variable. This method will enable a nuanced examination of how different factors contribute to variations in the dependent variable, providing deeper insights into the dynamics of the phenomena being studied.

Model I

$$ROE = \beta_0 + \beta_1 \times TDTA + \beta_2 \times DER + \beta_3 \times L + \beta_4 \times Li + \beta_5 \times AT + \beta_6 \times S + e$$

Model II

$$ROA = \beta_0 + \beta_1 \times TDTA + \beta_2 \times DER + \beta_3 \times L + \beta_4 \times Li + \beta_5 \times AT + \beta_6 \times S + e$$

Where,

ROA= Return on Assets

ROE = Return On equity

TDTA = Total Debt to Total Assets

DER= Debt equity ratio

L= Leverage

Li= Liquidity

AT= Assets Tangibility

S= Size (log of total assets)

3.6 Research Framework and Definition of Variables

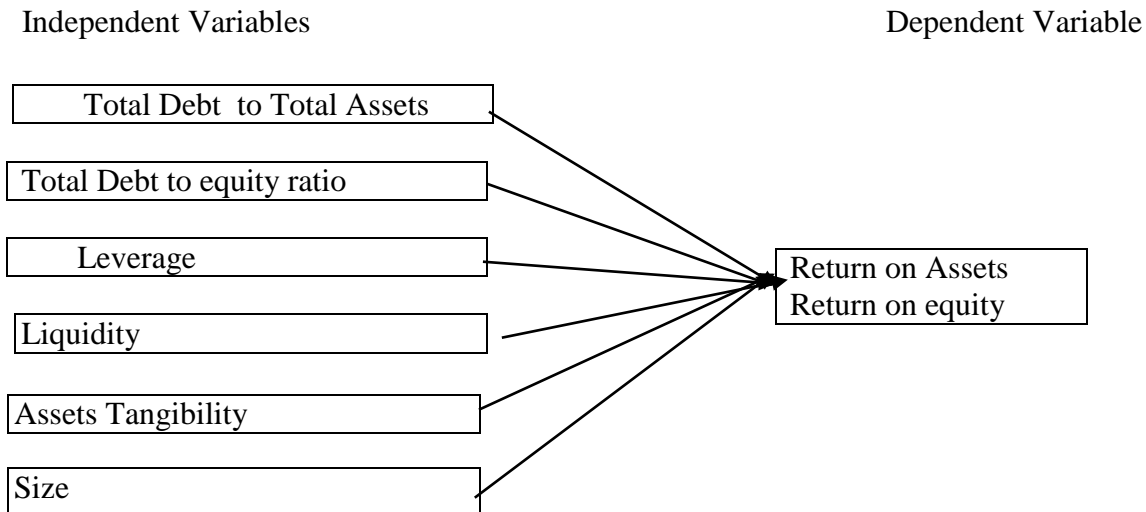


Figure 1

Research Framework

Definitions of Variables

Dependent Variables

Return on Assets (ROA)

Return on Assets (ROA) is a financial metric that reflects a company's profitability relative to its total assets. It assesses how effectively a company utilizes its assets to generate profits. ROA is computed by dividing net income by total assets.

Return on Equity (ROE)

Return on Equity (ROE) measures a company's profitability in relation to shareholders' equity. It indicates how well a company is leveraging equity investments to produce profits.

Independent Variables

Total Debt to Total Assets

The Total Debt to Total Assets ratio indicates the proportion of a company's assets that is financed through debt. This metric reveals the company's financial leverage and risk profile. A higher ratio suggests a greater reliance on debt for financing, which may imply increase financial risk.

Debt to Equity Ratio

The Debt to Equity Ratio compares a company's total debt to its shareholders' equity. It is an indicator of the company's financial leverage, showing the extent to which debt is used to finance the company's assets in relation to equity.

Leverage

Leverage refers to the use of borrowed capital to enhance the potential return on an investment. While leverage can amplify returns, it also increases risk, as the use of debt can magnify both gains and losses.

Liquidity

Liquidity describes how quickly and easily an asset or security can be converted into cash without significantly impacting its price. It is a key measure of financial health, reflecting an entity's ability to meet short-term obligations.

Assets Tangibility

Assets tangibility measures the proportion of a company's assets that are tangible rather than intangible. Tangible assets are physical and measurable, such as machinery and buildings, while intangible assets include non-physical items like patents and trademarks.

Size (Log of Total Assets)

Using the logarithm of total assets as a size measure normalizes the distribution of company sizes, facilitating comparison across companies of varying scales. This approach manages skewed data distributions and is particularly useful when company sizes vary greatly.

CHAPTER-IV

RESULT AND DISCUSSION

The results and discussion section is a crucial part of the dissertation. It transforms numerical data into a comprehensive analysis. This involves organizing the data through tabulation and then presenting it in a clear and structured manner using tables, figures, and other visual aids.

4.1 Result

4.1.1 Descriptive Statistical Analysis

This process includes assessing the company's strengths and weaknesses, with strengths offering advantages and weaknesses presenting challenges. Recognizing these factors provides important insights for future planning and organizational improvement

Table 4

Descriptive Statistics (n=30)

| | Minimum | Maximum | Mean | Std. Deviation |
|--------------------|---------|---------|--------|----------------|
| ROA | -4.38 | 45.08 | 12.16 | 11.58 |
| ROE | -11.61 | 54.35 | 23.14 | 15.226 |
| TDTA | 8.56 | 81.79 | 52.55 | 19.76 |
| DER | 9.36 | 455.98 | 147.50 | 112.97 |
| L | 109.39 | 557.48 | 245.85 | 112.70 |
| Li | 37.37 | 1086.17 | 182.35 | 239.99 |
| AT | 16.49 | 79.10 | 54.51 | 17.3 |
| S | 1.90 | 3.97 | 3.40 | .47 |
| Valid N (listwise) | | | | |

Source: *Appendix -1&2*

Table 4 presents the descriptive statistics for three manufacturing companies: bottlers Nepal (balaju), bottlers Nepal (terai), and Himalayan distillery. The data encompasses 30 observations, with each company providing information across a span of 10 years. The table provides key statistical measures, including the minimum, maximum, mean, and standard deviation for several financial metrics.

For return on assets (roa), the values range from a minimum of -4.38 to a maximum of 45.08, with a mean of 12.16 and a standard deviation of 11.58. This indicates a notable variation in roa across the sample. Return on equity (roe) shows a minimum of -11.61, a maximum of 54.35, a mean of 23.14, and a standard deviation of 15.22, reflecting considerable variability

in roe as well. The total debt to total assets (td/ta) ratio ranges from 8.56 to 81.79, with a mean of 52.55 and a standard deviation of 19.76, highlighting significant fluctuations in the leverage ratios of the companies.

The debt to equity ratio (d/e) varies between 9.36 and 455.98, with an average of 147.50 and a standard deviation of 112.97, indicating a wide spread in the debt levels relative to equity. Leverage ranges from 109.39 to 557.48, with a mean of 245.85 and a standard deviation of 112.70, showing substantial variability in the companies' leverage ratios. Liquidity figures range from 37.37 to 1086.17, with a mean of 182.35 and a standard deviation of 239.99, reflecting extreme variability in liquidity levels. Assets tangibility has a minimum of 16.49, a maximum of 79.10, a mean of 54.51, and a standard deviation of 17.3, showing moderate variation in asset tangibility. Finally, the size of the companies ranges from 1.90 to 3.97, with a mean of 3.40 and a standard deviation of 0.47, indicating relatively less fluctuation in company size compared to other variables.

Overall, the high standard deviations across all variables suggest substantial fluctuation in the data, reflecting the varying financial conditions and operational characteristics of the three manufacturing companies. This variability indicates that these financial metrics exhibit considerable dispersion, contributing to the dynamic nature of the data observed in this study.

4.1.2 Correlation Analysis

The correlation analysis is a statistical method used to assess the strength and direction of the relationship between two numerical variables. This technique calculates a correlation coefficient, such as Pearson's r , which ranges from -1 to +1. A coefficient close to +1 signifies a strong positive correlation, where an increase in one variable is associated with an increase in the other. Conversely, a coefficient near -1 indicates a strong negative correlation, meaning an increase in one variable corresponds with a decrease in the other. A coefficient close to 0 suggests no linear relationship between the variables.

Table 5 presents the correlation analysis for three manufacturing companies: Bottlers Nepal (Balaju), Bottlers Nepal (Terai), and Himalayan Distillery. The analysis includes 30 observations from 10 years of data for each company. It examines the relationships between the independent variables total debt to total assets, debt equity ratio, leverage, liquidity, asset tangibility, and size and the dependent variables return on assets and return on equity.

The correlation between total debt to total assets and return on assets is both negative and significant, confirming the hypothesis. With a correlation value of -0.752 and a significance level of 0.00 (below 0.01), this indicates a strong negative relationship at the 1% significance level.

Similarly, the correlation between the debt equity ratio and return on assets is negative and significant, supporting the hypothesis. The correlation value of -0.541 and a significance level of 0.002 (below 0.01) confirm this result at the 1% significance level.

Table 5

Correlations Analysis

| | | ROA | ROE | TDTA | DER | L | Li | AT | S |
|------|---------------------|---------|--------|---------|---------|---------|---------|------|----|
| TDTA | Pearson Correlation | -.752** | -.365* | 1 | | | | | |
| | Sig. (2-tailed) | .000 | .047 | | | | | | |
| | N | 30 | 30 | 30 | | | | | |
| DER | Pearson Correlation | -.541** | -.142 | .862** | 1 | | | | |
| | Sig. (2-tailed) | .002 | .455 | .000 | | | | | |
| | N | 30 | 30 | 30 | 30 | | | | |
| L | Pearson Correlation | -.537** | -.140 | .849** | .998** | 1 | | | |
| | Sig. (2-tailed) | .002 | .460 | .000 | .000 | | | | |
| | N | 30 | 30 | 30 | 30 | 30 | | | |
| Li | Pearson Correlation | .546** | .221 | -.814** | -.533** | -.527** | 1 | | |
| | Sig. (2-tailed) | .002 | .240 | .000 | .002 | .003 | | | |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | | |
| AT | Pearson Correlation | -.475** | -.118 | .752** | .682** | .686** | -.748** | 1 | |
| | Sig. (2-tailed) | .008 | .534 | .000 | .000 | .000 | .000 | | |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | 30 | |
| S | Pearson Correlation | -.244 | -.247 | .122 | .201 | .231 | .020 | .110 | 1 |
| | Sig. (2-tailed) | .195 | .189 | .519 | .286 | .219 | .915 | .564 | |
| | N | 30 | 30 | 30 | 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: *Appendix -1&2*

The relationship is negative and significant, with a correlation value of -0.537 and a significance level of 0.002, which is below the 1% threshold. This confirms the hypothesis.

The relationship is positive and significant, indicated by a correlation value of 0.546 and a significance level of 0.002, also below the 1% threshold, supporting the hypothesis.

The relationship is negative and significant, with a correlation value of -0.475 and a significance level of 0.008, which is below the 1% threshold. This validates the hypothesis.

The relationship is negative but insignificant, with a correlation value of -0.244 and a significance level of 0.195, which is above the 5% threshold. This means the hypothesis is not supported.

The relationship is negative and significant, with a correlation value of -0.365 and a significance level of 0.047, below the 5% threshold, supporting the hypothesis.

The relationship is negative and insignificant, with a correlation value of -0.142 and a significance level of 0.455, above the 5% threshold. This means the hypothesis is not supported.

The relationship is negative and insignificant, with a correlation value of -0.140 and a significance level of 0.460, above the 5% threshold. Therefore, the hypothesis is not supported.

The relationship is positive but insignificant, with a correlation value of 0.221 and a significance level of 0.240, above the 5% threshold. This means the hypothesis is not supported.

The relationship is negative and insignificant, with a correlation value of -0.118 and a significance level of 0.534, above the 5% threshold. This implies the hypothesis is not supported.

The relationship is negative and insignificant, with a correlation value of -0.247 and a significance level of 0.189, above the 5% threshold. Thus, the hypothesis is not supported.

4.1.3 Multiple Regression Analysis

Multiple regression analysis is a powerful statistical technique used to investigate the relationship between one dependent variable and two or more independent variables. Unlike simple linear regression, which examines the effect of a single predictor, multiple regression incorporates several predictors, allowing researchers to assess both the overall and individual impacts of each predictor on the outcome. The results are usually reported through

coefficients for each independent variable, which indicate the direction and strength of their relationships with the dependent variable. The analysis also includes model summaries, ANOVA tables, and coefficient estimates to provide a thorough understanding of these relationships.

Multiple Regression Based on Return on Assets

The regression analysis uses return on assets as the dependent variable and total debt to total assets, debt to equity ratio, leverage, liquidity, asset tangibility, and size as independent variables. The analysis includes the model summary, ANOVA, and coefficients of variation.

Table 6

Model summary of ROA Based Model

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .891 ^a | .795 | .741 | 5.89 |

a. Predictors: (Constant), S, Li, DER, AT, TDTA, L

Source: *Appendix -1&2*

Table 6 presents the model summary for the three manufacturing companies over a ten-year period. The sample includes Bottlers Nepal (Balaju), Bottlers Nepal (Terai), and Himalayan Distillery, with a total of 30 observations, 10 for each company. The adjusted R-squared value is 0.471, indicating that the independent variables size, liquidity, leverage, asset tangibility, total debt to total assets, and debt to equity ratio collectively explain 47.1% of the variation in the dependent variable, return on assets (ROA). The remaining 52.9% is influenced by other variables not included in this research.

Table 7

ANOVA of the Study

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|--------|-------------------|
| 1 | Regression | 3091.341 | 6 | 515.223 | 14.844 | .000 ^b |
| | Residual | 798.301 | 23 | 34.709 | | |
| | Total | 3889.642 | 29 | | | |

a. Dependent Variable: ROA

b. Predictors: (Constant), S, Li, DER, AT, TDTA, L

Source: *Appendix -1&2*

Table 7 presents the model summary for the three manufacturing companies over a ten-year period. The sample includes Bottlers Nepal (Balaju), Bottlers Nepal (Terai), and Himalayan Distillery, with a total of 30 observations, 10 for each company. The significance value is 0.000, indicating that the impact is statistically significant, and the regression model is robust.

Table 7

Coefficient of the Study

| Model | | Unstandardized Coefficients | | Standardized | t | Sig. |
|-------|------------|-----------------------------|------------|--------------|--------|------|
| | | B | Std. Error | Coefficients | | |
| 1 | (Constant) | 158.015 | 30.290 | | 5.217 | .000 |
| | TDTA | -1.617 | .258 | -2.758 | -6.255 | .000 |
| | DER | .957 | .298 | 9.336 | 3.212 | .004 |
| | L | -.829 | .283 | -8.070 | -2.927 | .008 |
| | Li | -.045 | .013 | -.931 | -3.560 | .002 |
| | AT | .041 | .114 | .061 | .357 | .724 |
| | S | 2.286 | 3.237 | .093 | .706 | .487 |

a. Dependent Variable: ROA

Source: *Appendix -1&2*

Table 7 presents the coefficients for the three manufacturing companies over a ten-year period. The sample includes Bottlers Nepal (Balaju), Bottlers Nepal (Terai), and Himalayan Distillery, with a total of 30 observations (10 per company). The table illustrates the impact of each independent variable on the dependent variable, return on assets (ROA).

The total debt to total assets ratio has a negative and significant impact on ROA, supporting the hypothesis. This negative effect is shown by a beta value of -1.617, with a significance level of 0.000, well below the 0.05 threshold, confirming the hypothesis.

The total debt to equity ratio positively and significantly impacts ROA, with a beta value of 0.957. The significance level of 0.004, also below 0.05, further validates the hypothesis.

Leverage negatively impacts ROA, and this effect is significant, indicated by a beta value of -0.829 and a significance level of 0.008, supporting the hypothesis.

Liquidity also has a negative and significant effect on ROA, shown by a beta value of -0.045 and a significance level of 0.002, confirming the hypothesis.

On the other hand, asset tangibility has a positive but statistically insignificant effect on ROA. The beta value of 0.041 suggests a positive relationship, but the significance level of 0.724 is well above the 0.05 threshold. This high p-value indicates that the observed effect may not be statistically significant, implying it could be due to random variation rather than a true association.

Similarly, company size shows a positive but statistically insignificant impact on ROA, with a beta value of 2.289 and a significance level of 0.09, which is above the 0.05 threshold. This suggests that the observed positive relationship may not be strong enough to be considered statistically significant, indicating that the effect could also result from random fluctuations rather than a meaningful influence.

Multiple Regression Based on Return on Equity

The regression analysis is conducted with return on equity as the dependent variable and total debt to total assets, debt to equity ratio, leverage, liquidity, asset tangibility, and size as the independent variables. In this multiple regression analysis, the model summary, ANOVA, and coefficients of variation have been calculated.

Table 9

Model summary of ROE Based Model

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .740 ^a | .547 | .429 | 11.50 |

a. Predictors: (Constant), S, Li, DER, AT, TDTA, L

Source: *Appendix -1&2*

Table 9 presents the model summary for the three manufacturing companies over a ten-year period. The sample includes Bottlers Nepal (Balaju), Bottlers Nepal (Terai), and Himalayan Distillery, with a total of 30 observations, 10 for each company. The adjusted R-squared value is 0.429, indicating that the independent variables Size, Liquidity, Leverage, Asset Tangibility, Total Debt to Total Assets, and Debt to Equity Ratio explain 42.9% of the variance in the dependent variable, return on equity. The remaining 57.1% is influenced by other variables not included in this study.

Table 9*ANOVA of the Study*

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1 | Regression | 3678.033 | 6 | 613.005 | 4.633 | .003 ^b |
| | Residual | 3043.003 | 23 | 132.304 | | |
| | Total | 6721.036 | 29 | | | |

a. Dependent Variable: ROE

b. Predictors: (Constant), S, Li, DER, AT, TDTA, L

Source: *Appendix -1&2*

Table 9 presents the model summary for the three manufacturing companies over a ten-year period. The sample companies include Bottlers Nepal (Balaju), Bottlers Nepal (Terai), and Himalayan Distillery, with a total of 30 observations, 10 for each company. The significance value is 0.003, indicating that the impact is statistically significant. The regression model is robust.

Table 10*Coefficient of the Study*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 227.457 | 59.138 | | 3.846 | .001 |
| | TDTA | -2.272 | .505 | -2.949 | -4.501 | .000 |
| | DER | 1.412 | .582 | 10.479 | 2.427 | .023 |
| | L | -1.188 | .553 | -8.798 | -2.149 | .042 |
| | Li | -.071 | .025 | -1.123 | -2.892 | .008 |
| | AT | .125 | .222 | .142 | .561 | .580 |
| | S | 1.516 | 6.319 | .047 | .240 | .813 |

a. Dependent Variable: ROE

Source: *Appendix -1&2*

Table 10 provides the coefficients for three manufacturing companies over a decade. The sample includes Bottlers Nepal (Balaju), Bottlers Nepal (Terai), and Himalayan Distillery, with a total of 30 observations (10 per company). The table illustrates the effect of various independent variables on the dependent variable, return on equity (ROE).

The total debt to total equity ratio shows a negative and significant impact on ROE, supporting the hypothesis. This effect is reflected in a beta value of -2.272, with a

significance level of 0.000, which is well below the 0.05 threshold, confirming the hypothesis.

Likewise, the total debt to equity ratio has a positive and significant effect on ROE, with a beta value of 1.412. The significance level of 0.023, also below 0.05, further validates the hypothesis.

Leverage also negatively influences ROE, with a significant impact indicated by a beta value of -1.188 and a significance level of 0.042, supporting the hypothesis.

Liquidity has a negative and significant impact on ROE, demonstrated by a beta value of -0.71 and a significance level of 0.008, confirming the hypothesis.

On the other hand, asset tangibility exhibits a positive but statistically insignificant effect on ROE, with a beta value of 0.125 and a significance level of 0.58, which is above the 0.05 threshold. This high p-value suggests that the observed effect might be due to random chance rather than a genuine relationship, and therefore, the hypothesis is not supported.

Similarly, company size has a positive but statistically insignificant impact on ROE, indicated by a beta value of 5.516 and a significance level of 0.813, well above the 0.05 threshold. This suggests that the observed effect is likely due to random variation rather than a significant influence, and the hypothesis is not supported.

4.2 Discussion

The first objective of the research is to evaluate the current status of total debt to total assets, total debt to equity ratio, leverage, liquidity, asset tangibility, size, return on assets, and return on equity among Nepali manufacturing companies. The findings indicate that the descriptive statistics show a high level of standard deviation, suggesting significant fluctuations in the data. This result aligns with Nuraeni (2024). The return on equity, return on assets, total debt to total assets, debt-equity ratio, leverage, liquidity, asset tangibility, and size all exhibit fluctuations, consistent with the findings of Pradhan & Kafle (2021).

The second objective is to explore the relationship between total debt to total assets, total debt to equity ratio, leverage, liquidity, asset tangibility, and size with return on assets and return on equity in these companies. The study finds a negative and significant relationship between total debt to total assets and return on assets, confirming the hypothesis and

corroborating the findings of Khadka & Pradhan (2023). Similarly, the debt-equity ratio shows a negative and significant relationship with return on assets, supporting the hypothesis and aligning with Chalise & Adhikari (2022). The relationship between liquidity and return on assets is positive and significant, again confirming the hypothesis, consistent with Nuraeni (2024). Asset tangibility shows a negative and significant relationship with return on assets, validating the hypothesis and consistent with Anozie et al., (2023). However, the relationship between size and return on assets is negative and not significant, thus not supporting the hypothesis, and is in line with Olusola et al., (2022).

Regarding the relationship with return on equity, the study finds that total debt to total assets has a negative and significant relationship, confirming the hypothesis, consistent with Hamal (2020). The debt-equity ratio has a negative but insignificant relationship with return on equity, not supporting the hypothesis, which is consistent with Neupane (2020). Leverage shows a negative and insignificant relationship with return on equity, refuting the hypothesis and aligning with Handini (2024). Liquidity has a positive and insignificant relationship with return on equity, not supporting the hypothesis, in line with Haekal & Tannady (2023). The relationship between asset tangibility and return on equity is negative and insignificant, not confirming the hypothesis, consistent with Kim et al. (2023). Similarly, the size also has a negative and insignificant relationship with return on equity, not supporting the hypothesis and consistent with Demiraj et al., (2023).

The third objective is to analyze the impact of total debt to total assets, total debt to equity ratio, leverage, liquidity, asset tangibility, and size on return on assets and return on equity in Nepali manufacturing companies. The study finds that the total debt to total assets ratio negatively impacts return on assets significantly, supporting the hypothesis, consistent with Nguyen et al., (2023). The debt-equity ratio positively impacts return on assets significantly, confirming the hypothesis, consistent with Boshnak (2023). Leverage negatively and significantly impacts return on assets, validating the hypothesis and aligning with Anozie et al., (2023). Liquidity negatively and significantly impacts return on assets, supporting the hypothesis, consistent with Habibniya et al., (2022). However, asset tangibility and size positively impact return on assets but are not significant, thus not supporting the hypothesis, consistent with Hamal (2020) and Neupane (2020), respectively.

For return on equity, the total debt to total equity ratio negatively and significantly impacts it, confirming the hypothesis and consistent with Jaishi (2020). The debt-equity ratio positively and significantly impacts return on equity, confirming the hypothesis, consistent with Bhattarai (2020). Leverage negatively and significantly impacts return on equity, validating the hypothesis, consistent with Handini (2024). Liquidity negatively and significantly impacts return on equity, supporting the hypothesis, consistent with Haekal & Tannady, (2023). However, asset tangibility and size positively impact return on equity but are not significant, thus not supporting the hypothesis, consistent with Kim et al., (2023) and Nguyen et al. (2023), respectively.

CHAPTER- V

SUMMARY AND CONCLUSION

This chapter comprises three key components: summary, conclusion, and implications. The summary provides a comprehensive overview of the entire study process, encompassing the entirety of the research efforts from initiation to completion. Both the summary and conclusion of the thesis are incorporated in this section. Additionally, the implications of the results obtained from the thesis work are discussed.

5.1 Summary

In Nepal, where manufacturing is crucial to the economy, it is vital to understand how various financing options impact profitability to ensure sustainable growth and competitiveness. Manufacturing firms in Nepal often encounter specific challenges in securing financing, facing fewer options for debt and equity capital compared to more advanced markets. Therefore, their decisions regarding capital structure have a substantial effect on profitability. Optimal capital structure choices can boost profitability by utilizing debt to leverage tax benefits and reduce the cost of capital, whereas excessive debt may heighten financial risk and interest expenses, thereby negatively impacting profitability. Achieving the right balance between debt and equity financing is essential for Nepali manufacturing companies to enhance profitability, ensure financial stability, and support long-term growth in a fluctuating economic landscape. Based on this context, the study investigates the effect of capital structure on the profitability of Nepali manufacturing companies.

The research aims to address several key questions: What is the current status of total debt to total assets, total debt to equity ratio, leverage, liquidity, assets tangibility, size, return on assets, and return on equity among Nepalese manufacturing companies? Is there a relationship between these financial indicators (total debt to total assets, total debt to equity ratio, leverage, liquidity, assets tangibility, and size) and the return on assets and return on equity of these companies? Furthermore, how do these factors impact the return on assets and return on equity?

To address these questions, the research objectives are set as follows: (1) to assess the current status of the mentioned financial indicators within Nepali manufacturing companies; (2) to examine the relationship between these indicators and return on assets and return on equity; and (3) to analyze the impact of these indicators on the return on assets and return on equity.

The study employs a descriptive and causal-comparative research design, utilizing descriptive statistics, correlation, and regression analysis to achieve these objectives. Data were collected from the annual reports of three selected manufacturing companies over a ten-year period (2014-2023).

The findings reveal that the standard deviations in the descriptive statistics are notably high, indicating significant fluctuations in the data. The results show that return on equity, return on assets, total debt to total assets, and debt to equity ratio, leverage, liquidity, assets tangibility, and size exhibit a fluctuating pattern. Specifically, the relationship between total debt to total assets, debt to equity ratio, leverage, liquidity, and assets tangibility is significant concerning return on assets, while total debt to total assets has a significant relationship with return on equity. However, assets tangibility and size do not have a significant relationship with return on equity, nor do debt to equity, leverage, liquidity, and assets tangibility. In terms of impact, total debt to total assets, debt to equity ratio, leverage, and liquidity significantly affect both return on assets and return on equity, while assets tangibility and size do not.

5.2 Conclusion

The first objective of research is to assess the current status of total debt to total assets, total debt to equity ratio, leverage, liquidity, assets tangibility, size, return on assets and return on equity of Nepali manufacturing companies. It is found that the result the data flow of descriptive statistics the standard deviation seem higher and higher standard deviations means the higher level of fluctuation in the data flow. The return on equity, return on assets, and total debt to total assets, debt equity ratio, leverage, liquidity, assets tangibility and size are fluctuating in nature. In conclusion the return on equity, return on assets, and total debt to total assets, debt equity ratio, leverage, liquidity, assets tangibility and size are fluctuating in nature.

The second objective of research is to examine the relationship of total debt to total assets, total debt to equity ratio, leverage, liquidity, assets tangibility and size to the return on assets and return on equity of Nepali manufacturing companies. It is found that the relationship of total debt to total assets, debt to equity ratio, leverage, liquidity, assets tangibility is significant to the return on assets. The total debt to total assets is significant relationship to the return on equity. The assets tangibility and size has not significant relationship to the return on equity. The debt to equity, leverage, liquidity, assets tangibility and sig have not significant relationship to the return on equity. In conclusion total debt to total assets, debt to equity ratio, leverage, liquidity, assets tangibility is significant to the return on assets and total debt to total assets is significant relationship to the return on equity

The third objective of research is to analyze the total debt to total assets, total debt to equity ratio, leverage, liquidity, assets tangibility and size impact to the return on assets and return on equity of Nepali manufacturing companies. It is found that the impact of total debt to total assets, debt to equity ratio, leverage and liquidity is significant to the return on assets and return on equity. The assets tangibility and size have not significant impact to the return on assets and return on equity. In conclusion that the impact of total debt to total assets, debt to equity ratio, leverage and liquidity is significant to the return on assets and return on equity.

5.3 Implications

Research on the impact of capital structure on the profitability of Nepalese manufacturing companies has profound implications. It provides insights into the optimal balance between debt and equity financing, aiding firms in maximizing their profitability while managing financial risk.

Understanding this relationship aids financial managers in making well-informed decisions regarding leverage and funding strategies, which can lead to improved financial health and stability.

Policymakers can utilize these insights to develop regulations that encourage sound financial practices and support sustainable growth within the manufacturing sector.

This research can ultimately contribute to Nepal's broader economic development by strengthening and making the manufacturing industry more resilient and efficient.

The study provides benchmarks for performance evaluation, assisting managers in assessing the effectiveness of their capital structure strategies and making necessary adjustments.

The findings may identify areas for further investigation, such as the effects of different types of debt, industry-specific factors, or comparative studies with other sectors or countries.

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APPENDICES

Appendices 1

Data from annual report

Bottler (Terai)

| Date (Terai) | NPAT | TA | TE | TD | CA | CL | FA |
|--------------|------|------|------|------|------|------|------|
| 2023 | 638 | 9240 | 3908 | 5332 | 3520 | 4568 | 5720 |
| 2022 | 625 | 8328 | 3316 | 5011 | 2634 | 3673 | 5694 |
| 2021 | 423 | 8038 | 2691 | 5346 | 2197 | 2600 | 5841 |
| 2020 | 5 | 8323 | 2266 | 6057 | 2104 | 3888 | 6219 |
| 2019 | 453 | 7746 | 2340 | 5405 | 1619 | 3979 | 6127 |
| 2018 | 741 | 4249 | 1987 | 2259 | 1299 | 1888 | 2950 |
| 2017 | 482 | 4203 | 1266 | 2934 | 1352 | 2587 | 2851 |
| 2016 | 276 | 3749 | 860 | 2888 | 1133 | 2244 | 2616 |
| 2015 | 186 | 3426 | 623 | 2799 | 762 | 2039 | 2664 |
| 2014 | 175 | 3356 | 602 | 2745 | 776 | 2001 | 2580 |

Bottler (Balaju)

| Date (Balaju) | NPAT | TA | TE | TD | CA | CL | FA |
|---------------|------|------|------|------|------|------|------|
| 2023 | 405 | 5640 | 2389 | 3251 | 4151 | 2722 | 1489 |
| 2022 | 197 | 4005 | 1980 | 2024 | 2396 | 1447 | 1609 |
| 2021 | 61 | 3771 | 1757 | 2012 | 2028 | 1429 | 1743 |
| 2020 | -16 | 3628 | 1718 | 1906 | 1823 | 1377 | 1805 |
| 2019 | 357 | 3413 | 1779 | 1633 | 1671 | 1187 | 1742 |
| 2018 | 307 | 2772 | 1517 | 1252 | 1207 | 889 | 1565 |
| 2017 | 244 | 2751 | 1213 | 1537 | 1329 | 1184 | 1422 |
| 2016 | 181 | 2142 | 1012 | 1127 | 846 | 826 | 1296 |
| 2015 | -99 | 2262 | 853 | 1406 | 1113 | 1153 | 1149 |

| | | | | | | | |
|------|-----|------|-----|------|------|------|------|
| 2014 | 170 | 2163 | 796 | 1569 | 1056 | 1356 | 1107 |
|------|-----|------|-----|------|------|------|------|

Himalayan Distillery (HDL)

| Date (HDL) | NPAT | TA | TE | TD | CA | CL | FA |
|------------|------|------|------|-----|------|-----|-----|
| 2023 | 660 | 3669 | 3354 | 314 | 3063 | 282 | 605 |
| 2022 | 1056 | 3192 | 2844 | 347 | 2561 | 306 | 631 |
| 2021 | 1041 | 2309 | 2004 | 294 | 1702 | 269 | 607 |
| 2020 | 466 | 1995 | 1252 | 742 | 1397 | 711 | 598 |
| 2019 | 537 | 1403 | 988 | 400 | 745 | 373 | 658 |
| 2018 | 294 | 1200 | 796 | 404 | 552 | 367 | 648 |
| 2017 | 48 | 1017 | 580 | 437 | 360 | 177 | 657 |
| 2016 | 248 | 959 | 612 | 345 | 356 | 196 | 603 |
| 2015 | 8 | 102 | 39 | 72 | 49 | 64 | 53 |
| 2014 | 13 | 80 | 39 | 44 | 32 | 44 | 48 |

| Bottler (Balaju) | Date | ROA | ROE | TDTA | DER | L | Li | AT | S |
|------------------|------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 2023 | 7.180851 | 16.9527 | 57.64184 | 136.082 | 236.082 | 152.4982 | 26.40071 | 3.751279 |
| | 2022 | 4.918851 | 9.949495 | 50.53683 | 102.2222 | 202.2727 | 165.584 | 40.17478 | 3.602603 |
| | 2021 | 1.617608 | 3.471827 | 53.35455 | 114.5134 | 214.6272 | 141.9174 | 46.22116 | 3.576457 |
| | 2020 | -0.44101 | -0.93132 | 52.53583 | 110.943 | 211.1758 | 132.3893 | 49.75193 | 3.559667 |
| | 2019 | 10.46001 | 20.06745 | 47.84647 | 91.79314 | 191.8494 | 140.7751 | 51.04014 | 3.533136 |
| | 2018 | 11.07504 | 20.23731 | 45.16595 | 82.53131 | 182.7291 | 135.7705 | 56.45743 | 3.442793 |
| | 2017 | 8.869502 | 20.11542 | 55.87059 | 126.7106 | 226.7931 | 112.2466 | 51.69029 | 3.439491 |
| | 2016 | 8.450047 | 17.88538 | 52.61438 | 111.3636 | 211.6601 | 102.4213 | 60.5042 | 3.330819 |
| | 2015 | -4.37666 | -11.6061 | 62.15738 | 164.83 | 265.1817 | 96.53079 | 50.79576 | 3.354493 |
| | 2014 | 7.859454 | 21.35678 | 72.53814 | 197.1106 | 271.7337 | 77.87611 | 51.17892 | 3.335057 |
| Bottler | 2023 | 6.904762 | 16.32549 | 57.70563 | 136.4381 | 236.4381 | 77.05779 | 61.90476 | 3.965672 |

| | | | | | | | | | |
|----------------------------------|------|----------|----------|----------|----------|----------|----------|----------|----------|
| (Terai) | | | | | | | | | |
| | 2022 | 7.504803 | 18.84801 | 60.17051 | 151.1158 | 251.146 | 71.7125 | 68.37176 | 3.920541 |
| | 2021 | 5.262503 | 15.71906 | 66.50908 | 198.6622 | 298.6994 | 84.5 | 72.66733 | 3.905148 |
| | 2020 | 0.060074 | 0.220653 | 72.77424 | 267.2992 | 367.2992 | 54.11523 | 74.72065 | 3.92028 |
| | 2019 | 5.84818 | 19.35897 | 69.77795 | 230.9829 | 331.0256 | 40.68862 | 79.09889 | 3.889077 |
| | 2018 | 17.4394 | 37.2924 | 53.16545 | 113.689 | 213.84 | 68.80297 | 69.4281 | 3.628287 |
| | 2017 | 11.468 | 38.07267 | 69.80728 | 231.7536 | 331.9905 | 52.26131 | 67.8325 | 3.623559 |
| | 2016 | 7.361963 | 32.09302 | 77.03388 | 335.814 | 435.9302 | 50.4902 | 69.77861 | 3.573915 |
| | 2015 | 5.429072 | 29.85554 | 81.69877 | 449.2777 | 549.9197 | 37.37126 | 77.75832 | 3.534787 |
| | 2014 | 5.214541 | 29.06977 | 81.7938 | 455.9801 | 557.4751 | 38.78061 | 76.87723 | 3.525822 |
| Himalayan Distillery (HDL) | 2023 | | | | | | | | |
| | | 17.98855 | 19.678 | 8.55819 | 9.361956 | 109.3918 | 1086.17 | 16.48951 | 3.564548 |
| | 2022 | 33.08271 | 37.1308 | 10.87093 | 12.20113 | 112.2363 | 836.9281 | 19.76817 | 3.504063 |
| | 2021 | 45.08445 | 51.94611 | 12.73278 | 14.67066 | 115.2196 | 632.7138 | 26.28844 | 3.363424 |
| | 2020 | 23.3584 | 37.22045 | 37.19298 | 59.26518 | 159.345 | 196.4838 | 29.97494 | 3.299943 |
| | 2019 | 38.27512 | 54.35223 | 28.51033 | 40.48583 | 142.004 | 199.7319 | 46.8995 | 3.147058 |
| | 2018 | 24.5 | 36.93467 | 33.66667 | 50.75377 | 150.7538 | 150.4087 | 54 | 3.079181 |
| | 2017 | 4.719764 | 8.275862 | 42.96952 | 75.34483 | 175.3448 | 203.3898 | 64.60177 | 3.007321 |
| | 2016 | 25.86027 | 40.52288 | 35.97497 | 56.37255 | 156.6993 | 181.6327 | 62.878 | 2.981819 |
| | 2015 | 7.843137 | 20.51282 | 70.58824 | 184.6154 | 261.5385 | 76.5625 | 51.96078 | 2.0086 |
| | 2014 | 16.25 | 33.33333 | 55 | 112.8205 | 205.1282 | 72.72727 | 60 | 1.90309 |

Appendix 2:

Calculations of descriptive statistics, correlation and regression

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|------|----|---------|---------|----------|----------------|
| ROA | 30 | -4.38 | 45.08 | 12.1690 | 11.58126 |
| ROE | 30 | -11.61 | 54.35 | 23.1421 | 15.22366 |
| TDTA | 30 | 8.56 | 81.79 | 52.5588 | 19.76066 |
| DER | 30 | 9.36 | 455.98 | 147.5001 | 112.97792 |
| L | 30 | 109.39 | 557.48 | 245.8510 | 112.70613 |
| Li | 30 | 37.37 | 1086.17 | 182.3513 | 239.99974 |

| | | | | | |
|--------------------|----|-------|-------|---------|----------|
| AT | 30 | 16.49 | 79.10 | 54.5172 | 17.37298 |
| S | 30 | 1.90 | 3.97 | 3.4091 | .47325 |
| Valid N (listwise) | 30 | | | | |

Correlations

| | | ROA | ROE | TDTA | DER | L | Li | AT | S |
|------|---------------------|---------|--------|---------|---------|---------|---------|---------|-------|
| ROA | Pearson Correlation | 1 | .854** | -.752** | -.541** | -.537** | .546** | -.475** | -.244 |
| | Sig. (2-tailed) | | .000 | .000 | .002 | .002 | .002 | .008 | .195 |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| ROE | Pearson Correlation | .854** | 1 | -.365* | -.142 | -.140 | .221 | -.118 | -.247 |
| | Sig. (2-tailed) | .000 | | .047 | .455 | .460 | .240 | .534 | .189 |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| TDTA | Pearson Correlation | -.752** | -.365* | 1 | .862** | .849** | -.814** | .752** | .122 |
| | Sig. (2-tailed) | .000 | .047 | | .000 | .000 | .000 | .000 | .519 |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| DER | Pearson Correlation | -.541** | -.142 | .862** | 1 | .998** | -.533** | .682** | .201 |
| | Sig. (2-tailed) | .002 | .455 | .000 | | .000 | .002 | .000 | .286 |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| L | Pearson Correlation | -.537** | -.140 | .849** | .998** | 1 | -.527** | .686** | .231 |
| | Sig. (2-tailed) | .002 | .460 | .000 | .000 | | .003 | .000 | .219 |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Li | Pearson Correlation | .546** | .221 | -.814** | -.533** | -.527** | 1 | -.748** | .020 |
| | Sig. (2-tailed) | .002 | .240 | .000 | .002 | .003 | | .000 | .915 |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| AT | Pearson Correlation | -.475** | -.118 | .752** | .682** | .686** | -.748** | 1 | .110 |
| | Sig. (2-tailed) | .008 | .534 | .000 | .000 | .000 | .000 | | .564 |
| | N | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| S | Pearson Correlation | -.244 | -.247 | .122 | .201 | .231 | .020 | .110 | 1 |
| | Sig. (2-tailed) | .195 | .189 | .519 | .286 | .219 | .915 | .564 | |
| | N | 30 | 30 | 30 | 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).

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .891 ^a | .795 | .741 | 5.89141 |

a. Predictors: (Constant), S, Li, DER, AT, TDTA, L

ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|--------|-------------------|
| 1 | Regression | 3091.341 | 6 | 515.223 | 14.844 | .000 ^b |
| | Residual | 798.301 | 23 | 34.709 | | |
| | Total | 3889.642 | 29 | | | |

a. Dependent Variable: ROA

b. Predictors: (Constant), S, Li, DER, AT, TDTA, L

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 158.015 | 30.290 | | 5.217 | .000 |
| | TDTA | -1.617 | .258 | -2.758 | -6.255 | .000 |
| | DER | .957 | .298 | 9.336 | 3.212 | .004 |
| | L | -.829 | .283 | -8.070 | -2.927 | .008 |
| | Li | -.045 | .013 | -.931 | -3.560 | .002 |
| | AT | .041 | .114 | .061 | .357 | .724 |
| | S | 2.286 | 3.237 | .093 | .706 | .487 |

a. Dependent Variable: ROA

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .740 ^a | .547 | .429 | 11.50237 |

a. Predictors: (Constant), S, Li, DER, AT, TDTA, L

ANOVA^a

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1 | Regression | 3678.033 | 6 | 613.005 | 4.633 | .003 ^b |
| | Residual | 3043.003 | 23 | 132.304 | | |

| | | | | | |
|-------|----------|----|--|--|--|
| Total | 6721.036 | 29 | | | |
|-------|----------|----|--|--|--|

a. Dependent Variable: ROE

b. Predictors: (Constant), S, Li, DER, AT, TDTA, L

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 227.457 | 59.138 | | 3.846 | .001 |
| | TDTA | -2.272 | .505 | -2.949 | -4.501 | .000 |
| | DER | 1.412 | .582 | 10.479 | 2.427 | .023 |
| | L | -1.188 | .553 | -8.798 | -2.149 | .042 |
| | Li | -.071 | .025 | -1.123 | -2.892 | .008 |
| | AT | .125 | .222 | .142 | .561 | .580 |
| | S | 1.516 | 6.319 | .047 | .240 | .813 |

a. Dependent Variable: ROE

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ii ABSTRACT The objectives of research are set and they are; To assess the current status

of total debt to total assets, total debt to equity ratio

, leverage, liquidity, assets tangibility, size, return on assets and return on equity of Nepalese manufacturing companies, to examine the relationship of