CAPITAL STRUCTURE AND PROFITABILITY OF DEVELOPMENT BANKS IN NEPAL

A Dissertation Submitted to Office of the Dean in Partial Fulfillment of the Requirements for the Degree of Masters of Business Studies (MBS)

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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 Development Banks in Nepal**". The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it been proposed and presented as part of requirements for any other academic purpose.

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

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REPORT OF RESEARCH COMMITTEE

Asmita Sapkota has defended research proposal entitled "**Capital Structure and Profitability of Development Banks in Nepal**" successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestion and guidance of supervisor Asso. Prof. Rita Maskey and submit the dissertation for evaluation and Viva-Voce examination.

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ABBREVIATIONS

AD	:	Annon Domini
ANOVA	:	Analysis of Variances
CDR	:	Credit Deposit Ratio
Coeff.	:	Coefficient
DER	:	Debt Equity Ratio
DR	:	Debt Ratio
F-Value	:	Fishers Value
FY	:	Fiscal Year
GARIMA	:	Garima Bikas Bank
JYOTI	:	Jyoti Bikas Bank
LDR	:	Loan Deposit Ratio
MAHALAXMI	:	Mahalaxmi Development Bank
MUKTINATH	:	Muktinath Bikash Bank
NPLR	:	Non-Performing Loan Ratio
PER	:	Price Earnings Ratio
P-Value	:	Probability Value
ROA	:	Return on Assets
ROE	:	Return on Equity
Rs.	:	Rupees
S.D.	:	Standard deviation
SHINE	:	Shine Resunga Development Bank

ABSTRACT

This dissertation investigates the impact of capital structure on the profitability of selected development banks in Nepal over a decade. The study focuses on analyzing key financial ratios debt ratio, debt-equity ratio, loan to deposit ratio, credit deposit ratio, and non-performing loan ratio across five development banks from 2013/14 to 2022/23. Return on assets (ROA) and return on equity (ROE) serve as dependent variables, while the identified ratios act as independent variables. Statistical methods including correlation coefficients and regression models are employed to explore the relationships and impacts.

The findings reveal that higher debt ratios generally correlate with reduced profitability, emphasizing the importance of prudent leverage management in bank operations. Non-performing loan ratios consistently show negative correlations with both ROA and ROE, highlighting the detrimental impact of deteriorating credit quality on financial performance. However, relationships with ratios like loan to deposit and credit deposit exhibit varying impacts that are not always statistically significant, indicating nuanced influences on profitability metrics.

In conclusion, this study underscores the pivotal role of capital structure in shaping the financial performance of development banks in Nepal. It underscores the necessity for development banks to adopt optimal debt-to-equity ratios and robust credit risk management practices to enhance profitability and mitigate financial risks effectively. Tailored financial strategies aligned with specific bank characteristics and market dynamics are essential for achieving sustainable growth and resilience in Nepal's evolving economic landscape.

Keywords: *Capital structure, Profitability, Development banks, Financial ratios*

CHAPTER-I
INTRODUCTION

1.1 Background of the Study

Capital structure is another name for a company's financial strategy. Every company plans its capital structure in some way. The capital structure, which denotes the firm's ongoing funding sources, is thus a component of the financial structure. The proportion of debt, preferred stock, and ordinary equity makes up the capital structure. The overall value of the company's securities is maximized at the capital structure where the weighted average cost of capital is reduced. Consequently, the best capital structure is referred to as the minimal cost capital structure. For many years, capital structure has been a contentious issue in the field of financial management (Rahman et al., 2019).

The term "firm's debt capacity" refers to the total amount of debt included in a company's debt optimum capital structure. The business risk of the company, the tax structure, the degree of optimal financial distress and agency costs, and the role that capital structure policy plays in providing signals to the capital markets regarding the firm's performance all influence the optimal capital structure and, consequently, the debt capacity of the company (Nagendra & Arif, 2017).

The capital structure of a company is only one aspect of its financial structure. Determining how much debt should be utilized to fund assets is one of the challenges that firms face when making corporate financing decisions. The capital structure design looks for solutions to problems like separating the total amount of funding sources into short- and long-term parts. The kind of assets that the company owns has a significant impact on the finance plan's maturity structure. A corporation should use permanent forms of financial capital to fund its fixed assets if it has a higher percentage of them (Hunsaker, 1999). the ratio of debt, preferred stock, and equity to total assets as the main emphasis. The company's common stock price will be maximized if the right combination of the aforementioned capital can be identified. Still, the right combination of long-term funding. The fundamental problem with capital structure management is this. The impact of financial advantage on the total cost of capital for the companies is a long-standing debate in the field of financial theory. Capital structure is unquestionably a significant component of corporate financial management if the firm's capital structure has an impact on its cost of capital. For the last

thirty years or more, a large part of capital structure theory has been devoted to attempts to address the aforementioned topic.

The capital structure of the company represents the variety of securities. Financial decisions need to be made carefully since an incorrect debt-to-equity ratio might force the company into bankruptcy. The ideal amount of capital structure is reached when returns are maximized, and shareholder risk perception is reduced. The market value of the company is maximized automatically when the return to shareholders is maximized. The cost of the company is impacted by its capital structure. When choosing the best capital structure for, the financial management has to use common sense (Koirala, 2014).

The banking industry in Nepal is an essential part of the nation's economy since it is crucial to resource mobilization and financial intermediation. For sustained development and financial stability, it is critical to have a deep grasp of the complex relationships between capital structure and profitability as the industry faces changing possibilities and constraints. This part goes into the background, highlighting important aspects of the banking situation in Nepal, the body of research that has already been done, and the motivation for the study of the relationship between capital structure and profitability.

The banking industry in Nepal, which includes financial institutions, development banks, and commercial banks, has seen rapid expansion and change in recent years. The industry's capacity to handle changes in the economy, laws, and technology is indicative of its resilience and flexibility. In this dynamic environment, banks' financial choicesparticularly those pertaining to their capital structurebear a significant impact on their stability, expansion, and overall economic contributions (Nepal Rastra Bank, 2021).

Financial management heavily relies on capital structure, which includes the ratio of debt to equity that a company uses to fund its operations. The decisions taken on capital structure have a big effect on the cost of capital, risk profile, and overall financial performance of a bank. Understanding the subtleties of capital structure choices is crucial for strategic financial management in the context of Nepalese banks, where market dynamics, regulatory frameworks, and economic situations offer distinct issues (Modigliani & Miller, 1958).

Although the literature from across the world provides insightful information on the connection between profitability and capital structure, the unique characteristics of the banking environment in Nepal call for a more focused study. There hasn't been much study done on Nepal's banking industry, therefore the many facets of this connection may not be

fully captured in the studies that are now accessible. Abor's (2005) research on Ghanaian companies highlighted the need of looking at how various capital structure elements affect profitability. Consequently, there is a significant study vacuum in our knowledge of the unique characteristics of Nepalese banks with regard to capital structure and how it affects profitability (Abor, 2005; Harris & Raviv, 1991).

This in-depth analysis explores the complex link that exists between capital structure and profitability in the banking industry in Nepal. In light of Nepal's changing banking environment, the study fills a significant information vacuum by examining how bank capital structure choices affect the banks' overall profitability and financial performance. Strategic financial management requires an awareness of the complex dynamics of capital structure as Nepalese banks navigate particular market, regulatory, and economic circumstances. This research attempts to dissect the distinct elements of capital structure, such as debt, equity, and their ratios, and their direct bearing on the profitability indicators of banks in Nepal via a thorough examination. The study adds to academic literature and provides useful implications for financial decision-makers and policymakers in Nepal's banking sector by fusing global financial theories with specific observations.

1.2 Problem Statement

Capital structure serves as a gauge for a company's long-term success or failure. The main issue with capital structures is how a business should determine its debt-to-equity ratio. The choice of capital structure is critical as it affects the health of the company. The choice of capital structure in the banking business is crucial as it affects public funds, just like in other industries. Since development banks serve as the foundation of every economy, their financial stability is equally crucial. The bank management is responsible for making sure that either the cost of capital is kept to a minimum or the return on investor capital is maximized. Through the use of several financial indicators and ratios, such as capital adequacy, asset quality, profits and profitability, and liquidity, the research focuses on the factors that determine these banks' capital structures and how they affect their earnings, liquidity, assets, and overall performance. Additionally, other statistical methods like regression and correlation analysis are used.

To far, the majority of theoretical and empirical works have focused on how to optimize a company's value by carefully balancing its debt and equity allocation. The traditional theory of capital structure and the Net Income (NI) approach both assert the existence of

the ideal capital structure. They argue that the right balance between debt and equity may increase a company's worth. On the other hand, the M-M hypothesis and the Net Operating Income (NOI) methodology argue that the firm's cost of capital and value are unaffected by the capital structure. Since the 1958 publication of M-M's seminal article, the idea of capital structure has been the focus of debate (Ghimire, 1993).

According to the pecking order idea, companies have a certain preference order for the money they utilize to fund their operations (Myers, 1984). The relative costs of financing differ between the financing options due to the existence of knowledge asymmetries between the company and possible funders. Since the firm's retained profits serve as the funding source and have access to more information than new stock holders, the latter will demand a greater rate of return on their investment, making new equity financing more expensive for the company than using already-existing internal funds. One may make a similar case for retained profits vs new debt holders. Furthermore, each source will demand a larger return on capital the more exposed it is to the danger of information asymmetries for the different financing options outside retained profits. Therefore, the companies will choose debt over equity, short-term debt over long-term debt, and retained profits financing over debt.

Numerous investigations have been carried out about the factors that determine capital structure. It has been discovered that a bank's capital structure is influenced by a number of factors, including growth, profitability, age, size, liquidity, tax rate, and so forth. These factors not only impact the bank's profits and profitability but also other qualitative elements of banking, such as shareholder psychology. The owner's willingness to cede control of management via market-driven debt issuance determines the capital structure. Management may decide to use debt for fresh financings if it presently has voting power, or more than 50% of the shares, but is unable to purchase any additional shares. On the other hand, if the company's financial standing is so precarious that using debt might put it at significant default risk, management may choose to employ equity. In general, aggressive management seeks to increase earnings by taking on additional debt. In comparison to other industry participants, the capital structure is probably impacted or changed if the management has an aggressive expansion plan.

Research to far has looked at a company's capital structure and how it affects overall performance, but it hasn't looked at what factors influence capital structure. Similarly, a more comprehensive analysis of the capital structure element and its effect on profitability

has not been conducted. Since various theories have differing opinions on how capital structure affects a company's value, this research has been started to outline the following issues. By providing a comprehensive analysis of the link between capital structure and profitability within the Nepalese banking industry, this research aims to close this gap. This study intends to provide significant insights for both academic discourse and practical financial management in the banking sector by taking into account the distinct contextual elements influencing the financial choices made by Nepalese banks.

i. What is the status of development banks' profitability, loan-to-deposit ratio, credit deposit ratio, non-performing loan ratio, and total debt to equity?

ii. Is there correlation between development debt ratio, total debt to equity, loan to deposit, credit deposit ratio, non-performing loan ratio and banks' profitability (ROA and ROE)?

iii. Does debt-to-equity, loan-to-deposit, credit-deposit, and non-performing loan ratio have impact on development banks' profitability (ROA and ROE)?

1.3 Objectives of the Study

This study's primary goal is to find out how capital structure affects the profitability of certain development banks. The study's particular goals are:

i) To describe the position of debt ratio, total debt to equity, loan to deposit, credit deposit ratio and non-performing loan ratio and profitability (ROA and ROE) of development banks.

ii) To evaluate the relationship between debt ratio, total debt to equity, loan to deposit, credit deposit ratio and non-performing loan ratio and profitability (ROA and ROE) of development banks.

iii) To examine the impact of debt ratio, total debt to equity, loan to deposit, credit deposit ratio and non-performing loan ratio (capital structure) on profitability i.e. return on assets and equity of development banks.

1.4 Research Hypotheses

A hypothesis is a rephrased question that may be put to the test and proven true by science (Gangaram, 2019). In essence, a hypothesis is developed as a potential response to the study topic. The study's heuristics are as follows:

$H_1$1: There is significant relationship between debt ratio and return on assets.

$H_1$2: There is significant relationship between debt equity ratio and return on assets.

$H_1$3: There is significant relationship between non-performing loan ratio and return on assets.

$H_1$4: There is significant relationship between loan to deposit ratio and return on assets.

$H_1$5: There is significant relationship between credit deposit ratio and return on assets.

$H_1$6: There is significant relationship between debt ratio and return on equity.

$H_1$7: There is significant relationship between debt equity ratio and return on equity.

$H_1$8: There is significant relationship between non-performing loan ratio and return on equity.

$H_1$9: There is significant relationship between loan to deposit ratio and return on equity.

$H_1$10: There is significant relationship between credit deposit ratio and return on equity.

1.5 Rationale of the Study

Financial structure refers to how different sources of funding are employed in relation to one another in a firm. The ratio of the different long-term sources of funding is referred to as the capital structure, which is a component of the financial structure. Its focus is on creating a suitable variety of funding sources in terms of relative quantity and proportion. Debt and equity securities make up a company's capital structure, which is how the business finances its assets. It is a company's ongoing funding, denoted by net worth, preferred stock, and long-term debt. Thus, it has to do with how capital is arranged and doesn't include short-term borrowing. Since it does not include short-term funding sources, it indicates a certain level of permanence.

The cost of each capital structure element to the company varies. For businesses, funding comes from a variety of sources. In proprietary enterprises, the owners often provide all of the money used. Capital in this sense refers to the entire amount of money contributed by long-term creditors as well as shareholders. This raises the question: What is the proper ratio of debt to owned capital? It is dependent upon each company's unique financial philosophy. Debt capital could even exceed owned capital in one firm while it might even be zero in another. A company's capital structure is shown by the ratio, or the ratio's percentage between the two. Thus, the primary beneficiaries of this dissertation are the government, researchers, general public, shareholders, creditors (debt holders), investors, and management team, among other important stakeholders of the company.

1.6 Limitations of the Study

The following are the limitations of the research:

i) Over the seventeen development banks in Nepal, only five development banks are taken as sample.

ii) Only secondary data are considered from 2013/14 to 2022/23. The last current ten years data are employed in this study.

iii) Debt ratio, debt-equity ratio, loan to deposit ratio, credit deposit ratio and non-performing loan ratio are taken as independent variables among others.

iv) Return on equity and return on assets are taken as dependent variable.

v) The only major financial statements like balance sheet and profit and loss account has been taken from all the respective banks for the analysis.

vi) This study is only focused on capital structure and its impact on profitability.

CHAPTER II
LITERATURE REVIEW

2.1 Theoretical Review

The capital structure of a business describes how it raises money from various sourcesbond sales, long-term notes payable, common stock, preferred stock, and retained profits, for exampleto support its operations and expansion. Capital structure is frequently called "financial leverage," as every company must decide what proportion of debt to equity is best for operating its firm. Business leaders must consider capital structure in order to attempt to either maximize the wealth of shareholders or raise the value of the firm. When assisting a firm in financing its operations, financial institutions like banks and other lenders must also take their risk into account. A low-leveraged firm looks to be less risky because it makes more money than it borrows, while a highly leveraged company appears to be riskier since it has far more debt than equity. The result of commercial interactions is profitability. The input (mix of loan and equity) determines it. It's the outcome of effective management. It is the capacity of an organization to use its resources to produce income higher than its outlays. Stated otherwise, this refers to the capacity of a business to make money off of its activities.

2.1.1 Traditional Theories of Capital Structure

A company's capital structure is the combination of debt and equity issuance used to fund its operations. Numerous research endeavors have attempted to investigate the primary factors influencing capital structure and the ideal combination that optimizes the company's worth. Weston and Bringham et al. (1992) defined the optimum capital structure mix as the combination that maximizes the market value of the company's outstanding shares. But in spite of all the efforts, this discussion continues since the best course of action is not well established. The well recognized theorem is the "Irrelevance proposition" of Modigliani and Miller (1958). As new ideas emerge in the near future, they significantly advanced the capital structure theory. Even yet, their thesis was developed in an unrealistic environment with homogeneous expectations, flawless capital markets, no transaction costs, and no taxes. However, Modigliani and Miller (1958) modified their theory by taking into account the tax advantages when determining the capital structure of the company. According to Modigliani and Miller (1963), "firms should use the as much debt capital as it possible in

order to maximize its value" since choosing debt would result in less taxable revenue, or a "tax-shield." Firms with more tax advantages have higher leverage because the difference between the value of a levered business and the value of an unlevered firm matches the value of the tax shield. In addition, Miller (1977) introduced the concept of personal taxes. He stated that there are three tax rates in the United States that determine a company's overall value: "the corporate tax rate, the tax rate imposed on the income of the dividends, and the tax rate imposed on the income of interest inflows." Furthermore, he said that the net-after-tax cost of debt should be raised to the point of maximum profit.

2.1.2 Pecking Order Theory

The primary goal is to capture the costs of information asymmetry, which is based on the pecking order hypothesis and is really the case given market circumstances. It is absurd to expect management and investors to have the same understanding of the company. management, for instance, will attempt to account for investors' expectations about the amount of leverage the firm uses; investors base their judgments on the intentions of management. Having stated that, the management must choose between debt and equity financing when it comes to project investment planning. Myers (1984) states that this choice is based on his assessment of the company's prospects, namely whether the stock price is overpriced or undervalued. The management would go with debt if it is anticipated that the company is cheap, as there is a good chance that the market would misprize stock if it is issued. The possibility of mispricing increases with the size of the investment project. According to Myers and Majluf (1984), businesses may often prevent this underpricing by starting with the least expensive and safest source of funding. In light of this, businesses may use domestically produced capital first, loans later, and equity in the end. The term "pecking order" refers to this financial stratification (Myers 1984). In particular, businesses sell equity when they believe it to be overpriced (Myers, 1984). Furthermore, even though leverage carries some risk, Myers and Majluf (1984) shown that it is still better to equity. Finally, Pecking Order Theory has some amazing ramifications. There isn't initially an ideal or desired debt to equity ratio. Second, since they can finance their operations with their revenues, prosperous businesses often have lower leverage ratios. These businesses generate more income internally, which suggests they need less outside funding. Therefore, it makes sense that a company that is more lucrative will utilize less debt financing.

2.1.3 Trade-Off Theory

Empirical research has supported the idea that businesses might have an endless amount of debt. Nevertheless, a number of studies make clear that this assertion is untrue, claiming that more leverage is also associated with increased risk. The expenses immediately spent when there is a larger than zero risk of the company experiencing financial trouble are referred to as bankruptcy costs. This figure increases the uncertainty of loan repayment and interest payments; hence it has a positive link with debt levels. Kraus and Lichtenberger (1973) provided an explanation for the inclusion of the phrase "bankruptcy cost" in the capital structure calculation. Therefore, the existence of bankruptcy costs establishes a limit on the amount of leverage that a company may use (Baxter, 1967). Titman (1984) states that these costs can be either direct, like legal and administrative fees, or indirect, like profit loss from unhappy shareholders, hiring and customer turnover, and low liquidity levels, which are hard to quantify (Baxter, 1967; Warner, 1977).

2.1.4 Signaling Hypothesis

The Signaling Hypothesis, according to Ross (1977), is the reverse of the Pecking Order Theory in that information is more important. It blends Pecking-Order Theory with Trade-Off Theory. Leverage and profitability, according to him, have a high positive correlation. Managers would specifically profit from their superior understanding of the firm's value drivers in opposition to investors and market players. For example, even if the growth potential are exceedingly good and the stock is issued at a discount, investors might interpret it as a week signal. Managers handling prospective investment initiatives, on the other hand, would rather use debt financing as a way to provide the market a signal that prosperity is undervalued. The Signal Factor Hypothesis integrates information asymmetry levels into the trade-off theory, as described by Chou et al. (2011).

2.1.5 Marketing Timing Theory

The implications of the Pecking Order Theory and the Trade-Off Theory are contested by a developed theory produced by Baker and Wurgler (2002), according to the Behavioral Finance Literature. Additionally, it shows how companies modify their capital structure decisions based on stock market performance. Presumably, mispricing exists, which is simpler for businesses to find than for the market. One premise is that there is no ideal debt-to-value ratio and, in line with Pecking Order Theory, that companies prefer to issue stock when it is seen to be overpriced. According to Leary and Roberts (2005), market timing

clearly influences any changes in the firm's short-term leverage. Thus, over an extended period of timeat most two yearsthis impact is offset by the expenses associated with bankruptcy and the Trade-Off Theory (Alti, 2006). Not to mention, Baker and Wurgler (2002) made the assumption that leverage, and historical stock performance are inversely related.

2.1.6 Agency Cost Theory

According to the Agency Cost Theory of capital structure, the best capital structure will be determined by accounting for the costs associated with bankruptcy as well as any indirect costs resulting from conflicts of interest between bondholders, shareholders, and managers (Jensen & Meckling, 1976). It is well recognized that the parties involved in an agency issue have distinct motives from one another. This might be balanced, however, by determining the ideal debt-to-income ratio and weighing the benefits of leverage against the indirect agency costs (Myers, 1984). With an emphasis on the Agency Cost of Theory, capital structure is impacted by three different kinds of consequences. First, the asset substitution effect shows how a manager's motivation to take on riskier or less lucrative (negative NPV) initiatives increases in direct proportion to the amount of debt they have. This occurs as a result of the managers' reduced risk; if the project is lucrative, the creditors will be dissatisfied, or the shareholders will be pleased. In light of the strong incentives for managers to engage in manipulative conduct, any free cash flow should be paid to investors (Bolton et al., 1996). Last but not least, there is the underinvestment problem, which describes a growing company's incapacity to take on positive net present value (NPV) projects because the managers would not receive enough compensation due to the risky and expensive nature of the debt; as noted by Myers (1977), debt holders or shareholders would take the credibility.

2.2 Conceptual Review

Below is a discussion of the profitability and capital structure concepts.

2.2.1 Concept of Capital Structure

The delicate balancing act that a company performs between debt and equity funding in order to finance its operations and growth is known as capital structure. The cost of financing, risk profile, and overall financial performance are all directly impacted by this strategic choice (Myers, 1984). Modigliani and Miller (1958) first addressed the fundamental trade-off between debt and equity when they proposed that, in certain cases, a

firm's value is not reliant on its capital structure. But when further research revealed elements like taxes, bankruptcy expenses, and agency disputes, this irrelevance theory had to be adjusted (Harris & Raviv, 1991).

Several ideas make an effort to explain how the ideal capital structure is determined. According to the trade-off approach, businesses balance the tax benefits of debt with the expenses of financial hardship and agency conflicts (Myers, 1984). An extension of the trade-off theory, the pecking order hypothesis suggests that companies choose debt over equity and internal finance over external financing (Myers, 1984). According to signaling theory, a firm's capital structure choices tell investors about its prospects for the future (Ross, 1977).

2.2.2 Concept of Profitability

A key financial indicator, profitability measures a company's ability to turn a profit in relation to its costs. It is essential for drawing stakeholders and investors. The three main ratios used to evaluate profitability are Net Profit Margin (NPM), Return on Equity (ROE), and Return on Assets (ROA). ROA evaluates how well assets are used to generate profits, while ROE compares earnings to shareholders' equity. The proportion of income held as profit is shown in NPM (Ross, 2017).

Profitability is influenced by internal elements like as cost control, price strategies, product quality, and operational efficiency. The regulatory environment, market dynamics, rivalry, and economic trends are examples of external variables. Long-term sustainability and creditworthiness are impacted by profitability, which is linked to other financial indicators (Ross, 2017).

2.2.3 Relationship between Capital Structure and Profitability

In corporate finance, the link between capital structure and profitability is crucial since it affects risk, value generation, and financial stability. According to the trade-off approach, businesses weigh the tax advantages of debt against the higher financial risk brought on by interest payments (Myers, 1984). Although equity financing prevents financial hardship, ownership may be diluted. These trade-offs are examined empirically in research by Abor (2005) and Ali et al. (2012), which show complex correlations.

According to the pecking order principle, companies choose internal funding first, then debt, and then consider equity as a last option. According to Pradhan and Khadka (2015), bank profitability is favorably impacted by short-term debt and interest coverage ratios,

which is consistent with the pecking order hypothesis. According to signaling theory, decisions concerning a firm's capital structure convey information about its future prospects to investors. Wu (2019) draws attention to the profitability impact of coverage ratio, suggesting that it has a favorable effect on financial stability.

2.2.4 Impact of Capital Structure

A company's risk profile, value generation, and financial health are all impacted by its capital structure. A firm's cost of capital is greatly influenced by the capital structure it chooses, which in turn shapes its sustainability and financial performance (Myers, 1984). Drawing on well-known theories and empirical research, this section explores the major effects of capital structure.

Cost of Capital

A company's cost of capital is directly impacted by the makeup of its capital structure. The cost of capital is independent of the capital structure in a world without taxes and bankruptcy fees, claim Modigliani and Miller (1958). However, tax shelters from loan interest payments affect the cost of capital in real-world situations (Myers, 1984). According to the trade-off hypothesis, businesses should aim for the best possible balance between controlling financial distress expenses and taking advantage of tax benefits (Harris & Raviv, 1991).

Financial Risk and Stability

Financial risk is introduced by a company's capital structure's debt level. The likelihood of financial trouble and insolvency is increased by excessive debt, highlighting the careful balance that must be struck between tax advantages and financial risk (Myers, 1984). To preserve financial stability and fulfill their financial commitments, businesses must carefully manage this trade-off (Ross, 2017).

Value Creation and Shareholder Wealth

A fundamental aspect of corporate finance is the effect of capital structure on shareholder wealth. According to the pecking order principle, companies should give priority to internal finance in order to preserve shareholder value, followed by debt and equity (Myers, 1984). By matching financing options with the company's development potential and risk tolerance, optimal capital structure decisions help create value (Harris & Raviv, 1991).

Market Signals and Investor Perception

Capital structure choices are indications to the market regarding the financial stability and future development potential of a company. According to the signaling hypothesis, companies educate investors via their capital structure decisions (Ross, 1977). An problem with debt, for example, might convey confidence in future cash flows and affect investor opinion.

Strategic Flexibility

The capital structure's composition may provide businesses flexibility in their strategic choices. According to Harris and Raviv (1991), enterprises may effectively respond to changing market circumstances, seize development opportunities, and manage economic uncertainty by raising capital via a combination of debt and equity.

Finally, capital structure has an influence on a firm's strategic posture, risk management, and shareholder value in addition to financial measures. To make sure that capital structure choices are in line with their overall company goals, companies must carefully analyze these effects.

2.3 Empirical Review

Numerous researches on the effects of capital structure on development banks' profitability from various angles have been carried out. This study may benefit from the findings of earlier research on the many areas. In light of this, a review of relevant literature and earlier research is conducted.

2.3.1 Review of International Studies

Sitanggang et al. (2024) discovered that despite the fact that the majority of the assets traded on this stock exchange are bonds issued by Dutch corporations and bonds issued by the Indonesian government via the Indonesian Development Bank, the exchange is still growing. By going public or issuing shares or other securities to the public in accordance with the processes governed by the money Markets Law and its Implementing Regulations, issuers (businesses that go public) may raise extra money with the assistance of BEI. A quantitative research approach was the kind of method employed in this study. This research methodology is grounded on positivist philosophy. Research tools are used for data collecting when studying a specific population or sample, and quantitative or statistical data analysis is done to test a hypothesis.

Auliani et al. (2024) examined the determinants influencing the value of infrastructure sector businesses listed on the Indonesia Stock Exchange (BEI) between 2017 and 2021. Panel data regression techniques are used in this study's quantitative analysis together with an associative causal approach. The three stages of the data regression test are the pre-pandemic period (2017–2019), the pandemic period (2020–2021), and the overall research period (2017–2021). This study was tested at three different significance levels: 1%, 5%, and 10%. There are twenty-eight infrastructure sector businesses on the IDX in total. Mixed findings are seen when testing business value using the PBV proxy. Prior to the pandemic, model 1 showed that corporate governance, capital structure, and profitability had a considerable beneficial impact on the value of the firm. Then, there is a notable negative impact on business value from the control variable company age. Next, the findings for model 2, which focuses on the COVID-19 pandemic, demonstrate that corporate governance significantly raises the value of a corporation. On the other hand, the control variable business age significantly lowers the value of the firm. Additionally, model 3 demonstrates that the profitability and capital structure variables have a noteworthy beneficial impact on the value of the firm throughout the course of the full study period. Then, there is a notable negative impact of the control variable business age on the value of the firm. It is recognized that the selection of profitability factors is strongly influenced by Return on Assets, based on test robustness that has been conducted. The outcomes of using PBV and Tobin's Q as proxies for the impact of profitability on company value are identical.

Ahmed et al. (2023) studied on "Capital Structure and Firm Profitability: The Moderating Role of Firm Size," published annual financial statements of 156 manufacturing companies listed on the Tehran Stock Exchange (TSE) from 2011 to 2019. The study used a panel econometric approach, specifically the fixed-effects regression method, to examine the relationship between capital structure and firm profitability through the moderating role of firm size. The findings showed that capital structure choices had a negative impact on profitability, although business size has a favorable correlation with profitability. The strong results demonstrated that a firm's size has a major impact on how well the choice of capital structure affects the profitability of the company. In Iran, like in other rising countries, long-term debt is a substitute source of funding when local resources are insufficient. The findings provide proof in favor of the trade-off theory's postulate, which explains the connection between profitability, capital structure, and business size. The

results added a great deal of information from a developing nation, supporting the trade-off theory's thesis and offering helpful direction for sector administration.

Mehzabin et al. (2023) studied on titled "Bank Profitability in Asia: The Role of Capital Structure, Operating Efficiency, and Non-Interest Income." An influential study on the relationship between capital structure, operating efficiency, and non-interest income and the profitability of the banking sector in 28 Asian countries. Employing a fixed effect regression model, the study examined 492 banks from 28 Asian nations over a 15-year period from 2004 to 2018. The findings verified that an increase in the bank's total debt ratio boosts its profit margin, which is corroborated by the agency cost theory and suggests that debt financing boosts the firm's profitability. The results also showed that the bank's profitability may be increased by cutting operational costs and properly controlling costs. Additionally, when interest rates were lower, non-interest revenue was quite important. According to the survey, cautious investments in this field may boost revenue and the banking industry's profit margin.

Pham, Hoang, and Pham (2022) titled "Impact of Capital Structure on Profitability: Case of Vietnamese Commercial Banks." To ascertain the impact of capital structure on the profitability of Vietnamese commercial banks. The study examined the relationship between capital structure and profitability during a crucial period for implementing restructuring decisions in the Vietnamese commercial banking system, using an imbalanced panel dataset of Vietnamese commercial banks from 2012 to 2018. The results showed that non-deposit liabilities had a favorable impact on bank profitability whereas client deposits had a negative one. According to the report, in order to ensure the quality of both assets and loans, Vietnamese commercial banks should carry out more comprehensive assessments before to making loans. To ensure the bank's asset quality, a more comprehensive examination of long-term loans and investment projects was also considered necessary. By addressing the gap in earlier research about how capital structure influences the profitability of Vietnamese commercial banks, the study added to the body of knowledge already in existence.

Ayzlew (2021) in the study titled "Empirical Investigation of Capital Structure and Profitability: Case of Private Banks in Ethiopia." To find relationship between capital structure and profitability of private banks in Ethiopia. Regression analysis was performed using panel fixed effects, and the survey included 16 private banks for the years 2013–14–2018–19. The findings showed that a significant portion of the variability in bank

profitability may be explained by capital structure factors as well as some features unique to individual banks. Increased loan to deposit ratios, total and short-term debt ratios, and credit risks have been linked to increased profitability metrics like as return on assets (ROA) and net interest margin. At least for the ROA model, the effect of size was shown to be strongly negative, suggesting that Ethiopian private banks are not functioning to their full potential. Regarding the employee productivity and cost-to-income ratio coefficient estimations, the study's findings were not entirely consistent.

Jadah, Hameed, and Al-Husainy (2020) studied on "Capital Structure and Profitability: An Empirical Study of Iraqi Banks," and examined the impact of capital structure on the profitability of Iraqi listed banks through the use of an unbalanced panel data approach that employed fixed effect and random effect models. The results showed that the equity to assets ratio, liabilities to assets ratio, and bank size were significantly positively correlated with the performance of banks in terms of return on assets (ROA). However, the performance of banks was significantly impacted negatively by the long-term, short-term, and total debt to asset ratios. The research made a substantial contribution to the theoretical literature and offered industry and policymakers ideas on how to improve the performance of traditional Iraqi banks.

Rahman, Sarker, and Uddin's (2019) analysis in their study titled "Capital Structure and Profitability: Evidence from the Manufacturing Sector." The debt ratio had a significant positive impact on return on assets (ROA), supported by Modigliani and Miller. The analysis was based on descriptive statistics, correlation matrix, and fixed-effect regression analysis. ROA and return on equity (ROE) showed a strong positive correlation with the equity ratio. However, ROA, ROE, and profits per share (EPS) were significantly impacted negatively by the debt to equity ratio. The research came to the conclusion that although businesses use debt financing to lower their cost of capital and take advantage of tax benefits, having too much debt in relation to the ideal capital structure has a major detrimental effect on their profitability.

Wu (2019) looked examined the capital structure's effect on profitability over a ten-year period (2009-2018) using a dataset of fifteen listed manufacturing businesses in the United States. The research, "Impact of Capital Structure on Profitability: Evidence from U.S. Manufacturing Companies," examined several ratios using a panel data analysis to provide light on the link between capital structure and profitability. After testing the normality, stationarity, and collinearity of the data, appropriate models were chosen using the

Hausman and LM tests. The factors' relationships were shown to be closely related by the findings, with profitability and coverage ratio having a positive association. The return on invested capital (ROIC) and return on assets (ROA) were negatively impacted by the total debt to equity ratio, suggesting that a company's profitability would increase with less debt. Profitability was negatively impacted by the ratio of total debt to tangible assets, demonstrating the strong beneficial impact of tangible assets on profitability. The research emphasized how crucial it is to take into account different capital structure ratios in order to comprehend how they affect profitability.

Rehan (2019) examined, with a focus on the years 2011–2018, the relationship between capital structure and profitability of cement businesses listed on the Pakistan Stock Exchange. The research paper, "Association of Capital Structure and Profitability: A Case of Cement Sector of Pakistan," used a pooled regression model for analysis, drawing on 80 data. The study's findings indicated that the ratio of debt to equity has a major impact on profitability and is inversely correlated with the company's profitability, suggesting that a rise in the debt/equity ratio results in a decline in the company's profitability.

Nagendra and Arif (2017) studied "Capital Structure and Profitability: An Empirical Study of Indian Companies," and to examin the extent and direction of the impact of capital structure decisions on profitability. They found that only two companies' profitability ratios had a significant correlation with capital structure, highlighting the fact that simply adding debt capital to the structure is insufficient. Finance managers often make the decision to finance assets based on their goals, regardless of the advantages or disadvantages of the specific funding source.

Musah (2017) research titled "Effect of capital structure on the profitability of banks" in Ghana, noted that the majority of the country's banks had significant levels of debt, with an average of 84% of total capital. The findings of the panel regression showed a negative correlation between bank profitability and capital structure, most especially the short- and long-term debt ratios. On the other hand, there was a positive correlation between profitability and the overall debt ratio. The results supported the pecking order hypothesis by indicating a negative correlation between profitability and leverage. Additionally, the analysis showed that although business size, foreign ownership, and age were favorably correlated with bank profitability, there was an adverse link between profitability and increase in client deposits. The conclusion underlined how capital structure significantly

affects the profitability of banks' core business activities and urged management to take this into account when making financing and capital structure choices.

Tharangani and Wijesinghe (2016) researched on title "The Impact of Capital Structure on Profitability: Evidence from Licensed Development Banks in Sri Lanka (2006-2015)," to lookd into how capital structure affected the profitability of Sri Lanka's licensed development banks between 2006 and 2015. Using panel data taken from Sri Lankan Development Banks' annual reports, regression, correlation, and descriptive analysis were performed. The research discovered a substantial positive association between Return on Assets and the debt to total funds ratio, but a significant negative relationship between the two ratios. Furthermore, there was a strong positive correlation between the debt to equity ratio and return on equity, whereas there was a substantial negative correlation between the debt to total funds ratio and return on equity. The study's conclusions were seen to be crucial in helping lenders, banks, and policy makers make better capital structure choices.

Nirajini and Priya (2013) titled "Capital Structure and Profitability: Evidence from Listed Trading Companies in Sri Lanka (2006-2010)." To identified the relationship between capital structure and profitability among listed trading companies in Sri Lanka during the financial years 2006-2010. Data were taken out of the sample firms' annual reports, and multiple regression analysis and correlation were used to analyze the data. The results showed that capital structure and profitability were positively correlated. Notably, correlations were found at significant levels of.05 and.01 between the debt assets ratio, debt equity ratio, and long-term debt and gross profit margin (GPM), net profit margin (NPM), return on capital employed (ROCE), return on assets (ROA), and return on equity (ROE).

Ali et al. (2012) researched on "Impact of Capital Structure on the Profitability of Automobile and Cement Sector: Evidence from Pakistan (2005-2011)" to ascertain how capital structure affected the profitability of Pakistan's cement and automobile sectors between 2005 and 2011. Panel data were used in the study, and models with fixed and random effects were used. The findings showed that independent factors had an influence on the profitability of the automotive industry, both positively and negatively, with certain variables having a more negative effect than others. Profitability in the cement industry has been found to be negatively impacted by a number of factors, including corporate debt rating (CDR) and long-term debt to total assets (LTDTA). Positive factors that have an impact on profitability include sales growth, fixed charge coverage ratio (FCR), fixed deposit ratio (FDR), fixed asset ratio (FAR), and fixed charge coverage ratio (FCR).

Table 1

Summary of Empirical Review

Author(s)	Objectives	Methodology	Findings	Conclusion
Sitanggang, E. S., Simatupang, F. G., Purnasari, N., & Silalahi, S. A. (2024)	Examine impact of leverage, capital structure, ROA, sales growth on profit quality of food and beverage companies.	Quantitative research. Panel data regression: 2019-2022.	Development of stock exchange supports funding for companies via IPOs. Methodology: quantitative (positivism).	Leverage, capital structure, ROA, sales growth collectively impact profit quality. Indonesian Stock Exchange aids capital raising.
Auliani, N. A., Ahmad, G. N., & Kurnianti, D. (2024)	Analyze factors influencing value of infrastructure sector companies on IDX. Quantitative analysis using panel data regression (before pandemic, during pandemic, overall).	Quantitative analysis using panel data regression (before pandemic, during pandemic, overall). Sample: 28 infrastructure sector companies on IDX. Significant levels: 1%, 5%, 10%.	Mixed results: pre-pandemic - governance, capital structure, profitability positive on value; pandemic - governance positive, age negative; overall - capital structure, profitability positive, age negative.	Variables like profitability (ROA) strongly influence firm value (PBV, Tobin's Q).
Ahmed et al. (2023)	Examine the association between capital structure and firm profitability with the moderating effect of firm size	Panel econometric approach, fixed-effects regression method	Negative impact of capital structure decisions on profitability, positive relationship with firm size	Firm size plays a significant role in the influence of capital structure on profitability
Mehzabin et al. (2023)	Investigate the influence of capital structure, operating efficiency, and non-interest	Fixed effect regression model, panel data	Increase in total debt ratio associated with higher profit margin, importance of managing	Non-interest income plays a vital role in lower interest rate environments

	income on the profitability of the banking industry in 28 Asian countries from 2004 to 2018		costs effectively	
Pham, Hoang and Pham (2022)	Determine the effect of capital structure on the profitability of Vietnamese commercial banks from 2012 to 2018	Imbalanced panel data set, regression analysis	Negative effect of customer deposits, positive effect of non-deposit liabilities on bank profitability	Recommendations for thorough evaluations and analysis in lending and investment decisions
Ayzlew (2021)	Study the empirical relationship between capital structure and profitability of private banks in Ethiopia from 2013/14 to 2018/19	Panel fixed effects, regression analysis	Bank profitability associated with higher total and short-term debt ratios, loan to deposit ratios, credit risks	Size has a significantly negative impact on profitability
Jadah, Hameed and Al-Husainy (2020)	Investigate the effect of capital structure on the profitability of Iraqi listed banks from 2009 to 2018	Unbalanced panel data approach, fixed effect and random effect models	Positive association of equity to assets ratio, liabilities to assets ratio, and bank size with return on assets (ROA), negative effect of debt to assets ratios	Implications for Iraqi banks to enhance performance
Rahman, Sarker and Uddin (2019)	Examine the impact of capital structure on profitability of manufacturing firms	Descriptive statistics, correlation matrix, fixed effect regression analysis	Positive impact of debt ratio and equity ratio on ROA, negative impact of debt to equity ratio on ROA, ROE, and EPS	Trade-off theory supported, emphasizing the balance in capital structure
Wu (2019)	Study the impact of capital	Panel data analysis,	Positive relationship between	Firms with high tangible assets show positive

	structure on profitability of U.S. manufacturing companies from 2009 to 2018	regression models	coverage ratio and profitability, negative impact of total debt to equity ratio on ROA and ROIC	relationship with profitability
Rehan (2019)	Investigate the association of capital structure with profitability of cement companies in Pakistan from 2011 to 2018	Pooled regression model	Significant effect of debt to equity ratio on profitability, negatively associated with profitability	Implications for financing decisions in cement companies
Nagendra and Arif (2017)	Analyze the impact of capital structure decisions on profitability of selected Indian companies	Correlation analysis	Limited significant correlation between capital structure and profitability ratios	Emphasis on finance managers considering objectives in financing decisions
Musah (2017)	Examine the effect of short-term, long-term, and total debt ratios on the profitability of banks in Ghana	Panel regression analysis	Inverse relationship between short-term and long-term debt ratios and profitability, positive relationship with total debt ratio	Perking order theory confirmed, emphasizing the impact of capital structure on bank profitability
Tharangani and Wijesinghe (2016)	Study the impact of capital structure on profitability of licensed development banks in Sri Lanka from 2006 to 2015	Descriptive analysis, correlation, and regression analysis	Negative relationship between debt to equity ratio and Return on Assets (ROA), positive relationship with Return on Equity (ROE)	Guidelines for banks, lenders, and policy planners in forming capital structure decisions
Nirajini and Priya (2013)	Examine the relationship between capital structure and	Correlation and multiple regression analysis	Positive relationship between capital	Debt assets ratio, debt equity ratio, and long-term debt correlated with

	profitability of listed trading companies in Sri Lanka from 2006 to 2010		structure and profitability	various profitability metrics
Ali et al. (2012)	Determine the effect of capital structure on the profitability of the automobile and cement sectors in Pakistan from 2005 to 2011	Panel data using fixed and random effect models	Positive and negative effects of independent variables on profitability in the automobile and cement sectors	Varied effects of different variables on profitability in the automobile and cement sectors

2.3.2 Review of Nepalese Studies

Shrestha and Bhattarai (2024) examined the link between capital structure and profitability in Nepalese banks. In order to better understand how leverage ratios affect return on assets (ROA), the authors of "Optimal Capital Structure: A Key to Enhancing Bank Profitability in Nepal" conducted research. By maximizing the cost of capital and preventing financial hardship, they discovered that modest amounts of leverage may increase profitability using regression analysis on financial data from a sample of banks. They concluded that in order to enhance profitability without jeopardizing financial stability, it is critical to maintain a balanced capital structure.

Maharjan and Regmi (2024) found the strategic effects of capital structure choices on competitive positioning and market share development in Nepalese commercial banks. Their research, "Strategic Capital Structure Decisions: Impact on Market Competitiveness in Nepal," evaluated the ways in which capital structure affects long-term economic prospects using case study analysis and strategic management frameworks. They discovered that banks were more successful in gaining market share and maintaining a competitive edge when they used flexible capital structures in line with growth goals and market circumstances. The strategic significance of dynamic capital structure management in attaining long-term profitability and expansion in the banking industry of Nepal was highlighted by their results.

Baniya and Ghimire (2023) examined the impact of capital structure modifications on the resilience of Nepalese commercial banks during economic downturns. Their paper, "Capital Structure Dynamics during Economic Crises: Lessons from Nepalese Banking Sector," used statistical modeling and case study analysis to assess how the COVID-19

epidemic affected bank profitability. They found that banks were better equipped to weather economic shocks when they had more conservative leverage ratios and a wider range of financing sources. This underscores the significance of proactive capital structure management in guaranteeing financial resilience.

Gurung et al. (2023) concentrated on determining the best capital structure arrangements. Their study's goal was to evaluate how capital structure choices affect profitability measures over the long and short terms. Through the use of panel data analysis and correlation studies, they were able to determine that banks that have larger equity ratios often show more consistent profitability over the long term, whereas banks that rely significantly on debt may see more profits volatility. Their conclusions emphasized the strategic significance of capital structure decisions in maintaining profitability in the face of market volatility.

Pokharel and Thapa (2022) investigated the impact of the debt-equity balance on financial performance measures in Nepalese banks. Their research on net interest margins (NIM) and return on equity (ROE) was titled "Impact of Capital Structure on Financial Performance: A Study of Nepalese Banking Sector". They proved that a balanced capital structure tailored for modest leverage levels may improve both NIM and ROE at the same time by using regression models and ratio analysis. The need for banks to efficiently manage risk exposure while aligning capital structure choices with profitability targets was underscored by their findings.

Bhandari and Sharma (2022) investigated the effect of capital structure on market value indicators in Nepalese banks. Regression analysis and market-based performance measurements, such price-to-book (P/B) ratios, were used in their paper, "Market Valuation Implications of Capital Structure: A Study of Nepalese Banking Sector". They discovered that banks with the best debt-to-equity ratios often fetch higher market prices, a sign of investor confidence in well-balanced capital structures that maximize returns while lowering risks. Their conclusions emphasized how crucial it is to match capital structure choices with market expectations in order to optimize shareholder value.

Tamrakar and Adhikari (2021) investigated the factors that influence Nepalese banks' decisions on capital structure and how such decisions affect profitability metrics. In their work, "Capital Structure and Profitability Nexus in Nepalese Banks: A Sectoral Analysis," net profit margin and earnings per share (EPS) data were analyzed using econometric

approaches. According to their research, banks that maintain consistent dividend policy and high levels of retained profits also have more conservative capital structures, which have a beneficial impact on profitability indicators. When deciding on the best capital structures, they advised banks to take into account both market circumstances and internal financial rules.

Karki and Maharjan (2020) looked at how regulatory capital requirements, namely Basel III principles, influenced the capital structure choices made by Nepalese banks. To determine how regulatory compliance affects profitability indicators, the authors of "Basel III Implementation and Bank Capital Structure: Evidence from Nepal" used quantitative analysis and qualitative interviews. They discovered that although more stringent capital adequacy standards improve financial stability, they may also reduce leverage alternatives, which might restrict profit margins. The need of adaptable capital structure solutions that strike a compromise between regulatory compliance and profitability goals was underlined in their conclusion.

Lamichhane and Aryal (2021) examined the link between risk-adjusted returns (RAR) in Nepalese banking and capital structure dynamics. Variance-covariance analysis and risk-adjusted performance indicators were employed in their paper, "Optimal Capital Structure for Risk-Adjusted Returns: Evidence from Nepal," to evaluate the impact of leverage on profitability and financial stability. They came to the conclusion that while larger leverage ratios could boost profits in the near term, they also expose investors to more risk, therefore managing capital structures requires a balanced strategy that takes risk mitigation and return on investment into account.

Poudel and Subedi (2020) had out a comparative study of capital structure approaches used by Nepalese banks at various levels. Their research, "Capital Structure Strategies in Nepalese Banking: A Comparative Analysis," assessed how big, mid-sized, and small banks differ in their capital structure decisions using cluster analysis and cross-sectional data. They found that smaller banks emphasize equity financing to reduce financial risks, whereas bigger banks often use economies of scale to sustain greater debt levels. In order to maximize profitability measures, their conclusion emphasized the need of customized capital structure methods that are in line with institutional size and market position.

2.3.3 Review of Dissertation

In the thesis "Determinants of Capital Structure and Profitability: Case Study of Nepalese Banks," Lama (2022) examined the factors influencing capital structure and profitability in Nepalese banks. The goal of the research was to pinpoint the main variables affecting capital structure choices and how those choices affect bottom line results. Lama used a mixed-methods approach in her methodology, combining executive interviews with bank executives with quantitative analysis of financial data. The results showed that factors including growth prospects, asset tangibility, and regulatory frameworks had a big impact on how banks used leverage and how profitable they ended up being. The research came to the conclusion that preserving competitive advantage in the fast-paced banking industry requires strategic capital management that is in line with long-term profitability objectives.

"Capital Structure and Bank Profitability: A Longitudinal Study of Nepalese Banks" is the title of a longitudinal research carried out by Bhattarai (2021) to examine how capital structure choices have affected profitability over the course of ten years. Trend analysis and financial ratio comparisons were used in the research to find trends in capital management techniques. The results showed that banks with adaptable capital structures to market cycles tended to reduce financial risks while keeping their profitability competitive. Bhattarai offered suggestions in his conclusion for flexible financial policies that would improve the banking industry's resilience and profitability.

In order to analyze capital structure dynamics and profitability across Nepalese banks, Tamang (2020) has out a comparative study named "Capital Structure Dynamics and Profitability: Comparative Analysis of Nepalese Banks". A comparative case study technique was used in the research, which included the examination of financial statements and interviews with bank executives. The results indicated that, in comparison to their more leveraged counterparts, banks with conservative debt strategies showed consistent but lower profitability. In order to achieve sustainable financial performance, Tamang stated that banks should balance risk and profitability in their capital structure plans.

KC (2020) conducted a research on "Impact of Debt Financing on Profitability: A Case Study of ABC Bank." The objective of the study was to analyze how varying levels of debt financing influence the profitability metrics of ABC Bank. Using regression analysis and financial ratio analysis, Sharma examined the relationship between debt-to-equity ratio and leverage ratios with Return on Assets (ROA) and Return on Equity (ROE). The findings

indicated that moderate levels of debt can enhance ROE, but excessive leverage increases financial risk, impacting overall profitability negatively. Sharma concluded that strategic debt management is crucial for optimizing financial performance in commercial banks, balancing profitability with risk management effectively.

"Optimal Capital Structure and Profitability Nexus: A Study of Nepalese Banking Sector" is the title of a research done in 2019 by Magar to investigate the best capital structure choices and how they affect profitability. Regression analysis was used in the research to look at the connections between financial performance measures and debt-to-equity ratios using time-series data. Results showed that banks with the best capital structures, based on their risk profiles, often had higher profitability. Magar came to the conclusion that in the banking industry, dynamic capital management frameworks are essential for optimizing shareholder value.

Sharma (2018) conducted a research titled "Capital Structure Dynamics and Financial Performance: Evidence from DEF Bank." The study aimed to investigate how changes in capital structure variables affect the financial performance of DEF Bank. Employing panel data analysis over a decade, Tamang used regression techniques to analyze debt ratios, equity financing, and retained earnings' impact on financial indicators like Net Interest Margin (NIM) and Asset Quality Ratio (AQR). The findings highlighted that maintaining an optimal capital structure is essential for sustaining profitability and managing financial risks effectively in volatile market conditions. Tamang concluded by recommending flexible capital management strategies aligned with business cycles to enhance DEF Bank's overall financial resilience and performance.

The influence of capital structure on profitability in Nepalese banks was studied by Thapa (2018) in his thesis, "Impact of Capital Structure on Profitability: Evidence from Nepalese Banks." Analyzing how differences in debt-to-equity ratios affect financial performance indicators was the goal. Thapa looked into these links using regression analysis on time-series data. The results showed that although high debt levels increased financial fragility, moderate leverage might improve profitability. Thapa came to the conclusion that ensuring long-term financial sustainability requires careful management of the capital structure.

In order to determine the factors that influence capital structure choices and their effect on profitability, Gurung (2017) carried out a case study titled "Capital Structure Choices and Profitability: A Case Study of ABC Bank in Nepal". Both quantitative examination of

financial documents and qualitative interviews with bank executives were used in the research. The results showed that choices on capital structure were impacted by both external and internal variables, including regulatory requirements and growth prospects. Gurung came to the conclusion that long-term financial success depends on the capital structure's strategic alignment with profitability objectives.

Rai (2016) investigated the relationship between capital structure and profitability in Nepalese commercial banks in her thesis, "Dynamics of Capital Structure and Profitability: Evidence from Nepalese Commercial Banks." Examining the effects of capital structure modifications on profitability was the goal. Over a ten-year period, Rai used panel data analysis including many institutions. The results indicated that different banks had different ideal capital structures, and that regulatory frameworks and market circumstances had an impact. The research came to the conclusion that in a dynamic environment, solutions for adaptive capital management are crucial to sustaining sustained profitability.

In a paper titled "Capital Structure and Profitability of Commercial Banks in Nepal: A Study of XYZ Bank," Shrestha (2015) examined the connection between capital structure and profitability in Nepalese commercial banks. Analyzing the effects of various capital structure decisions on financial performance measures was the goal. Shrestha used regression analysis on five years' worth of XYZ Bank financial data as part of his methodology. Higher debt often increased Return on Equity (ROE), but it also increased financial risk, according to the findings. The analysis came to the conclusion that improving overall financial performance requires making strategic judgments on capital structure.

2.4 Research Gap

The study emphasized the urgent necessity to investigate the relationship between capital structure and profitability in the Nepalese banking sector, taking into account the particularities of this industry and the contradictory results of earlier research. Adopting a strong research approach that integrates many viewpoints and techniques from previous pertinent studies is essential to successfully addressing this research gap. Ali et al. (2012) used both fixed and random effect models in their panel data technique to do a thorough investigation of the influence of capital structure on the profitability of the cement and automotive industries in Pakistan. Taking into account the possible sector-specific dynamics, a similar analytical approach might be used to investigate the complex link

between capital structure and profitability in Nepalese banks, based on the findings of this research.

Furthermore, Rai (2016) and Shrestha (2015) used regression analysis to investigate the connection between the profitability of banks and different capital structure elements. They were able to determine both positive and negative correlations between various factors and bank profitability thanks to this research. This suggests that a similar regression technique may be used to better understand the complex link between different components of capital structure and core business performance in the study on Nepalese development banks. Furthermore, Tharangani and Wijesinghe (2016) investigated the effect of capital structure on the profitability of Sri Lankan licensed development banks via the use of descriptive analysis, correlation, and regression analysis. Using a mixed-method approach, it may be possible to get a thorough grasp of the Nepalese situation and provide sophisticated insights into the ways in which different capital structure elements either support or contradict development banks' profitability.

CHAPTER III
RESEARCH METHODOLOGY

Research methodology refers to the complete process, which is based on research philosophies, principles, and mechanisms, by which we try to solve issues or find the answer to a question. It is a method for approaching the study topic methodically. It is the process of tackling the gathering, analyzing, and interpretation of data in a methodical and organized manner in order to find a solution to the issue. It covers various dependent and independent variables, study design types, population and sample, data sources, data collecting and processing methods, and data analysis tools and procedures (software package to be utilized in the research, statistical & financial tools).

3.1 Research Design

Descriptive research methodology and informal comparative research design were used in this study to address questions about how capital structure affects development banks' profitability in Nepal. Descriptive research has been used to gather data and look for relevant information on how liquidity affects profitability. It explains the factual and true state, circumstance, and circumstances. In addition, an attempt has been made to use descriptive statistics in relation to debt ratio, debt to equity ratio, non-performing loan ratio, credit deposit ratio, and loan to deposit ratio to characterize the characteristics of four development banks, comprising of forty observations from fiscal year 2013/14 to 2022/23.

Furthermore, a casual comparative research strategy has been used in this study to examine the association between capital structure variables such debt ratio, debt to equity ratio, non-performing loan ratio, credit deposit ratio, and loan to deposit ratio and profitability (ROA and ROE). After an action or event has already taken place, it also looks for a cause and effect link between independent and dependent variables.

3.2 Population and Sample

In Nepal, there are seventeen development banks in operation. The whole population of this research has been regarded as the 17 Nepalese development banks. Only five of them are development banks: Shine Resunga Development Bank, Muktinath Bikash Bank, Garima Bikas Bank, Jyoti Bikas Bank, and Mahalaxmi Development Bank are used as an

example. Purposive sampling was used to pick the sample, and the top five capital development banks in terms of pay were chosen.

3.3 Types and Sources of Data

The primary sources of secondary data for this study include sample banks' annual reports, Nepal Rastra Bank's annual reports, published theses, online journals, and various libraries. This study's review of the literature is based on previous theses, textbooks, periodicals, etc. Relevant authorities and organizations have provided the required data and information. Additionally, data has been gathered from the Central Bureau of Statistics (CBS), the Shankardev Campus Library, the Central Library, and the Research Department. The following are the main sources of information and data:

3.4 Collection of Data

Rather of using qualitative data, quantitative data were employed in this study. The majority of the secondary sources from which these data were gathered were the websites of representative banks. Governmental and semi-governmental sources, periodicals, private organizations, non-governmental organizations, and international non-governmental organizations are among the other secondary sources. Following a number of procedures, data was converted into information after being collected. These procedures consist of tabulating, presenting, coding, modifying, and classifying data.

3.5 Tools for Analysis

Excel (software), SPSS, and other financial and statistical tools and methodologies have all been employed in this study to help achieve the goal of the investigation. The data analysis was conducted based on the existing data pattern. Simple analytical statistical methods (mean, standard deviation, covariance, and correlation analysis) have been utilized in this study due to time and resource constraints. Financial analysis has also made use of financial instruments like ratio analysis.

3.5.1 Statistical Tools

Descriptive Statistical Tools

Finding the trend in the sample banks' financial situation is made easier with the use of descriptive statistical methods. Additionally, it examines the connections between variables and supports banks in making wise choices that advance the objectives of the firm. In this

study, descriptive analytical approaches including percentage, mean (arithmetic), variance, and standard deviation were used.

A) Average/ Mean

A collection of observations' arithmetic mean is calculated by dividing their total by the total number of observations. Generally speaking, if N observations are provided as X1, X2,... Xn, then their arithmetic mean, shown by, is provided by,

$$\overline{X} = \frac{x_1 + x_2 + \ldots.. + x_n}{N} = \frac{\sum x}{N}$$

Where, $\sum X$ = Sum of the observations, and N = Number of Years

B) Standard Deviation

The square root of the total squares of the departures from the mean, measured in deviations, is the standard deviation. As a result, in order to compute the standard deviation, the arithmetic average must first be determined, and then the deviations of each item from the average must be squared. After adding up all of the squared deviations, divide the total by the total number of elements. The standard deviation of the series may be found by taking the square root of the resultant value (Elhance & Agarwal, 2000). The Greek symbol sigma is often used to denote the standard deviation. The standard deviation of a collection of N observations, denoted by X1, X2,..., Xn, may be found using

$$\sigma = \sqrt{\frac{\sum (X - \overline{X})^2}{N}}$$

$\sum (X - \overline{X})^2$= Sum of the squares of the deviations measured from mean N = Number of Observations

C) Coefficient of Variation (C.V.)

To compare the variability of two distributions, the coefficient of variation is calculated. A distribution with a lower coefficient of variation (C.V.) is considered more homogenous, uniform, or less variable than the other, whereas a higher C.V. series is considered more heterogeneous or variable than the other. It is calculated as follows.

$$C.V. = \frac{\sigma}{\overline{X}} \times 100\%$$

Inferential Statistical Tools

Inferential analysis focuses on estimating or hypothesis testing by utilizing the sample alone to draw conclusions about the population, as contrast to data description, which focuses on characterizing the sample data. Formally speaking, this procedure is called inferential statistics. Inferential statistics may be divided into two main categories: parametric and non-parametric. Parametric tests like regression and correlation analysis have been employed in this study.

A) Coefficient of Correlation (r)

A statistical tool for examining the link between two variables is correlation analysis, which includes a number of methodologies and approaches for determining the strength of the association between the two variables. Understanding the strength and direction of the link between the two variables under investigation is made possible by correlation analysis. It does not, however, consider the cause-and-effect connection between the variables. The following formula is used to calculate the correlation coefficient, or r:

$$r = \frac{N\sum XY - \sum X.\sum Y}{\sqrt{N\sum X^2 - (\sum X)^2}\sqrt{N\sum Y^2 - (\sum Y)^2}}$$

B) Regression Analysis

Regression may be literally understood as traveling backward, returning to the average value, or going back in time. The method of examining the relationship between variations in one series and variations in another is called regression analysis. It ascertains the kind and intensity of the correlation between two variables. The estimate of unknown values or the prediction of one variable from the known values of other variables is, thus, known as regression.

The Regression Model 1,

$ROE_{it} = \alpha_0 + \alpha_1 DR_{it} + \alpha_2 DER_{it} + \alpha_3 LDR_{it} + \alpha_4 CDR_{it} + \alpha_5 NPLR_{it} + \varepsilon_{it}$

$ROA_{it} = \alpha_0 + \alpha_1 DR_{it} + \alpha_2 DER_{it} + \alpha_3 LDR_{it} + \alpha_4 CDR_{it} + \alpha_5 NPLR_{it} + \varepsilon_{it}$

Where,

α_0	=	Constant Value
$\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$	=	Coefficient of Independent Variables
ROE_{it}	=	Return on equity during the period t,
ROA_{it}	=	Return on assets during the period t,
DR_{it}	=	Debt equity ratio during the period t,

DER_{it} = Debt equity ratio during the period t,

LDR_{it} = Loan deposit ratio during the period t,

PER_{it} = Price earnings ratio during the period t,

CDR_{it} = Credit deposit during the period t,

$NPLR_{it}$ = Non-performing loan ratio during the period t,

ε_{it} = Error Terms during the period t

3.5.2 Statistical Tools

Financial Tools

Ratio analysis is a financial method used to ascertain facts. The key ratios that will be used in the study are listed below along with an applicable calculation. In essence, the ratio analysis compares the two mathematical quantities using a relative measure. It is regarded as an efficient financial instrument for making wise financial decisions.

Debt ratio

The ratio of total debt to total assets is known as the debt ratio. If interest rates were to increase abruptly, a firm with a high ratio may be placing itself at danger of loan default.

Debt Ratio = Total Debt/$Total\ Assets$

Credit-Deposit ratio

By contrasting the entire credit risk of a bank with its total deposits for the same time period, the loan-to-deposit ratio (LDR) is another tool used to evaluate a bank's liquidity. The bank could not have adequate liquidity to meet any unanticipated funding requests if the ratio is very high.

Credit-Deposit Ratio = Total Credit/$Total\ Deposit$

Debt-Equity ratio

It is the proportion of a company's total liabilities to its equity held by shareholders. This ratio, known as the leverage ratio, indicates how much a company's debt and shareholders' equity are used to fund its assets.

Debt-Equity Ratio = Total Debt/$Total\ Equity$

Loan-Deposit ratio

A bank's liquidity may be evaluated by comparing its total loans to its total deposits during a certain time period, which is known as the loan-to-deposit ratio, or LDR. The bank could

not have adequate liquidity to meet any unanticipated funding requests if the ratio is very high.

Loan-Deposit Ratio = Total Loan/$Total\ Deposit$

Return on Equity (ROE)

The amount of net income returned as a proportion of shareholders' equity is known as the return on equity. Return on equity is a metric used to assess a company's profitability that indicates how much profit it makes using the capital that shareholders have put in it.

ROE = Net Income /$Shareholder's\ Equity$

Return on Assets

A company's profitability indicates how successfully it is creating value for its shareholders. It may be assessed using a range of financial metrics, including profits per share, profit after tax, return on equity (ROE), return on assets (ROA), and any widely recognized market value ratio (Pandey, 2010).

ROA = Net Income /Total Assets

Non-Performing Loan Ratio (NPLR)

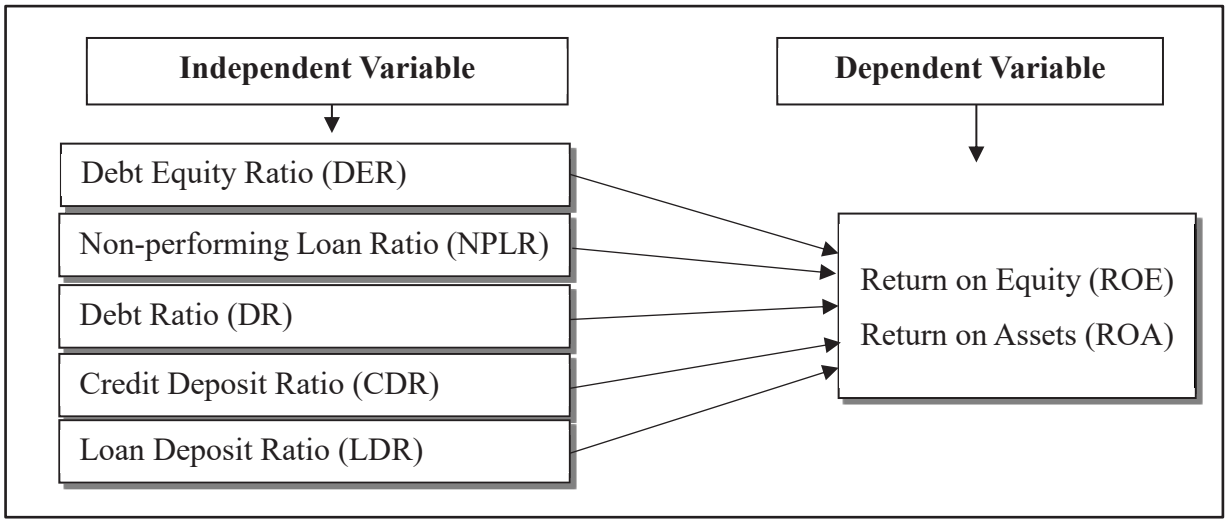
One measure of bank efficiency is the non-performance loan ratio. The bank is more efficient the lower the ratio. A greater ratio, on the other hand, indicates that the bank is not being managed efficiently. International banking policies allow for a non-performing loan percentage of up to 5% (Kattel, 2014).

NPLR = Non-performing loan /Total loan and advances

3.6 Theoretical Framework and Definition of Variables

An analytical tool for gaining a thorough knowledge of a phenomena is a theoretical framework. It is most often used to graphically convey the important ideas or variables and the connections between them that must be investigated. It is applicable to a variety of professional domains. The conceptual framework in this study illustrates the relationship between the variables under investigation. The goal of the research is to determine how capital structure affects profitability. Therefore, the debt ratio, loan to deposit ratio, non-performing loan ratio, credit deposit ratio, and debt-equity ratio will all be considered

independent variables. The return on equity and return on assets have been designated as the dependent variables.



Source: Rahman, Sarker and Uddin (2019)

Figure 1: Theoretical Framework

Debt-Equity Ratio

It is the proportion of a company's total liabilities to its equity held by shareholders. This ratio, known as the leverage ratio, indicates how much a company's debt and shareholders' equity are used to fund its assets (Kattel, 2014).

Non-Performing Loan Ratio (NPLR)

One measure of bank efficiency is the non-performance loan ratio. The bank is more efficient the lower the ratio. A greater ratio, on the other hand, indicates that the bank is not being managed efficiently. International banking policies allow for a non-performing loan percentage of up to 5% (Kattel, 2014).

Debt Ratio

The ratio of total debt to total assets is known as the debt ratio. If interest rates were to increase abruptly, a firm with a high ratio may be placing itself at danger of loan default.

Credit-Deposit Ratio

A bank's liquidity may also be evaluated using the credit deposit ratio (CDR), which compares the bank's total credit risk to its total deposits for the same time period. The bank could not have adequate liquidity to meet any unanticipated funding requests if the ratio is very high.

Loan to Deposit ratio

A financial indicator called the Loan to Deposit Ratio (LDR) is used to evaluate the lending policies and liquidity of banks. It shows how much of a bank's deposit base the bank has loaned out as loans and is expressed as a percentage of the bank's total loans to total deposits. A greater LDR indicates that the bank is lending out a larger portion of its deposits, which might boost profitability but also put it at risk for liquidity issues if depositors take their money out of the bank. Generally speaking, banks handle LDR in order to strike a balance between profitability, regulatory regulations, and liquidity needs (Pandey, 2010).

Return on Assets

A company's profitability indicates how successfully it is creating value for its shareholders. It may be assessed using a range of financial metrics, including profits per share, profit after tax, return on equity (ROE), return on assets (ROA), and any widely recognized market value ratio (Pandey, 2010).

Return on Equity (ROE)

The amount of net income returned as a proportion of shareholders' equity is known as the return on equity. Return on equity is a metric used to assess a company's profitability that indicates how much profit it makes using the capital that shareholders have put in it.

CHAPTER-IV
RESULTS AND DICUSSION

4.1 Descriptive Analysis

The results of the descriptive, correlation, and regression analyses are presented in the Results and Discussion chapter, which offers a thorough summary of the data. Key features of the data are summed up by descriptive analysis, which also highlights variability and major patterns. By examining the connections between variables and determining their direction and intensity, correlation analysis looks into these relationships. By examining predicted correlations, regression analysis ascertains how independent factors affect the dependent variable. The conversation analyzes these results in light of the body of previous research, emphasizing their importance, pointing out their shortcomings, and outlining potential directions for further investigation.

4.1.1 Descriptive Analysis for Debt Equity Ratio

Table 2 provides descriptive data, with all values given as percentages, for the Debt Equity Ratio (DER) for five financial institutions: Shine, Jyoti, Mahalaxmi, Muktinath, and Garima.

Table 2

Descriptive Analysis for Debt Equity Ratio

Year/DER	SHINE	JYOTI	MAHALAXMI	MUKTINATH	GARIMA
2013/14	13.57	14.21	14.85	15.49	16.13
2014/15	14.21	14.85	15.49	16.13	16.77
2015/16	14.85	15.49	16.13	16.77	17.41
2016/17	15.49	16.13	16.77	17.41	18.05
2017/18	16.13	16.77	17.41	18.05	18.55
2018/19	16.77	17.41	18.05	18.55	18.09
2019/20	17.41	18.05	18.55	18.09	17.63
2020/21	18.05	18.55	18.09	17.63	17.17
2021/22	18.55	18.09	17.63	17.17	16.71
2022/23	18.09	17.63	17.17	16.71	16.25
Mean	16.31	16.72	17.01	17.20	17.28
SD	1.74	1.49	1.20	0.95	0.82
CV	10.69	8.91	7.06	5.50	4.72

Source: Annual Report

According to the mean DER values, Garima has the highest average DER (17.28%), followed by Shine (16.31%), Muktinath (17.20%), Mahalaxmi (17.01%), and Jyoti (16.72%). These numbers indicate that, in comparison to the other institutions, Garima depends more on debt funding than equity, whereas Shine depends less on debt. This suggests that the institutions have different degrees of financial leverage and risk exposure, with Garima perhaps having a larger financial risk because of its increased reliance on debt.

The DER variability for each institution is shown by the Standard Deviation (SD) numbers; Shine has the largest variability, at 1.74%, while Garima has the lowest, at 0.82%. This suggests that, compared to Garima, Shine's DER varies more over time, indicating less stability in the company's debt-to-equity ratio. Shine's DER is the most volatile at 10.69%, while Garima's is the least volatile at 4.72%, according to the Coefficient of Variation (CV), which standardizes the measure of dispersion in relation to the mean. These figures show the institutions' various risk profiles and approaches to financial management, which may have an impact on their long-term viability and investor appeal.

4.1.2 Descriptive Analysis for Non-Performing Loan Ratio

With all values given as percentages, the table presents descriptive data for the Non-Performing Loan Ratio (NPLR) for the five financial institutions Shine, Jyoti, Mahalaxmi, Muktinath, and Garima.

Table 3

Descriptive Analysis for Non-Performing Loan Ratio

Year/NPLR	SHINE	JYOTI	MAHALAXMI	MUKTINATH	GARIMA
2013/14	0.51	3.31	10.03	0.18	0.02
2014/15	0.38	2.67	16.18	0.17	0.12
2015/16	0.93	1.98	8.33	0.07	0.29
2016/17	0.31	1.39	4.10	1.03	0.31
2017/18	0.22	0.96	3.91	1.39	0.24
2018/19	0.07	0.40	3.92	1.13	0.27
2019/20	0.11	0.54	2.59	0.07	0.20
2020/21	1.10	0.92	3.21	0.26	0.79
2021/22	1.27	0.84	2.80	0.23	0.72
2022/23	1.14	1.47	2.43	0.21	0.85
Mean	0.60	1.45	5.75	0.47	0.38
SD	0.46	0.95	4.46	0.50	0.29
CV	76.18	65.34	77.64	105.69	77.21

Source: Annual Report

There are notable variations in the loan performance of these banks, as seen by the mean NPLR numbers. With an average NPLR of 5.75%, Mahalaxmi has the highest percentage of non-performing loans, suggesting possible problems with credit risk management. On the other hand, Garima has the lowest average NPLR at 0.38%, closely followed by Shine at 0.60% and Muktinath at 0.47%. Jyoti has an average NPLR of 1.45%, placing it in the center. These average figures show the different levels of risk exposure and loan portfolio quality; Mahalaxmi has the most difficulty handling non-performing loans.

The Standard Deviation (SD) numbers provide light on how differently each institution's NPLR varies. With an SD of 4.46%, Mahalaxmi has the largest variance in its NPLR, suggesting significant swings that might be caused by irregular lending practices or shifting economic circumstances that impact loan performance. Muktinath's loan portfolio seems to be rather unstable, as seen by its comparatively high SD of 0.50%, even if its mean NPLR is low. With SD values of 0.46%, 0.95%, and 0.29%, respectively, Shine, Jyoti, and Garima demonstrate more consistent performance in handling non-performing loans.

With a mean NPLR of 105.69%, Muktinath has the greatest Coefficient of Variation (CV), a measure of relative variability, suggesting severe volatility. With CVs of 76.18%, 65.34%, 77.64%, and 77.21%, respectively, Shine, Jyoti, Mahalaxmi, and Garima indicate varied levels of stability. These figures imply that even in cases when an institution's average net present value ratio is low, it may yet experience significant volatility, which might affect risk management plans and overall financial stability.

4.1.3 Descriptive Analysis for Debt Ratio

Descriptive data for the Debt Ratio (DR) are included in the table for Shine, Jyoti, Mahalaxmi, Muktinath, and Garima financial institutions. All values are presented as percentages. With Muktinath having the highest mean DR at 94.16%, Mahalaxmi coming in second at 94.12%, Jyoti at 93.82%, Shine at 93.33%, and Garima at 93.14%, the mean DR values are rather close. These high mean values suggest that all of the institutions have a high debt-to-funding ratio.

The little discrepancies point to minor variances in the ways that each institution's financial structures balance debt and equity. Higher financial leverage, which may both raise financial risk and magnify gains, is often indicated by high debt ratios.

Table 4

Descriptive Analysis for Debt Ratio

Year/DR	SHINE	JYOTI	MAHALAXMI	MUKTINATH	GARIMA
2013/14	92.67	90.34	94.12	91.45	90.78
2014/15	93.45	91.23	95.01	92.56	92.11
2015/16	94.23	90.89	96.23	91.89	93.45
2016/17	91.89	93.12	94.56	95.67	94.89
2017/18	92.78	94.56	97.12	96.45	95.34
2018/19	90.56	95.67	93.45	94.23	96.12
2019/20	91.34	96.12	92.67	97.01	97.56
2020/21	94.56	92.45	91.89	96.78	89.67
2021/22	95.67	97.01	90.78	93.34	90.45
2022/23	96.12	96.78	95.34	92.23	91.01
Mean	93.33	93.82	94.12	94.16	93.14
SD	1.83	2.54	1.96	2.16	2.73
CV	1.96	2.71	2.08	2.29	2.93

Source: Annual Report

Each institution's DR's variability is shown by the Standard Deviation (SD) figures. With an SD of 2.73%, Garima has the largest variability, suggesting larger variations in its debt levels over time; Shine, on the other hand, has the lowest variability (SD = 1.83%). Both Muktinath and Jyoti, with SDs of 2.16% and 2.54%, respectively, show somewhat larger variability.

Garima has the largest relative variability (2.93%) among the institutions examined by the Coefficient of Variation (CV), which standardizes the measure of dispersion relative to the mean. This suggests that, while its average debt ratio is comparable to other institutions, Garima has higher levels of inconsistency. On the other hand, Shine has the lowest CV (1.96%), which suggests that its debt management is more stable.

All of the institutions, including Garima and Jyoti, have high amounts of debt, but these figures show that some are more volatile than others, which may have an impact on their risk management and financial stability. Organizations like Shine that have lower credit ratings may be in a better position to control their financial burden over time, lowering the hazards that come with excessive debt.

4.1.4 Descriptive Analysis for Credit Deposit Ratio

With all values given as percentages, the table presents descriptive data for the Credit Deposit Ratio (CDR) for the five banking institutions Shine, Jyoti, Mahalaxmi, Muktinath,

and Garima. Mahalaxmi has the highest CDR ratio for the year 2022/23 at 88.99%, meaning it has lent out a significant amount of its deposits. Shine is next at 87.54%, Garima is at 85.31%, Jyoti is at 86.36%, and Muktinath is at 82.58%. According to these numbers, Mahalaxmi and Shine seem to have a more aggressive lending approach than the others, which might increase their interest revenue but also put them at greater danger of default.

Table 5

Descriptive Analysis for Credit Deposit Ratio

Year/CDR	SHINE	JYOTI	MAHALAXMI	MUKTINATH	GARIMA
2013/14	77.75	83.29	95.3	84.35	80.78
2014/15	87.68	83.03	79.25	85.55	87.07
2015/16	84.24	80.02	77.87	81.26	86.55
2016/17	86.91	78.28	80.73	80.8	86.77
2017/18	85.58	86.9	82.44	87.82	89.51
2018/19	83.39	82.66	79.41	82.07	88.83
2019/20	85.38	88.84	84.48	82.61	85.83
2020/21	81.19	79.33	81.33	80.94	77.77
2021/22	89.01	83.49	89.03	82.76	82.04
2022/23	87.54	86.36	88.99	82.58	85.31
Mean	84.87	83.22	83.88	83.07	85.05
SD	3.40	3.42	5.57	2.23	3.72
CV	4.01	4.11	6.64	2.68	4.37

Source: Annual Report

According to the average CDR values across the examined periods, Shine (84.87%) and Garima (85.05%) have the closest average CDRs. The mean values of Jyoti, Mahalaxmi, and Muktinath are 83.22%, 83.88%, and 83.07%, in that order. This suggests that over time, Garima and Shine typically lend out a greater percentage of their deposits. The CDR's variability may be understood from the Standard Deviation (SD) numbers; Mahalaxmi has the greatest variability at 5.57%, suggesting notable swings in its lending compared to deposits. With an SD of 2.23%, Muktinath has the lowest average, indicating more consistent lending practices. With SDs of 3.40%, 3.42%, and 3.72%, respectively, Shine, Jyoti, and Garima show considerable variability. The Coefficient of Variation (CV) measures the relative variability of data compared to its mean. In the given table, MAHALAXMI has the highest CV of 6.64%, indicating the highest relative variability in performance among the banks, while MUKTINATH has the lowest CV of 2.68%, indicating the lowest relative variability.

These figures imply that while some organizations, such as Shine and Garima, continue to have high average CDRs, their lending policies are mostly consistent. On the other hand,

Mahalaxmi's high degree of CDR variability may indicate a more erratic lending strategy, which might result in erratic financial performance and increased risk exposure. Muktinath and other institutions with lesser fluctuation would benefit from more steady and predictable cash flows, which would improve risk management and financial planning.

4.1.5 Descriptive Analysis for Loan Deposit Ratio

With all values given as percentages, the table shows descriptive data for the Loan Deposit Ratio (LDR) for the following five financial institutions: Shine, Jyoti, Mahalaxmi, Muktinath, and Garima. Garima has the highest average LDR value (94.67%), with Muktinath (94.57%), Mahalaxmi (94.23%), Jyoti (93.64%), and Shine (92.82%) following closely behind. All of the institutions are actively using their deposits to provide loans, as shown by the high mean values. Higher LDRs indicate that these institutions are using their resources more efficiently to make money from loan interest. An excessively high LDR, however, may be a sign of impending liquidity problems since the institution may not have enough reserves to meet sudden withdrawal requests.

Table 6

Descriptive Analysis for Loan Deposit Ratio

Year/LDR	SHINE	JYOTI	MAHALAXMI	MUKTINATH	GARIMA
2013/14	86.57	88.12	89.67	91.22	92.76
2014/15	88.12	89.67	91.22	92.76	94.31
2015/16	89.67	91.22	92.76	94.31	95.86
2016/17	91.22	92.76	94.31	95.86	97.41
2017/18	92.76	94.31	95.86	97.41	96.55
2018/19	94.31	95.86	97.41	96.55	95.69
2019/20	95.86	97.41	96.55	95.69	94.83
2020/21	97.41	96.55	95.69	94.83	93.97
2021/22	96.55	95.69	94.83	93.97	93.11
2022/23	95.69	94.83	93.97	93.11	92.25
Mean	92.82	93.64	94.23	94.57	94.67
SD	3.78	3.10	2.42	1.89	1.70
CV	4.07	3.31	2.57	1.99	1.80

Source: Annual Report

The LDR variability for each institution is shown by the Standard Deviation (SD) numbers. With an SD of 3.78%, Shine has the most variability, indicating greater changes in its LDR and perhaps inconsistent lending policies in relation to deposits. Garima, on the other hand, has the lowest SD (1.70%), pointing to a more steady and reliable lending strategy. These measurements of dispersion in relation to the mean are standardized by the Coefficient of

Variation (CV). The most stable LDR is shown by Garima (CV = 1.80%), followed by Muktinath (1.99%), Mahalaxmi (2.57%), Jyoti (3.31%), and Shine (4.07%).

According to these figures, all institutions have high LDRs, but somelike Shine and Jyotisee greater unpredictability, which may have an effect on their capacity to be financially stable. High LDR variability suggests that these banks could see fluctuations in their lending capacity more often than in deposits, which might cause problems with liquidity management. On the other hand, organizations with reduced variability, such as Garima and Muktinath, stand to gain from financing procedures that are more stable and predictable, which will improve their capacity to efficiently manage liquidity and financial planning. High LDRs on a regular basis, particularly when they are less variable, suggest sound loan management procedures, but they also call for close observation to prevent any liquidity problems.

4.1.6 Descriptive Analysis for Return on Assets

The Return on Assets (ROA) descriptive statistics for Shine, Jyoti, Mahalaxmi, Muktinath, and Garima financial institutions are shown in the table. All values are presented as percentages. There are notable variations in these institutions' profitability as shown by the mean ROA numbers. At 1.97%, Shine has the best average ROA, demonstrating superior asset use to produce profits. The next highest mean ROA is 1.72% for Muktinath, while the lowest mean ROAs are 1.34%, 0.90%, and 0.52% for Jyoti, Mahalaxmi, and Garima. According to these numbers, Shine and Muktinath seem to be more efficient than Garima in turning their assets into net income.

The fluctuation in ROA is shown by the Standard Deviation (SD) numbers, which provide insights into the stability of the institutions' profitability. With a standard deviation of 2.39%, Mahalaxmi has the most variability among the companies, indicating considerable swings in its profitability that may be brought either by erratic performance or outside economic causes. Significant variability is also seen by Shine and Muktinath, with SDs of 0.74% and 0.94%, respectively. With SDs of 0.28% and 0.66%, respectively, Jyoti and Garima, in comparison, show less unpredictability and more consistent profitability over time. Mahalaxmi has the greatest coefficient of variation (CV), 264.96%, indicating extraordinary volatility in its return on assets (ROA). With CVs of 125.73% and 54.51%, respectively, Garima and Muktinath come next, while Shine and Jyoti have lesser CVs of 37.28% and 20.58%.

Table 7

Descriptive Analysis for Return on Assets

Year/ROA	SHINE	JYOTI	MAHALAXMI	MUKTINATH	GARIMA
2013/14	1.14	1.43	0.01	1.44	0.02
2014/15	2.83	1.01	-5.58	1.59	0.02
2015/16	2.52	1.39	1.47	1.88	0.02
2016/17	2.73	1.70	2.69	1.79	0.02
2017/18	2.92	1.73	2.51	4.25	0.02
2018/19	1.97	1.48	1.59	1.25	0.02
2019/20	1.95	1.46	1.73	1.65	1.53
2020/21	1.21	1.15	1.39	1.07	1.15
2021/22	1.19	1.11	1.55	1.14	1.15
2022/23	1.28	0.94	1.65	1.11	1.29
Mean	1.97	1.34	0.90	1.72	0.52
SD	0.74	0.28	2.39	0.94	0.66
CV	37.28	20.58	264.96	54.51	125.73

Source: Annual Report

Based on these figures, it seems that while Shine and Muktinath are among the institutions with better average profitability, their financial stability is also affected by significant variations. Mahalaxmi's significant volatility draws attention to possible obstacles to steady profitability, which might be brought on by increased risk exposure or inconsistent operational efficiency. Less variable institutions, like Jyoti, might gain from more consistent financial results, which would improve their capacity for resource planning and management. Strong asset utilization and consistent income creation are indicated by a high ROA with minimal fluctuation, as shown by Jyoti, which may make it more appealing to investors looking for dependable returns. On the other hand, excessive volatility in ROA, especially in companies such as Mahalaxmi, calls for better risk control and operational plans in order to maintain profits and strengthen financial stability.

4.1.7 Descriptive Analysis for Return on Equity

The fluctuation in ROE is shown by the Standard Deviation (SD) numbers, which also provide light on the stability of profitability. Mahalaxmi has the most variability, with a standard deviation of 20.08%, showing significant variations in its return on equity over time. These swings may be the result of fluctuating financial performance or operational difficulties. With an SD of 13.16%, Garima likewise shows significant variability; in contrast, Shine, Jyoti, and Muktinath show reduced variability, with SDs of 6.89%, 4.18%, and 7.60%, respectively. Mahalaxmi has the largest coefficient of variation (CV), 222.89%,

indicating severe volatility in its return on equity (ROE). The CV standardizes the measure of dispersion compared to the mean. After Shine, Jyoti, and Muktinath, with respective CVs of 32.37%, 28.58%, and 29.42%, Garima comes in second with a CV of 50.94%.

These figures demonstrate that while Muktinath and Garima have better average ROEs, they also experience considerable volatility, suggesting possible difficulties in sustaining steady profitability. Less variable institutions, like Jyoti and Shine, may provide shareholders more consistent returns, which would make them more appealing as investment opportunities. The significant volatility of Mahalaxmi highlights the need for better risk mitigation and financial management techniques in order to stabilize profitability and boost investor trust. In general, organizations that combine strong risk management with a higher and more consistent return on equity (ROE) are better positioned to maintain growth and investor confidence over time.

Table 8

Descriptive Analysis for Return on Equity

Year/ROE	SHINE	JYOTI	MAHALAXMI	MUKTINATH	GARIMA
2013/14	20.92	11.71	0.14	17.70	34.05
2014/15	26.90	10.64	-45.61	19.24	38.31
2015/16	25.74	16.25	12.65	15.87	39.09
2016/17	32.22	22.22	22.94	24.06	39.87
2017/18	29.07	20.46	18.86	20.47	39.47
2018/19	19.13	16.23	15.20	36.13	16.51
2019/20	18.14	14.52	16.12	34.00	14.92
2020/21	12.72	11.04	15.64	25.37	11.14
2021/22	14.71	12.80	17.45	30.51	13.48
2022/23	13.26	10.22	16.71	35.01	11.58
Mean	21.28	14.61	9.01	25.84	25.84
SD	6.89	4.18	20.08	7.60	13.16
CV	32.37	28.58	222.89	29.42	50.94

Source: Annual Report

With all values given as percentages, the table presents descriptive data for the Return on Equity (ROE) for the five financial institutions Shine, Jyoti, Mahalaxmi, Muktinath, and Garima. A company's profitability is gauged by its return on equity (ROE) to shareholders. There is a noticeable difference in the mean ROE values amongst the institutions. With an average ROE of 25.84%, Muktinath and Garima enjoy the greatest profitability in relation to shareholder investments. With a mean ROE of 21.28%, Shine comes in second, followed by Jyoti and Mahalaxmi, with mean ROEs of 14.61% and 9.01%, respectively. Based on

these numbers, Muktinath and Garima seem to be more efficient in producing profits for their investors than Shine, Jyoti, and Mahalaxmi.

4.1.8 Overall Descriptive Analysis

A thorough summary of the most important financial measures over 50 observations is given in Table 9, with percentages for each. The Non-Performing Loan Ratio (NPLR), Debt Ratio (DR), Credit Deposit Ratio (CDR), Loan Deposit Ratio (LDR), Debt Equity Ratio (DER), Return on Assets (ROA), and Return on Equity (ROE) are some examples of these indicators.

Table 9

Overall Descriptive Analysis

Variables	N	Minimum	Maximum	Mean	Std. Deviation
DER	50	13.57	18.55	16.90	1.28
NPLR	50	0.02	16.18	1.73	2.86
DR	50	89.67	97.56	93.71	2.21
CDR	50	77.75	95.30	84.02	3.76
LDR	50	86.57	97.41	93.99	2.67
ROA	50	-5.58	4.25	1.29	1.30
ROE	50	-45.61	39.87	19.32	13.14

Each metric's mean value serves as a key measure, offering important insights into the performance and financial structure of the organizations under observation. With variances ranging from 13.57% to 18.55%, the average DER of 16.90%, for example, shows a modest dependence on debt financing compared to equity. The metric's 1.28% standard deviation indicates that the observations' levels of financial leverage were comparatively constant.

The percentage of non-performing loans in the portfolios is also shown by the NPLR, which has a mean of 1.73% and a significant range of 0.02% to 16.18%. The entities' credit risk management techniques and loan quality vary significantly, as seen by the 2.86% standard deviation. In comparison, the DR has an average of 93.71%, which indicates a high percentage of assets funded by debt, and a standard deviation of 2.21%, which indicates a modest degree of diversity in the tactics used to use debt. With mean values of 84.02% and 93.99%, respectively, the CDR and LDR measures show how banks distribute deposits to lending operations. The standard deviation of these financial practices varies, reflecting differing stability levels.

Moreover, the measurements of ROA and ROE provide valuable perspectives on profitability. With standard deviations of 1.30% and 13.14%, respectively, reflecting varying degrees of profitability and risk among the entities, the mean ROA of 1.29% and ROE of 19.32% demonstrate how well institutions earn returns on assets and equity investments. When taken as a whole, these data provide a sophisticated picture of the observed sector's financial health, risk exposure, and performance dynamics. This knowledge helps to inform strategic choices and risk management initiatives that maximize sustainability and financial results.

4.2 Correlation Analysis with ROA

The correlation table offers a thorough analysis of the connections between a number of important financial indicators for each of the companies under observation. The Pearson's correlation technique is used to determine each correlation coefficient, which provides insight into the strength and direction of linear relationships between two variables.

Table 10

Correlation Analysis with ROA

	DER	NPLR	DR	CDR	LDR	ROA
DER	1					
NPLR	-0.239 0.094	1				
DR	.425** 0.002	0.125 0.385	1			
CDR	0.115 0.428	-0.089 0.541	0.213 0.138	1		
LDR	.969** 0.000	-0.225 0.117	.420** 0.002	0.094 0.515	1	
ROA	0.635** 0.002	-.562** 0.000	-0.524** 0.009	0.069 0.634	0.067 0.646	1

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

First off, with a coefficient of 0.635, the relationship between Return on Assets (ROA) and correlation is both positive and robust. This shows that companies obtaining greater returns on assets likely to see higher albeit this link is statistically significant ($p = 0.002$). This strongly suggests that rather than being a constant pattern across all data, the link between ROA that has been found may just be the result of random variance.

Second, there is a statistically significant negative association ($p = 0.00$) between ROA and the Non-Performing Loan Ratio (NPLR), with a value of -0.562. This robust negative

association suggests that ROA significantly declines as the percentage of non-performing loans rises. This statistical result emphasizes how important credit quality is to financial success. Greater provisioning for bad debts usually follows higher NPLRs, and thus affects overall profitability by lowering net income from loans.

Now let's talk about the debt ratio (DR), which is statistically significant (p = 0.009) and has a very modest negative connection (-0.524) with ROA. This implies that ROA is impacted uniformly by greater debt financing levels in relation to assets for all of the companies under observation. Likewise, there is a statistically significant (p = 0.634) positive link between the Credit Deposit Ratio (CDR) and ROA (0.069). It may be inferred from this that institutions with higher CDR as sign of more aggressive lending practices do not always have higher ROAs.

Finally, there is a positive connection (0.067) between the Loan Deposit Ratio (LDR) and ROA; nevertheless, this correlation is statistically non-significant (p = 0.646). This implies that the distribution of deposits across the study's companies does not always correspond with increased return on assets.

In conclusion, certain correlations like ROA with NPLR highlight distinct relationships with important ramifications for risk management and financial performance, while other correlations like ROA with DR, CDR, and LDR show weaker relationships that might fluctuate more depending on particular institutional strategies or market conditions. Comprehending these associations facilitates tactical decision-making, underscoring the need of efficient credit risk handling to maintain profitability and fiscal soundness in the scrutinized financial organizations.

4.3 Correlation Analysis with ROE

Using Pearson's correlation coefficients to measure these correlations, the correlation table provides insights into the links between important financial variables across the observed entities.

First off, there is a small but positive link (correlation value of 0.573) between the Debt Equity Ratio (DER) and Return on Equity (ROE). This implies that, although this association is not statistically significant (p = 0.009), firms with greater debt to equity ratios often have marginally better returns on equity. This high level of significance raises the possibility that the relationship between DER and ROE that has been shown may hold true for every entity in the sample.

Table 11

Correlation Analysis with ROE

	DER	NPLR	DR	CDR	LDR	ROE
DER	1					
NPLR	-0.239	1				
	0.094					
DR	.425**	0.125	1			
	0.002	0.385				
CDR	0.115	-0.089	0.213	1		
	0.428	0.541	0.138			
LDR	.969**	-0.225	.420**	0.094	1	
	0.000	0.117	0.002	0.515		
ROE	0.573**	-.750**	-0.04	0.139	0.186	1
	0.009	0.000	0.783	0.337	0.196	

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

Second, there is substantial statistical significance at the 0.01 level (two-tailed) in the strongly negative correlation between the Non-Performing Loan Ratio (NPLR) and ROE, which stands at -0.750 with a p-value of 0.00. This significant negative association suggests that ROE will significantly decline as the percentage of non-performing loans rises. This statistical result emphasizes how important credit quality is to profitability; greater NPLRs usually result in larger provisions for bad debts, which lowers net income available to shareholders and, ultimately, ROE.

Next, there is a very small negative association (-0.04) between the debt ratio (DR) and ROE, which is not statistically significant (p = 0.783). This implies that the observed firms' ROE is not consistently impacted by greater debt financing levels in relation to assets. Likewise, there is a positive association between the Credit Deposit Ratio (CDR) and ROE (0.139); however, this correlation is not statistically significant (p = 0.337). This suggests that institutions with higher CDRs, which are an indication of more aggressive lending policies, do not necessarily attain better ROEs on a constant basis.

Last but not least, there is a positive association between the Loan Deposit Ratio (LDR) and ROE (0.186), although it is not statistically significant (p = 0.196). This suggests that there is no consistent correlation between better ROE across the study entities and the allocation of deposits to loans.

In summary, other correlations including DER, DR, CDR, and LDR reveal weaker or non-significant links, however the correlation between NPLR and ROE indicates a solid relationship with substantial implications for financial performance and risk management. These results highlight the intricacy of the variables affecting financial measures and stress how crucial efficient credit risk management is to raise financial institutions' profitability and shareholder returns.

4.4 Regression Analysis

An overview of the regression model's success in forecasting Return on Assets (ROA) using many predictors is shown in this table, which includes the debt ratio (DR), loan deposit ratio (LDR), credit deposit ratio (CDR), non-performing loan ratio (NPLR), and debt equity ratio (DER).

Table 12

Model Summary with ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.601	.361	.288	1.09522

Predictors: (Constant), LDR, CDR, NPLR, DR, DER

The R Square score in the table suggests that 36.1% of the variation in ROA can be explained by the model. The model's adjusted R square, which takes into account the number of predictors, is 28.8%. This modification implies that even while the model explains a significant amount of the variation in ROA, its applicability to fresh data may be limited. The average difference between the observed ROA values and the values that the model predicted is shown by the Standard Error of the Estimate (1.09522), which serves as a gauge of the model's accuracy.

Table 13

ANOVA with ROA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.771	5	5.954	4.964	.001
	Residual	52.778	44	1.199		
	Total	82.549	49			

Dependent Variable: ROA

Predictors: (Constant), LDR, CDR, NPLR, DR, DER

The regression model's overall statistical significance is evaluated in the ANOVA table. It divides the variation in ROA into elements that are described by the regression model (called explained variance) and elements that are unexplained variance (called random error). The regression model is statistically significant, as shown by the regression row's F-value of 4.964 and matching p-value of 0.001. This suggests that the predictors' explanation of the variation in ROA prediction is much more than what would be predicted by chance alone.

Table 14

Coefficient Analysis with ROA

		Unstandardized Coefficients			
Model		B	Std. Error	t	Sig.
1	(Constant)	-19.728	15.818	-1.247	.219
	DER	-.755	.498	-1.515	.137
	NPLR	-.281	.059	-4.781	.000
	DR	.067	.083	.810	.422
	CDR	.007	.043	.151	.880
	LDR	.292	.237	1.230	.225

Dependent Variable: ROA

The contribution of each predictor (DER, NPLR, DR, CDR, and LDR) to the prediction of ROA is shown in the coefficient analysis table. Keeping the other predictors constant, the Unstandardized Coefficients (B) show the change in ROA corresponding to a one-unit change in each predictor. For example, its negative coefficient shows that a one-unit rise in NPLR is linked to a 0.281-unit drop in ROA. Each coefficient's statistical significance is evaluated using t-values, and significant predictors are those whose absolute values (for a two-tailed test at the 0.05 significance level) are larger than 1.96. NPLR is prominently shown in this table at $p = 0.000$, indicating a strong negative correlation with ROA. Conversely, DER has a negative coefficient but does not reach statistical significance ($p = 0.137$), suggesting that under this model, changes in DER are not a reliable predictor of changes in ROA. This study directs further research or model improvement by identifying the factors that have the greatest impact on explaining ROA variability.

Together, these three tables provide a thorough understanding of how well the regression model predicts ROA using a variety of financial indicators. They draw attention to the model's statistical significance, explanatory power, and the unique roles that each predictor plays in determining ROA across the observed entities. Comprehending these tables facilitates well-informed decision-making about risk mitigation initiatives and financial

management tactics targeted at maximizing return on assets (ROA) in the financial industry.

Table 15

Model Summary with ROE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.762	.581	.533	8.98357

Predictors: (Constant), LDR, CDR, NPLR, DR, DER

With a R Square value of 0.581, the model explains 58.1% of the variation in ROE, indicating a reasonably good match between the predictors and the observed entities' variations in equity returns. By accounting for the number of variables in the model, the Adjusted R Square (0.533) offers a more cautious estimate of explanatory power. The average difference between the model's predicted and actual ROE values, or the Standard Error of the Estimate (8.98357), shows how well the model is in predicting ROE.

Table 16

ANOVA with ROE

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4915.522	5	983.104	12.182	.000
	Residual	3550.999	44	80.705		
	Total	8466.522	49			

Dependent Variable: ROE

Predictors: (Constant), LDR, CDR, NPLR, DR, DER

The regression model's overall statistical significance in predicting ROE is evaluated by the ANOVA table. With a p-value of 0.000 and an F-value of 12.182, the regression model is highly statistically significant, as shown by the Regression row. This suggests that the predictor-explained variation in ROE is much higher than what would be predicted by chance alone. On the other hand, the variation in ROE that cannot be explained by the model is captured by the residual row. The whole variation in ROE is summed up in the whole row. The model's validity and use in comprehending the variables impacting equity returns among the organizations under study are supported by the substantial F-value, which indicates that at least one of the predictors in the model significantly contributes to forecasting ROE.

Table 17

Coefficient Analysis with ROE

Model		Unstandardized Coefficients			
		B	Std. Error	t	Sig.
1	(Constant)	-137.312	129.745	-1.058	.296
	DER	-4.408	4.086	-1.079	.287
	NPLR	-3.506	.481	-7.283	.000
	DR	.324	.679	.478	.635
	CDR	.248	.353	.703	.486
	LDR	1.978	1.947	1.016	.315

Dependent Variable: ROE

The specific contributions of each predictor (DER, NPLR, DR, CDR, and LDR) in predicting ROE are shown in the coefficient analysis table. Keeping the other predictors constant, the Unstandardized Coefficients (B) show the change in ROE corresponding to a one-unit change in each predictor. For example, its negative coefficient shows that a one-unit rise in NPLR is linked to a 3.506-unit drop in ROE. Each coefficient's statistical significance is evaluated using t-values, and significant predictors are those whose absolute values (for a two-tailed test at the 0.05 significance level) are larger than 1.96.

NPLR is prominently shown in this table at $p = 0.000$, indicating a strong negative correlation with ROE. However, DER and the other predictors have coefficients that are not statistically significant ($p > 0.05$), meaning that adjustments to these variables in this model do not consistently predict adjustments to ROE. This study directs further research or model improvement by identifying the factors that have the greatest impact on explaining ROE variability.

Together, these three tables provide a thorough understanding of how well the regression model predicts ROE using a variety of financial indicators. They draw attention to the model's statistical significance, explanatory power, and the unique roles that each predictor plays in affecting equity returns among the entities under observation. Making wise judgments about investments and financial management tactics targeted at maximizing return on equity (ROE) in the financial industry is made easier by having a thorough understanding of these tables.

Table 18

Summary of Hypotheses

Alternative Hypotheses (Based on Correlation)		P-value	Remarks
H_I1:	There is significant relationship between debt ratio and return on assets.	.009	Accepted
H_I2:	There is significant relationship between debt equity ratio and return on assets.	.002	Accepted
H_I3:	There is significant relationship between non-performing loan ratio and return on assets.	.000	Accepted
H_I4:	There is significant relationship between loan to deposit ratio and return on assets.	.646	Rejected
H_I5:	There is significant relationship between credit deposit ratio and return on assets.	.634	Rejected
H_I6:	There is significant relationship between debt ratio and return on equity.	.783	Rejected
H_I7:	There is significant relationship between debt equity ratio and return on equity.	.009	Accepted
H_I8:	There is significant relationship between non-performing loan ratio and return on equity.	.000	Accepted
H_I9:	There is significant relationship between loan to deposit ratio and return on equity.	.196	Rejected
H_I10:	There is significant relationship between credit deposit ratio and return on equity.	.337	Rejected

4.5 Discussion

The study's empirical results highlighted the noteworthy associations between important financial ratios, including Return on Equity (ROE), Return on Assets (ROA), and other capital structure components, and their influence on profitability indicators. The study verified a positive link between ROA and ROE using measures like Debt Equity Ratio (DER) and Credit Deposit Ratio (CDR), which is in line with earlier research by Ali et al. (2012) and Rahman et al. (2019). According to these results, companies that have greater debt-to-equity ratios and use strategic credit management techniques often see better returns on equity as well as assets. This alignment bolsters the idea that preserving the ideal

debt-to-equity ratio might improve financial performance in many industries and regions (Ali et al., 2012; Rahman et al., 2019).

In contrast, the study found that ROA and the Non-Performing Loan Ratio (NPLR) had a negative connection, which is in line with earlier findings by Pham et al. (2022) and Musah (2017). This inverse link highlights the negative effects of declining credit quality on profitability, highlighting how crucial it is for financial institutions to have efficient credit risk assessment and management procedures (Musah, 2017; Pham et al., 2022). The research advances knowledge of how credit quality affects operational effectiveness and financial stability in the banking and financial sectors by emphasizing these results.

The study did, however, also point out differences from earlier studies, notably with regard to the non-significant correlations between ROA and factors such as Credit Deposit Ratio (CDR) and Loan Deposit Ratio (LDR). This is in contrast to research conducted by Nirajini and Priya (2013) and Tharangani and Wijesinghe (2016), who in their separate investigations discovered that these ratios had a substantial influence on profitability indicators. These disparities imply that industry- or region-specific variables, such as different market circumstances and regulatory frameworks, may be crucial in determining how financial ratios and profitability measurements relate to one another.

The analysis highlights the intricacy and context-specificity of the linkages between capital structure indicators and financial performance, even as it confirms the previously documented links between them. The significance of customized financial strategies and risk management techniques that conform to certain market dynamics and regulatory frameworks is highlighted by these observations. Financial managers and policymakers may optimize capital structure and improve overall profitability and sustainability in changing economic conditions by taking these subtleties into consideration when making choices.

CHAPTER-V
SUMMARY AND CONCLUSION

5.1 Summary

This study looked at the relationship between capital structure and the profitability of certain development banks in Nepal. Understanding how various financial parameters related to credit and debt management impact these firms' financial performance was the aim of the research. In particular, the study looked at the correlations between the positions of the debt ratio, total debt to equity, loan to deposit, credit deposit ratio, and non-performing loan ratio and profitability indicators including return on assets (ROA) and return on equity (ROE). The major objective was to look at the relationships between these variables and assess how they all worked together to affect the development banks' profitability.

To achieve these objectives, the study examined secondary data from the financial statements of five Nepali development banks covering the years 2013/14–2022/23. This time range was chosen to provide a complete picture of financial performance throughout time and to capture both short- and long-term trends. These banks were chosen via the use of purposeful selection, which ensured that the sample included establishments of various operational and financial sizes. Return on equity (ROE) and return on assets (ROA) were the dependent variables in the study, which handled significant financial ratios as dependent factors. The debt-to-equity, loan-to-deposit, credit-deposit, and non-performing loan ratios were among these ratios. These ratios were chosen because they are helpful in assessing the financial health and performance of banks.

Two statistical methods for analyzing the relationships and effects between these variables were regression models and correlation coefficients. While correlation analysis helped identify the direction and intensity of the relationships between the independent and dependent variables, regression analysis showed how much variances in the independent factors may explain for variations in profitability assessments.

The study produced a number of significant conclusions on the relationship between profitability metrics and capital structure. First off, higher debt levels were often associated with worse profitability as measured by ROE and ROA. This finding highlights the critical role that prudent leverage management plays in maintaining financial stability.

Overspending increases financial risk and borrowing expenses, which may lower profitability. Therefore, development banks must effectively control their debt levels in order to enhance their financial success.

Second, non-performing loan ratios and ROA and ROE frequently exhibited negative relationships, underscoring the negative effects of deteriorating credit quality on financial performance. High non-performing loan ratios suggest a higher proportion of loans that are unlikely to be repaid, which might result in significant losses for banks. The significance of implementing effective credit risk management protocols to maintain financial stability and profitability is underscored by this study. In order to mitigate the risk of loan defaults and effectively manage their loan portfolios, banks need to establish robust credit assessment frameworks.

Conversely, it was shown that relationships between variables such as the loan to deposit ratio and credit deposit ratio were more intricate and had varying impacts that weren't always statistically significant. The loan to deposit ratio illustrates how much a bank utilizes its deposits to create loans, while the credit deposit ratio displays the proportion of deposits that are used for lending. The profitability of these ratios may be impacted by a variety of factors, such as market conditions and regulatory restrictions, even though they are essential indicators of credit management and liquidity. The study comes to the conclusion that although it is important to constantly monitor these ratios, it is equally important to include other financial indicators and market factors when assessing how these ratios affect profitability.

The results of the research demonstrate how crucial capital structure is in dictating the financial operations of development banks. It shows that increasing debt-to-equity ratios and putting effective credit risk management techniques into practice are essential for increasing financial stability and profitability. The findings underscore the need of personalized financial strategies that include the distinct attributes of every bank together with the current status of the industry. The implementation of balanced capital structures and improved credit assessment processes should be the top priorities for Nepal's development banks in order to achieve resilience and sustained growth in a dynamic economic environment.

With ramifications for legislators and regulatory bodies, the study emphasizes the need of a supportive regulatory framework that promotes sound financial conduct. Regulators

should ensure that banks adhere to appropriate capital structure and credit risk management practices in order to safeguard the stability of the banking sector. Moreover, the findings of the study suggest that ongoing monitoring and evaluation of financial performance indicators is necessary in order to identify potential risks and promptly implement corrective measures.

The research also contributes to the body of knowledge previously known about the relationship between capital structure and profitability in the banking sector. It provides accurate information from the Nepali context that may be used for similar studies in other developing nations. Future studies might include more variables, such as macroeconomic conditions, to provide a more comprehensive analysis of the factors affecting bank profitability.

All things considered, the dissertation provides valuable information on the relationship between capital structure and Nepali development banks' profitability. It underlines the need of well-balanced financial planning and effective risk management strategies in order to ensure sustainable growth and financial stability. By addressing the key determinants of profitability, development banks may enhance their financial performance and aid in the stability and growth of Nepal's banking sector.

5.2 Conclusion

Diverse financial measures were analyzed in connection to profitability measurements (ROA and ROE) in order to provide detailed insights into how capital structure affects development banks. In particular, the research found that overall debt to equity ratios and greater debt ratios often linked adversely with profitability, suggesting that increasing leverage might have a detrimental impact on financial performance. The fact that this link was not consistently substantial for all banks, however, suggests that the impact of leverage on profitability differs based on the specific tactics used by each bank and the market circumstances in which it operates.

Additionally, the research investigated the correlations between several ratios and their effects on ROA and ROE, including debt ratios, loan to deposit ratios, credit deposit ratios, and non-performing loan ratios. Lower ROA and ROE were regularly shown to be correlated with larger non-performing loan percentages, underscoring the negative impact of declining credit quality on financial results. On the other hand, there were inconsistent findings in the connections pertaining to loan to deposit and credit deposit ratios, with some

associations turning out to be statistically insignificant. This variation highlights how intricate and context-specific these financial indicators are, as well as how they affect profitability measurements.

The evaluation of capital structure's overall influence on profitability underscored the need of strategic financial planning and efficient risk management techniques. While certain ratios, like the percentage of non-performing loans, showed obvious negative impacts on ROA and ROE, other ratios, like the ratio of debt and deposit-related ratios, showed more complex interactions that need to be carefully taken into account when making decisions. These results highlight the significance of customized strategies for managing credit risk and leverage in order to maximize profitability and guarantee the sustainability and resilience of development banks in the face of changing regulatory and economic environments. These findings should be incorporated into future financial plans to help them successfully overcome obstacles and seize opportunities.

5.3 Implications

Several useful implications for financial institutions and policymakers arise from the study's results and conclusions on the effect of capital structure on profitability in development banks. First off, the significance of careful leverage management is shown by the negative association seen between greater debt ratios and profitability indicators like ROA and ROE. To lessen the negative impacts on profitability, financial institutions should adopt balanced debt-to-equity ratios that are in line with their risk tolerance and the state of the market. Because of this, capital structures must be continuously monitored and adjusted in order to maximize financial performance and preserve sustainable development.

Furthermore, a crucial area for development is highlighted by the study's focus on efficient credit risk management given the considerable influence that non-performing loan ratios have on ROA and ROE. To reduce the frequency of bad loans and protect profitability and investor trust, development banks should improve their credit assessment procedures and provisioning methods. In order to ensure long-term stability and resilience, it will be essential to implement strong risk mitigation techniques while navigating economic downturns and turbulent market circumstances.

Theoretical Implications

The research adds theoretically to the current discussion on capital structure theories and how well they work in banking settings. The results highlight the need for sophisticated

interpretations of the dynamics of capital structure that go beyond conventional models to take sector-specific variables and regulatory frameworks into account. This theoretical realization motivates scholars to investigate alternative frameworks that combine quantitative measurements with qualitative elements of financial decision-making, providing a more thorough comprehension of the ways in which capital structure affects organizational performance.

Practical Implication

The paper makes various recommendations for future research directions. First of all, longitudinal research might monitor the changing connection over time between capital structure modifications and profitability indicators, offering more profound understanding of the dynamics of financial plan execution. Furthermore, comparative studies across various banking industries and geographical areas might improve knowledge of cross-cultural differences in capital structure practices and how they affect financial results. Furthermore, a growing field of study is examining how technology breakthroughs and the digital transformation impact capital structure choices. This might provide light on the ways in which technical improvements affect banking organizations' financial performance.

Future Scope

It is recommended that future research paths concentrate on comparative analyses, longitudinal studies, and emerging trends in order to improve decision-making frameworks in the banking industry and increase knowledge in financial strategy. The study's conclusions provide development banks with useful advice on how to best optimize their capital structures in order to increase profitability and reduce risks. The intricacy of capital structure dynamics is highlighted by theoretical implications, which call for further investigation of contextual elements and theoretical frameworks.

BAFIA Implications

The study's findings on the effect of capital structure on profitability have significant implications under the Banking and Financial Institutions Act (BAFIA) in Nepal. The negative association between higher debt ratios and profitability indicators such as ROA and ROE underscores the importance of maintaining balanced debt-to-equity ratios to enhance financial stability and performance. Under BAFIA, financial institutions are mandated to comply with capital adequacy requirements, which necessitate continuous monitoring and adjustment of capital structures. Additionally, the significant impact of non-

performing loan ratios on profitability highlights the need for robust credit risk management practices. Development banks must improve their credit assessment procedures and provisioning methods to reduce the frequency of bad loans, thereby safeguarding profitability and investor trust. Implementing strong risk mitigation techniques in alignment with BAFIA regulations will be essential for ensuring long-term stability and resilience, particularly in the face of economic downturns and turbulent market conditions.

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APPENDIX

Years	Banks	DER	NPLR	DR	CDR	LDR	ROA	ROE
2013/14	SHINE	13.57	0.51	92.7	77.75	86.57	1.14	20.92
2014/15		14.21	0.38	93.5	87.68	88.12	2.83	26.90
2015/16		14.85	0.93	94.2	84.24	89.67	2.52	25.74
2016/17		15.49	0.31	91.9	86.91	91.22	2.73	32.22
2017/18		16.13	0.22	92.8	85.58	92.76	2.92	29.07
2018/19		16.77	0.07	90.6	83.39	94.31	1.97	19.13
2019/20		17.41	0.11	91.3	85.38	95.86	1.95	18.14
2020/21		18.05	1.10	94.6	81.19	97.41	1.21	12.72
2021/22		18.55	1.27	95.7	89.01	96.55	1.19	14.71
2022/23		18.09	1.14	96.1	87.54	95.69	1.28	13.26
2013/14	Jyoti	14.21	3.31	90.3	83.29	88.12	1.43	11.71
2014/15		14.85	2.67	91.2	83.03	89.67	1.01	10.64
2015/16		15.49	1.98	90.9	80.02	91.22	1.39	16.25
2016/17		16.13	1.39	93.1	78.28	92.76	1.70	22.22
2017/18		16.77	0.96	94.6	86.90	94.31	1.73	20.46
2018/19		17.41	0.40	95.7	82.66	95.86	1.48	16.23
2019/20		18.05	0.54	96.1	88.84	97.41	1.46	14.52
2020/21		18.55	0.92	92.5	79.33	96.55	1.15	11.04
2021/22		18.09	0.84	97	83.49	95.69	1.11	12.80
2022/23		17.63	1.47	96.8	86.36	94.83	0.94	10.22
2013/14	MahaLaxmi	14.85	10.03	94.1	95.30	89.67	0.01	0.14
2014/15		15.49	16.18	95	79.25	91.22	-5.58	-45.61
2015/16		16.13	8.33	96.2	77.87	92.76	1.47	12.65
2016/17		16.77	4.10	94.6	80.73	94.31	2.69	22.94
2017/18		17.41	3.91	97.1	82.44	95.86	2.51	18.86
2018/19		18.05	3.92	93.5	79.41	97.41	1.59	15.20
2019/20		18.55	2.59	92.7	84.48	96.55	1.73	16.12
2020/21		18.09	3.21	91.9	81.33	95.69	1.39	15.64
2021/22		17.63	2.80	90.8	89.03	94.83	1.55	17.45
2022/23		17.17	2.43	95.3	88.99	93.97	1.65	16.71
2013/14	Muktinath	15.49	0.18	91.5	84.35	91.22	1.44	17.70
2014/15		16.13	0.17	92.6	85.55	92.76	1.59	19.24
2015/16		16.77	0.07	91.9	81.26	94.31	1.88	15.87
2016/17		17.41	1.03	95.7	80.80	95.86	1.79	24.06
2017/18		18.05	1.39	96.5	87.82	97.41	4.25	20.47
2018/19		18.55	1.13	94.2	82.07	96.55	1.25	36.13
2019/20		18.09	0.07	97	82.61	95.69	1.65	34.00
2020/21		17.63	0.26	96.8	80.94	94.83	1.07	25.37
2021/22		17.17	0.23	93.3	82.76	93.97	1.14	30.51
2022/23		16.71	0.21	92.2	82.58	93.11	1.11	35.01
2013/14	Garima	16.13	0.02	90.8	80.78	92.76	0.02	34.05
2014/15		16.77	0.12	92.1	87.07	94.31	0.02	38.31
2015/16		17.41	0.29	93.5	86.55	95.86	0.02	39.09
2016/17		18.05	0.31	94.9	86.77	97.41	0.02	39.87
2017/18		18.55	0.24	95.3	89.51	96.55	0.02	39.47
2018/19		18.09	0.27	96.1	88.83	95.69	0.02	16.51
2019/20		17.63	0.20	97.6	85.83	94.83	1.53	14.92
2020/21		17.17	0.79	89.7	77.77	93.97	1.15	11.14
2021/22		16.71	0.72	90.5	82.04	93.11	1.15	13.48
2022/23		16.25	0.85	91	85.31	92.25	1.29	11.58

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
DER	50	13.57	18.55	16.9040	1.28270
NPLR	50	.02	16.18	1.7314	2.86224
DR	50	89.67	97.56	93.7120	2.21308
CDR	50	77.75	95.30	84.0180	3.75551
LDR	50	86.57	97.41	93.9860	2.66997
ROA	50	-5.58	4.25	1.2912	1.29795
ROE	50	-45.61	39.87	19.3156	13.14481
Valid N (listwise)	50				

Correlations

		DER	NPLR	DR	CDR	LDR	ROA
DER	Pearson Correlation	1	-.239	.425**	.115	.969**	.035
	Sig. (2-tailed)		.094	.002	.428	.000	.812
	N	50	50	50	50	50	50
NPLR	Pearson Correlation	-.239	1	.125	-.089	-.225	-.562**
	Sig. (2-tailed)	.094		.385	.541	.117	.000
	N	50	50	50	50	50	50
DR	Pearson Correlation	.425**	.125	1	.213	.420**	-.024
	Sig. (2-tailed)	.002	.385		.138	.002	.869
	N	50	50	50	50	50	50
CDR	Pearson Correlation	.115	-.089	.213	1	.094	.069
	Sig. (2-tailed)	.428	.541	.138		.515	.634
	N	50	50	50	50	50	50
LDR	Pearson Correlation	.969**	-.225	.420**	.094	1	.067
	Sig. (2-tailed)	.000	.117	.002	.515		.646
	N	50	50	50	50	50	50
ROA	Pearson Correlation	.035	-.562**	-.024	.069	.067	1
	Sig. (2-tailed)	.812	.000	.869	.634	.646	
	N	50	50	50	50	50	50

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

Correlations

		DER	NPLR	DR	CDR	LDR	ROE
DER	Pearson Correlation	1	-.239	.425**	.115	.969**	.173
	Sig. (2-tailed)		.094	.002	.428	.000	.229
	N	50	50	50	50	50	50
NPLR	Pearson Correlation	-.239	1	.125	-.089	-.225	-.750**
	Sig. (2-tailed)	.094		.385	.541	.117	.000
	N	50	50	50	50	50	50
DR	Pearson Correlation	.425**	.125	1	.213	.420**	-.040
	Sig. (2-tailed)	.002	.385		.138	.002	.783
	N	50	50	50	50	50	50
CDR	Pearson Correlation	.115	-.089	.213	1	.094	.139
	Sig. (2-tailed)	.428	.541	.138		.515	.337
	N	50	50	50	50	50	50
LDR	Pearson Correlation	.969**	-.225	.420**	.094	1	.186
	Sig. (2-tailed)	.000	.117	.002	.515		.196
	N	50	50	50	50	50	50
ROE	Pearson Correlation	.173	-.750**	-.040	.139	.186	1
	Sig. (2-tailed)	.229	.000	.783	.337	.196	
	N	50	50	50	50	50	50

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

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.601[a]	.361	.288	1.09522

a. Predictors: (Constant), LDR, CDR, NPLR, DR, DER

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.771	5	5.954	4.964	.001[b]
	Residual	52.778	44	1.199		
	Total	82.549	49			

a. Dependent Variable: ROA

b. Predictors: (Constant), LDR, CDR, NPLR, DR, DER

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-19.728	15.818		-1.247	.219
	DER	-.755	.498	-.746	-1.515	.137
	NPLR	-.281	.059	-.619	-4.781	.000
	DR	.067	.083	.114	.810	.422
	CDR	.007	.043	.019	.151	.880
	LDR	.292	.237	.600	1.230	.225

a. Dependent Variable: ROA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.762[a]	.581	.533	8.98357

a. Predictors: (Constant), LDR, CDR, NPLR, DR, DER

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4915.522	5	983.104	12.182	.000[b]
	Residual	3550.999	44	80.705		
	Total	8466.522	49			

a. Dependent Variable: ROE

b. Predictors: (Constant), LDR, CDR, NPLR, DR, DER

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-137.312	129.745		-1.058	.296
	DER	-4.408	4.086	-.430	-1.079	.287
	NPLR	-3.506	.481	-.763	-7.283	.000
	DR	.324	.679	.055	.478	.635
	CDR	.248	.353	.071	.703	.486
	LDR	1.978	1.947	.402	1.016	.315

a. Dependent Variable: ROE

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ABSTRACT This dissertation investigates

the impact of capital structure on the profitability **of selected** development **banks in** Nepal **over** a decade. **The**

study focuses on analyzing key financial ratios

debt ratio, debt-equity ratio, loan to deposit ratio , credit deposit ratio, **and**

non- performing loan ratio across five development banks from 2013/14 to 2022/23. Return on assets (ROA) and return on equity (ROE) serve as dependent variables, while the identified ratios act as independent variables. Statistical methods including correlation coefficients and regression models are employed to explore the relationships and impacts. The findings reveal that higher debt ratios generally correlate with reduced profitability, emphasizing the importance of prudent leverage management in bank operations. Non-performing loan ratios consistently show negative correlations with both ROA and ROE, highlighting the detrimental impact of deteriorating credit quality on financial performance. However, relationships with ratios like loan to deposit and credit deposit exhibit varying impacts that are not always statistically significant, indicating nuanced influences on profitability metrics. In conclusion, this study underscores the pivotal role

of capital structure in shaping **the financial performance of** development **banks in** Nepal. It underscores **the**

necessity for development banks to adopt optimal debt-to-equity ratios and robust credit risk management practices to enhance profitability and mitigate financial risks effectively. Tailored financial strategies aligned with specific bank characteristics and market dynamics are essential for achieving sustainable growth and resilience in Nepal's evolving economic landscape. Keywords: Capital structure, Profitability, Development banks, Financial ratios i CHAPTER-I INTRODUCTION 1.1 Background of the Study Capital structure is another name for a company's financial strategy. Every company plans its capital structure in some way. The capital structure, which denotes the firm's ongoing funding sources, is thus a component of the financial structure. The proportion of debt, preferred stock, and ordinary equity makes up the capital structure. The overall value of the company's securities is maximized at the