Credit Risk Management in Commercial Banks of Nepal

(With Reference to Laxmi Bank Limited)

A Dissertation submitted to office of the Dean, Faculty of Management in partial fulfillment of Master's Degre

By

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RECOMMENDATION

This is to certify that the thesis

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has been prepared as approved by this campus in the prescribed format of the faculty of management. This thesis is forwarded for examination.

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VIVA-VOCE SHEET

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Viva-Voce Committee

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Declaration

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled Credit Risk Management in Commercial Banks of Nepal (With Reference to Laxmi Bank Limited). The work of this dissertation has not been submitted previously for done for the purpose of confederal of any degree nor it has been proposed and presented as a part of requirements of any other academic purposes right that 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 references section of the dissertation

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Abbreviations

LLP - Loan Loss Provision

L&A - Loans and Advances

NP - Net Profit

NPL - Non-Performing Loans

D - Deposits

TA - Total Assets

C.V. - Coefficient of Variation

NPA - Non-Performing Asset

INT_REV - Interest Revenue

Abstract

This research explores the credit risk management practices of Laxmi Bank Limited, focusing on the period from 2011/12 to 2021/22. The primary objective is to examine the relationship between non-performing loans (NPL), loan loss provisions (LLP), loans and advances, deposits, total assets, and net profit, and how these factors impact the bank's overall financial performance. The study employs both descriptive and inferential statistical methods, including correlation and regression analysis, to analyze the data extracted from the bank's annual reports.

The findings indicate that Laxmi Bank has faced challenges with increasing deposits and decreasing lending opportunities, leading to issues of over liquidity and higher credit risk. The research highlights the importance of robust credit risk management processes to mitigate these risks and ensure the bank's profitability and stability. Additionally, the study underscores the significance of risk asset management and the need for continuous improvement in credit risk management practices to adapt to the dynamic financial environment.

This study contributes to the understanding of credit risk management in Nepal's commercial banking sector and provides insights into the practices that can enhance the financial performance and credibility of banks. The limitations of the study, including its focus on Laxmi Bank and reliance on secondary data, are acknowledged, suggesting areas for future research.

CHAPTER I

INTRODUCTION

1.1 Background of the Study

A commercial bank's main goal is to increase the wealth of its owners by taking deposits and making loans to the general public. The bank must allocate the majority of its capital to riskier assets like loans and advances in order to maximize return to shareholders. Banks are important financial institutions. The bank engages in the process of gathering loose cash and assisting with its mobilization in various sectors based on the needs of its clients. Investing in the commercial, industrial, manufacturing, trade, and commerce sectors is facilitated by banking loans. By acting as an export and import intermediary, banks also contribute to the growth of global trade. Banks contribute to the nation's strength in this way.

Financial firms and banks are vying with one another to provide loans to underserved markets. For security reasons, banks and other financial institutions are investing in hire-purchase and home loans. Banks are experiencing over liquidity issues as a result of a dearth of favorable lending prospects. Banks now have more deposits in savings and fixed accounts than ever before, but their lending practices are trending downward. Thus, this has led to significant issues for commercial banks. All commercial operations involve some level of risk, but credit risk is a crucial component that banks and other financial organizations must manage. The chance that a borrower or counter party won't fulfill its responsibilities in line with the terms of the agreement is known as credit risk. Thus, the bank's interactions with or lending to businesses, private citizens, and other banks or financial institutions give rise to credit risk. Credit risk is the possibility of suffering a loss if a debtor defaults on a loan or other credit arrangement, either on the principle or interest or both (Campbell, 2007).

Effective credit management is facilitated by the risk asset management system. Stated differently, risk asset management is the process of controlling credit exposures resulting from corporate bonds, credit derivatives, and loans. In commercial banks, exposure to risk assets serves as the primary source of investment, with the return on such an investment being the primary source of revenue.

To minimize or control the likelihood and impact of unfavorable events, as well as to maximize the realization of opportunities, risk management entails simply identifying, evaluating, and prioritizing risks and then applying resources in a coordinated and cost-effective manner (Mobely 2011).By keeping the credit risk exposure within allowable bounds, credit risk management seeks to optimize a bank's risk-adjusted rate of return. While there are various forms of credit risk throughout a bank's operations, such as acceptances, interbank transactions, guarantees, and transaction resolution, loans are often the biggest and most visible source of credit risk for banks.

The basis for deciding whether and how much credit to offer is provided by a company's risk assets policy. Credit criteria and credit analysis are the two main components that make up a bank's risk assets policy choice. A company must create and adhere to criteria for determining credit, as well as suitable sources of credit data and credit research techniques.

1.1.1 Introduction of Laxmi Bank Limited

The 16th commercial bank in Nepal was founded in April 2002 and is known as Laxmi Bank. Later, in 2004, HISEF financing Limited—a first-generation financing company—was bought by Laxmi Bank. In the corporate history of Nepal, this is the first merger. Nepal Rastra Bank has granted a category 'A' license to Laxmi Bank as a financial institution. The bank and Sunrise Bank Limited recently merged. Lami Sunrise Bank Limited is the new name of the combined company.

Its goal is to become the most reputable and trustworthy bank, enabling individuals, families, and communities to work together to create shared and sustainable prosperity. Its goals are similar: to provide the best customer experience possible through an empowered team that delivers smart, simple, and secure banking; to thrive by utilizing technology; to uphold strong corporate governance; to embrace equality and celebrate diversity as the cornerstones of our inclusive approach; and to value relationships.

With a paid-up capital of Rs. 11.55 billion as of the fiscal year 2021/22, Laxmi Bank is owned by the public, Citizens Investment Trust, a Nepalese government enterprise, and some of the most prestigious corporate houses in the nation. The Nepal Stock Exchange Limited is where the bank's shares are listed for trade.

Services & Goods Offered by Laxmi Bank:

Banks and other financial institutions are essential to the nation's economic development. These kinds of institutions are essential to gathering and mobilizing public property in developing nations like Nepal. The bank's primary functions are deposit collection and business and industry lending. In addition, it offers remittance, cards, internet banking, safe deposit boxes, bancassurance, and other services.

1.2 Focus of the Study

In Nepal's financial sector, the commercial banking industry is regarded as a prosperous sector. Due to intense rivalry among them, commercial banks nowadays need to be more genuine and organic in order to develop a stronger creditworthiness position. The current idea focuses on how risk asset positions are managed by commercial banks and how such management affects organizational effectiveness.

This research is highly significant from a bank management perspective. Being in a better position to provide credit is every commercial bank's primary strategy, as it directly affects the bank's financial success. Additionally, it contributes to the development of a favorable consumer perception and image. It would contribute to the bank's performance in terms of increased profitability, turnover, and transactions. Fewer studies have examined the credit risk component of banks, with the majority of prior research concentrating on the financial performance of banks. As a result, the current study is crucial for understanding how creditable an organization's performance or position is.

1.3 Statement of Problem

Large bad debts from loan repayment failures make it difficult for most banks to meet their profit goals. The main difficulty is figuring out what risk management strategies banks should use to reduce or eliminate these hazards. What may be the causes of these enormous bad debts? Which credit risk management procedures have the different banks set up to reduce loan repayment? Therefore, the borrower's bank should be very interested in both the borrower's financial situation and the current value of any underlying collateral.

The primary issue statement concerns the credit risk management procedures that Nepalese commercial banks use in an effort to completely remove or significantly reduce

risk. It refers to whether the methods are effective or if they require revision in light of the current circumstances.

To prevent losses and provide a healthy return for their investors, banks need to manage credit risk in a robust and proactive manner that enables them to successfully control their loan portfolios. Banks acknowledge the significance of credit risk management in order to set process standards and separate roles and responsibilities, as shown in bank-endorsed policies and procedures.

The following research inquiries are being considered for the investigation:

1. What is the status of non-performing loans in Laxmi Bank Limited?
2. What is the relationship between loan and advances, non-performing loan, deposit, total assets, interest income and loan loss provision?
3. How do loan and advances, non-performing loan, deposit, total assets, interest income impact loan loss provision?

1.4 Objectives of the Study

Gaining a broader understanding of bank risk management, specifically with regard to Laxmi Bank, is the primary goal of this research. Finding the connection between risk asset procedures and profitability status is another goal. As a result, the research has established the following goals:

- To Analyze the ratio between non-performing loan and loan loss provision; loan loss provision and loans and advances; loan loss provision and total assets, loan loss provision and net profit, loan loss provision and net interest income of Laxmi Bank Limited.
- To examine the relationship between loan and advances, non-performing loan, deposit, total assets, interest income and loan loss provisions of Laxmi Bank Limited.
- To analyze the impact of loan and advances, non-performing loan, deposit, total assets, and interest income on loan loss provisions of Laxmi Bank Limited.

1.5 Significance of the Study

In Nepal's financial sector, the commercial banking industry is regarded as a prosperous sector. Due to intense rivalry among them, commercial banks nowadays need to be more genuine and organic in order to develop a stronger creditworthiness position. The current idea focuses on how risk asset positions are managed by commercial banks and how such management affects organizational effectiveness. The current study is crucial from a bank management perspective. The main strategy used by every commercial bank is to increase its credibility, which has a big impact on the financial results of the company. Additionally, it fosters a favorable consumer attitude and perspective that contributes to the success of the firm through improved transaction, higher turnover, and higher profitability. Fewer studies have examined the credit risk component of banks, with the majority of prior research concentrating on the financial performance of banks. As a result, the current study is crucial for understanding how creditable an organization's performance or position is.

1.6 Limitation of the Study

Not the present Laxmi Sunrise Bank Limited, which was formed by the merger of Laxmi Bank Limited and Sunrise Bank Limited, but rather the credit risk management of the former Laxmi Bank Limited will be the primary focus of this study. The following are the limitations of the study:

- The study covers a period of 10 years (2011/12 to 2021/22).
- The scope of the study is limited only to Laxmi Bank Limited. Therefore, generalization to the whole banking industry would not give a bigger picture. Yet, it might be considered as a reference.
- The study is particularly based on secondary data. Therefore, the accuracy of calculation is fully dependent on the accuracy of data published by the bank.
- The study was based on ratios calculated from the data extracted from annual reports.
- This report cannot remain without flaws. Best effort has been done to make this report with minimum error. Being almost impossible without error, existence of unnoticed error is also identical limitation of the study.

1.7 Organization of the Study

The research has been arranged into five sections in compliance with Tribhuvan University's thesis writing requirements. This dissertation will be presented in the following sequence for a methodical and organized presentation because the study has been separated into five chapters.

Chapter I: Introduction

This is the first section of the dissertation, and it begins with the study's history, main emphasis, problem statement, aims, importance, and limitations before summarizing with an arrangement of the research.

Chapter II: Literature Review

Literature Review This chapter addresses the research gap as well as the conceptual review and reviews of relevant studies and literature.

Chapter III: Research Methodology

This chapter This chapter covers the techniques used for conducting the research as well as the sampling and data gathering procedures.

with methods adopted while performing the research work and process of sampling and data collection.

Chapter-IV: Data Presentation and Analysis

The study's central chapter is this one. The display and analysis of data using percentage, average, standard deviation, and coefficient of variation are covered in this chapter. Regression analysis has been used for impact evaluation, whereas correlation analysis has been done to determine relationships.

Chapter-V: Summary and Conclusion

This chapter offers a succinct summary of the study's key conclusions and outcomes. It creates a logical synopsis by combining the information, analysis, and interpretations offered throughout the thesis.

Alongside these five chapters is the References section, which includes a list of books, journals, websites, and other published and unpublished materials that were used as sources of information and as references.

Chapter - II

LITERATURE REVIEW

2.1 Conceptual Review

Banks are always exposed to a variety of hazards that might negatively impact their operations. A vital component of banking operations is taking measured risks, and part of the reward for doing so is profit. On the other hand, excessive risk-taking or poor risk management can lead to monetary losses and compromise the security of depositors' money. Justifiable risks are those that are manageable, measurable, and that the bank can take on without suffering a great deal of damage. Well-designed risk management systems enable bank managers to take calculated risks, reduce risks as needed, and make plans for unanticipated future occurrences.

Risk is the possibility that something may happen to a bank that would have a detrimental impact on its profitability, operational continuity, or financial stability1. These negative consequences might show up as sudden financial losses or as obstacles that prevent the bank from achieving its objectives. These limitations may make it more difficult for banks to operate their businesses or to seize chances to grow their operations. Therefore, it is expected of bank managers to make sure that the risks they are accepting are justified.

As is common knowledge, risk is determined by the degree of loss that results from a circumstance or action as well as the possibility that anything will happen. One may suffer direct or indirect losses. For example, buildings may be destroyed as a result of an earthquake's rapid damage. Secondary repercussions include lowered credibility, clients' lost trust, and increased costs in the repair process. The possibility of such things happening might affect how well objectives are achieved.

Systematic and non-systematic hazards are two categories of risk. A risk that is related to the entire market or system is referred to as systemic risk. It is also referred to as un-diversification risk, systemic risk, or market risk when it cannot be mitigated by diversification. Diversification is a useful strategy for mitigating unsystematic risk, which

is linked to certain assets. Other names for it are residual risk, particular risk, and diversifiable risk.

Similarly, risk management is the process of recognizing, evaluating, and taking appropriate action in order to manage prospective hazards. The procedure can help in lessening the negative impact and creating new chances. The result might be useful in controlling the possibility of risk happening and its negative effects if it does.

As per Nepal Rastra Bank (2010), risk management is a fundamental discipline of every bank, encompassing all actions that impact its risk profile. Risks must be identified, measured, tracked, and controlled to make sure that:

a) Those who manage or take on risks are fully aware of them.

b) The Board of Directors' stated restrictions on the organization's risk exposure are met.

c) Risk-taking decisions are made in accordance with the company plan and the BOD-established goals.

d) The anticipated rewards more than offset the assumed hazards.

f) Clearly stated judgments about taking risks are made.

f) There is enough capital on hand to absorb risk as a cushion.

Every scenario is different, both in terms of the responsibilities and competencies of the people involved and the goals, operations, and structure of the bank. Certain risk management techniques that work well for one bank might not work well for another. There is no one recommended risk management approach that is effective for all banks due to the wide range of risks that they incur.

The idea of a strong and adequate risk management system for a particular bank is dynamic; it changes as technology advances, promoting innovation and improving the quality of information, and as market efficiency increases. It is imperative that every bank tailors its risk management strategy to fit its own needs and circumstances. In order to remain competitive, banks must constantly improve their operations and be nimble.

The following components should be present in a good risk management system:

· Vigorous board and upper management supervision

- Sufficient guidelines, protocols, and restrictions
- Sufficient information system for risk monitoring, assessment, and management; and
- Extensive internal oversight.

It should not be assumed that risk management is the exclusive domain of the person or people in charge of the entire risk management function. All business lines have equal accountability for the risks they undertake. The line staff is aware of the dangers associated with their work, and any negligence on their part might compromise the integrity of the risk management process.

Before risks can be properly managed, they need to be assessed and measured. Furthermore, a precise risk assessment gives management a clear picture of the bank's situation, which helps with the development of future plans. Risk measurement should include both the short- and long-term effects on the bank, and it should reflect the total exposure of the bank to each risk class and business line. Banks should, to the greatest degree feasible, set up systems and models that quantify their risk profile; yet, many risk categories, such operational risk, are highly complex and challenging to measure (Nepal Rastra Bank, 2010). Qualitative methods should be used to capture hazards in situations when quantification is not possible. It is crucial that employees possess the necessary knowledge and skills. Any risk measurement framework is only as good as its underlying assumptions, the rigor and robustness of its analytical procedures, the controls surrounding data inputs, and its proper application. This is especially true for frameworks that use quantitative approaches or models.

According to Nepal Rastra Bank's Risk Management Guideline, important programs in any bank need top-level assistance. Senior management and the governing board of each organization are responsible for determining the bank's tolerance for risk by putting in place the necessary guidelines, restrictions, and standards and making sure they are adhered to. It is necessary to quantify, track, and notify important decision-makers about risks. Banks ought to put in place a system that oversees the institution's whole risk management. A system like this may take the shape of a department, committee, or risk manager, depending on the size and complexity of the bank. The general risk management role should ideally be separate from those who take on or accept risk on the bank's behalf.

Although banks vary widely in terms of formality and complexity, they must all maintain open procedures for routine performance reviews and risk assessments. It is essential to have clear roles and duties, appropriate accountability, and a task split between internal control, risk management, and business operations. To maintain the integrity of risk management, it's critical to put in place efficient monitoring if those in charge of it are also involved in day-to-day operations.

For each kind of risk, a bank must set up a system for routinely reviewing and revising its risk management policies, procedures, and guidelines. Periodically, this should be carried out while taking into account the most important findings from monitoring reports, the influence of external market dynamics, and other environmental changes. The results of these assessments need to be carefully documented and submitted to the Board for approval. Furthermore, it is anticipated that banks would carry out an internal assessment of their risk management framework for every risk category and provide a reasonable grade that corresponds with the efficiency of their procedures and systems. A basic level for risk management practises to be implemented in banks is provided by the Risk Management Guideline (Nepal Rastra Bank, 2010). A bank may create a framework that is more intricate and thorough than what is specified in the guidelines.

Numerous elements, including an organization's size, complexity, volume of commercial activity, and other considerations, influence the types and degrees of hazards to which it may be exposed. The primary risks that Nepalese commercial banks face are covered by this guideline: credit risk, market risk, operational risk, and liquidity risk. For effective risk management, banks can use a number of strict procedures, depending on the kind and scale of the organization.

Numerous hazards, including reputational, legal, and strategic risks, can be quantified using qualitative criteria. Every risk related to a bank's business operations should be included in the risk management process. The general ideas and principles for risk management in the banking industry are presented in this guideline. It offers both general and minimum standards to incentivize banks to focus their efforts on strict risk management procedures. The risk management guidelines' sole goal is to help banks improve and preserve financial safety and soundness by implementing better risk management procedures.

In the last several decades, risk management has advanced inside financial organizations. Financial services companies have historically operated in an unpredictable environment. In the present financial crisis, the banking sector is the most volatile. Financial sector operations are subject to a wide range of hazards. Because of this, risk management is the financial sector's most crucial area relative to all other industries (Carey 2001). According to Carey, financial institutions should be the primary source of risk-taking in an uncertain climate.

2.1.1 Major Risks in Commercial Banks

2.1.1.1 Credit Risk and Its Management

Credit risk is the likelihood that a debtor or the issuer of a financial instrument will not be able or will not be willing to pay interest or return the principal as agreed upon in a credit arrangement, which would cause the bank to suffer a financial loss. Credit risk is also the possibility that a borrower's failure to meet its commitments to the bank might have a negative impact on the bank's capital and financial performance.

The main risk that banks encounter during routine lending and credit evaluation procedures is credit risk1. It appears when a borrower doesn't carry out their end of the bargain. For banks, loans are usually the largest and most obvious source of credit risk, but credit risk can also come from actions that occur both on and off the balance sheet. If a borrower is unable or refuses to comply with the conditions of the agreement, credit risk may arise. Furthermore, if there is a true or perceived deterioration in the borrower's creditworthiness, which lowers the value of the credit portfolio, credit risk may result in losses.

The major components of a typical bank's credit risk management system may be roughly classified as follows:

- Senior Management and the Board's Supervision

Systems and protocols for recognition, approval, and quantification

- Risk monitoring and management.

Credit risk management is generally done by following improvements:

a. Credit Strategy

The target market and internal strength of the bank are taken into consideration when developing a credit risk strategy. The strategy maintains a consistent approach while accounting for the cyclical nature of the nation's economy and the ensuing changes in the composition and caliber of the whole credit portfolio. In order for the bank to thoroughly know its consumers, the credit procedure seeks to gain a thorough grasp of the clients, their backgrounds, and their enterprises. These tactics are evaluated on a regular basis and adjusted as needed.

Setting exposure limitations for both on-balance sheet and off-balance sheet credit exposures for a single counter party and a group of related counter parties is a crucial aspect of credit risk management. Setting a credit limit is meant to keep banks from depending too much on a single big borrower or group of large borrowers. It is anticipated that banks would create their own strict limit structures while still staying within the exposure limitations.

b. Approving New Credits and Extension of Existing Credits

An essential part of preserving a bank's stability and safety is credit administration. The activity that supports and regulates credit extension and administration is essentially back-office in nature. The tasks of credit paperwork, distribution, and monitoring; loan repayment; and upkeep of credit files, collateral, and security papers are often completed by a credit administration unit.

c. Credit Administration

Banks create a system of ratings for their advances and loans. Using the underlying credit quality as a basis, the risk rating divides all credits into several classifications. When a borrower's risk grade is observed to be declining, the borrower's facilities and assigned risk rating are adjusted appropriately. In order to determine the consistency and dependability of the ratings being utilized, banks conduct routine monitoring and evaluations of the actual default or loss experience of loans in each risk grade.

d. Internal Credit Risk Rating System

Banks create a system of ratings for their advances and loans. Using the underlying credit quality as a basis, the risk rating divides all credits into several classifications. When a borrower's risk grade is observed to be declining, the borrower's facilities and assigned

risk rating are adjusted appropriately. In order to determine the consistency and dependability of the ratings being utilized, banks conduct routine monitoring and evaluations of the actual default or loss experience of loans in each risk grade.

e. Credit Risk Monitoring and Control

Credit risk monitoring entails continuing examination of the bank's whole credit portfolio in addition to individual credit accounts, particularly those with off-balance sheet commitments. To keep tabs on every borrower and credit throughout the bank's many portfolios, banks set up intricate procedures and information systems. Through the use of this system, banks may confirm if loans are being repaid in accordance with the conditions that were agreed upon, whether enough provisions have been made, whether the overall risk profile stays within the bounds defined by management, and whether it conforms with regulatory requirements.

f. Managing Problem Credits

Banks set up a method to assist detect trouble loans early on, when there may be more choices for corrective action. When a loan is found to be problematic, it is handled through a special corrective procedure. Remedial plans are implemented with counter parties in a proactive manner by keeping internal records of follow-up activities and regular communication. Rigid attempts are frequently undertaken early on to shield banks from lawsuits and loan losses.

A borrower's capacity to repay can be improved by appropriate remedial actions such as changing the conditions of the loan, raising credit limits, or decreasing interest rates. Banks reassess the value of the collateral to calculate the recoverable loan amount. In order to ensure that contracts, collateral, and guarantees are comprehensive and enforceable, they also review security paperwork.

2.1.1.2 Market Risk and Its Management

Market risk is the risk that a bank bears when prices in the market fluctuate, especially when it comes to interest rates, foreign exchange rates, equities prices, and commodity prices. The danger of losses resulting from shifts in market pricing both on and off the balance sheet is known as market risk. Actively traded instruments and portfolios of stocks and securities may have explicit market risk exposure. However, it might also be

implicit, such in the case of interest rate risk brought on by a mismatch between deposits and loans. Moreover, actions that are classified as off-balance sheet items may also result in market risk. Market risk, then, is the likelihood of suffering a loss as a result of unfavorable changes in market risk variables including interest rates, currency exchange rates, equities prices, and commodity prices. The following is a discussion of the risk associated with these factors:

a. Foreign Exchange Risk

The potential negative effect that exchange rate variations may have on a bank's capital and financial performance is known as foreign exchange risk. It stands for the present or future risk to capital and earnings due to adverse changes in exchange rates that impact the value of open foreign currency investments. As a result, adjustments to currency discounts might result in losses for banks.

The following activities may result in foreign exchange positions:

- Trading foreign exchange as a market maker or position taker using spot, forward, and option transactions; this includes taking unhedged positions from customer-driven foreign exchange transactions.
- Having foreign exchange holdings in the banking book, including bonds, deposits, loans, and international investments; or
- Using foreign currency to settle derivative transactions for trading or hedging.

Banks that deal in foreign exchange are also exposed to counterparty default or settlement risk, which might result in replacement costs that are influenced by fluctuations in exchange rates. Time-zone risk is another issue that banks face because of delays in settling one currency in one location and another currency in a separate time zone. Sovereign or nation risk is also present in foreign exchange transactions involving counterparties outside of Nepal.

b. Interest Rate Risk

Interest rate risk is the possibility that fluctuations in interest rates will have a negative effect on a bank's capital and financial performance. Interest rate changes have an impact on a bank's profitability because they change the amount of other interest-sensitive revenue, operational expenditures, and net

interest income. Interest rate swings have an effect on the present value of future cash flows, which in turn affects the underlying value of the bank's obligations, assets, and off-balance sheet instruments. Changes in interest rates have an immediate influence on the bank's net interest revenue; but, over time, they also have an impact on the bank's net worth because they alter the economic value of the bank's obligations, assets, and off-balance sheet exposures.

For banks to remain secure and sound, an efficient risk management procedure that maintains interest rate risk at reasonable levels is essential. Two perspectives are commonly used to evaluate interest rate risk: the earnings perspective, which emphasizes how changes in interest rates affect accruals or reported earnings, and the economic value perspective, which considers how changes in interest rates affect a financial institution's economic worth.

c. Commodity Risk

Variations in the "convenience yield" between cash positions in the commodity and derivatives contracts, such futures and swaps, are also taken into consideration by a bank that trades commodities.

d. Equity Price Risk

It is a risk to capital or earnings that arises from unfavorable fluctuations in a bank's equity-related portfolio values. Equities price risk can be either systematic or unpredictable. The former speaks of how sensitive a portfolio's value is to shifts in the level of stock prices as a whole, whilst the latter speaks of price volatility that is influenced by factors unique to a certain business.

e. Risk Measurement

For effective risk management and control, market risk must be measured precisely and promptly. Every bank develops a measuring process that employs all available data to identify and quantify market risk indicators that impact the value of both traded and non-traded portfolios, revenue streams, and other business operations. Depending on the size and complexity of the company, banks may use any of a broad variety of risk measuring approaches, from highly sophisticated dynamic modeling (Monte Carlo Simulation) to static measurement techniques (Gap analysis).

f. Risk Monitoring

For the purpose of supporting management's adherence to board policy, banks should have an information system that is precise, timely, and useful. Risk measures are regularly reported, comparing actual exposures to policy limitations. To find any flaws in risk measuring methods, historical forecasts or risk estimations are further contrasted with actual outcomes.

g. Risk Control

In order to guarantee the integrity of the market risk management procedure, banks need to have adequate internal controls. The internal control framework of the bank guarantees the efficacy of the market risk management procedures. An efficient risk limit structure and internal audit and review are important components of the internal control process.

h. Limits

Banks impose restrictions, such as operating restrictions, on various trading desks and/or traders who may deal in a variety of goods and instruments across many marketplaces. Processes in risk-taking units keep an eye on activities to make sure they always stay within authorized bounds.

i. Stress Testing

A thorough assessment of the impact of challenging market circumstances on the bank is made possible by the risk measuring system of the bank. Stress testing can be customized to the risk characteristics of the bank in order to give information on the kind of situations in which certain holdings or strategies would be most susceptible. Among the potential stress situations are:

- Sudden shifts in the overall market rate structure;
- Modifications to the connections between important market rates;
- Modifications to the yield curve's form and slope;
- Modifications to the volatility of market rates or the liquidity of important financial markets; or
- Circumstances in which fundamental business presumptions and constraints fail.

2.1.1.3 Liquidity Risk and Its Management

The capacity of an entity to quickly and affordably transform its assets into cash or its equivalent in order to pay its debts when they become due is referred to as liquidity. A major worry for banks is liquidity risk, which occurs when the cushion of liquid assets is not enough to cover commitments. It is basically the danger of a funding crisis, which can arise from either unanticipated credit expansion or planned development. Liquidity risk is higher for banks that heavily rely on big corporate deposits or have considerable off-balance sheet exposures. Vigorous asset expansion also demands close consideration of liquidity. The following are early warning signs of possible financial problems:

- Negative patterns or notable spikes in risk in any sector or range of products.

- Asset or liability concentrations.

- A decline in the credit portfolio's quality.

A decrease in projected or actual profit performance.

- Quick asset growth supported by erratic big deposits.

- Significant exposures off-balance sheet.

- Poor reviews or negative press from other sources.

Avoid using irrational competitive pricing tactics.

a. Liquidity Risk Management

A bank's capacity to remain viable depends on its ability to analyze, monitor, and reduce liquidity risk. It entails estimating future cash flows and figuring out how funding needs will be satisfied by examining both on- and off-balance sheet positions. This entails locating easily available funding channels, comprehending their characteristics, assessing how the bank will use these markets going forward and keeping an eye out for indications of eroding trust.

b. Liquidity Policy

The Board of Directors approves liquidity policies that are established by banks based on recommendations from the Asset-Liability Committee

(ALCO) or senior management. Key components of every liquidity strategy, though specifics differ, include:

- General liquidity plan (both short- and long-term); particular aims and objectives for the management of liquidity risk; strategy formulation procedures; and bank approval levels.

- The roles and duties of those who manage liquidity risk, such as pricing, marketing, contingency planning, structural balance sheet management, management reporting, and authority lines for liquidity choices.

- A mechanism for managing liquidity risk that allows for the tracking, reporting, and evaluation of liquidity.

- Instruments for determining, quantifying, tracking, and managing liquidity risk, such as ratios and restrictions on liquidity.

- Backup strategies for managing shortages of cash.

The bank's liquidity risk profile is frequently reviewed and communicated to all areas of the organization whenever there are significant changes brought about by either internal (such as shifts in business priorities) or external (such as changes in the state of the economy) causes. The bank's liquidity policies can be updated and modified as a result of these evaluations in light of its experience with liquidity management and company growth.

c. Asset-Liability Committee (ALCO)

Banks create the proper frameworks for managing overall liquidity, which is usually handled by an ALCO. Senior executives from important divisions of the bank in charge of handling liquidity risk should ideally make up ALCO. To guarantee that ALCO directions are carried out by the units carrying out liquidity-related activities, these members must have unambiguous power over those units. The creation and upkeep of risk management guidelines, MIS reporting, limitations, and supervision initiatives are among ALCO's duties. The bank's treasury section is given day-to-day duties by ALCO, which also sets rules and guidelines for treasury operations. To reduce the risk of liquidity

associated with new product launches and future business ventures, ALCO members frequently collaborate with risk managers and strategic planners.

d. Liquidity Risk Management Process

Systems for identifying, measuring, monitoring, and controlling liquidity exposures are part of effective liquidity risk management. It is imperative for management to promptly and precisely identify and evaluate the principal sources of liquidity risk, taking into account both current and potential hazards. The management is always on the lookout for fresh sources of liquidity risk in the portfolio as well as in transactions. An efficient MIS, systems to assess, monitor, and mitigate liquidity concerns, and reporting to top management are essential components of a successful risk management process.

e. Management Information System

Making wise judgments about liquidity management requires an efficient management information system (MIS). Information timeliness and accuracy are essential for keeping an eye on liquidity. Even while comprehensive data on each transaction might not enhance analysis, early warning signs provided by a suitable monitoring system aid in the identification of liquidity issues. The following details are crucial for overseeing daily operations and comprehending the bank's intrinsic liquidity risk profile:

- Trends in asset quality.

- Predicted earnings.

- The overall standing of the bank in the marketplace and its current state.

- The kind and makeup of the overall structure of the balance sheet.

The nature, origin, level of maturity, and cost of fresh deposits.

f. Monitoring and Measuring Liquidity Risk

Liquidity risk management requires a strong measuring system. Banks have procedures in place to anticipate liquidity risk, enabling the taking of the

necessary corrective action to prevent large losses. The degree of liquidity risk varies according to bank size and company complexity, hence specific measuring methods are required. Large bank networks, for instance, could have access to reliable, low-cost deposits, whereas smaller banks might be more dependent on large bank deposits. In times of crisis, an efficient measuring and monitoring system may assist manage liquidity and maximize profits by making optimum use of available funds. In addition to having a margin of surplus liquidity as a safety precaution, banks should have enough liquidity on hand to cover variations in loans and deposits. In order to maintain appropriate levels, management makes projections of the liquidity requirements under different scenarios.

g. Limits and Ratios of Liquidity

Different ratios are used by banks to assess liquidity and to set limitations for liquidity management. Regular usage of these ratios along with qualitative interpretation aids in decision-making. Ratios need to be comprehended in terms of their construction, substitute parts, and conclusions' range. Maintaining consistency when calculating ratios is essential to prevent inaccurate comparisons between banks or time periods.

Liabilities that mature within a given period are measured and controlled using cash flow ratios and limitations. Reliance on a small number of financing sources is avoided by liability concentration ratios and restrictions. Typically, limits are stated as a proportion of total liabilities, deposits, liquid assets, or acquired money. A few examples of common ratios include the following: short-term liabilities to liquid assets, total loans to total equity capital, credit to deposit ratio, liquid assets to total deposits, and borrowed funds to total assets. These restrictions and ratios act as early warning signs of excessive risk or poor liquidity control.

The board and senior management set limits on acceptable liquidity risk levels in addition to the statutory requirements for cash reserves and liquid assets. These limits are then reviewed and adjusted on a regular basis in response to evolving circumstances or risk tolerances. The bank's plans, historical performance, profits level, capital available to absorb losses, and the board's

risk tolerance are all taken into account. Complexity of the balance sheet establishes the appropriate boundaries for both short- and long-term periods.

h. Management of Foreign Currency Liquidity

Institutions possess mechanisms for quantifying, tracking, and managing their liquidity holdings in the main currencies. They evaluate commitments made in domestic currency together with the total amount of foreign currency liquidity requirements and allowable shortfalls. Beyond only adhering to Foreign Currency Exposure limitations, institutions create robust internal risk management procedures based on the size, kind, and complexity of their businesses. They do independent analysis for every currency.

2.1.1.4 Managing Operational Risk

2.1.1.4 Operational Risk and Its Management

The financial innovation landscape is evolving at a rapid rate, adding complexity to bank operations and risk profiles. For this risk category to be managed and controlled successfully, it is important to comprehend operational risk.

Operational risk is the possibility that staff mistakes, insufficient internal policies and procedures, careless handling of data and other systems, and unanticipated outside events will have a detrimental effect on a bank's capital and financial performance. The following operational risk occurrences have the potential to cause large losses:

- Internal fraud: This includes insider trading, deliberate misreporting of positions, and staff theft.

- External fraud: This includes theft, forgeries, and hacking-related harm.

- Workplace safety and employment practices: This includes general liability, organized labor activities, health and safety code breaches, workers' compensation claims, and discrimination lawsuits.

- Customers, goods, and commercial operations: fiduciary violations, inappropriate trading, money laundering, and the sale of unapproved goods are a few examples of these.

- Physical asset damage: This includes damage from earthquakes, fires, floods, vandalism, and terrorism.

- System malfunctions and business interruptions: These include utility outages, telecommunication problems, and hardware and software malfunctions.

- Execution, delivery, and process management: This includes mistakes made while entering data, failings in collateral management, lacking proper legal documents, illegal access to client accounts, problems with counterparty performance, and disagreements with vendors.

Operational risk also includes mistakes in the timely processing, settlement, and payment of deals. It covers issues with maintaining accurate records, processing system malfunctions, and regulatory compliance. Human mistake, technology malfunctions, and insufficient protocols and controls all contribute to this risk. It includes possible losses resulting from fraud, unanticipated disasters, technological malfunctions, breaches of internal controls, and other operational problems. There is operational risk associated with every product and company activity. The steps involved in operational risk management are as follows:

a. Operational Risk Function

Banks create a distinct, independent department tasked with overseeing operational risk. This department is in charge of determining, quantifying, tracking, and reporting operational risks as well as making sure management complies with the bank's policy and plan. In addition to monitoring occurrences and preparing reports for management and the board of directors, this role assists in establishing rules and standards, organizes different risk management activities, and offers recommendations on risk management instruments.

b. Operational Risk Management

In order to lower operational risk to acceptable levels, management designs and implements affordable solutions after evaluating the efficacy and efficiency of risk management instruments and processes. A code of conduct, authority delegation, job segregation, audit coverage, compliance, succession planning, required leave, employee remuneration, hiring and training, customer relations, handling complaints, record-keeping, management information system, and physical controls are a few examples of controls.

Even with new methods emerging, operational risk is still hard to measure. In order to ensure proper evaluation procedures for new endeavors, banks identify and evaluate operational risk in all important products, activities, processes, and systems. Proactive operational risk management is supported by regular reporting to top management and the board of directors. Defects in rules, methods, and procedures that are quickly found and fixed can greatly lessen the severity of losses.

In order to keep running smoothly and limit losses in the event of major interruptions, banks also have strategies in place for business continuity and disaster recovery. These plans take into

account a range of possibilities according to the complexity and size of the bank. Important company operations are recognized for prompt service restoration, particularly those that depend on outside suppliers or third parties.

c. Stress Testing

A popular method for risk management, stress testing evaluates possible threats to specific banks, financial institutions, and the financial system. The application of stress testing has grown in the wake of the most recent global financial crisis. The Basel Committee on Banking Supervision (BCBS) and the International Monetary Fund (IMF) have created guidelines for performing stress testing.

Stress testing notifies bank management of potentially dangerous circumstances and highlights the capital and liquidity required to cover losses in certain cases. It assesses the effects of particular occurrences and changes in financial variables. Stress testing supports capital and liquidity planning, overcomes the limits of historical data analysis, facilitates internal and external communication, helps define risk tolerance, and helps create contingency plans.

In order to assist in decision-making, stress testing uses analytical techniques to assess financial conditions under stressful scenarios. For evaluations that look forward, creating scenarios and researching the links between financial variables are crucial. Methods for stress testing, from basic to advanced, evaluate how serious stress events affect things like capital, liquidity, and profitability. These techniques may be applied at both the micro and macro levels, and they are categorized into basic sensitivity tests and scenario assessments.

Macro-level stress tests evaluate the susceptibility of the financial system to outside shocks, whereas micro-level stress tests examine variable connections inside specific institutions. The basic requirements for stress testing in Nepalese banking are provided by simple shocks. Regular corporate stress tests are mandatory for all commercial banks, and they are also urged to implement more sophisticated methods to improve internal risk control procedures. Different stress testing techniques are used depending on the kind, scale, and complexity of company operations.

Each bank's liquidity situation has to be stress tested independently. While developing diverse stress testing scenarios might be difficult, it is important to specify the starting amounts of shocks to distinct risk components by taking into account potential and historical changes in risk variables. Banks are permitted to test various shock levels in

accordance with their risk tolerance and unique circumstances. Three fictitious situations have to be included in stress testing:

- Minor Level Shocks: These indicate minor disruptions to risk variables.

- Shocks at the Moderate Level: Considering medium shocks that are specific to each risk factor.

- Major Level Shocks: Including notable shocks to each risk factor that is defined independently.

2.2 Review of Previous Studies

2.2.1 Review of International Articles and Journals

In comparison to the banking systems of industrialized nations, Ahmad and Ariff (2007) looked at the major factors influencing the credit risk of commercial banks in developing economies. The authors discovered that multi-product and service banking systems require regulation, and that in the case of loan-dominant banks in emerging nations, management quality is crucial. One important indicator of possible credit risk is also seen to be a rise in the loan loss provision.

According to Silwal & Tiwari (2010), there is still more work to be done even if credit risk management in financial institutions is improving and changing. High overall profitability rates, low delinquency rates in both general and agricultural portfolios, and consistent growth rates in agricultural portfolios over time are indicative of the performance of many of the institutions assessed. However, the low number of institutions operating in rural regions and the stated needs for improved risk management systems, along with the modest loan amounts and constrained periods, suggest that the current state of affairs is not ideal.

The problem and barriers related to credit risk management of business loans in Indian Public Sector Banks were identified by Arora and Singh (2014). One way to summarize the paper's main conclusions is that the bank has a well-thought-out credit risk policy and strategy. Al-Tamimi and Al-Mazrooei (2007) investigated the extent to which risk management procedures and strategies were applied by UAE banks to address various forms of risk. According to this report, the three main risk categories that UAE

commercial banks must deal with are foreign exchange risk, credit risk, and operating risk. Lastly, it found that there were notable differences in risk assessment, analysis, monitoring, and control practices between national banks in the United Arab Emirates and international banks.

Poudel (2012) investigated a number of factors related to credit risk management and how they impact the bottom line of banks. According to the study, the default rate is the best indicator of a bank's financial success, although all other metrics had an inverse effect on it. Commercial banks manage credit risk by carefully evaluating loans, requesting collateral, and investigating borrowers' credit histories. According to Duaka (2015), bank profitability is very susceptible to illiquidity and distress since it is negatively correlated with the amount of advances, loans, non-performing loans, and deposits. Poudel (2012) has examined a number of factors related to credit risk management and how they impact the bottom line of banks. According to the study, the default rate is the best indicator of a bank's financial success, although all other metrics had an inverse effect on it. Commercial banks manage credit risk by carefully evaluating loans, requesting collateral, and investigating borrowers' credit histories.

Data Envelopment Analysis (DEA) was proposed by Yin et al. (2016) to examine the efficiency of credit risk management based on current efficiency. It has been determined that in China's banking sector, state-owned banks are not as efficient at managing credit risk as non-state-owned commercial banks. The study emphasizes that identifying the likelihood that a counterparty would default on its financial commitments is the main purpose of credit risk models.

After looking at the risk management techniques used by Pakistani commercial banks, Rehman et al. (2019) discovered that the capital adequacy ratio of the banks, corporate governance, hedging, and diversification all play a key role in explaining credit risk management. According to the study, credit risk performance is strongly impacted by credit risk identification. They discovered a negative correlation between the yearly rise in non-performing assets or loans and the identification of credit risk. A priori expectations regarding the superior credit risk performance of private banks over government banks were supported by data.

2.3 Review of Previous Thesis

The impact of credit risk management strategies on the expansion of commercial banks in Nepal was examined by Humagain in 2023. The study combined quantitative research techniques with a descriptive research approach. The information was gathered between 2011 and 2022, a span of 12 years. The study's findings show that non-performing loans (NPLs) significantly harm bank profitability and the expansion of total assets in Nepal. Throughout the research period, the commercial banks' average percentage of non-performing loans was 1.5%. The banking industry's average growth in total assets throughout this time was 19.94 percent. Inflation, non-performing loans, and the credit to deposit ratio were statistically significant predictors of the expansion of commercial banks. The survey also showed that Nepalese commercial banks' credit management procedures are not up to par. This report also recommends that in order to reduce credit risks, the regulatory body should examine the credit risk management strategies used by banks on a regular basis.

Indian commercial banks' use of credit risk management procedures and risk management strategies from 2021–17 to 2020–21 was investigated by Brahmaiah (2022). The other goal was contrasting the risk management strategies used by private and public sector banks (PVBs and PSBs). Twelve banks were included in the sample; six of the largest private sector banks (PVBs) and six of the largest public sector banks (PSBs) were included in the study. According to the report, there are three types of risks that scheduled commercial banks (SCBs) must deal with: credit, market, and operational. Additionally, it discovered that risk identification, assessment, analysis, evaluation, monitoring, and control are all part of the credit risk management process and practices. The study concludes that private sector banks (PVBs) outperform public sector banks (PSBs) in terms of credit risk management methods. While PVBs had superior asset quality and profitability ratios over PSBs during the research period, PSBs had more non-performing assets (NPAs) than PVBs.

Alshatti (2015) used capital adequacy ratio, leverage ratio, and non-performing loans/gross loans ratio as independent variables to investigate the impact of risk management on the financial performance of Jordanian commercial banks from 2005 to 2013. The profitability as determined by ROE and ROA is represented by the dependent variables. The author comes to the conclusion that the financial performance of the Jordanian commercial banks is significantly impacted by each of the risk management indicators employed in the study.

Kargi (2011) assessed how risk affected Nigerian banks' profitability. Financial ratios were gathered between 2001 and 2008 from the annual reports and accounts of selected banks, and descriptive, correlation, and regression analysis methods were applied. The results showed that risk management significantly affects Nigerian banks' profitability. It was determined that the amounts of advances, loans, non-performing loans, and deposits had an inverse effect on banks' profitability, placing them at significant danger of illiquidity and distress.

In his unpublished master's thesis, Paudel (2012) used the financial reports of 31 banks over an eleven-year period (2001–2011) to investigate the effect of credit risk management on the financial performance of commercial banks in Nepal. Multiple regression, correlation, and descriptive data analysis were the techniques used in this investigation. Return on assets (ROA) was the financial performance metric employed in the investigation. The study employed the default rate, cost per loan asset, and capital adequacy ratio as predictors of the banks' financial performance. According to the authors, the financial performance of banks is negatively impacted by each of these characteristics. The default rate (NPLR), however, is the risk management indicator that has the greatest influence on bank financial performance in Nepal; cost per loan asset, on the other hand, is not a major predictor of bank performance. The author comes to the conclusion that, given its strong correlation with bank performance, credit risk management is essential to bank performance.

Al-Khouri (2011) studied the effects of general banking conditions and bank-specific risk characteristics on the performance of forty-three commercial banks operating in six Gulf Cooperation Council (GOC) nations between 1998 and 2008 for his master's thesis. The results of fixed effect regression analysis demonstrated that the only risk that influences profitability when assessed by return on equity is capital risk, but credit, liquidity, and capital risk are the main factors influencing bank performance when measured by return on assets.

The impact of credit risk management on Kenya's commercial banks' profitability has been evaluated by Kithinji (2010). Information about credit availability, the percentage of non-performing loans, and profitability were gathered between 2004 and 2008. The majority of commercial banks' earnings are not affected by the quantity of credit and non-performing loans, according to the findings of a descriptive study methodology. This

suggests that other factors besides credit and non-performing loans have an impact on profits.

2.4 Research Gap

The goal of this study was to investigate the credit risk management procedures used by Nepalese commercial banks, using Laxmi Bank Limited as a case study.

While earlier research mostly focused on comparing banks and the banking sector as a whole, this study focuses on a single bank to provide a thorough longitudinal examination of the chosen bank. Longitudinal analyses, which last ten years, can identify trends and patterns that comparative and general studies may miss. This might entail examining the historical development of important financial ratios (such as Return on Assets and Loan Loss Provisioning) and determining the variables that have influenced these shifts.

The research, however, can serve as a guide for domestically operated commercial banks of a similar size. Regarding conceptual comprehension, every current piece of information on risk management in commercial banks has been gathered and clarified.

Chapter - III

RESEARCH METHODOLOGY

3.1 Research Design

In order to achieve its stated goal, the current study makes use of both analytical and descriptive statistics. The main goal of descriptive research is to determine "What is." In-depth analysis and assessment of the facts at hand are necessary for analytical investigation in order to understand complicated phenomena. The data gathered from the connected banks' administration departments was used to assess the secondary data. Using a spreadsheet, a few financial statements of particular commercial banks were totaled.

3.2 Population Sample and Sample Design

Laxmi Bank Limited has been selected as a sample for the study from among the 26 commercial banks that will be in operation in the nation as of mid-July 2022. The convenience selection approach is employed based on the data's convenience.

3.3 Data Collection Procedure

The study's foundation is a secondary data source. Publicly available financial statements (year reports) during a ten-year period of Laxmi Bank Limited were gathered for research purposes. Similar to this, spreadsheets were used to compile and tabulate Laxmi Bank's financial accounts. The administration departments of the relevant banks provided this kind of secondary data. Additionally, in order to get clarification, validation, and suggestions on the collected data, questions were posed to the personnel of the concerned company.

3.4 Data Analysis Tools

Financial and statistical techniques are employed in the study for data analysis reasons.

3.4.1 Financial Tools

To meet the objectives of the study, the sources of secondary data of commercial bank are analyzed by using financial ratios which are as follows:

1. **Non-performing Loan (NPL) Ratio**: This ratio measures the percentage of loans that are not being paid back by borrowers. Non-performing loans are those where payments are overdue by a certain number of days (typically 90 days or more) or where the borrower is unlikely to repay the loan. The ratio is calculated as:

   NPL Ratio=Total Loans / Non-performing Loans

2. **Loan Loss Provision (LLP) to Loan Ratio**: This ratio indicates the percentage of total loans that a bank sets aside as provision to cover potential losses from bad loans. The ratio is calculated as:

   Total Loans / Loan Loss Provision

3. **Loan Loss Provision to Total Assets Ratio**: This ratio shows the proportion of a bank's total assets that is allocated as provision for potential loan losses. It reflects the bank's risk management and financial health. The ratio is calculated as:

   Total Assets / Loan Loss Provision

4. **Loan Loss Provision to Net Profit Ratio**: This ratio indicates how much of a bank's net profit is being used to cover potential loan losses. A higher ratio could suggest higher risk exposure or conservative financial practices. The ratio is calculated as:

   Net Profit / Loan Loss Provision

5. **Loan Loss Provision to Net Interest Income Ratio**: This ratio measures the proportion of a bank's net interest income that is set aside as provision for loan losses. It helps assess the effectiveness of the bank's loan loss provisioning relative to its core earnings from interest. The ratio is calculated as:

   Net Interest Income / Loan Loss Provision

   Definitions of Variables:

   - **Non-performing Loans (NPL)**: Loans where borrowers have not made payments for a specified period (often 90 days or more).
   - **Total Loans**: The aggregate amount of loans extended by the bank to borrowers.

- **Loan Loss Provision (LLP)**: The amount of money that a bank sets aside in its accounts to cover potential losses from bad loans.
- **Total Assets**: The sum of all assets (both tangible and intangible) held by the bank.
- **Net Profit**: The profit after deducting all expenses from total revenue.
- **Net Interest Income**: The difference between interest income earned by the bank and interest expenses paid out.

3.4.2 Statistical Tools

1. Arithmetic Mean or Average ($\overline{X}$)

A single value that sums up a set of values is called an average. It portrays the traits of the entire group. Its value falls between the two extremes, that is, the largest and smallest things, and it serves as a representation of the overall mass of homogenous data. By dividing the total of the amounts by the total number of things, it may be found. Consequently,

$$\text{Mean}(\overline{X}) = \frac{\sum X}{N}$$

Where,

$\sum X$= sum of size of the items

N= number of items

2. Standard Deviation (σ)

The standard deviation is the arithmetic average of the squares of all the deviations measured from the series' arithmetic average, expressed as a positive square root. It doesn't matter where the origin is located.

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

Where,

N= number of items in the series

$\overline{X}$= mean

X= variable

3. Coefficient of Variation (C.V.)

In other words, a series (or group) with a higher coefficient of variation is considered to be less homogenous, consistent, uniform, and stable. It is found by dividing the arithmetic mean by the standard deviation, and is represented by the letter C.V. Consequently,

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

Where,

σ = Standard Deviation

X = Mean

4. Coefficient of correlation (r)

A statistic called the coefficient of correlation shows how closely connected two variables are to one another and how much change in one affects variation in the other.

It is defined by Karl Pearson as:

$$\text{Coefficient of Correlation (r)} = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - (\sum X)^2}\sqrt{N\sum Y^2 - (\sum Y)^2}}$$

There exists a value r such that -1 < r < +1. Positive and negative correlations are denoted by the + and - signs, respectively.

Positive correlation: r is near +1 if there is a significant positive correlation between X and Y. A complete positive match is indicated by a value of r = +1. A positive value indicates a link between the variables X and Y, meaning that when the value of X grows, so does the value of Y. This line has a positive slope if r = +1.

Negative correlation: X and Y have a high negative correlation if r is near to -1. A complete negative fit is indicated by a r value of exactly -1. A negative value suggests that there is a link between X and Y in which the values of Y fall as the values of X rise. The slope of this line is negative if r = -1.

No correlation: r is near to 0 if there is neither a strong correlation nor any correlation at all. Comparably, a nonlinear, random relationship between two variables is indicated by a value of r that is close to zero.

In general, a correlation that is more than 0.8 is considered high, whereas one that is less than 0.5 is considered weak.

6. Regression analysis

Understanding the relationship between one dependent variable (often represented as Y) and one or more independent variables (denoted as X1, X2,..., Xp) is possible using the statistical technique of regression. Predicting the value of the dependent variable from the values of the independent variables is its main goal.

The most popular kind is linear regression, which assumes a linear connection between the variables. $Y = \beta0 + \beta1X + \epsilon$ is the formula for basic linear regression, where X is the independent variable (the variable used to generate predictions), Y is the dependent variable (the variable we wish to forecast), and $\beta0$ is the intercept (the value of Y predicted when X=0).

The error factor, ϵ, explains for the variability in Y that cannot be explained by the linear connection with X. Slope, or $\beta1$, reflects the change in Y for a one-unit change in X.

where:

- Y is the dependent variable (the variable we want to predict),
- X is the independent variable (the variable used to make predictions),
- $\beta0$ is the intercept, which represents the predicted value of Y when X=0
- $\beta1$ is the slope, which represents the change in Y for a one-unit change in X,
- ϵ is the error term, which accounts for the variability in Y that cannot be explained by the linear relationship with X.

Regression Model:

$$LLP = \beta0 + \beta1\ L\&A + \beta2\ NP + \beta3\ NPL + \beta4\ D + \beta5\ TA + \epsilon$$

Where:

LLP is the Loan Loss Provision.

L&A is Loans and Advances.

NP is Net Profit.

NPL is Non-Performing Loans.

D is Deposits.

TA is total Loan

The coefficients denoting the associations between LLP and each independent variable are β0, β1, β2, β3, and β4.

ϵ is the error term.

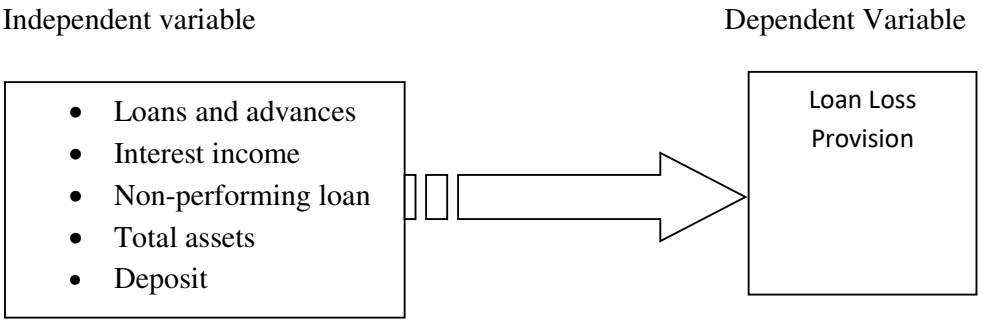
Interpretation:

Interpretation: Putting other variables constant, β1, β2, β3, and β 4 show the estimated effects of each independent variable on Loan Loss Provision (LLP).

3.5 Research Framework and Definition of Variables

For the study purpose loan loss provision is considered as dependent variable whereas Loans and advances, interest income, non-performing loan, total assets and deposit are considered as independent variable.

Figure 1: Research Framework



3.4.1 Definition of variables

Dependent Variable:

- **Loan Loss Provision (LLP)**: The amount set aside by financial institutions to cover potential losses from defaulted loans and is recognized as an expense on the income statement.

Independent Variables:

1. **Loans and Advances (L&A)**: The total amount of loans extended to borrowers, including both performing and non-performing loans.
2. **Total Assets (TA)**: Total assets of the bank which includes fixed assets, current assets and fictitious assets as well.
3. **Non-Performing Loans (NPL)**: These are the Loans where the borrower has failed to pay the installment of payments for a specified period (usually 90 days or more), indicating higher credit risk.
4. **Deposits (D)**: Funds held by a financial institution on behalf of depositors, including demand deposits, savings deposits, and time deposits.
5. **Total Assets**: The sum of all assets (both tangible and intangible) held by the bank.

CHAPTER IV

PRESENTATION ANDANALYSIS OF DATA

4.1 Financial Ratios

4.1.1 Non-Performing Loan Ratio

Table 1

Non-performing Loan Ratio

Year	Non-Performing Loan	Loans & Advances	NPA Ratio
2012/13	304,446,252	20,100,290,341	1.51%
2013/14	265,001,167	23,096,490,765	1.15%
2014/15	410,793,867	31,557,955,514	1.30%
2015/16	324,710,408	40,359,566,178	0.80%
2016/17	489,023,384	53,111,484,777	0.92%
2017/18	800,187,000	62,656,608,239	1.28%
2018/19	849,109,050	77,844,722,977	1.09%
2019/20	933,653,000	88,452,549,821	1.06%
2020/21	852,890,000	105,213,372,497	0.81%
2021/22	1,175,726,000	126,767,902,555	0.93%
Mean			1.09%
Standard Deviation			0.22%
Coefficient of variation			20.17

The NPL Ratio fluctuates over the years, ranging from a low of 0.80% in 2015/16 to a high of 1.51% in 2012/13. There are periods where the ratio increases (e.g., from 2016/17 to 2018/19), which might indicate challenges in loan quality or economic conditions affecting borrower repayments. The mean ratio of 1.09% suggests a generally stable performance in managing non-performing loans relative to total loans and advances over the years.

Mean NPL Ratio: The average NPL Ratio across the years is 1.09%. This indicates, on average, 1.09 percentage of loans are non-performing each year.

Standard Deviation: The standard deviation of 0.22% suggests that the NPL Ratio tends to vary around the mean by approximately 0.22%. This indicates the degree of variability or dispersion of the NPL Ratio values from the average.

Coefficient of Variation: The coefficient of variation (CV) of 20.17% is a measure of relative variability, which compares the standard deviation to the mean. A higher CV suggests greater variability relative to the mean. In this case, the CV of 20.17% indicates moderate variability in the NPL Ratio across the years.

4.1.2 Loan Loss Provision to Loans and Advances Ratio

Table 2

Loan Loss Provision to Loans and Advances Ratio

Year	Loan Loss Provision	Loans and Advance Ration	LLP to Loans and Advance Ration
2012/13	406470763	20,100,290,341	2.02%
2013/14	372643966	23,096,490,765	1.61%
2014/15	586,617,477	31,557,955,514	1.86%
2015/16	725,317,049	40,359,566,178	1.80%
2016/17	850,825,424	53,111,484,777	1.60%
2017/18	1,165,707,166	62,656,608,239	1.86%
2018/19	1,293,222,200	77,844,722,977	1.66%
2019/20	1,857,503,546	88,452,549,821	2.10%
2020/21	1,999,054,077	105,213,372,497	1.90%
2021/22	3,042,429,661	126,767,902,555	2.40%
Mean			1.88%
Standard Deviation			0.23%
Coefficient of variation			12.39

(Source: Appendix 1)

The LLP to Loans and Advances Ratio fluctuates over the years, ranging from a low of 1.60% in 2016/17 to a high of 2.40% in 2021/22. There are periods where the ratio increases (e.g., from 2018/19 to 2021/22), which might indicate increased provisioning due to economic conditions or changes in loan quality. The mean ratio of 1.88% suggests a consistent approach to managing loan loss provisions relative to total loans and advances over the years.

Mean LLP to Loans and Advances Ratio: The average LLP to Loans and Advances Ratio across the years is 1.88%. This indicates, on average, what percentage of loans and advances are provisioned for potential losses each year.

Standard Deviation: The standard deviation of 0.23% suggests that the LLP to Loans and Advances Ratio tends to vary around the mean by approximately 0.23%. This indicates the degree of variability or dispersion of the ratio values from the average.

Coefficient of Variation: The coefficient of variation (CV) of 12.39% is a measure of relative variability, which compares the standard deviation to the mean. A higher CV suggests greater variability relative to the mean. In this case, the CV of 12.39% indicates moderate variability in the LLP to Loans and Advances Ratio across the years.

4.1.3 Loan Loss Provision to Total Assets Ratio

Table 3:
Loan Loss Provision to Total Assets Ratio

Year	Loan Loss Provision	Total Assets	Loan Loss Provision to Total Assests Ratio
2012/13	406470763	29,815,936,963	1.36%
2013/14	372643966	34,919,161,181	1.07%
2014/15	586,617,477	45,580,211,937	1.29%
2015/16	725,317,049	55,194,304,207	1.31%
2016/17	850,825,424	71,406,157,330	1.19%
2017/18	1,165,707,166	84,836,282,882	1.37%
2018/19	1,293,222,200	106,995,721,513	1.21%
2019/20	1,857,503,546	128,898,573,855	1.44%
2020/21	1,999,054,077	152,240,859,890	1.31%
2021/22	3,042,429,661	173,383,953,688	1.75%
Mean			1.33%
Standard Deviation			0.17%
Coefficient of variation			13.03

(Source: Appendix 1)

The LLP to Total Assets Ratio shows variation over the years, ranging from a low of 1.07% in 2013/14 to a high of 1.75% in 2021/22. There are noticeable increases in the ratio in certain years (e.g., 2021/22), possibly indicating increased provisioning due to economic conditions or changes in risk assessment. The mean ratio of 1.33% suggests a consistent approach to managing loan loss provisions relative to total assets over the years.

Mean LLP to Total Assets Ratio: The average LLP to Total Assets Ratio across the years is 1.33%. This indicates, on average, what percentage of total assets are allocated towards loan loss provisions each year.

Standard Deviation: The standard deviation of 0.17% suggests that the LLP to Total Assets Ratio tends to vary around the mean by approximately 0.17%. This indicates the degree of variability or dispersion of the ratio values from the average.

Coefficient of Variation: The coefficient of variation (CV) of 13.03% is a measure of relative variability, which compares the standard deviation to the mean. A higher CV suggests greater variability relative to the mean. In this case, the CV of 13.03% indicates moderate variability in the LLP to Total Assets Ratio across the years.

4.1.4 Loan Loss Provision to Net Profit Ratio

Table 4

Loan Loss Provision to Net Profit Ratio

Year	Loan Loss Provision	Net Profit	Ratio between LLP and Net Profit
2012/13	406470763	423,274,548	96.03%
2013/14	372643966	481,460,812	77.40%
2014/15	586,617,477	430,806,820	136.17%
2015/16	725,317,049	730,030,401	99.35%
2016/17	850,825,424	1,081,411,100	78.68%
2017/18	1,165,707,166	1,181,090,925	98.70%
2018/19	1,293,222,200	1,590,074,275	81.33%
2019/20	1,857,503,546	1,411,549,380	131.59%
2020/21	1,999,054,077	1,575,760,520	126.86%
2021/22	3,042,429,661	1,513,452,887	201.03%
Mean			112.71%
Standard Deviation			35.99%
Coefficient of variation			31.93

(Source: Appendix 1)

The Ratio between LLP and Net Profit fluctuates over the years, ranging from a low of 77.40% in 2013/14 to a high of 201.03% in 2021/22. A ratio above 100% indicates that loan loss provisions exceed the net profit for that year, which may suggest a conservative approach to provisioning or higher perceived risks in certain years. The mean ratio of

112.71% indicates that, on average, loan loss provisions are a significant portion of the net profit, reflecting the importance placed on managing credit risk.

Mean Ratio between LLP and Net Profit: The average ratio between LLP and Net Profit across the years is 112.71%. This indicates, on average, that loan loss provisions constitute 112.71% of the net profit each year.

Standard Deviation: The standard deviation of 35.99% suggests that the ratio between LLP and Net Profit tends to vary around the mean by approximately 35.99%. This indicates the degree of variability or dispersion of the ratio values from the average.

Coefficient of Variation: The coefficient of variation (CV) of 31.93% is a measure of relative variability, which compares the standard deviation to the mean. A higher CV suggests greater variability relative to the mean. In this case, the CV of 31.93% indicates moderate to high variability in the ratio between LLP and Net Profit across the years.

4.1.5 Loan Loss Provision and Net Interest Income Ratio

Table 5

Loan Loss Provision and Net Interest Income Ratio

Year	Loan Loss Provision	Net Interest Income	Loan Loss Provision to Net Interest Income Ratio
2012/13	406470763	924,835,322	43.95%
2013/14	372643966	822,288,518	45.32%
2014/15	586,617,477	1,038,787,144	56.47%
2015/16	725,317,049	1,488,152,696	48.74%
2016/17	850,825,424	1,929,127,801	44.10%
2017/18	1,165,707,166	2,332,291,933	49.98%
2018/19	1,293,222,200	3,169,674,557	40.80%
2019/20	1,857,503,546	3,462,166,806	53.65%
2020/21	1,999,054,077	3,456,839,795	57.83%
2021/22	3,042,429,661	3,760,369,867	80.91%
Mean			52.18%
Standard Deviation			10.97%
Coefficient of variation			21.03

The Loan Loss Provision to Net Interest Income Ratio fluctuates over the years, ranging from a low of 40.80% in 2018/19 to a high of 80.91% in 2021/22. Higher ratios indicate a

larger portion of net interest income allocated towards loan loss provisions, which may reflect increased provisioning due to economic conditions, changes in credit risk, or strategic decisions. The mean ratio of 52.18% suggests a consistent approach to managing loan loss provisions relative to net interest income over the years.

Mean Loan Loss Provision to Net Interest Income Ratio: The average ratio across the years is 52.18%. This indicates, on average, what percentage of the net interest income is allocated towards loan loss provisions each year.

Standard Deviation: The standard deviation of 10.97% suggests that the Loan Loss Provision to Net Interest Income Ratio tends to vary around the mean by approximately 10.97%. This indicates the degree of variability or dispersion of the ratio values from the average.

Coefficient of Variation: The coefficient of variation (CV) of 21.03% is a measure of relative variability, which compares the standard deviation to the mean. A higher CV suggests greater variability relative to the mean. In this case, the CV of 21.03% indicates moderate variability in the Loan Loss Provision to Net Interest Income Ratio across the years.

4.2 Statistical Analysis

4.2.1 Correlation Analysis

The table 6 below shows the correlation matrix between loan loss provisions (LLP), Loan and advances (L&A), Non-performing loan (NPL), Interest revenue (Int.rev), Total assets (TA) and Deposit (Dep).

Table 6

Correlation Matrix

	LLP	*L&A*	*NPL*	*Int.rev*	*TA*	*Dep*
LLP	1.0000					
L&A	0.9765	1.0000				
NPL	0.9356	0.9531	1.0000			
Int.rev	0.9581	0.9770	0.9857	1.0000		
TA	0.9730	0.9978	0.9470	0.9734	1.0000	
Dep	0.9850	0.9971	0.9389	0.9673	0.9967	1.0000

According to the estimation output of the correlation matrix presented in the table 6 there is positive relationship between LLP and L&A, NPL, Int. Rev, TA and Dep. The relationship among variables is perfect and almost 1.

4.3 Regression Analysis

4.3.1 Descriptive Statistics

The table 7 presented below shows the descriptive statistics of the sample taken from Laxmi Bank Limited for the period of 2013 to 2022. The table presents the mean, median, maximum, minimum, standard deviation, skewness and Kurtosis of the both dependent as well as independent variables used in this research.

Table 7: Descriptive Statistics

	LLP	L_A	DEP	INT_REV	NPL	TA
Mean	1.229979	62.91609	70.28103	6.439859	0.640554	88.32712
Median	1.008266	57.88405	62.37623	6.025012	0.644605	78.12122
Maximum	3.042430	126.7679	139.5371	13.06013	1.175726	173.3840
Minimum	0.372644	20.10029	25.96060	2.376735	0.265001	29.81594
Std. Dev.	0.850093	36.12972	37.59021	3.825939	0.319008	50.34740
Skewness	0.956660	0.424898	0.559488	0.346971	0.227705	0.438392
Kurtosis	2.967558	1.985779	2.158062	1.761757	1.667769	1.851059

4.3.2 Regression Estimation

Regression analysis is a statistical technique that explores how a dependent variable is affected by one or more independent variables. Its primary purpose is to comprehend the variation in the dependent variable in response to changes in the independent variables.

Table 8: Regression Estimation

Dependent Variable: LLP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
L_A	-0.031725	0.020986	-1.511721	0.2051
DEP	0.070806	0.015334	4.617574	0.0099
INT_REV	0.039944	0.083593	0.477832	0.6577
NPL	0.759183	0.737806	1.028973	0.3616
TA	-0.021056	0.011721	-1.796389	0.1469
C	-0.634075	0.146332	-4.333134	0.0123

R-squared	0.992766	Mean dependent var	1.229979
Adjusted R-squared	0.983724	S.D. dependent var	0.850093
S.E. of regression	0.108451	Akaike info criterion	-1.321328
Sum squared resid	0.047046	Schwarz criterion	-1.139777
Log likelihood	12.60664	Hannan-Quinn criter.	-1.520489
F-statistic	109.7957	Durbin-Watson stat	1.555725
Prob(F-statistic)	0.000227		

The table 8 presented above shows the regression result of dependent variable LLP and Independent varaiables such as loan and advance (L_A), Deposit (DEP), Interest revenue (INT_REV), Non-performing loan (NPL), Total assets (TA) and C is the constant.

According to the result, loan loss provision has positive and statistically significant relationship with deposit at 1 percent level of significance. This means if deposit increases by 1 percent the loan loss provision increase by 0.07 percent. This may be the reason that banks makes loan and advances after taking deposits from the public.

The relationship of LLP with loan and advances is negative which is theoretically correct but statistically insignificant. The details of each co-efficient is presented in the table 8.

4.3.3 ANOVA

ANOVA stands for Analysis of Variance. It is a statistical method used to analyze the differences between group means and determine whether there is a statistically significant difference among the means of three or more independent groups.

Test for Equality of Means Between Series

Method	df	Value	Probability
Anova F-test	(5, 54)	18.08173	0.0000
Welch F-test*	(5, 21.9945)	21.50273	0.0000

*Test allows for unequal cell variances

Analysis of Variance

Source of Variation	df	Sum of Sq.	Mean Sq.
Between	5	79389.40	15877.88
Within	54	47418.33	878.1173
Total	59	126807.7	2149.284

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
LLP	10	1.229979	0.850093	0.268823
L_A	10	62.91609	36.12972	11.42522
DEP	10	70.28103	37.59021	11.88707
INT_REV	10	6.439859	3.825939	1.209868
NPL	10	0.640554	0.319008	0.100879
TA	10	88.32712	50.34740	15.92125
All	60	38.30577	46.36037	5.985098

ANOVA tests the null hypothesis that the means of several groups are equal against the alternative hypothesis that at least one group mean is different from the others. The estimation output of ANOVA test is presented in the table 9.

According to the result of ANOVA F-test, the P value is less than 0.05. The null hypothesis is rejected. It suggests that there is a statistically significant difference between the means of the groups being compared. It means that there is strong evidence that at least one group mean differs significantly from the others.

4.4 Major Findings

- The average Loan Loss Provision to Loans & Advances Ratio over the years is 1.88%, indicating consistent provisioning relative to total loans and advances. Variability (CV 12.39%) suggests moderate fluctuations in provisioning levels. Peaks in the ratio (e.g., 2.40% in 2021/22) indicate periods of higher provisioning, possibly due to economic conditions or risk management adjustments.

- The average NPL ratio is 1.09%, with variability (CV 20.17%) suggesting fluctuations in loan quality. Generally stable performance with occasional increases, such as from 2016/17 to 2018/19. Low points (e.g., 0.80% in 2015/16) indicate effective management of non-performing loans relative to total loans and advances.

- The average Loan Loss Provision to Total Assets Ratio is 1.33%, reflecting consistent provisioning practices relative to total assets. Moderate variability (CV 13.03%) indicates fluctuations in risk provisioning strategies. Increases in the ratio (e.g., 1.75% in 2021/22) suggest heightened provisioning relative to asset size, possibly reflecting increased risk perception or regulatory requirements.

- The average Loan Loss Provision to Net Profit Ratio is 112.71%, indicating that loan loss provisions often exceed net profits. Significant variability (CV 31.93%) suggests varying impacts of provisioning on profitability. Peaks (e.g., 201.03% in 2021/22) indicate years where provisioning significantly impacts net profits, possibly due to higher risk or conservative provisioning practices.

- The average Loan Loss Provision to Net Interest Income Ratio is 52.18%, showing a substantial portion of net interest income allocated towards loan loss provisions. Moderate variability (CV 21.03%) indicates fluctuations in provisioning relative to interest income. High ratios (e.g., 80.91% in 2021/22) suggest increased provisioning relative to interest income, possibly due to heightened credit risk or conservative provisioning practices.

- Across all ratios, there is evidence of proactive risk management through consistent or increased provisioning during periods of economic uncertainty or risk. Variability in ratios underscores the dynamic nature of financial risk and the

organization's response to changing conditions.Higher ratios in recent years (particularly 2021/22) suggest a cautious approach to risk management, possibly in response to external economic factors or internal risk assessments.

- There is positive and almost perfect relationship between loan loss provisions (LLP), Loan and advances (L&A), Non-performing loan (NPL), Interest revenue (Int.rev), Total assets (TA) and Deposit (Dep).
- The loan loss provision has positive and statistically significant relationship with deposit at 1 percent level of significance. This means if deposit increases by 1 percent the loan loss provision increase by 0.07 percent. This may be the reason that banks makes loan and advances after taking deposits from the public. The relationship of LLP with loan and advances is negative but statistically insignificant.
- According to the result of ANOVA F-test, the P value is less than 0.05. The null hypothesis is rejected. It means that there is strong evidence that at least one group mean differs significantly from the others.

CHAPTER – 5

Summary and Conclusion

5.1 Summary

The research focused on understanding the relationship between various banking parameters such as loan advances, non-performing loans (NPL), deposits, total assets, interest income, and loan loss provisions, specifically for Laxmi Bank Limited over a period of ten years (2011/12 to 2021/22). Key findings from the study are as follows:

1. Loan Loss Provision to Loans & Advances Ratio: The average ratio was 1.88%, indicating consistent provisioning relative to total loans and advances. Variability was moderate (CV 12.39%), with peaks like 2.40% in 2021/22 suggesting periods of higher provisioning due to economic conditions or risk management adjustments.

2. Non-Performing Loan (NPL) Ratio: The average NPL ratio was 1.09%, with variability (CV 20.17%) indicating fluctuations in loan quality. The ratio showed generally stable performance with occasional increases, such as from 2016/17 to 2018/19.

3. Loan Loss Provision to Total Assets Ratio : The average ratio was 1.33%, reflecting consistent provisioning practices relative to total assets. Moderate variability (CV 13.03%) suggested fluctuations in risk provisioning strategies, with increases in the ratio (e.g., 1.75% in 2021/22) indicating heightened provisioning relative to asset size.

4. Loan Loss Provision to Net Profit Ratio : The average ratio was 112.71%, indicating that loan loss provisions often exceeded net profits. Significant variability (CV 31.93%) suggested varying impacts of provisioning on profitability, with peaks like 201.03% in 2021/22 indicating years where provisioning significantly impacted net profits.

5. Loan Loss Provision to Net Interest Income Ratio: The average ratio was 52.18%, showing a substantial portion of net interest income allocated towards loan loss provisions. Moderate variability (CV 21.03%) indicated fluctuations in provisioning relative to interest income, with high ratios like 80.91% in 2021/22 suggesting increased provisioning relative to interest income.

6. Correlation and Impact Analysis: There was a positive and statistically significant relationship between loan loss provisions and deposits, with a 1% increase in deposits resulting in a 0.07% increase in loan loss provisions.The relationship between loan loss provisions and loan advances was negative but statistically insignificant.

7. ANOVA Test : The ANOVA F-test result showed that the P value was less than 0.05, indicating a statistically significant difference between the means of the groups being compared. This suggests strong evidence that at least one group mean differs significantly from the others.

5.2 Conclusion

Laxmi Bank Limited exhibits robust credit risk management practices, characterized by consistent and proactive loan loss provisioning, effective management of non-performing loans, and a balanced approach to risk across its asset base. The substantial impact of provisioning on profitability highlights the bank's emphasis on financial stability and conservative risk management. Additionally, the dynamic adjustments to provisioning in response to economic conditions underscore the bank's adaptability and foresight in managing credit risk. Overall, the findings affirm the bank's commitment to maintaining a resilient and stable financial position through prudent credit risk management strategies.

The key conclusions drawn from the findings are:

1. Effective Risk Management: The consistent provisioning relative to loans and advances, total assets, and interest income indicates proactive risk management practices at Laxmi Bank. The variability in ratios underscores the dynamic nature of financial risk and the bank’s response to changing conditions.

2. Impact on Profitability: The high loan loss provision to net profit and net interest income ratios indicate that provisioning has a substantial impact on the bank's profitability. This reflects a cautious approach to risk management, especially during periods of economic uncertainty.

3. Positive Relationship with Deposits: The positive and significant relationship between loan loss provisions and deposits suggests that as deposits increase, the bank allocates more provisions for potential loan losses, possibly due to an increase in loan advances made from these deposits.

4. Economic Conditions and Provisioning: The peaks in provisioning ratios during certain years indicate that economic conditions significantly influence the bank's provisioning strategies. The high ratios in recent years, particularly in 2021/22, suggest a conservative approach to risk management in response to external economic factors.

5. Need for Continuous Monitoring: The findings highlight the importance of continuous monitoring and adjustment of risk management practices to ensure financial stability and resilience against potential loan defaults.

Overall, this study contributes to the understanding of credit risk management practices in the banking sector, emphasizing the importance of proactive and dynamic risk management strategies to maintain financial stability and profitability.

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i CHAPTER I INTRODUCTION 1.1 Background of the Study A commercial bank's main goal is to increase the wealth of its owners by taking deposits and making loans to the general public. The bank must allocate the majority of its capital to riskier assets like loans and advances in order to maximize return to shareholders. Banks are important financial institutions. The bank engages in the process of gathering loose cash and assisting with its mobilization in various sectors based on the needs of its clients. Investing in the commercial, industrial, manufacturing, trade, and commerce sectors is facilitated by banking loans. By acting as an export and import intermediary, banks also contribute to the growth of global trade. Banks contribute to the nation's strength in this way. Financial firms and banks are vying with one another to provide loans to underserved markets. For security reasons, banks and other financial institutions are investing in hire- purchase and home loans. Banks are experiencing over liquidity issues as a result of a dearth of favorable lending prospects. Banks now have more deposits in savings and fixed accounts than ever before, but their lending practices are trending downward. Thus, this has led to significant issues for commercial banks. All commercial operations involve some level of risk, but credit risk is a crucial component that banks and other financial organizations must manage. The chance that a borrower or counter party won't fulfill its responsibilities in line with the terms of the agreement is known as credit risk. Thus, the bank's interactions with or lending to businesses, private citizens, and other banks or financial institutions give rise to credit risk. Credit risk is the possibility of suffering a loss if a debtor defaults on a loan or other credit arrangement, either on the principle or interest or both (Campbell, 2007). Effective credit management is facilitated by the risk asset management system. Stated differently, risk asset management is the process of controlling credit exposures resulting from corporate bonds, credit derivatives, and loans. In commercial banks, exposure to risk assets serves as the primary source of investment, with the return on such an investment being the primary source of revenue. To minimize or control the likelihood and impact of unfavorable events, as well as to maximize the realization of opportunities, risk management entails simply identifying, evaluating, and prioritizing risks and then applying resources in a coordinated and cost- effective manner (Mobely 2011).By keeping the credit risk exposure within allowable bounds,

credit risk management seeks **to** optimize **a bank's risk-adjusted rate of return**