

CREDIT RISK AND PROFITABILITY OF COMMERCIAL BANK IN NEPAL

A Dissertation proposal submitted to the Office of the Dean, Faculty of Management in
partial fulfilment of requirement for the Master's Degree

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled “**Credit Risk and Profitability of Commercial Bank in Nepal**”. The work of this dissertation has not been submitted previously for the purpose of conferral of any degree nor has it been proposed and presented as part of requirements for any other academic purposes. The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declared that all information sources and literature used are cited in the reference section of the dissertation.

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REPORT OF RESEARCH COMMITTEE

Ms. Ranjana Rimal has defended research proposal entitled “**Credit Risk and Profitability of Commercial Bank in Nepal**“, successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Kamal Prakash Adhikari and submit the thesis for evaluation and viva voce examination.

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Any remaining errors are mine.

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ABBREVIATIONS

ANOVA	:	Analysis of Variance
BE	:	Base Rate
CAR	:	Capital Adequacy Ratio
CV	:	Coefficient of Variation
ISP	:	Interest Spread Rate
LLP	:	Loan loss Provision
LR	:	Liquidity Ratio
MBS	:	Master in Business Studies
NABIL	:	Nabil Bank Limited
NBL	:	Nepal Bank Limited
NPL	:	Non performing loan
NRB	:	Nepal Rastra Bank
NSIBBL	:	Nepal SBI bank Limited
ROE	:	Return on Equity
SD	:	Standard Deviation
SPSS	:	Statistical Package for the Social Sciences

ABSTRACT

The objectives of research are to examine the current status of the credit risk and profitability of commercial bank, to analyse the relationship between credit risk and financial performance of sampled banks and to examine the impact of credit risk on the financial performance of sampled banks. The descriptive, correlation and causal comparative research design. The secondary data are taken from the sample bank. The sample bank are three from the commercial bank in Nepal. The research variables are profitability, credit risk, liquidity ratio, capital adequacy ratio, interest spread rate, base rate. The financial and statistical analysis are done from the achievement of the objectives through given raw data. The financial analysis is form the various ratio analysis and statistical analysis from the descriptive statistics, correlation and regression analysis. SPSS and excel are the tool for the analysis. The finding of the study are the variables has a the gap between minimum and maximum is very and on the basis of the mean the standard deviation is seem to be very high which represent the current position of the research variables is the very fluctuating nature of the data. The relationship between profitability and credit risk, profitability and liquidity is positive but not significant. The capital adequacy and ratio and profitability is negative and not significant. The interest spread rate and profitability is positive and significant relationship. The base rate has negative relationship to the profitability and significant too. The impact of credit risk and to the profitability is negative and not significant. The liquidity ratio and capital adequacy has positive impact to the profitability but not significant. The interest spread rate positive and base rate negative and significantly impact to the profitability of the bank.

Keywords: *Return on Equity, Non-performing loan, Capital Adequacy Ratio, Liquidity Ratio, Interest Spread Rate and Base Rate*

CHAPTER- I

INTRODUCTION

1.1 Background of the Study

Credit Risk is the possibility of a loss resulting from a borrower's failure to repay a loan or meet contractual obligations. Credit risk is risk assessment that comes in an investment. Risk often comes in investing and in the allocation of capital. The risks must be assessed so as to derive a sound investment decision and decisions should be made by balancing the risks and returns. Giving loans is a risky affair for bank sometimes and certain risks may also come when banks offer securities and other forms of investments. The risk of losses that result in the default of payment of the debtors is a kind of risk that must be expected. It's very important for a bank to keep a substantial amount of capital to protect its solvency and to maintain its economic stability. The greater the bank is exposed to risks, the greater the amount of capital must be when it comes to its reserves, so as to maintain its solvency and stability, credit risk must play its role then to help banks be in compliance with Basel II Accord and other regulatory bodies. Credit risk is an integral part of the loan process in banking business.

Commercial banks' profitability is evaluated through return on equity, with an analysis incorporating various bank-specific variables such as the non-performing loan ratio (NPL), solvency ratio, capital adequacy ratio, total assets, and interest spread. Additionally, the study considers macro-economic factors like bank size growth, inflation rate, and interbank interest rate alongside bank-specific variables to assess profitability in Nepali commercial banks. The findings indicate that the non-performing loan ratio significantly and negatively influences the profitability of commercial banks in Nepal. Conversely, the solvency ratio, interest spread rate, and inflation exhibit an insignificant negative impact on profitability. On the other hand, the capital adequacy ratio, total assets, and growth demonstrate a significant positive impact on the profitability of commercial banks in Nepal. Lastly, the inter-bank interest rate shows an insignificant positive impact on profitability, according to (Poudel, 2018).

Banks should formulate and implement strategies not only to minimize their exposure to credit risk but also to enhance their overall performance and competitiveness. It is crucial for banks to establish effective credit risk management strategies, including conducting thorough credit evaluations before approving loans for customers. The recommended approach involves aligning credit granting activities with established strategies, developing and implementing written procedures, and ensuring clear and proper assignment of responsibilities for loan approval and review. Senior management's responsibility includes conducting periodic independent internal assessments of the bank's credit-granting and management functions. Bhattarai (2016) suggested the importance of adopting robust credit risk and loan service process management to maintain low levels of non-performing loans (NPL), thereby ensuring the sustained high performance and profitability of commercial banks in Nepal.

The study focused on the credit risk identification techniques employed by selected commercial banks in operation in Nepal, with specific objectives aimed at discerning differences in the practices of State-owned, Private sector, and Joint venture banks in the credit process. The findings reveal that Nepalese bankers recognize the significance of various techniques for efficiently assessing risk levels. Nepalese commercial banks utilize a range of techniques, including interviews, root cause analysis, checklist analysis, SWOT analysis, scenario analysis, expert judgment, simulation, and stress testing. Predominantly, banks adopt qualitative approaches such as borrower interviews, SWOT analysis, and scenario analysis as tools for credit risk identification. However, there is a lesser familiarity with quantitative approaches like simulation models and stress testing in regular credit appraisal practices. The evidence suggests that the banking industry shows a limited concentration on modern credit identification techniques. Consequently, banks are encouraged to closely follow current developed models to identify credit risk during credit assessments. In the assessment processes, banks aim to detect any deceptive activities on the part of the borrower. The study highlights ongoing efforts within the banking sector to enhance credit risk identification techniques, emphasizing the need for continuous improvement in credit policies to ensure the quality of lending and the adoption of effective credit management systems, as outlined (Kattel, 2015).

The study focused on credit risk management policies and explored various challenges or issues arising from credit risks. The research targeted more experienced bank employees, particularly those in management positions. The primary conclusion drawn from the study is that measures taken to mitigate credit risk and the practices employed in credit risk management are positively correlated with loan repayment in banks, while obstacles encountered in the process have no significant relationship with loan repayment. The findings support the study's objectives and underlying hypotheses. Additionally, the research justifies that credit risk iteration, along with credit risk management practices, has been effectively implemented in Nepali banks, as evidenced by the mean scores of the responses. Consequently, it is inferred that successful credit risk management involves adherence to credit risk policies, well-defined roles and responsibilities for the employees in the credit risk department, and the provision of necessary skills and knowledge to enable them to carry out routine activities and make informed decisions. Commercial banks strategically employ credit risk mitigation measures to prevent the occurrence of non-performing assets (NPAs) and limited liability partnerships (LLPs). The entire process, from decision-making to loan approval, is diligently monitored and analysed to minimize credit risk and enhance loan repayment, according to Shah's study in 2019.

The impact of credit risk management on the financial performance of banks was the focus of the study, with specific objectives aimed at assessing the influence of default rate and cost per loan assets on bank financial performance. The results revealed that credit risk management serves as a crucial predictor of bank financial performance, indicating that the success of a bank is closely tied to effective risk management. The study further demonstrated that the default rate, as a key risk management indicator, significantly predicts bank financial performance, accounting for 56%, followed by the capital adequacy ratio at 25%. Credit risk management emerges as pivotal in determining bank performance, establishing a significant relationship that contributes up to 22.6% of overall bank performance. Among the various risk management indicators, the management of default rates stands out as the single most important predictor of bank performance, while the cost per loan assets does not serve as a significant predictor. The study underscores the substantial contribution of risk management to overall bank performance, as highlighted (Poudel, 2012).

The credit risk management system should create a conducive credit risk environment by implementing a robust credit granting process and maintaining an effective credit administration that includes thorough monitoring, processing, and adequate controls over credit risk. Banks are advised to formulate strategies aimed at not only mitigating their exposure to credit risk but also enhancing the overall performance and competitiveness of the institution. Additionally, it is crucial for banks to establish a comprehensive credit risk management strategy, involving the diligent evaluation of creditworthiness before granting loans to customers. The emphasis lies not only on limiting the discussion to credit risk but also on developing strategies that contribute to the performance and competitiveness of the banks. Furthermore, banks should continuously improve their efficiency in credit analysis and loan management to safeguard their assets to the greatest extent possible. This guidance is provided (Khanal & Sapkota, 2023).

As per the latest monthly report on Banking and Financial Statistics from Nepal Rastra Bank (NRB), the Non-Performing Loans (NPLs) of banks have surged from 1.31 percent to 2.63 percent within the past year. In mid-July 2022, Nepal's banking system reported an NPL of just 1.16 percent, which, however, increased to 1.98 percent by mid-October. Bankers attribute this rise in NPLs to factors such as the ongoing economic slowdown, political instability, and perceived deficiencies in NRB policy. The removal of the refinance facility, which was previously provided by NRB to entrepreneurs in response to the impacts of the COVID-19 pandemic, has also been cited as a contributing factor.

The ratio of non-performing loans to total loans serves as a key indicator of a bank's health and efficiency, identifying issues with asset quality in the loan portfolio. A lower value of NPLs indicates reduced financial risk for both banks and financial institutions (BFIs). NRB categorizes NPLs based on the overdue period of loans, designating them as sub-standard, doubtful, or bad loans. Substandard loans have interest and principal payments due for up to six months, doubtful loans have payments overdue for six months to one year, and bad loans have an overdue period exceeding one year.

Various studies conducted by private sector umbrella organizations indicate a notable decline in aggregate demand. National Statistics Office records reveal that the country's economic growth was a mere 0.8 percent in the first quarter of the current fiscal year. Amidst diminishing businesses, escalating consumer prices, and high-interest rates, instances of banking offenses are on the rise. Entrepreneurs, protesting against steep interest rates, have publicly refused to repay loans, as banks struggle to increase lending for business expansion. The NRB has set a maximum threshold of five percent for NPLs in commercial banks. Despite the current figure being below this prescribed threshold, the escalating NPLs are viewed as alarming for the banking sector, according to industry experts.

The (ROE) ratio is used as a measure of profitability, however, two types of analysis were applied through their study: first; tests are run on the mean of (ROE) for the different bank categories, to capture if there is a statistical difference in profitability for the bank categories under their study. Second, a simple regression was applied using dummy variables to proxy banks asset size; the hypothesis questioned of their study was, if there is a statistical difference in profitability ratio for these different sized banks. The results of tests showed that, there is a negative significant relationship between profitability and the volume of assets.

The findings showed that profitability is reduced by increase in non-performing loan. Poudel (2012) tried to explore various parameters pertinent to credit risk management as it affects banks' financial performance. The parameters covered in the study were; default rate, cost per loan assets and capital adequacy ratio. Financial report of 21 banks were used to analysed for eleven years (2001-2011) comparing the profitability ratio to default rate, cost of per loan assets and capital adequacy ratio. The study revealed that all these parameters have an inverse impact on banks financial performance; however, the default rate is the most predictor of bank financial performance. The author further recommended to the banks to design and formulate strategies that will not only minimize the exposure of the banks to credit risk but will enhance profitability.

The act of lending constitutes a pivotal function within banking institutions, exerting a significant influence on economic stability. However, an undue expansion in credit carries the potential to disrupt both price stability and the overall financial system, introducing

prudential risks at both micro and macro levels (Igan & Pinheiro, 2011). In the examination of the monetary transmission process, it becomes imperative to thoroughly analyze the impact of bank lending on inflation. In the context of Nepal, the study indicates a positive correlation between bank lending and inflation, signifying that increased bank lending contributes to inflation. Conversely, the study reveals a negative impact of interest rates on inflation. Consequently, it is advisable for the central bank, aiming to control inflation, to curtail excessive lending by banks in unproductive and speculative sectors (Timalsina Dhungana, 2017).

The primary focus of this study revolves around the ten-year quarterly financial performance analysis of Nabil Bank Limited, Nepal SBI Bank Limited, and Everest Bank Ltd. This analysis will be conducted within the framework of the Risk-based approach model, providing insights into the risk-oriented aspects of their financial performance over the specified period.

1.1.1 Brief Background of Commercial Bank

Everest Bank Limited (EBL)

With a customer base exceeding 15 lakhs, Everest Bank Limited (EBL) stands as a reliable institution offering professional and efficient banking services. Established in 1994, EBL has emerged as one of the leading banks in the country, serving various segments of society. Punjab National Bank (PNB), holding 20% equity as our joint venture partner, is a significant nationalized bank in India with a widespread presence in key centers (EBL, 2020). Nepal Rastra Bank recently granted a fresh license to EBL, classifying it as an "A" class licensed institution.

Nepal SBI Bank Limited:

Nepal SBI Bank Ltd. (NSBL) represents the initial Indo-Nepal joint venture in the financial sector, backed by three institutional promoters: State Bank of India (SBI), Employees Provident Fund, and Agricultural Development Bank of Nepal. This collaboration was formalized through a Memorandum of Understanding signed on 17 July 1992. Under the Banks & Financial Institutions Act, 2063, Nepal Rastra Bank issued a renewed license to NSBL, categorizing it as an "A" class licensed institution on 26 April 2006. State Bank of India (SBI) holds the majority share capital at 55%, with 15% held by the Employees

Provident Fund and the remaining distributed among the general public. The bank operates with a focus on providing comprehensive banking services.

Nabil Bank Ltd.:

Founded in 1984, Nabil Bank Ltd. has been established by prominent business personnel and professionals with the overarching goal of advancing collectively with its customers. Positioned as the first private commercial bank in Nepal, Nabil Bank has grown to be a leading player in the financial sector, emphasizing customer service excellence and maintaining strong relationships. The bank, initially known as Nepal Arab Bank Limited, was the first to be initiated by multinational investors. Over the years, it has expanded its network, operating through 248 branch offices, 271 ATMs, and numerous POS terminals across the nation. Acquiring Nepal Bangladesh Bank in July 2022, Nabil Bank continues to enhance its offerings, recently launching Bank, a neo banking service functioning as a virtual branch. Gyanendra Dhungana assumed the role of Chief Executive Officer on July 1, 2022, succeeding the renowned banker Anil Keshary Shah.

1.2 Problem Statement

Credit risk holds a pivotal role in influencing the profitability of banks, given that a substantial portion of their revenue is derived from interest-bearing loans. The relationship between credit risk and interest rate risk is inherently intertwined, suggesting that an increase in interest rates heightens the likelihood of loan default. This interconnection underscores the inseparability of credit risk and interest rate risk. The escalation of non-performing loans within the credit portfolio poses a significant threat to banks in achieving their objectives. Non-performing loans, defined as the percentage of loan values not serviced for three months and beyond (Ahmad & Ariff, 2008), amplify overall bank risk and disrupt the risk-adjusted rate of return.

In the context of credit risk management, Ogboi, Charles, Unuafe, and Kenneth (2015) demonstrated that implementing sound credit risk management strategies and reinforcing capital requirements can contribute to enhancing banks' profitability. The study emphasized the importance of appropriately managing provisions for loan loss and reducing non-performing loans, indicating a positive correlation between these measures and the likelihood of achieving profitability.

Non-performing loans serve as indicators of credit risk, with higher levels contributing to increased risk and a subsequent decline in the performance of banks. The impact of non-performing loans on profitability is evident, as some banks experience decreased performance due to the shifting costs associated with loan defaults onto other customers. Nair and Fissaha (2011) uncovered elevated levels of non-performing loans among commercial banks, highlighting the inherent dangers posed by such loans to the industry. Their findings further revealed a negative relationship between return on equity, return on assets, both indicative of profitability, and the ratio of non-performing loans to total loans (NPL/TL) in financial institutions, underscoring the adverse effects on profitability.

Credit risk stands as a critical determinant of an individual bank's well-being, with asset quality analysis focusing on assessing the probability of borrowers repaying loans. The degree of credit risk exposure is contingent upon the asset quality maintained by the bank. The quality of a bank's assets is contingent on its exposure to specific risks, trends in non-performing loans, and the overall health and profitability of its borrowers. Notably, two primary factors, namely poor asset quality and inadequate liquidity levels, have been identified as leading causes of bank failures. The repercussions of poor asset quality were notably observed in the Kenyan banking sector during the early 1980s, resulting in several bank failures (Olweny & Shipo, 2013).

Banks that prioritize enhancing their performance place a significant emphasis on profitability-centric performance measurement and management. This approach is crucial for understanding the potential impacts of various initiatives on profits and benchmarking their effectiveness. Key indicators utilized to gauge the asset quality of commercial banks often include the non-performing loan to total loan ratio and net non-performing loan to total loan ratio (Baral, 2005). The acceptable threshold for non-performing loans in a healthy bank is typically set at a maximum of 5 percent. The quality of management emerges as a pivotal factor influencing the future trajectory of a bank. Management oversees a bank's operations, actively manages the quality of loans, and ensures the institution remains profitable. Despite the existing studies, there is a notable gap in research employing more recent data within the context of Nepal. This study therefore deals with the following issues in the context of Nepalese banks.

- What is the current status of the credit risk and profitability of the sample banks?
- What is the relationship between credit risk and the financial performance of sample banks?
- What are the impact of credit risk on the financial performance of sampled banks?

1.3 Objective of the Study

The major objective of this study is to analyse the effect of credit risk and profitability of selected commercial bank in Nepal. However, the specific objectives are as follows:

1. To examine the current status of the credit risk and profitability of commercial bank.
2. To analyse the relationship between credit risk and financial performance of sampled banks.
3. To examine the impact of credit risk on the financial performance of sampled banks.

1.4 Hypothesis

In this study following hypothesis has been set.

H1: There is the significant relationship between credit risk and financial performance of sampled banks

H2: There is the significant impact of credit risk on the financial performance of sampled banks.

1.5 Rationale of the Study

In the contemporary business landscape, the operational efficiency of commercial banks is influenced by various factors. However, the primary focus of this study is to explore the impact of capital adequacy and credit risk on the overall profitability of a bank. Capital assumes a critical role as it serves to finance assets and safeguard the interests of both short-term and long-term creditors who contribute funds to the business. The robustness of the financial system holds significant importance for a country, as any failure in this regard can disrupt the overall economic development of the nation (Das & Ghosh, 2008).

Financial performance, as a key metric, denotes a company's ability to generate new resources through day-to-day operations over a specified period. This is typically assessed through indicators such as net income and cash from operations. Likewise, capital adequacy is measured as a percentage ratio, representing a financial institution's primary capital in

relation to its assets. This ratio serves as a gauge of the institution's financial strength and stability, providing insights into its capacity to maintain sufficient equity capital for meeting depositor demands while having surplus funds for expanding assets through additional lending.

The study, employing the Credit Risk model, delves into the determinants of bank performance, specifically focusing on profitability. It offers valuable insights to both supervisors and managers of commercial banks in Nepal, pinpointing areas of strength and weakness through the lens of the credit risk approach model. Additionally, the study underscores the significance of the credit risk categories model for risk managers and other stakeholders interested in evaluating the performance of banks.

1.6 Limitations of Study

For the completion of this study, some facts are to be considered as the limitations which are presented as below:

- This study is based on secondary data taken from annual report of sample banks, the calculation and conclusion of the study will fully depend on the accuracy and reliability of data collected from various sources and concerns organization.
- Among the 20 commercial banks (www.nrb.com.np, December,2023) only three commercial banks are taken as sample for this study.
- The whole study is based on data of ten-year period i.e. the fiscal year from 2013/14 to 2022/23.
- Only limited financial and statistical tools are used for analysis.

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

This chapter is mainly concerned with the exploration of the background of the research and a comprehensive review of recent and relevant literature. In this chapter we reviewed, various books, magazines, journals, research papers, unpublished thesis reports etc. It includes theoretical, conceptual and empirical review along with the research gap.

2.2 Theoretical Review

This theoretical review aims to examine the existing research on the impact of credit risk in Nepalese banks. Credit risk is a significant concern for financial institutions worldwide, and understanding its implications is crucial for ensuring the stability and resilience of banking systems. Nepal, being a developing country with a growing financial sector, faces its own unique set of challenges in managing credit risk effectively. This review explores the key theoretical concepts, methodologies, and findings in the relevant literature, shedding light on the current understanding of credit risk in Nepalese banks and providing insights for future research and risk management practices.

2.2.1 Theory of Credit Risk

Credit risk refers to the risk of suffering a financial loss due to the decline in the creditworthiness of counterparty in a financial transaction. Credit risk is one of the most significant risks that banks face, considering that granting credit is one of the main sources of income in commercial banks. Credit risk plays an important role on banks' profitability since a large chunk of banks' revenue accrues from loans from which interest is derived. However, credit risk may be a serious threat to the performance of banks. Therefore various researchers have examined the impact of credit risk on banks in varying dimensions.

Credit risk refers to the risk of suffering a financial loss due to the decline in the creditworthiness of counterparty in a financial transaction. Credit risk is one of the most significant risks that banks face, considering that granting credit is one of the main sources of income in commercial banks.

The theory of credit risk refers to the study and analysis of the potential for borrowers to default on their debt obligations. It encompasses various models, methodologies, and frameworks used to assess and quantify the likelihood of credit default and the associated risks for lenders and investors. One of the fundamental theories in credit risk is the probability of default (PD), which estimates the likelihood that a borrower will fail to meet their contractual debt obligations. PD can be calculated using various quantitative models, such as statistical techniques, credit scoring, and machine learning algorithms. These models consider factors such as financial ratios, historical data, credit history, industry trends, and macroeconomic indicators to evaluate the creditworthiness of borrowers.

Another crucial aspect of credit risk theory is the concept of credit rating. Credit rating agencies assign ratings to borrowers based on their creditworthiness and the likelihood of default. These ratings provide an indication of the relative risk associated with lending to a particular borrower or investing in their debt instruments. The theory of credit risk also incorporates the concept of loss given default (LGD), which quantifies the potential loss that creditors may incur if a borrower defaults. LGD takes into account factors such as collateral, guarantees, and recovery rates in case of default. It helps lenders and investors assess the potential impact of default and determine appropriate risk mitigation measures, such as collateral requirements or loan pricing adjustments.

Furthermore, credit risk theory includes the consideration of exposure at default (EAD), which measures the amount of outstanding exposure a lender has to a borrower at the time of default. EAD assists in estimating the potential magnitude of losses in the event of default and helps determine appropriate risk management strategies.

The theory of credit risk also explores portfolio credit risk, which deals with the risks associated with a portfolio of loans or credit instruments. It involves diversification effects, correlation analysis, and the assessment of concentration risk within a portfolio. By understanding portfolio credit risk, lenders and investors can optimize their risk-return trade-offs and design appropriate risk management strategies.

Overall, the theory of credit risk provides a framework for understanding and managing the risks associated with lending and investing in credit instruments. It enables financial

institutions, investors, and regulators to make informed decisions, set appropriate risk appetite, and implement risk mitigation measures to protect against potential credit losses. Credit risk measurement refers to the process of evaluating the likelihood of default or credit loss associated with a borrower or a portfolio of borrowers. It involves assessing the creditworthiness of individuals, companies, or other entities that have borrowed money or extended credit. Credit risk measurement techniques aim to provide an objective assessment of the risk associated with lending and credit activities. These methods are used by financial institutions, regulators, and investors to make informed decisions about lending, pricing, and risk management.

2.2.2 Theory of Profitability

The theory of profitability, also known as the theory of firm profitability, is an economic concept that seeks to explain the factors and conditions that determine the level of profit earned by a firm in a competitive market. It is a fundamental concept in economics and business strategy.

Profit is reflected in reduction in liabilities, increase in assets, and/or increase in owners' equity. It furnishes resources for investing in future operations, and its absence may result in the extinction of a company. Theory of profit is the reward to an entrepreneur for the functions he renders in productive activity. Out of the income earned by the firm, land owner is paid rent, labourer is paid wage and capitalist is paid interest. Whatever is left over goes to the entrepreneur as profit. Hence, profit is also called a residual income.

Profit generally refers to the financial gain or positive difference between the total revenue and the total costs incurred by a business or an individual over a specific period. It is a measure of the profitability or success of an endeavor, indicating that the revenue generated from the sale of goods, provision of services, or any other business activities exceeds the expenses and investments associated with those activities.

Profit can be calculated by subtracting the total costs or expenses, including production costs, operating expenses, taxes, and other associated costs, from the total revenue earned during a specific period. It is a key indicator used by businesses, investors, and stakeholders to assess the financial performance and viability of a company or an investment.

Profit is essential for businesses to sustain and grow, as it allows reinvestment in the company, expansion into new markets, development of new products or services, and the distribution of dividends to shareholders. It also acts as a reward for the risks taken and the resources invested by entrepreneurs and investors.

It's important to note that profit can be further categorized into different types, such as gross profit, operating profit, net profit, and profit margin, each providing insights into various aspects of a company's financial performance.

There are several theories and factors that influence profitability, and different schools of thought emphasize various aspects. Here are some key theories and factors related to profitability. It's important to note that the theory of profitability is a complex and multifaceted subject, and the factors mentioned above interact with each other in real-world scenarios. Moreover, the specific factors influencing profitability can vary across industries, sectors, and individual firms. A commonly used formula to calculate profit is:

$\text{Profit} = \text{Revenue} - \text{Cost}$

Here are some additional profit-related formulas:

$\text{Gross Profit} = \text{Revenue} - \text{Cost of Goods Sold (COGS)}$

$\text{Operating Profit} = \text{Gross Profit} - \text{Operating Expenses}$

$\text{Net Profit} = \text{Operating Profit} - \text{Taxes and Interest}$

2.2.3 Doctrine of Credit Risk in Banking

Reviewing the general theories or principles of credit risk management can provide a clearer picture on how banks carry out their credit risk management, despite of the specific approaches that may differ among banks. Some of the theories of sound practices of bank credit risk management as outlined in the Basel committee publications (International Business Machines Corporation, 2008). Currently banks has been faced so many credit risk i.e. credit risk, market risk, liquidity risk, Interest rate risk, foreign exchange risk and operation risk etc. They are handling the said risk with their manpower, working guidelines, system update, management efficiency etc.

2.2.4 Review of NRB Directives Relating to Credit Risk

The primary objective of this study is to examine the guidelines provided by Nepal Rastra Bank concerning Credit Risk Management in Commercial Banks. These directives, periodically issued by the central bank, serve as crucial instruments for the control and oversight of commercial banks. In the current scenario, Nepal Rastra Bank consistently releases directives to regulate various aspects of banking operations and enforce prudential norms. Notably, Directive No. 2 of the Unified Directives for the year 2022 (subject to annual amendments) pertains to loan classification and provisioning.

A) Directive No. 2: Loan Classification and Provisioning

Directives pertaining to loan classification and provisioning (Unified Directives No. 2), applicable from the fiscal year 2021 A.D., outline the categorization of outstanding loans and advances based on the aging of principal amounts into the following five categories:

Pass Loan: This category encompasses loans and advances with principal amounts that are not overdue and those past due for up to one month. These are regarded as performing loans.

Watch List: Loans included in the Watch List are those not serviced for three months, covering instances where principal and interest payments have not been made within the repayment period.

Sub-Standard Loan: All loans and advances that are overdue for a period ranging from 3 months to 6 months fall into this category.

Doubtful Loan: This category comprises loans and advances that are overdue for a period ranging from 6 months to 1 year.

Loss: Loans and advances falling under this category are those overdue for more than 1 year. It also includes advances with minimal prospects of recovery, considered unrecoverable, and those with a slim possibility of even partial recovery in the future.

B) Loan Loss Provision

The loan loss provisioning, on the basis of the outstanding loan and advances and bills purchases classified as per this directive, shall be provided as follow:

Table 1
Loan Loss Provision

S.N	Loan	Maturity	Percentage (%)
1	Pass	only 3 month	1
2	Watch List	crossed only 3 month	5
3	Sub-standard	Crossed 3-6 months	25
4	Doubtful	Crossed 6-12 months	50
5	Loss Crossed	1 year maturity	100

Source: *NRB Directive, 2022.*

C) Directive No 3 (Single obligor limit)

Unified Directive 2079 Regarding Credit Risk

The Unified Directive 2079, mandated by the Nepal Rastra Bank (NRB), exerts a significant influence on all commercial banks and financial institutions. Designed to standardize prudential regulations, this directive ensures that each bank aligns with its rules and regulations, serving as an effective control mechanism for comprehensive oversight. The key credit-related directives are summarized below:

Directive No. 1 - Capital Adequacy Ratio (Basel Implementation):

Capital Adequacy entails maintaining a sufficient capital fund or shareholders' equity for investing in risk-weighted exposure or assets. Banks and financial institutions categorized as "A," "B," "C," and "D" are required to uphold a specific percentage of their total risk-weighted exposure as a capital requirement. This approach is derived from the Basel framework and stands as a potent tool implemented by the NRB to monitor and minimize risks. The total risk-weighted assets encompass both on- and off-balance sheet items, with risk ratings ranging from 0% to 150%. The capital adequacy ratio is calculated by dividing the Total Capital Fund by the Total Risk-Weighted Exposure.

Table 2

Capital Fund Requirement

Institution	Minimum Capital Reserve as per Risk Weighted Exposure	
	Primary Capital	Supplementary Capital
"A" class	6%	10%
"B" & "C" Class	5.5%	11%
"D" Class	4%	8%

(Source: NRB Directive 2022)

Now, let's first discuss what exactly a capital fund stands for and what are constitutes. Capital Fund is the total capital invested by equity shareholders along with other long term capitals, reserves etc. The capital fund constitutes of sum of two types of capital consisting of:

- Expressed as a percentage of a bank's risk weighted credit exposures.
- Also known as "Capital to Risk Weighted Assets Ratio (CRAR).

$CAR = \frac{\text{Eligible total Capital}}{\text{Total Risk Weighted Exposure}}$

$\text{Total Risk Weighted Exposure} = \text{Credit Risk RWE} + \text{Market Risk RWE} + \text{Operational Risk RWE} + \text{Supervisory Adjustment under Pillar II}$

- Ratio is used to protect depositors and promote the stability and efficiency of financial systems around the world.

Capital Requirement

In the preceding monetary policy, the Nepal Rastra Bank (NRB) had introduced a provision stipulating a Credit-to-Deposit (CD) Ratio of 90%, which Banks and Financial Institutions (BFIs) were required to maintain. While this measure aimed to enhance the capacity of BFIs for economic recovery, the escalating liquidity pressure led to many BFIs surpassing the 90% threshold. To alleviate this pressure on the CD ratio, the monetary policy has now permitted the inclusion of bonds and debentures as deposits when calculating the CD ratio. This adjustment is anticipated to inject liquidity into the banking system, facilitating lending activities.

The counter-cyclical buffer, which was temporarily suspended during the onset of the pandemic to release additional loanable funds for lending, will be reinstated in the upcoming fiscal year. The exact amount will be determined later by the NRB in its working directive. Additionally, Micro Financial Institutions (MFIs) will be authorized to issue bonds as a means of raising capital for lending, with the maximum value of bonds issued not exceeding the amount of capital held by MFIs.

A. Primary or Core Capital (Tier 1)

The primary focus in assessing the pivotal aspect of capital revolves around Tier 1 (core) capital, encompassing equity capital and disclosed reserves. This critical component forms the foundation for most market evaluations of capital adequacy, exerting a significant influence on profit margins and a bank's competitive capacity. Recognizing its paramount importance, the Basel Committee on Banking Supervision (BCBS) has established a dual-tier definition of capital for supervisory purposes. This framework necessitates that at least 50% of a bank's capital base comprises a core element, including equity capital and published reserves derived from post-tax retained earnings. To qualify as Tier 1, the capital must be fully paid up, devoid of fixed servicing or dividend costs, and readily available to absorb losses prior to general creditors. Additionally, for Tier 1 classification, capital must exhibit a high degree of permanence.

B. Tier 2 (Supplementary) Capital

The Supplementary (Tier 2) Capital comprises reserves that have traversed the profit and loss account, alongside all other eligible and acceptable capital instruments for regulatory purposes. Components of Tier 2 capital will be considered as capital funds, capped at a maximum of 100 percent of Tier 1 capital, factoring in regulatory adjustments and deductions. If a bank's Tier 1 capital turns negative, the Tier 2 capital for regulatory calculations will be deemed zero, making the capital fund, in such instances, equivalent to the core capital. To be included in Tier 2 Capital, Preference Share Capital Instruments (such as Perpetual Cumulative Preference Shares, Redeemable Non-Cumulative Preference Shares, and Redeemable Cumulative Preference Shares), Subordinated Term Debt, and Hybrid Capital Instruments issued by the bank must meet specified criteria.

C. Capital Fund

Capital Fund includes both the primary and supplementary capital. It can be stated in equation as below:

$$\text{Capital Fund} = \text{Primary Capital} + \text{Supplementary Capital}$$

2.3 Empirical Review

Empirical review refers to the review of previously conducted research and article of scholars to related study. There are various studies are conducted by the various scholars in various contry and banking sector about impact of credit risk in commercial bank in Nepal. Commercial banks is not influenced by the amount of credit and nonperforming loans suggesting that other variables other than credit and non- performing loans impact on profits. Commercial banks that are keen on making high profits should concentrate on other factors other than focusing more on amount of credit and nonperforming loans. The empirical review of various research studies is as:

Credit risk impact on banking system is being failure to properly management of balance sheet which not only contributes to decline in net profit but also enhance liquidity crisis and has negatively effect on goodwill of the bank as well. Credit risk management is an important predictor of bank financial performance thus success of bank performance depends on risk management. Credit risk management is crucial on the bank performance since it have a significant relationship with bank performance. Risk management in general has very significant contribution to bank performance, the banks are advised to put more emphasis on risk management. In order to reduce risk on loans and achieve maximum performance the banks need to allocate more funds to default rate management and try to maintain just optimum level of capital adequacy. Credit risk plays an important role on banks'' profitability since a large chunk of banks'' revenue accrues from loans from which interest is derived. However, credit risk may be a serious threat to the performance of banks. Therefore various researchers have examined the impact of credit risk on banks in varying dimensions.

Khanal and Sapkota (2023) conducted a study to assess the impact of credit risk management on the financial performance of commercial banks in Nepal. Utilizing a Pooled Ordinary Least Square estimator on a balanced panel data of ten commercial banks from 2012 to 2021,

the study employed credit risk indicators such as CAR, NPLR, CDR, MQR, and BS, with ROA as the financial performance indicator. The results revealed that CAR, NPLR, and BS had positive and insignificant effects, while CDR had a negative and insignificant effect on ROA. Additionally, there was a positive and significant effect of MQR on ROA, indicating a significant impact of credit risk management on the financial performance of commercial banks in Nepal.

Obae and Jagongo (2022) investigated the influence of credit rationing and client appraisal on the loan performance of commercial banks in Kenya. Using a descriptive survey design on 38 commercial banks, the study collected primary data through a questionnaire and secondary data from loan records (2018-2020). The regression analysis showed that credit rationing and client appraisal significantly correlated with loan performance. The study concluded that efficient debt collection, reflected in a shorter debt collection period, positively impacted commercial bank loan performance. Additionally, client appraisal practices played a significant role in enhancing the performance of loans in the banking sector.

Emmanuel, Olaoye, and Afolabi (2021) explored the effect of credit risk on bank performance in Nigeria, selecting three banks randomly. The study used return on assets as the dependent variable and considered various independent variables such as capital adequacy ratio, non-performing loans ratio, total loans to total assets, total deposit, and interest rate. Employing Ordinary Least Square and panel co-integration techniques, the research found that credit risk had a negative impact on bank performance in the short run, establishing a long-run relationship between credit risk and bank performance.

Kulchittivej, Pornpundejwittaya, and Silpcharu (2020) focused on credit management guidelines to strengthen the Thai industrial sector. The study, based on qualitative and quantitative data from 500 questionnaires distributed to industrial business executives in Thailand, identified four credit management factors: characteristics management, financial management, operations management, and assets management. The findings emphasized the importance of these guidelines for industrial executives, with financial management playing a significant role in influencing assets management.

Zimon and Dankiewicz (2020) studied the trade credit management strategy in Polish group purchasing organizations during the COVID-19 pandemic. Analyzing data from the construction sector, the research highlighted mechanisms applied by SMEs in purchasing groups to adapt trade credit management strategies during the pandemic. Changes observed included purchasing goods with larger reserves, stringent control of receivables, shifting to cash sales, and limiting long-term trade credit.

Jahan and Rahman (2020) aimed to understand credit risk management and its impact on a bank's performance, focusing on return on equity (ROE). Conducting a survey on 12 banks (6 state-owned and 6 private commercial banks) in Bangladesh, the study used statistical tools like mean, standard deviation, regression analysis, and principal component analysis. The research aimed to provide stakeholders with precise information on the relationship between credit risk management and profitability.

Olabamiji and Michael (2018) examined the influence of credit management practices on the financial performance of Nigerian banks, specifically First Bank Plc. Using purposive sampling, the study collected data from 30 respondents and employed descriptive and inferential statistics. The results indicated a significant positive influence of credit management practices, such as client appraisal, credit risk control, and collection policy, on the financial performance of First Bank.

Asant (2018) investigated the credit risk management of microfinance institutions in Ghana, finding that corporate, individual, and SMEs commercial loans were key sources of credit risk. The study recommended that microfinance institutions enhance the capacity of their credit administration department to improve risk exposure management.

Jonathan and Michael (2018) analyzed the relationship between credit risk management and bank performance in Nigeria, using Fidelity Bank Nigeria PLC as a case study. The study concluded that there was no significant relationship between credit risk management and bank performance, although weak negative relationships were identified.

Nwanna and Oguezue (2017) explored the nexus between credit management and profitability (ROA) of Deposit Money Banks (DMBs) in Nigeria. Using multiple regression, the study found that loans and advances and loan loss provision had positive and insignificant effects on profitability, while non-performing loans had a negative and insignificant effect. The study concluded that sound credit management contributes to profitability and financial strength in DMBs.

Alemarga, Tekalign, and Abera (2014) examined credit management in Dashen Bank S.C, presenting elements such as loan processing, granting, disbursement, and recovery. The study recommended building the capacity of credit administration departments in banks to address existing credit management challenges.

Orag, Nkamare, and Effiong (2014) determined how commercial bank credit could influence the manufacturing sector in Nigeria. The study revealed that well-channeled commercial bank credit could enhance economic growth in Nigeria and investigated the relationship between interest rates and manufacturing sector performance.

Table 3

Summary of Article and Journal Reviews

S	Name of Author and Publication Date	Name of Article	Objective	Methodology	Findings
1	Khanal& Sapkota/ 2023	Credit risk management and its impact on performance of commercial bank: with reference to Nepal.	To investigate the effect of credit risk management on financial performance of commercial banks in Nepal.	This study applies the Pooled Ordinary Least Square estimator on balanced panel data of ten commercial banks over the period 2012-2021.	The investigation reveals that CAR, NPLR, and BS exhibit a positive yet insignificant impact, while CDR displays a negative and insignificant effect on ROA. In contrast, there is a positive and significant effect of MQR on ROA. These outcomes signify that credit

					risk management significantly influences the financial performance of commercial banks in Nepal.
	Olaoye and Afolabi/ 2021	Impact of credit risk on bank Performance in nigeria.	The study considered the effect of credit risk on bank performance in Nigeria.	Use of the classical Ordinary Least Square and panel co integration techniques	Credit risk has negative impact on bank performance in the short run and while credit risk also has a long run relationship with bank performance in the long run.
2	Zimon and Dankiewic/ 2020	Trade Credit Management Strategies in SMEs and the COVID-19 Pandemic —A Case of Poland	To present the trade credit management strategy in Polish group purchasing organizations During the COVID-19 pandemic.	The study uses data on the construction sector because it is one of the most important segments of the Polish economy, which is financed to a large extent with trade credit.	The analysis showed that enterprises changed trade credit management strategies from moderately conservative to highly conservative.
3	Zayed / 2019	“An Evaluation of The Credit Management policy of National Bank Limited (NBL): A study on Gulshan Branch, Dhaka”	To get an idea about the process of credit management practices of NBL. To examine the credit recovery performance of NBL. To present the major findings of	The report is fully exploratory in nature. Data has been gathered from secondary sources.	The elevated cost of funds compels the bank to impose higher interest rates on loans, hindering its ability to attract a larger customer base for investments. Moreover, inadequate advertising of various loan schemes by the bank contributes to customer unawareness of the available credit services. Additionally,

			NBL. To prescribe some suggestions to overcome the problems		the absence of an efficient recovery unit within the National Bank further exacerbates the challenges associated with loan recovery.
4	Jonathan and Michael/ 2018	An Analysis of the Relationship between Credit Risk Management and Bank Performance in Nigeria: A Case Study of Fidelity Bank Nigeria PLC	To analyses the relationship between credit risk management and bank performance in Nigeria.	Descriptive survey research was used and data were collected via Annual reports of the sampled bank within the period of 2010-2016. Pearson Coefficient of Correlation	The researcher concluded that there is no significant relationship between credit risk management and bank performance in Nigeria.
5	Nwanna/ 2017	Effect of Credit Management on Profitability of Deposit Money Banks in Nigeria.	The study examined the nexus between credit management and profitability (ROA) of Deposit Money Banks (DMBs) in Nigeria context for the period of 2006 to 2015	The study employed multiple regression technique in analysing the data that gathered, the analysis was done using ordinary least square with E-View 9 Econometric tool.	The study found that loans and advances and loan loss provision have positive and insignificant effect on profitability, while non-performing loan has a negative and insignificant effect on profitability.
6	Asante/ 2018	Credit Management in Microfinance Institutions: A Case Study of Some Selected	To investigated the credit risk management of microfinance institutions in Ghana.	Used questionnaires as its main data collection instrument.	Found key credit risk sources the surveyed microfinance institutions were exposed to in their operations were corporate, individual and SMEs commercial loans.

		Microfinance Institutions in the Ashanti Region of Ghana.			
7	Kulchitti vej, Pornpund ejwittAy and Silpcharu / 2020	Credit Management Guidelines to Strengthen Thai Industrial	This research investigates the credit management guidelines to strengthen Thai industrial sector.	The data were analysed by descriptive analysis categorized into SME and large enterprises, and SEM to conduct the model in consistent with the empirical data.	The findings show that the characteristics management is the essential starting component in SEM and the financial management factor has the most influence in the assets management variable with standard regression weight of 0.990.
8	Olabamiji and Michael/ 2018	Credit Management Practices and Bank Performance: Evidence from First Bank	The study examined the influence of credit management practices on financial performance of Nigerian banks with specific reference to First bank Plc.	Both descriptive and inferential statistics were used to analyse data, such as Frequency, percentage, weighted mean score, and multiple regression.	The result revealed that credit management practices have a significant positive influence on the financial performance of First bank.
9	Jahan and Rahman/ 2016	Effectiveness of Credit Risk Management and Its Impact on Financial Performance of Banks in	The research objective is formulated in order to obtain a better understanding of credit risk management and its	. Different statistical tools have been used such as mean, standard deviation, regression analysis, one way ANOVA etc.	The comprehensive study reveals a robust and statistically significant relationship between Non-Performing Loans (NPL) and profitability within the context of private commercial banks. However, in the case of state-owned

Bangladesh: An Empirical Investigation on	impact on bank's performance (return on equity).	commercial banks, the analysis indicates that the relationship between these two factors is not statistically significant. The findings suggest that credit risk management is effectively handled by private commercial banks, leading to a significant impact on profitability, while state-owned banks may face challenges in this regard.
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2.5 Research Gap

This study is focused to analyze the factors affecting profitability of the commercial banks with credit risk approach during the ten-year period data. This study differed from earlier studies in different aspects such as selection of time period, selection of banks, selection of objective, selection of research methodology, and selection of variables. Present study focuses to study the elements of credit risk and their impact on profitability in detail and tries to fulfill the gap of past and present study on the respective topic.

Bhattarai (2013) investigated the impact of credit risk on the performance of Nepalese banks and found that the sampled commercial banks exhibited poor credit risk management practices. The regression results indicated a negative effect of the 'non-performing loan ratio' on bank performance, while the 'cost per loan assets' had a positive effect. Bank size was found to have a positive impact on performance, whereas capital adequacy ratio and cash reserves were not considered influential variables.

Poudel (2018) conducted research on the same topic, focusing on the impact of credit risk on the profitability of commercial banks in Nepal. The study revealed a significant negative impact of credit risk on the profitability of commercial banks. Other factors, such as solvency ratio, interest spread rate, and inflation, showed insignificant negative impacts on profitability. Conversely, capital adequacy ratio, total assets, and GDP growth were

found to have significant positive impacts on profitability, while inter-bank interest rates had an insignificant positive impact.

Chhetri (2018) also explored the effect of credit risk management on the financial performance of Nepalese commercial banks. The study emphasized the importance for Nepalese commercial banks to adopt scientific credit risk management practices, enhance efficiency in credit analysis and loan management, and minimize non-performing loans to secure assets and mitigate negative effects on financial performance.

No researchers have done the analysis of credit risk approach with these selected commercial banks with the same time range and research methodology so far in Nepal.

This study comprises of hypothesis, statistical as well as financial tools which was neglected in the previous researches. So, this paper would try to find the main indicators that would have high influence in performance of commercial banks of Nepal. Research, articles, journals which are reviewed in empirical review are from different previous years so it has failed to provide latest data like in this present research. Through this study, it is expected to provide detail analysis to researchers, students, to get better understanding on the respective subject. In this study regression analysis has conducted to find out the impact of credit and credit related activities into profit of the bank and also the effort has been done for the effect of non-performing loan ratio, liquidity ratio, capital adequacy ratio, inflation, Interest Spread rate of the bank, which are not included in the previous studies on this topic. That's why, this study is fulfil the study gap to large extent.

CHAPTER-III

RESEARCH METHODOLOGY

Research methodology sets overall plan associated with a study. Research methodology mainly describes the technique, method and process applied in the entire process of a scientific research. This chapter therefore explains the methodology employed in this study. So, in this chapter the study has introduced how to get started to do this study from collecting data, retrieving necessary information, building the frame of variables to researching philosophy or approaching method.

3.1 Research Design

This study utilizes a research design that incorporates descriptive, correlation, and causal comparative approaches to address issues related to credit risk and bank performance within the Nepalese context. The descriptive research design is employed to characterize, measure, compare, and classify the financial conditions of commercial banks in Nepal. Additionally, the study assesses opinions and perceptions of respondents concerning credit risk and bank performance. Furthermore, a causal comparative research design is applied to evaluate the significance of variables in relation to the performance of Nepalese commercial banks. The primary objective of incorporating causal comparative research design in this study is to investigate and analyse the predictability of bank performance, as measured by ROA and ROE, based on information related to credit risk variables.

3.2 Population and Sample

The total population of the study is the 20 commercial banks in Nepal (until Mid-July 2022). In order to examine the role of different risk management variables on financial performance of banks, this study contains a sample of three commercial banks of Nepal whose respective data are collected for the time period of 2013/14 to 2022/23. The sample has been selected through random sampling method out of total population.

Table 4 presents the selected sample bank along with study period and number of observations.

Population size = 20 commercial banks (until Mid-July 2023)

Sample size = 3 commercial banks

Table 4

Sample of the Research

S.N.	Name of The Commercial Banks	Observation
1.	Everest Bank Ltd	10
2.	Nabil Bank Ltd.	10
3.	Nepal SBI Bank Ltd.	10
	Total	30

3.3 Nature and Sources of Data

This study is based on secondary sources of data in order to meet its affirmed objectives and respond the research questions. The secondary sources of data for the study are obtained from the published financial statement of the sample commercial bank in Nepal as at the latest fiscal year recorded in the database provided in their respective websites also in addition data bank of NRB were used to extract the required data for the purpose of this study. In order to ensure uniformity in presentation, the banks that are merged or acquired during the period covered in the study are excluded as far as possible.

3.4 Methods Analysis

To meet the study's objectives, a range of financial, statistical, and accounting tools has been employed. The data analysis will align with the available data patterns. Utilizing the existing tools and resources, the study employs analytical statistical methods, including Karl Pearson's coefficient of correlation and simple regression. The results derived from financial, accounting, and statistical tools are computed and organized under distinct categories. Subsequently, a comparative analysis is conducted to interpret and evaluate the outcomes.

3.4.1 Financial Analysis

Various financial tools are available to assess the financial performance of an organization. Traditional accounting-based metrics for financial performance utilize financial ratios, representing the mathematical relationships or ratios between different quantities from financial statements. These ratios serve as valuable tools for decision-making purposes (Banerjee, 2018). Among these ratios, ROA (Return on Assets) and ROE (Return on Equity) are commonly used to analyze financial performance. ROA is calculated as the ratio of net

income to total assets, while ROE is the ratio of net income to shareholders' equity. According to Ruslan et al. (2009), ROA assesses a bank's profitability by focusing on its ability to generate income from operations. On the other hand, ROE reflects how efficiently bank management utilizes shareholders' funds based on total equity (Kennedy, 2019). The ROE ratio is influenced by the degree of financial leverage and the ROA ratio (Robin et al., 2018). Banks with higher leverage typically exhibit lower ROA but higher ROE. To enhance ROE competitiveness, Ommeren (2011) argued that most banks employ substantial financial leverage. The foundational financial tools relevant to this study are discussed below.

Ratio of Equity

Allocating investments to commercial banks with superior profitability compared to their competitors can be lucrative for portfolios. Return on equity (ROE) serves as a valuable metric for investors to differentiate between banks that generate profits effectively and those that are less proficient in doing so. However, it's crucial to note that while ROE provides valuable insights, it may not offer a comprehensive view of a commercial bank's overall performance, and investors should exercise caution in its interpretation.

$$\text{Return on Equity (ROE)} = \frac{\text{Shareholders' equity}}{\text{Net income}}$$

Capital Adequacy Ratio (CAR)

The capital adequacy ratio serves as a metric to determine the percentage of a bank's capital in relation to its total risk-weighted assets. The assessment of credit risk associated with assets hinges on the entity to which the bank extends loans. For instance, the risk associated with a loan provided to the government is deemed to be 0%, while loans extended to individuals carry a considerably higher percentage of risk.

$$\text{Capital Adequacy Ratio (CAR)} = \frac{\text{Tier 1 Capital} + \text{Tier 2 Capital}}{\text{Risk Weighted Assets}}$$

Non-Performing Loan (NPL)

This ratio gauges the proportion of non-performing assets within the overall portfolio of loan advances. A higher ratio indicates poorer quality in the bank's loan portfolio. Therefore, a lower ratio of non-performing assets to loans and advances is considered more favorable.

According to international standards, only a 5% allowance for non-performing assets is permitted, but in the context of Nepal, a 10% non-performing assets ratio is deemed acceptable.

$$\text{NPA to Total Loan \& Advance} = \frac{\text{Total Non -Performing Loan}}{\text{Total Loan \& Advances}}$$

Loan Loss Provision (LLP)

Loan loss provision refers to the sum of money that a bank reserves from its yearly earnings as a precautionary measure against potential losses resulting from non-performing loans or to mitigate losses associated with a credit facility. Ahmadand (2007) conducted a study exploring the primary determinants of credit risk in commercial banks within emerging economy banking systems in comparison to developed economies. The study revealed that an escalation in loan loss provision is considered a noteworthy determinant of potential credit risk. This is expressed as:

$$\text{Loan loss Provision to NPL} = \frac{\text{Loan loss provision}}{\text{Non-Performign loan}} \times 100\%$$

LoanandAdvances

The ratio of loans and advances to total assets serves as a metric to gauge the extent of loans and advances in relation to the overall assets. This ratio reflects the proportion of loans and advances in the total asset composition. A higher ratio indicates effective mobilization of funds and a favourable organizational position. Conversely, a lower ratio suggests prudent use of funds. It is essential to note that loans represent assets with inherent risks. This ratio can be calculated as follows:

$$\text{LoanandAdvancestoTotal assets Ratio} = \frac{\text{LoansandAdvances}}{\text{Totalassets}}$$

3.4.2 Statistical Analysis

To achieve the goals of this study and conduct a thorough analysis of the data, various essential statistical tools have been applied. Coefficient of variance, correlation analysis, standard deviation, least squares, linear trend analysis, and other statistical techniques have been employed to carefully examine and interpret the data. These statistical tools play a

crucial role in ensuring the reliability of the conclusions drawn from the available financial data. The subsequent section presents a detailed discussion of the fundamental statistical analyses relevant to this study.

Descriptive Statistic Analysis

Arithmetic Mean

Arithmetic mean, often referred to simply as 'Mean,' is calculated by summing up all the observations in a set and dividing the total by the number of observations. It serves as a representative value for the entire group, representing the arithmetic average of a variable. Arithmetic mean of a series is given by:

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

Where, $\sum X$ = sum of the variable 'X'

N = No of observation

Standard Deviation

The standard deviation is considered an absolute measure of dispersion that overcomes drawbacks present in other measures of dispersion. Regarded as one of the best measures of dispersion, it satisfies many requirements for an effective measure of variability.

$$\text{Standard Deviation of } \sigma = \sqrt{\frac{\sum (X - \bar{X})^2}{n}}$$

Coefficient of Variation

The standard deviation serves as an absolute measure of dispersion, and its relative counterpart is termed the coefficient of standard deviation. This coefficient is calculated as follows:

$$\text{Coefficient of variation (CV)} = \frac{\sigma}{\bar{X}} \times 100$$

Correlation Analysis

Correlation coefficient is defined as the association between the dependent variable and independent variable. It is a method of determining the relationship between these two variables.

$$r_{xy} = \frac{N\sum x\sum y - (\sum x)(\sum y)}{\sqrt{\{N\sum x^2 - (\sum x)^2\}} \sqrt{\{N\sum y^2 - (\sum y)^2\}}}$$

When $r=1$, there is positive perfect correlation between the two variables.

When $r=-1$, there is a negative perfect correlation between the two variables.

When $r=0$, the variables are uncorrelated.

Regression Analysis

Regression is a statistical tool employed to discern the statistical relationship between two or more variables and to forecast or estimate one variable based on others. Essentially, it enables the estimation or prediction of an unknown value of one variable by leveraging the known values of other variables, presuming a close relationship between them. For instance, if there is a strong correlation between production and sales, regression allows us to determine the production quantity needed to achieve a specific sales target. In summary, regression gauges the average anticipated change in one variable given a certain level of change in another (Silwal, 2018).

The equation of ROE is

$$ROE_{it} = \beta_0 + \beta_1 \times NPL_{it} + \beta_2 \times LR_{it} + \beta_3 \times CAR_{it} + \beta_4 \times ISR + \beta_5 \times BR + e$$

Where,

ROE=Return on Equity

NPL= Non performing loan

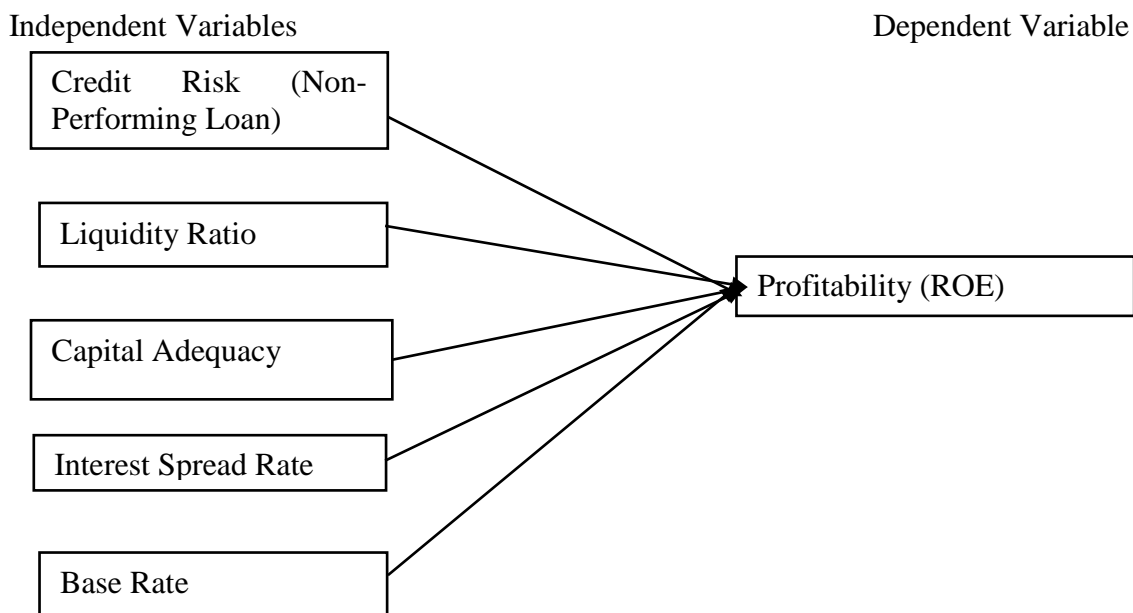
CAR= Capital Adequacy Ratio

LR= Liquidity Ratio

ISP=Interest Spread Rate

BE= Base Rate

3.5 Research Framework



Source: *Poudel (2018)*

Figure 1: Research Framework

The figure 1 has describes the relationship of profitability and credit risk based on the theoretical and empirical perspective. This study has taken return on equity and return on assets as the dependent variables. Whereas, non-performing loan/total loans and advances, loan loss provision/total loan, loans and advances/total deposit, total deposit/ loans and advances and capital adequacy ratio as independent variables which are used for the measurement of credit risk and capital adequacy. The empirical results are described from the following diagram.

3.6 Definition of the Variables

Dependent Variable

The following dependent Variables have been used in study:

Profitability

Profitability serves as the dependent variable in this study, commonly assessed through the widely used metric, return on equity (ROE). ROE, synonymous with both gross profit and net profit, is a pivotal measure in the literature for evaluating the profitability of commercial banks.

Investing in commercial banks with efficient profit generation compared to their counterparts can be highly lucrative for portfolios. ROE assists investors in distinguishing between banks that effectively create profits and those that struggle in this regard. However, it is emphasized that ROE, while a valuable metric, may not provide a comprehensive overview of a commercial bank's performance and should be interpreted carefully.

In this study focusing on commercial banks in Nepal, ROE is employed as the dependent variable to gauge financial performance. ROE serves as a key indicator, shedding light on the bank's ability to generate profits relative to its equity. This metric aids in assessing the efficiency and profitability of commercial banks, making it a crucial variable for analysis.

Return on Equity

Return on equity (ROE) serves as a metric to evaluate the profitability of equity funds invested in a bank, revealing the profit earned per unit of invested capital. This measure is highly significant as it reflects the productivity of the ownership or risk capital utilized within the bank, as highlighted by Getahun (2015). ROE, a financial ratio applied to assess the profitability and efficiency of various companies, including banks, is calculated by dividing a bank's net income by its average shareholders' equity.

The importance of ROE lies in its role as a key indicator for investors and stakeholders seeking to gauge a bank's ability to generate profits from shareholders' investments. Banks typically strive for a higher ROE, signifying increased profit generation per unit of shareholders' equity. It is crucial to acknowledge that ROE can exhibit significant variation among banks due to differences in business models, risk profiles, and prevailing market conditions.

Independent Variables

The following Independent Variables have been used in study:

Credit Risk Identification

Identifying credit risk typically involves assessing three major components: operational risk, market risk, and moral risk. Operational risk pertains to the potential for losses resulting from imperfect internal procedures, personnel issues, and external events.

Liquidity

Liquidity, in the context of banking, gauges a bank's ability to fulfill short-term obligations or commitments promptly. It is a critical consideration for banks, and a lack of liquidity can potentially lead to bank failure. Regulatory bodies also emphasize the importance of liquidity management. Banks facing a shortage of liquidity may be at risk of a bank run, as they struggle to meet the demands of depositors.

However, maintaining a high degree of liquidity can impact profitability negatively. Assets held in highly liquid forms, such as cash, tend to yield lower returns. While liquidity is crucial for financial stability, the trade-off with profitability is notable, as excessively liquid assets may limit income potential for a bank. The relationship between liquidity and profitability is often characterized by a negative and significant correlation in the banking sector.

Capital Adequacy Ratio

The Capital Adequacy Ratio (CAR) is selected as a pivotal measure reflecting a bank's financial strength, particularly from the perspective of regulatory authorities. It encompasses various forms of financial capital, with a primary focus on shareholders' equity, recognized for its reliability and liquidity. Banks boasting a robust Capital Adequacy Ratio tend to exhibit favorable profitability. This is attributed to the fact that well-capitalized commercial banks possess the capacity to absorb losses stemming from non-performing loans.

Studies, such as Bourke (1989), have highlighted a positive and statistically significant correlation between capital adequacy and profitability. In the context of this research, the mentioned variables were employed to assess the impact of credit risk management on the financial performance of commercial banks. The study applied statistical tools to evaluate the significance of both independent and dependent variables. Adequate capitalization emerges as a critical factor for banks, enabling them to withstand potential losses, uphold financial stability, and instil confidence in stakeholders. Elevated capital levels contribute to heightened profitability by minimizing the cost of capital. In summary, the Capital Adequacy Ratio is established as having a substantial and positive influence on bank performance.

Interest Spread Rate

The interest spread rate in banks delineates the variance between the interest rate at which banks extend loans to borrowers and the rate at which they remunerate depositors. This spread serves as the profit margin for banks, encapsulating their earnings from lending and borrowing activities.

Banks traditionally generate revenue by imposing higher interest rates on loans and credit products than the rates disbursed to depositors. The differential between these rates facilitates banks in offsetting operational costs, managing risks, and realizing profits. It is crucial to acknowledge that interest spread rates exhibit considerable diversity across different banks and various loan or deposit categories. For precise information on prevailing interest spread rates, consulting individual banks or financial institutions is recommended. The study discerns a significant and adverse impact of the interest spread rate ratio on bank performance.

Base Rate

Monetary policy wields a dual influence on credit risk, not only during the origination of loans but also when interest rates are elevated throughout the loan's duration. In this context, low interest rates amplify bank risk-taking behaviour, leading to the issuance of new loans with heightened credit risk. Simultaneously, the existing credit risk associated with bank loans diminishes when interest rates are lower.

CHAPTER-IV

RESULTS AND DISCUSSIONS

This section strives to scrutinize and present the secondary data related to capital adequacy, credit risk, and bank performance to discern the cross-sectional relationship among these variables. To fulfil this objective, the applied methods for analysing secondary data include descriptive statistics, Pearson correlation coefficients, and stepwise cross-sectional regression analysis. The detailed findings from the results are comprehensively addressed in the respective sections, as presented in the result section. Primarily, this chapter focuses on systematically presenting, interpreting, and analysing the collected data to address various issues related to the influence of credit risk on the performance of selected Nepalese commercial banks.

4.1 Result

The result is a process that involves analyzing, cleansing, manipulating, and modeling data with the goal of identifying usable information, drawing conclusions, and aiding decision-making. It encompasses several dimensions and approaches, utilizing a diverse range of techniques across various disciplines such as business, science, and social sciences. Essentially, it is the systematic evaluation of data through analytical and logical reasoning, scrutinizing each component of the provided data. Information is gathered from diverse sources, reviewed, and then analyzed to derive findings or conclusions. Numerous specific result methods exist, including data mining, text analytics, business intelligence, and data visualizations. In this study, empirical conclusions were drawn by collecting and systematically processing secondary data, with the assistance of SPSS software for calculations.

4.1.1 Descriptive Statistics Analysis

In this section, the results are presented through the descriptive analysis of the data. The objectives of the research pertaining to the current position of the variables are addressed by calculating the mean, standard deviation, minimum, maximum, and coefficient of variation for each variable across all sample banks. This descriptive analysis provides an overview of the industrial current position of the variables under consideration.

Profitability: Return on Equity (ROE)

The amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. Return on equity (ROE) measures the rate of return on the ownership interest or equity of the common stock owners. It measures a firm's efficiency at generating profits from every unit of shareholders' equity which is also known as net assets or assets minus liabilities. Return on equity shows how well a company uses investment funds to generate earnings growth. Total shareholder's equity consists of preference share capital, ordinary share capital, share premium and reserve and surplus less accumulated losses. This ratio can be computed as Net profit after tax (NPAT) divided by average total shareholder's equity. It is calculated by dividing a company's net income by the value of its shareholders' equity.

Table 5

Return on equity in Sample banks

S.N.	Year	EBL	Nabil	NSBI
1	2013/14	32.98	28.03	22.85
2	2014/15	29.5	21.73	21.51
3	2015/16	25.56	25.84	22.16
4	2016/17	23.5	27.13	20.54
5	2017/18	21.6	25.11	15.8
6	2018/19	18.13	18.28	16.28
7	2019/20	13.45	13.76	10.44
8	2020/21	9.3	13.76	6.35
9	2021/22	11.76	9.5	9.57
10	2022/23	13.31	12.96	12.1
Total		199.09	196.1	157.6
Mean		19.91	19.61	15.76
SD		8.01	6.81	5.93
CV		0.40	0.35	0.38

Source: *Appendix*

Table5 shows return on equity ratio of Everest Bank Ltd., Nabil Bank Ltd and Nepal SBI Bank Ltd. over the period of 2013/14 to 2022/23. The total net profit after tax is divided by total equity to get the return on equity ratio. Here we can see that average return on equity ratio for EBL NABIL and NSBI are 19.91, 19.61 and 15.76 in ten years sample data respectively. Which shows that the EBL is better in terms of ROE than that of NABIL and

NSBI. This ratio indicates the profitability of the owner's investment. Highest ratio shows the improvement situation of bank and lowest ratio shows the poorer situation of bank. The Standard deviation of EBL NABIL and NSBI Bank are 8.01, 6.81 and 5.93 respectively which reflects that the EBL is riskier than that of NABIL and NSBI Bank in terms of Return on Equity. Further, the coefficient of variation of EBL NABIL and NSBI Bank are 0.40, 0.35 and 0.38 respectively. This indicates that NABIL bank have been more consistent in maintaining the Return on Equity during the study period than that of EBL and NSBI bank.

Capital Adequacy Ratio

Capital Adequacy Ratio is considered as the core measure of a banks' financial strength from a regulators point of view. It is the amount of capital a bank or other financial institutions have to hold as required by its financial regulator. In order to prevent banks from going bankrupt, it must be determined that they have adequate capital on hand to absorb a specific level of losses. A bank with a high capital adequacy ratio is considered to be above the minimum requirements needed to suggest solvency.

Table 6

Capital adequacy ratio of Sample banks

S.N.	Year	EBL	Nabil	NSBI
1	2013/14	12.89	13.23	13.7
2	2014/15	13.32	11.91	13.47
3	2015/16	12.79	12.65	13.33
4	2016/17	14.85	13.44	15.92
5	2017/18	14.97	13.26	15.48
6	2018/19	13.75	12.78	14.01
7	2019/20	13.32	12.91	15.44
8	2020/21	12.51	12.75	13.93
9	2021/22	11.95	13.56	13.32
10	2022/23	13.36	12.68	12.78
Total		133.7	129.2	141.4
Mean		13.37	12.92	14.14
SD		0.96	0.48	1.08
CV		0.07	0.04	0.08

Source: *Appendix*

Table 6 depicts the capital adequacy ratio of the selected banks for ten fiscal years. EBL' CAR has been under fluctuating trend during the study period. Similarly, EBL Banks' CAR is under

decreasing trend till 2021/22 and is under fluctuating state then after. NABIL Bank has increasing trend of CAR till 2014/15 and in underfluctuating state. According to NRB, the minimum Capital Adequacy Ratio (CAR) of 10% has to be maintained by commercial banks. The average Capital adequacy ratio of EBL, NABIL and NSBI Bank are 13.37, 12.92 and 14.14 which indicates that all sample banks have maintained a rate as stated by Nepal Rastra Bank and they have adequate capital on hand to absorb a specific level of losses. No sample banks have violated the minimum rate of CAR during the study period. However, among the sample banks, NABIL Bank has been able to maintain better Capital Adequacy Ratio as compared to NABIL and NSBI Bank. The Standard deviation of EBL, NABIL and NSBI Bank are 0.96, 0.48 and 1.08 respectively which reflects that the NSBI Bank is riskier than that of EBL and NABIL Bank in terms of Capital Adequacy Ratio. Further, the coefficient of variation of EBL, NABIL and NSBI bank are 0.07, 0.04 and 0.08 respectively. This indicates that NABIL bank has been more consistent in maintaining the Capital Adequacy Ratio during the study period than that of EBL and NSBI Bank.

Non-Performing Loan

The non-performing loan ratio, often known as the NPL ratio, is the percentage of non-performing loans in a bank's loan portfolio compared to the total amount of outstanding loans. As per NRB directives, non-performing loans are those that fall into the sub-standard, doubtful, or loss categories. A higher NPL ratio indicates that the bank's assets in the form of loans and advances are of poor quality and vice versa. As a result, lower NPL to total credit ratio is preferable.

Table 7

Structure of Non-performing loan to total loan of Sample banks

S.N.	Year	EBL	Nabil	NSBI
1	2013/14	0.62	2.23	0.26
2	2014/15	0.66	1.82	0.19
3	2015/16	0.38	1.14	0.14
4	2016/17	0.51	0.79	0.1
5	2017/18	0.2	0.55	0.2
6	2018/19	0.16	0.74	0.2
7	2019/20	0.22	0.97	0.23
8	2020/21	0.12	0.78	0.23
9	2021/22	0.24	1.54	0.15
10	2022/23	0.79	1.23	2.43
Total		3.9	11.79	4.13
Mean		0.39	1.18	0.41
SD		0.24	0.54	0.71
CV		0.61	0.46	1.72

Source: *Appendix*

Table 7 shows the non-performing loan of the sampled banks from the year 2014 to 2023. The NPL of EBL is under increasing trend till 2020/21 and is in fluctuating trend thereafter. NABILs' NPL has the fluctuating trend over the study period whereas NSBI NPL is under decreasing trend since 2016/17. EBL, NABIL, NSBI Bank had the highest NPL during the year 2022/23, 2013/14 and 2022/23 respectively which indicates that these banks had these banks had highest poor-quality loan assets during the stated years. The average Non-Performing Loan of EBL, NABIL and NSBI Bank are 0.39, 1.18 and 0.41 respectively which indicates that among the sample banks, Nabil Bank have a highest poor loan assets during the study period than that of EBL and NSBI Bank. The Standard deviation of EBL, NABIL and NSBI Bank are 0.24, 0.54 and 0.71 respectively which reflects that the NSBI Bank is riskier than that of EBL and Nabil Bank in terms of NPL which also reflects that NSBI Bank has the higher risk of having poor quality loan assets. Further, the coefficient of variation of EBL, NABIL and NSBI Bank are 0.61, 0.46 and 1.72 respectively. This indicates that NABIL bank has been more consistent in maintaining the Non-Performing Loan during the study period than that of EBL and NSBI Bank.

Loan Loss Provision (LLP)

A loan loss provision is an expense that is reserved for defaulted loans or credits. It is an amount set aside in the event that the loan defaults. Generally, banks conduct their business by taking deposits and making loans using those deposits. It is a bit more complicated however; this is the basic banking model. Banks must balance their loan receivables with the demand for deposits in any group of loans, banks expect there to be some loans that do not perform as expected. Loan loss provision are deductible expenses and are deducted from interest income. Banks attempt to keep sufficient capital to withstand future write-offs and try to predict losses in order to stabilize earnings and remain solvent in difficult times. It is an indicator of how bank tries to get protected against future losses. A higher ratio indicates the better position of the bank against future losses and vice versa.

Table 8

Structure of loan loss provision to total loan of Sample Banks

S.N.	Year	EBL	Nabil	NSBI
1	2013/14	100	120.3	476.4
2	2014/15	100	135.9	659.6
3	2015/16	100	182.3	829.9
4	2016/17	100	221.8	1133
5	2017/18	675	278.1	628
6	2018/19	714	221.1	627.4
7	2019/20	682	195.5	647.2
8	2020/21	1311	241	742.7
9	2021/22	676	154.2	1497
10	2022/23	235.6	107.1	116.5
Total		4694	1857	7358
Mean		469.36	185.73	735.77
SD		408.08	55.95	370.29
CV		0.87	0.30	0.50

Source: *Appendix*

Table 8 shows structure and pattern of loan loss provision to total loan from 2013/14 to 2022/23. The result shows that NSBI had highest loan loss provision percent, which indicates that these banks had to bear highest provision from its net income during the stated years. The average LLP ratio of EBL, NABIL and NSBI Bank are 469.36, 185.73 and 735.77 respectively which indicates that among the sample banks, NSBI Bank have to maintain a higher cash reserve in a bank through its net income in order to cover the problematic loans

that are unlikely to see repayment in future. The Standard deviation of EBL, NABIL and NSBI Bank are 408.08, 55.95 and 370.29 respectively which reflects that the EBL Bank is riskier than that of NABIL and NSBI in terms of LLP which also indicates that EBL Bank has the higher risk of bearing the problematic loans. Further, the coefficient of variation of EBL, NABIL and NSBI Bank are 0.87, 0.30 and 0.50 respectively which shows that NABIL Bank has been more consistent in maintaining the Loan Loss Provision during the study period than that of EBL and NSBI Bank.

Interest Spread Rate (ISR)

The interest spread rate, also known as the net interest margin (NIM), is an important financial metric for commercial banks. It represents the difference between the interest income generated by a bank's assets (such as loans and investments) and the interest expenses incurred on its liabilities (such as deposits and borrowings). The interest spread rate is a key indicator of a bank's profitability and efficiency in managing its interest-bearing assets and liabilities.

Table 9

Interest Spread rate ratio of Sample banks

S.N.	Year	EBL	Nabil	NSBI
1	2013/14	5.69	5.71	4.93
2	2014/15	4.76	4.55	5.43
3	2015/16	4.89	4.98	4.99
4	2016/17	4.48	4.92	5.44
5	2017/18	4.72	5.05	4.99
6	2018/19	4.29	4.43	4.43
7	2019/20	3.59	3.73	3.87
8	2020/21	3.24	3.79	3.18
9	2021/22	4.06	4.22	4.36
10	2022/23	3.97	4.99	3.99
Total		43.69	46.37	45.61
Mean		4.37	4.64	4.56
SD		0.70	0.62	0.73
CV		0.16	0.13	0.16

Source: Panel Data in Appendix

Table 9 shows structure and pattern of interest spread rate ratio from 2013/14 to 2022/23. The average ISR ratio of EBL, NABIL and NSBI Bank are 4.37, 4.64 and 4.56 respectively which indicates that among the sample banks, EBL Bank have to less impact in a bank

through its well management of fund. The Standard deviation of EBL, NABIL and NSBI Bank are 0.70, 0.62 and 0.73 respectively which reflects that the NABIL Bank is less risky than that of EBL and NSBI in terms of ISR which also indicates that NABIL Bank has the lower risk of bearing during the period due to sufficient fund utilized and increases the deposit patron. Further, the coefficient of variation of EBL, NABIL and NSBI Bank are 0.16, 0.13 and 0.16 respectively which shows that NABIL Bank has been more consistent in maintaining the Interest Spread rate during the study period than that of NSBI and EBL Bank.

Base Rate (BR)

Base rate refers to the minimum standard rate below which the commercial banks are not allowed to lend. In other words, the base rate is the cost of doing the banking business. Base Rate includes the cost of funds along with the operation costs for the business. Bank in Nepal provide loans at a certain premium above the base rate. Higher base rate results in higher lending rates. Hence, the low base rate is more favourable for the banks. Banks with lower base rate has a competitive edge over other banks.

Table 10

Base Rate Ratio of Sample banks

S.N.	Year	EBL	Nabil	NSBI
1	2013/14	6.4	5.67	8.78
2	2014/15	6.14	5.78	7.71
3	2015/16	4.86	4.17	5.98
4	2016/17	7.68	6.61	8.98
5	2017/18	8.45	7.78	10.12
6	2018/19	8.12	8.09	9.72
7	2019/20	8.05	7.32	9.25
8	2020/21	5.99	5.86	7.37
9	2021/22	8.82	8.77	9.61
10	2022/23	9.92	9.52	10.74
Total		74.43	69.57	88.26
Mean		7.44	6.96	8.83
SD		1.55	1.64	1.43
CV		0.21	0.24	0.16

Source: *Appendix*

Table 10 shows structure and pattern of Base rate ratio from 2013/14 to 2022/23. The average base rate ratio of EBL, NABIL and NSBI Bank are 7.44, 6.96 and 8.83 respectively which indicates that among the sample banks, NABIL Bank have to less impact in a bank through its handsome utilize of the fund. The Standard deviation of EBL, NABIL and NSBI Bank are 1.55, 1.64 and 1.43 respectively which reflects that the NSBI Bank is riskier than that of EBL and NABIL in terms of BR which also indicates that NABIL Bank has the higher risk of bearing the bank's base rate. Further, the coefficient of variation of EBL, NABIL and NSBI Bank are 0.21, 0.24 and 0.16 respectively which shows that NSBI Bank has been more consistent in maintaining the Base rate during the study period than that of EBL and NABIL Bank.

Table 11

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	CV (in %)
Profitability	30	6.35	32.98	18.42	6.99	37.94
Credit risk	30	.10	2.43	.66	.63	0.95
Liquidity Ratio	30	21.51	42.69	29.70	6.079	20.46
Capital Adequacy Ratio	30	11.91	15.92	13.47	.990	7.3
Interest Spread Rate	30	3.18	5.71	4.52	.67	14.82
Base Rate	30	4.17	10.74	7.74	1.68	21.7
Valid N (listwise)	30					

Source: *Appendix*

Table 11 shows the descriptive statistics of the research variables. The research variables are profitability, credit risk, liquidity ratio, capital adequacy ratio, interest spread rate, base rate. The data are collected from the annual report of the respective sample bank annual report and each of bank has 10 observation or in total 30 observation are the research observations. All the 30 observation are used for the calculation of the descriptive statistics know as mean, standard deviation, coefficient of variation, minimum and maximum.

In the tables the minimum, maximum, mean, standard deviation and coefficient of variation of profitability is 6.35, 32.98, 18.42, 6.99 and 37.94 respectively. The credit risk one of the independent variables of the research minimum, maximum, mean, standard deviation and

coefficient of variation is 0.10, 2.43, 0.66, 0.63 and 0.95 respectively. The Liquidity Ratio is also the independent variables of the research minimum, maximum, mean, standard deviation and coefficient of variation is 21.51, 42.69, 29.70, 6.079 and 20.46 respectively. The Capital Adequacy Ratio is also the independent variables of the research minimum, maximum, mean, standard deviation and coefficient of variation is 11.91, 15.92, 13.47, 0.990 and 7.3 respectively. The Interest Spread Rate is also the independent variables of the research which is minimum, maximum, mean, standard deviation and coefficient of variation 3.18, 5.71, 4.52, 0.67 and 14.82 respectively. The Base Rate is also the independent variables of the research and minimum, maximum, mean, standard deviation and coefficient of variation is calculated, they are 4.17, 10.74, 7.74, 1.68 and 21.7 respectively.

The research shows that all the variables have a gap between minimum and maximum which is very large and on the basis of the mean the standard deviation is seen to be very high which represents the current position of the research variables as the very fluctuating nature of the data.

4.1.2 Correlation Analysis

In this section, the correlation between profitability measures (return on equity) and explanatory variables (credit risk, liquidity ratio, capital adequacy ratio, interest spread rate, and base rate) has been presented and analysed. A correlation matrix was employed to assess the relationships between the explanatory variables. The correlation matrix, which is a table displaying correlation coefficients between variables, was utilized to examine the correlations among credit risk, liquidity ratio, capital adequacy ratio, interest spread rate, and base rate in relation to profitability. The data were sourced from the annual reports of the respective sample banks, with each bank providing 10 observations, resulting in a total of 30 research observations.

The correlation matrix serves as a comprehensive summary of the data. Correlation coefficients between two variables range from +1 (indicating a perfectly positive relationship) to -1 (indicating a perfectly negative relationship), while a correlation coefficient of zero suggests no linear relationship between the two variables.

Table 12

Correlation of the Variables

		Profitabilit y	Credit risk	Liquidity Ratio	Capital Adequacy Ratio	Interest Spread Rate	Base Rate
Profitabilit y	Pearson						
	Correlation	1					
	Sig. (2- tailed)						
Credit risk	N	30					
	Pearson						
	Correlation	.095	1				
Liquidity Ratio	Sig. (2- tailed)	.616					
	N	30	30				
	Pearson						
Capital Adequacy Ratio	Correlation	.005	.038	1			
	Sig. (2- tailed)	.978	.841				
	N	30	30	30			
Interest Spread Rate	Pearson						
	Correlation	-.025	-.418*	-.201	1		
	Sig. (2- tailed)	.895	.022	.286			
Base Rate	N	30	30	30	30		
	Pearson						
	Correlation	.791**	.110	-.301	.146	1	
Base Rate	Sig. (2- tailed)	.000	.563	.107	.441		
	N	30	30	30	30	30	
	Pearson						
Base Rate	Correlation	-.536**	-.100	-.153	.416*	-.177	1
	Sig. (2- tailed)	.002	.597	.419	.022	.349	
	N	30	30	30	30	30	30

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

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

Source: *Appendix*

Table 12 show the correlation between the independent and dependent variables. In this research the dependent variable is the Profitability measured by return on equity and independent variables are credit risk measured by non-performing loan, liquidity ratio,

capital adequacy ratio, interest spread rate, base rate. The objective two of the research is to analyse the relationship between independent and dependent variables is calculated in this correlation table.

The relationship between the profitability and credit risk is positive and low level of relationship also which in not significant relationship. The correlations value is 0.095 which represent the low positive correlations value. The significant value is 0.616 which is more than $n0.05$ so the relationship is not significant. The hypothesis is not true.

The relationship between the profitability and Liquidity Ratio is positive and low level of relationship also which in not significant relationship. The correlations value is 0.005 which represent the low positive correlations value. The significant value is 0.978 which is more than 0.05 so the relationship is not significant. The hypothesis is not true.

The relationship between the profitability and capital adequacy Ratio is negative and low level of relationship also which in not significant relationship. The correlations value is 0.025 which represent the low negative correlations value. The significant value is 0.895 which is more than 0.05 so the relationship is not significant. The hypothesis is not true.

The relationship between the profitability and Interest Spread Rate is positive and high level of relationship but not perfectly and also which in significant relationship. The correlations value is 0.791 which represent the high positive correlations value. The significant value is 0.000 which is less than 0.01 so the relationship is significant or called 1 percent level of significant. The hypothesis is true.

The relationship between the profitability and Base Rate is negative and moderate level of relationship but not perfectly and also which in significant relationship. The correlations value is 0.536 which represent the high negative correlations value. The significant value is 0.002 which is less than 0.01 so the relationship is significant or called 1 percent level of significant. The hypothesis is true.

4.1.3 Regression Analysis

The third objectives of the research is to examine the impact of the independent variables to the dependent variables of the research. The regression is based on the multiple regression

equation. The multiple regression equation is $ROE_{it} = \beta_0 + \beta_1 \times NPL_{it} + \beta_2 \times LR_{it} + \beta_3 \times CAR_{it} + \beta_4 \times ISR + \beta_5 \times BR + e$. The model summary, ANOVA and Coefficient is calculated. Regression analysis helps to find out the impact of independent variables on the dependent variable. The regression analysis is conducted for sampled banks. In this study, regression analysis is done for the different determining factor towards ROE. Regression analysis looks at how one dependent variable relates to one or more other independent factors in order to estimate the average value of the dependent variable using the independent variable's known values. The table presents the regression analysis of the major variables under study. This table depicts the regression analysis where ROE is used as dependent variable.

Table 13

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.906	.820	.783	3.26

a. Predictors: (Constant), Base Rate , Credit risk , Liquidity Ratio , Interest Spread Rate, Capital Adequacy Ratio

Source: *Appendix*

Table 13 shows the model summary of 30 observations of three commercial bank in Nepal and respondent of each bank has 10 observation. Here $R^2=0.82$ means 82% of total variations in profitability is explained dependent variables and independent variable i.e. Base Rate , Credit risk , Liquidity Ratio, Interest Spread Rate, Capital Adequacy Ratio but 18% of total variation on profitability is explained by other factors which are not included in our research.

Table 14

ANOVA of Variables

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1163.462	5	232.692	21.886	.000
	Residual	255.165	24	10.632		
	Total	1418.627	29			

a. Dependent Variable: Profitability

b. Predictors: (Constant), Base Rate , Credit risk , Liquidity Ratio , Interest Spread Rate, Capital Adequacy Ratio

Source: *Appendix*

Table 14 shows the ANOVA of three commercial bank of 30 observations. Here dependent variable Profitability called predictor and independent variable Base Rate, Credit Risk, Liquidity Ratio, Interest Spread Rate, capital Adequacy Ratio. Here regression is significant because significant value is 0.000 which is less than 5%. Its mean the regression is strong.

Table 15

Coefficient of Variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-17.340	11.221		-1.545	.135
	Credit risk	-.120	1.082	-.011	-.111	.913
	Liquidity Ratio	.217	.107	.189	2.020	.055
	Capital Adequacy Ratio	.430	.779	.061	.551	.586
	Interest Spread Rate	8.032	1.021	.770	7.865	.000
	Base Rate	-1.642	.419	-.397	-3.921	.001

a. Dependent Variable: Profitability

Source: *Appendix*

Table 15 shows the coefficient of commercial bank. The coefficient of different three commercial bank total 30 respondents of each of 10. Here dependent variable Profitability called predictor and independent variable Base Rate, Credit Risk, Liquidity Ratio, Interest

Spread Rate, capital Adequacy Ratio. Here coefficient table shows the individual variable variation to the dependent variable, their accuracy, significant level.

The impact of the Credit risk to the Profitability is negative which shows by the beta value of negative 0.12. The beta value shows 1 percent change in to Credit risk than negatively 0.12 percentage change in to profitability of the bank. The standard error calculated is very high i.e. 1.082 which mean low level of accuracy of calculated value. The significant value is more than 0.05 so the impact is not significant i.e. 0.913.

The impact of the Liquidity Ratio to the Profitability is positive which shows by the beta value of positive 0.217. The beta value shows 1 percent change in to Liquidity Ratio than positive 0.217 percentage change in to profitability of the bank. The standard error calculated is very low i.e. 0.107 which mean high level of accuracy of calculated value. The significant value is more than 0.05 so the impact is not significant i.e. 0.055.

The impact of the Capital Adequacy Ratio to the Profitability is positive which shows by the beta value of positive 0.43. The beta value shows 1 percent change in to Capital Adequacy Ratio than positive 0.43 percentage change in to profitability of the bank. The standard error calculated is very low i.e. 0.779 which mean high level of accuracy of calculated value. The significant value is more than 0.05 so the impact is not significant i.e. 0.586.

The impact of the Interest Spread rate to the Profitability is positive which shows by the beta value of positive 8.032. The beta value shows 1 percent change in to Interest Spread rate than positive 8.032 percentage change in to profitability of the bank. The standard error calculated is very high i.e. 0.1.021 which mean low level of accuracy of calculated value. The significant value is less than 0.05 so the impact is significant i.e. 0.00.

The impact of the Base rate to the Profitability is negative which shows by the beta value of negative 1.642. The beta value shows 1 percent change in to Base rate than negative 8.032 percentage change in to profitability of the bank. The standard error calculated is very low i.e. 0.419 which mean low level of accuracy of calculated value. The significant value is less than 0.05 so the impact is significant i.e. 0.001.

4.2 Discussion

The first objective of research is to examine the current status of the credit risk and profitability of commercial bank. It is found that the current position of the research variables is the very fluctuating nature. The result is consistence with the result of (Jonathan & Michael, 2018) and the result is different with the research result of (Nwanna & Oguezue, 2021).

The second objective of research is to analyses the relationship between credit risk and financial performance of sampled banks. It is found that the relationship between the profitability and credit risk is positive and low level of relationship also which in not significant relationship and the hypothesis is not true. The result is consistence with the result of (Asant, 2018). The relationship between the profitability and Liquidity Ratio is positive and low level of relationship also which in not significant relationship and the hypothesis is not true. The result is consistence with the result of (Khanal & Sapkota, 2023). The relationship between the profitability and capital adequacy Ratio is negative and low level of relationship also which in not significant relationship and the hypothesis is not true. The result is consistence with the result of (Jahan & Rahman, 2020). The relationship between the profitability and Interest Spread Rate is positive and high level of relationship but not perfectly and also which in significant relationship and the hypothesis is true. The result is consistence with the result of (Emmanuel, Olaoye & Afolabi, 2021). The relationship between the profitability and Base Rate is negative and moderate level of relationship but not perfectly and also which in significant relationship and the hypothesis is true. The result is consistence with the result of (Obae & Jagongo, 2023).

The third objective of research is to examine the impact of credit risk on the financial performance of sampled banks. It is found that the impact of the Credit risk to the Profitability is negative which shows by the beta and the significant value is more than five percent so the impact is not significant. The result is consistence with the result of (Kulchittivej, Pornpundejwittaya & Silpcharu, 2020). The impact of the Liquidity Ratio to the Profitability is positive which shows by the beta value and the significant value is more than five percent so the impact is not significant. The result is consistence with the result of (Olabamiji & Michael, 2018). The impact of the Capital Adequacy Ratio to the Profitability is

positive which shows by the beta and the significant value is more than five percent so the impact is not significant. The result is consistent with the result of (Zimon & Dankiewicz, 2020). The impact of the Interest Spread rate to the Profitability is positive which shows by the beta value and the significant value is less than five percent so the impact is significant. The result is consistent with the result of (Khanal & Sapkota, 2023). The impact of the Base rate to the Profitability is negative which shows by the beta value and the significant value is less than five percent so the impact is significant. The result is consistent with the result of (Emmanuel, Olaoye & Afolabi, 2021).

CHAPTER-V

SUMMARY AND CONCLUSION

This chapter included the summary, conclusion and implication of the research. The summary explain about the detail of the research from beginning to ending. The conclusion included the objectives based finding and in conclusion statement. The implication explain about the implication of the research in the concern sector, person and total society member.

5.1 Summary

Credit risk refers to the potential for a loss arising from a borrower's inability to repay a loan or fulfill contractual obligations. It represents an integral aspect of risk assessment in investment. In the realm of investing and capital allocation, it is imperative to evaluate risks to make informed investment decisions, striking a balance between risks and returns. Providing loans can be a precarious undertaking for banks, and risks may also be associated with offerings such as securities and various forms of investments. The study gauges the profitability of commercial banks by assessing return on equity and conducting regressions on bank-specific variables, including the non-performing loan ratio (NPL), solvency ratio, capital adequacy ratio, total assets, and interest spread. Additionally, the research explores the impact of macroeconomic variables, such as bank size growth, inflation rate, and interbank interest rate, alongside bank-specific variables in discerning profitability within Nepalese commercial banks. On the given background the study is conducted on “credit risk and profitability of commercial bank in Nepal”.

The problem of the research are what is the current status of the credit risk and profitability of the sample banks? What is the relationship between credit risk and the financial performance of sample banks? What are the impact of credit risk on the financial performance of sampled banks? For the solving the problem of the research the certain objectives are set. The objectives of research are to examine the current status of the credit risk and profitability of commercial bank, to analyses the relationship between credit risk and financial performance of sampled banks and to examine the impact of credit risk on the financial performance of sampled banks. The descriptive, correlation and causal comparative research design. The secondary data are taken from the sample bank. The sample bank are

three from the commercial bank in Nepal. The research variables are profitability, credit risk, liquidity ratio, capital adequacy ratio, interest spread rate, base rate. The financial and statistical analysis are done from the achievement of the objectives through given raw data. The financial analysis is form the various ratio analysis and statistical analysis from the descriptive statistics, correlation and regression analysis. SPSS and excel are the tool for the analysis. The finding of the study are the variables has a the gap between minimum and maximum is very and on the basis of the mean the standard deviation is seem to be very high which represent the current position of the research variables is the very fluctuating nature of the data. The relationship between profitability and credit risk, profitability and liquidity is positive but not significant. The capital adequacy and ratio and profitability is negative and not significant. The interest spread rate and profitability is positive and significant relationship. The base rate has negative relationship to the profitability and significant too. The impact of credit risk and to the profitability is negative and not significant. The liquidity ratio and capital adequacy has positive impact to the profitability but not significant. The interest spread rate positive and base rate negative and significantly impact to the profitability of the bank.

5.2 Conclusion

The first objective of research is to examine the current status of the credit risk and profitability of commercial bank. It is found that the variables has a the gap between minimum and maximum is very and on the basis of the mean the standard deviation is seem to be very high which represent the current position of the research variables is the very fluctuating nature of the data. In conclusion the current position of the research variables is the very fluctuating nature.

The second objective of research is to analyses the relationship between profitability and credit risk, profitability and liquidity is positive but not significant. The capital adequacy ratio and profitability is negative and not significant. The interest spread rate and profitability is positive and significant relationship. The base rate has negative relationship to the profitability and significant too. In conclusion the interest spread rate and profitability is positive and significant and base rate has negative but relationship.

The third objective of research is to examine the impact of credit risk on the financial performance of sampled banks. It is found that the impact of credit risk and to the profitability is negative and not significant. The liquidity ratio and capital adequacy has positive impact to the profitability but not significant. The interest spread rate positive and base rate negative and significantly impact to the profitability of the bank. In conclusion the interest spread rate positive and base rate negative and significantly impact to the profitability of the bank.

5.3 Implication

The study delved into evaluating the factors influencing bank performance, particularly focusing on profitability through the lens of the Credit Risk model. The findings offer valuable insights for both regulatory authorities and managers of commercial banks in Nepal, delineating the strengths and weaknesses of these banks using the credit risk approach model. Moreover, it underscores the significance of the credit risk categories model for risk managers and other stakeholders keen on scrutinizing bank performance.

- The research has various implication to the various areas and they are following.
- Banks have to adhere to the guideline of the central bank to reduce the amount of NPL and also to increase accountability and credibility of bank.
- Banks are one of the most reputed organizations of the country. So, banks should fulfil some social obligations by extending their resources to rural areas and promoting the development of poor and disadvantaged group. In order to do so, they should open their branches in the remote areas with objectives of providing cheaper charge banking services.
- Bank should avoid extending credit merely based on oral information presented at the credit interview. Bank also should regularly follow the credit customers to confirm that whether the customers have utilized their credit for the same purpose committed at the time of taking credit from the bank.
- The bank and financial institution can use this study to inform management choices about the variable. The bank's board of directors uses it as a tool for decision-making when making decisions on credit-related instruments. The other bank stakeholders will benefit from the work of this researcher. The management of other businesses of

a similar type can use this study to guide their decisions. The fresh researcher and scholar may use it as a reference for their future work.

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APPENDIX

Everest Bank Ltd (10 Yrs Data From 2014 to 2023)									
Year	ROE	CAR	ISR	NPL	LLP	Base Rate	Cost of fund	CD Ratio	Liquidity Ratio
2014	32.98	12.89	5.69	0.62	100	6.4	3.56	75.06	25.31
2015	29.5	13.32	4.76	0.66	100	6.14	3.26	69.47	40.56
2016	25.56	12.79	4.89	0.38	100	4.86	2.24	76.24	35.72
2017	23.5	14.85	4.48	0.51	100	7.68	4.82	76.94	31.46
2018	21.6	14.97	4.72	0.2	675	8.45	5.6	75.98	37.84
2019	18.13	13.75	4.29	0.16	714	8.12	6.21	75.07	38.09
2020	13.45	13.32	3.59	0.22	682	8.05	6.11	68.57	39.64
2021	9.3	12.51	3.24	0.12	1311	5.99	4.48	72.52	42.69
2022	11.76	11.95	4.06	0.24	676	8.82	7.31	86.04	33.67
2023	13.31	13.36	3.97	0.79	235.64	9.92	7.75	82.32	33.22

Nabil Bank Ltd (10 Yrs Data From 2014 to 2023)								
ROE	CAR	ISR	NPL	LLP	Base Rate	Cost of fund	CD Ratio	Liquidity Ratio
28.03	13.23	5.71	2.23	120.33	5.67	3.34	77.51	32.86
21.73	11.91	4.55	1.82	135.94	5.78	3.18	65.12	35.25
25.84	12.65	4.98	1.14	182.32	4.17	2.08	73.84	26.76
27.13	13.44	4.92	0.79	221.75	6.61	2.7	75.62	25.84
25.11	13.26	5.05	0.55	278.12	7.78	4.75	74.68	25.5
18.28	12.78	4.43	0.74	221.06	8.09	6.13	72.9	29.58
13.76	12.91	3.73	0.97	195.52	7.32	5.49	68.08	23.95
13.76	12.75	3.79	0.78	241.01	5.86	4.41	79.22	23.49
9.5	13.56	4.22	1.54	154.16	8.77	7.17	89.79	22.79
12.96	12.68	4.99	1.23	107.12	9.52	7.81	87.68	27.86

Nepal SBI Bank Ltd.((10 Yrs Data From 2014 to 2023))								
ROE	CAR	ISR	NPL	LLP	Base Rate	Cost of fund	CD Ratio	Liquidity Ratio
22.85	13.7	4.93	0.26	476.42	8.78	3.99	75.23	22.85
21.51	13.47	5.43	0.19	659.59	7.71	3.17	79.11	21.51
22.16	13.33	4.99	0.14	829.87	5.98	2.55	76.57	24.99
20.54	15.92	5.44	0.1	1132.98	8.98	3.54	75	25.4
15.8	15.48	4.99	0.2	628	10.12	5.45	74.38	23.43
16.28	14.01	4.43	0.2	627.41	9.72	6.51	74.38	24.83
10.44	15.44	3.87	0.23	647.16	9.25	6.85	63.2	29.7
6.35	13.93	3.18	0.23	742.7	7.37	5.27	74.86	24.97
9.57	13.32	4.36	0.15	1497.07	9.61	6.12	86.86	27.8
12.1	12.78	3.99	2.43	116.51	10.74	8.2	78.99	33.51

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Profitability	30	6.35	32.98	18.4263	6.99415
Credit risk	30	.10	2.43	.6607	.63462
Liquidity Ratio	30	21.51	42.69	29.7023	6.07948
Capital Adequacy Ratio	30	11.91	15.92	13.4753	.99076
Interest Spread Rate	30	3.18	5.71	4.5223	.67051
Base Rate	30	4.17	10.74	7.7420	1.68981
Valid N (listwise)	30				

Correlations

		Profita bility	Credit risk	Liquidity Ratio	Capital Adequacy Ratio	Interest Spread Rate	Base Rate
Profitability	Pearson Correlation	1	.095	.005	-.025	.791**	-.536**
	Sig. (2-tailed)		.616	.978	.895	.000	.002
	N	30	30	30	30	30	30

Credit risk	Pearson Correlation	.095	1	.038	-.418*	.110	-.100
	Sig. (2-tailed)	.616		.841	.022	.563	.597
	N	30	30	30	30	30	30
Liquidity Ratio	Pearson Correlation	.005	.038	1	-.201	-.301	-.153
	Sig. (2-tailed)	.978	.841		.286	.107	.419
	N	30	30	30	30	30	30
Capital Adequacy Ratio	Pearson Correlation	-.025	-.418*	-.201	1	.146	.416*
	Sig. (2-tailed)	.895	.022	.286		.441	.022
	N	30	30	30	30	30	30
Interest Spread Rate	Pearson Correlation	.791**	.110	-.301	.146	1	-.177
	Sig. (2-tailed)	.000	.563	.107	.441		.349
	N	30	30	30	30	30	30
Base Rate	Pearson Correlation	-.536**	-.100	-.153	.416*	-.177	1
	Sig. (2-tailed)	.002	.597	.419	.022	.349	
	N	30	30	30	30	30	30

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

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

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.906 ^a	.820	.783	3.26065

a. Predictors: (Constant), Base Rate , Credit risk , Liquidity Ratio , Interest Spread Rate, Capital Adequacy Ratio

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1163.462	5	232.692	21.886	.000 ^b
	Residual	255.165	24	10.632		
	Total	1418.627	29			

a. Dependent Variable: Profitability

b. Predictors: (Constant), Base Rate , Credit risk , Liquidity Ratio , Interest Spread Rate, Capital Adequacy Ratio

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-17.340	11.221		-1.545	.135
	Credit risk	-.120	1.082	-.011	-.111	.913
	Liquidity Ratio	.217	.107	.189	2.020	.055
	Capital Adequacy Ratio	.430	.779	.061	.551	.586
	Interest Spread Rate	8.032	1.021	.770	7.865	.000
	Base Rate	-1.642	.419	-.397	-3.921	.001

a. Dependent Variable: Profitability