"Impact of Credit Risk Management on Profitability of Commercial Banks: An Estimation of Dynamic Panel Investigation from Bangladesh"

An Internship Report Submitted in partial fulfillment of the requirements for the Degree of Master of Business Administration (MBA)

SUBMITTED TO

Md. Amdadul Hoque
Associate Professor
Department of Finance and Banking
Faculty of Business Studies
Comilla University, Cumilla.

SUBMITTED BY

Kanij Rukaiya Eitu
Class ID: 22317047
Registration No: 22317047
Session: 2022-2023
Program: MBA
Department of Finance and Banking
Comilla University, Cumilla.

DATE OF SUBMISSION

26th May, 2025

Letter of Transmittal

26th May 2025

Md. Amdadul Hoque

Associate Professor

Department of Finance and Banking,

Comilla University.

Subject: Submission of internship report on **"Impact of Credit Risk Management on Profitability of Commercial Banks: An Estimation of Dynamic Panel Investigation from Bangladesh"**

Dear Sir,

With due respect, I would like to state that it is a matter of great pleasure and honor for me to submit my internship report on **"Impact of Credit Risk Management on Profitability of Commercial Banks: An Estimation Dynamic Panel Investigation from Bangladesh".** As this report is an obligatory requirement to complete our MBA Program.

This report explores the relationship between credit risk management practices and the profitability of selected commercial banks in Bangladesh, utilizing a dynamic panel estimation approach. The findings provide insights into how banks manage credit risk and its subsequent impact on their financial performance.

Lastly, I am thankful for your guidance and support throughout the process, and I hope this report meets your expectations. I shall be glad to answer any queries that you may have in this regard.

Sincerely yours,

……

Kanij Rukaiya Eitu
ID No: 22317047
Session: 2022-23
Department of Finance and Banking,
Comilla University

Supervisor's Declaration

26th May 2025

This is to certify that the internship report on **"Impact of Credit Risk Management on Profitability of Commercial Banks: An Estimation of Dynamic Panel Investigation from Bangladesh"** is done by **Kanij Rukaiya Eitu**, **ID No: 22317047**, **Reg No: 22317047**, **Session: 2022-23** as the partial fulfillment of Master of Business Administration (MBA) degree from Department of Finance and Banking, Faculty of Business Studies, Comilla University, Comilla.

This internship report has been prepared under your guideline and is a report of the authentic work carried out successfully.

……

Md. Amdadul Hoque

Associate Professor

Department of Finance and Banking,

Comilla University.

Student Declaration

I sincerely declare that the work in this internship report on **"Impact of Credit Risk Management on Profitability of Commercial Banks: An Estimation of Dynamic Panel Investigation from Bangladesh"** is an original work done by me under the supervisor of Md. Amdadul Hoque, Associate Professor, Department of Finance and Banking, Comilla University.

No part of this report has been previously submitted to any other University/ College/ Institution/ Organization for any academic certificate/ degree/ diploma. This work I have presented does not breach any existing copyright and no portion of this report is copied from any work done earlier for any degree. Information derived from the published and unpublished work of others has been acknowledged in the text and references I further undertake to identify the department against any lost or damage arising from breach of the forgoing obligation, If any.

…….

Kanij Rukaiya Eitu

ID No: 22317047

Session: 2022-2023

Department of Finance and Banking

Faculty of Business Studies

Comilla University, Comilla.

Acknowledgement

At the very beginning I would like to express my deepest gratitude to almighty for giving me the strength and the composure to finish the task. Internship report is an essential part of the MBA program. It is a great pleasure to prepare internship report on **"Impact of Credit Risk Management on Profitability of Commercial Banks: An Estimation of Dynamic Panel Investigation from Bangladesh"**

On this manner I would like to express my deepest gratitude to my honorable academic supervisor, **Md. Amdadul Hoque**, Department of Finance and Banking, Comilla University for permitting and guiding me to prepare the report.

JANATA BANK PLC

Cumilla Cadet College Branch

Cumilla

Tell: +88-2334400295

Cell: 01313416729

E-mail: jb0839@junatabank-bd.com

Ref. JB/CCC/Internship/Eitu/MBA/2025

Date: 24-05-2025

TO WHOME IT MAY CONCERN

This is to certify that Kanij Rukaiya Eitu, MBA Session 2022-23, ID: 22317047, Department Finance and Banking, Comilla University, Cumilla. Has successfully completed three months internship program in the branch. Her tittle of internship report is **"Impact of Credit Risk Management on Profitability of Commercial Banks: An Estimation of Dynamic Panel Investigation from Bangladesh"** to fulfill her requirement of Master of Business Administration (MBA) program. She is under my supervision and explored the general functions of the bank.

During the period of her internship program in this office, she was very much sincere, dedicated and dutiful in her responsibilities. She maintained steaming enthusiasm all through. Her diligence delighted us. This hand of experience will have ensured sweet fruition of her professional life.

We wish her every success in life.

(Mubarak Hossain)

Manager

Janata Bank PLC

Cumilla Cadet College Branch Cumilla

Executive Summary

The profitability of commercial banks is influenced by a variety of internal and external factors. This study aims to identify and evaluate the bank-specific and macroeconomic determinants that affect the profitability of commercial banks in Bangladesh. The analysis is based on a dynamic panel data model using annual financial data from 10 commercial banks over a ten-year period, from 2014 to 2023. Return on Assets (ROA) and Return on Equity (ROE) are employed as the primary indicators of bank profitability. It providing a comprehensive measure of financial performance. The study considers a range of bank-specific factors, including the loan loss provision to total loan ratio (LLPTR), total loan to total asset ratio (TLTAR), total loan to total deposit ratio (TLTD), capital adequacy ratio (CAR), and non-performing loans to total loan ratio (NPLTL). In addition, key macroeconomic variables such as GDP growth rate (GDPGRR), inflation rate (INFR), exchange rate (ER), and real interest rate (RIR) are included to capture the broader economic environment.

The empirical findings reveal that several bank-specific factors—specifically LLPTR, TLTAR, and CAR—exert significant influence on bank profitability, as do the macroeconomic variables INFR, ER, and RIR. These variables demonstrate a statistically significant relationship with both ROA and ROE, suggesting that both internal management decisions and external economic conditions play a critical role in shaping bank performance. The results indicate that prudent loan loss provisioning and effective capital management are critical for sustaining profitability, while efficient asset allocation further enhances performance. Conversely, the total loan to total deposit ratio (TLTD) and GDP growth rate (GDPGRR) do not show a statistically significant impact on profitability, indicating their limited predictive power in this context. For regulators, the evidence suggests that enhancing the supervisory framework around credit risk exposure and enforcing stricter capital adequacy standards could improve the sector's stability and profitability.

The results of this study have practical implications for bank management, regulators, and policymakers, highlighting the need to strengthen capital adequacy, manage credit risk efficiently, and consider macroeconomic trends when formulating strategies to enhance the financial performance and stability of commercial banks in Bangladesh.

Table of Contents

Introduction

Introduction

In the dynamic financial landscape of Bangladesh, commercial banks play a critical role in fostering economic growth and stability. One of the key challenges faced by these institutions is managing credit risk—the possibility that borrowers may fail to meet their repayment obligations. Effective credit risk management is essential not only to maintain financial health but also to ensure long-term profitability.

According to (Nahar 2006), there is a simultaneous and inverse relationship between bank credit risk and profitability. For variables handled as control variables at the macroeconomic and bank levels, particular models have been employed. His study shows a negative correlation between macroeconomic variables. Capital adequacy, loan to deposit ratio, and income diversification are all favorably correlated in the profitability model, but inefficiency has a detrimental impact on profitability,(Nahar 2006). Another study is examine by Iqbal and Suhong they claim that, ‘‘Effective loan management is crucial for reducing bad debts and increasing profitability, as evidenced by the strong and negative association between increased Loan Loss Provision (LLP) and ROA and ROE’’ (Iqbal and Suhong).Effective credit risk management is therefore critical for maintaining profitability and safeguarding the financial system. The impact of CRM practices on bank profitability has been widely studied, yet the influence of such practices within the context of Bangladesh’s unique economic and regulatory environment remains under explored.

This study investigates the impact of credit risk management on the profitability of ten commercial banks in Bangladesh, focusing on how various components of credit risk affect banks' financial outcomes. The dependent variable in this research is profitability, typically measured through indicators such as Return on Assets (ROA) and Return on Equity (ROE). The independent variables include key credit risk management indicators such as loan loss provision to total loan ratio (LLPTR), total loan to total asset ratio (TLTAR), total loan to total deposit ratio (TLTD), capital adequacy ratio (CAR), and also macroeconomic factors such as GDP growth rate (GDPRG), inflation rate (INFR), exchange rate (ER), and real interest rate (RIR) are incorporated to examine their moderating or mediating effects on the relationship between CRM and profitability.

By integrating both firm-specific and macroeconomic dimensions, this research seeks to provide a comprehensive understanding of how credit risk management strategies impact the profitability of ten selected commercial banks in Bangladesh. The findings will offer valuable

insights for policy formulation, strategic planning, and risk mitigation practices which aiming to strengthen the resilience and performance of the banking sector of Bangladesh.

Background of the Study

This research aims to evaluate the effectiveness of credit risk management of commercial banks in Bangladesh while also serving as a comprehensive resource for understanding how credit risk management practices contribute to enhancing profitability and long-term sustainability in the banking sector. The study is being conducted under the guidance of my academic supervisor ‘‘Amdadul Hoque" from the Department of Finance and Banking at Comilla University, Bangladesh. He closely monitors my progress and provides recommendations to address any errors encountered during the research process. To carry out this study, I have gathered secondary data on the financial performance of ten selected commercial banks from 2014 to 2023.

Statement of the Problem

The profitability of commercial banks is significantly influenced by how well they manage credit risk. In Bangladesh, rising levels of non-performing loans, inefficient provisioning practices, and poor credit risk management strategies have raised concerns about the financial stability and performance of the banking sector. Despite regulatory reforms and policies to mitigate credit risk, many banks continue to experience profitability challenges, reflected in declining returns on assets (ROA) and return on equity (ROE). Moreover, macroeconomic factors such as GDP growth rate, inflation rate, exchange rates, and real interest rates add further complexity to bank performance. There is a pressing need to empirically analyze how credit risk management, in conjunction risk macroeconomic conditions, impacts the profitability of commercial banks in Bangladesh. This study aims to fill the gap by using a dynamic panel estimation approach to provide more robust and policy-relevant insights.

Significance of the Study

This study examines how credit risk management affects the profitability of commercial banks in Bangladesh, using dynamic panel data analysis for robust results. By examining both ‘bank-specific indicators’ such as loan loss provision to total loan ratio (LLPTR), total loan to total asset ratio (TLTAR), total loan to total deposit ratio (TLTD), capital adequacy ratio (CAR), non-performing loans to total loan (NPLTL) and also macroeconomic factors such as GDP growth rate (GDPRG), inflation rate(INFR), exchange rate (ER), and real interest rate (RIR), the study offers a comprehensive understanding of profitability determinants.

It contributes to banking literature by analyzing bank-specific factors and macroeconomic variables. The findings aid bank managers, policymakers, and investors in decision-making and risk mitigation. Additionally, it provides a foundation for future research on banking profitability in emerging markets.

By focusing on 10 selected commercial banks in Bangladesh, this study sets a foundation for further research. Future studies can expand the sample size, incorporate additional risk factors, or apply alternative econometric techniques to validate the findings. It thus sets a foundation for future studies in South Asian economies facing similar financial and regulatory environments.

Scope of the Study

This study focuses on evaluating the impact of credit risk management on the profitability of ten selected commercial banks in Bangladesh. Profitability is assessed using two key financial indicators: return on assets (ROA) and return on equity (ROE), which serve as the dependent variables. The study incorporates four primary credit risk indicators as independent variables: The loan loss provision ratio, total loan to total asset ratio, and total loan to total deposit ratio, capital adequacy ratio, non-performing loans to total loan. To account for external influences, the study also includes macroeconomic variables—GDP growth rate, inflation rate, exchange rate, and real interest rate—as control variables. The study employs dynamic panel data estimation techniques to address potential endogeneity and provide a more accurate assessment of the relationships among variables. It is limited to the commercial banking sector of Bangladesh, and findings are expected to be relevant for policymakers, bank managers, and regulatory authorities aiming to enhance financial performance through better risk management.

Research Questions

This current investigation attempts to address the following specific questions in light of the mentioned previously evidence:

1. What is the impact of loan loss provision ratios on the profitability of Bangladeshi commercial banks?
2. How do credit exposure indicators—total loan to total asset and total loan to total deposit ratios affect ROA and ROE?

3. How does credit risk, measured by non-performing loans, affect the ROA and ROE of commercial banks in Bangladesh?
4. To what extent do macroeconomic factors (GDP growth rate, inflation rate, exchange rate, and real interest rate) influence the profitability of commercial banks in Bangladesh?
5. How do credit risk management indicators and macroeconomic variables jointly influence the profitability of commercial banks in Bangladesh based on dynamic panel data estimation?

Research Objectives

General Objective of the study:

The main objective of this study is to determine the crucial factors influencing credit risk management on profitability of Commercial Banks in Bangladesh.

Specific Objectives of the study:

A few explicit objectives of this research are given below:

1. To investigate the relationship between bank-specific elements (loan loss provision ratio, total loan to total asset ratio, total loan to total deposit ratio, capital adequacy ratio, non-performing loan to total loan ratio) and the profitability of Commercial Banks in Bangladesh.

2. To investigate the association between macroeconomic factors (GDP growth rate, inflation rate, exchange rate, and real interest rate) and the profitability of Commercial Banks in Bangladesh.

CHAPTER 2

Literature Review

Literature Review

According to the study, there is a vicious cycle between bank profitability and credit risk, and this relationship is important for the economy in emerging nations like Bangladesh. Thirty-two Bangladeshi commercial banks' annual reports provided the study's data. Using 390 observations, the panel data regression model was employed between 2000 and 2014. According to the data set's initial diagnoses, the two-stage-least square (2SLS) method is recommended for data manipulation. The study concludes that there is a simultaneous and inverse relationship between bank credit risk and profitability. For factors regarded as significant control variables at the macroeconomic and bank levels, particular models have been employed. According to the credit risk model, there is a statistically significant inverse association between capital adequacy and off-balance sheet assets and a positive relationship between inefficiency and bank size. Both models employed in this study show a negative correlation between macroeconomic variables. Capital adequacy, loan to deposit ratio, and income diversification are all favorably correlated in the profitability model, but inefficiency has a detrimental impact on profitability. This study offers some recommendations for suitable nations with similar legislative frameworks and concepts of bank risk management. Therefore, this work will add to the body of knowledge regarding credit risk management research. (Nahar 2006)

In an effort to boost the nation's gross domestic product (G.D.P.), the majority of banks are eager to offer their clients excellent financial assistance, or credit. The lending risk analysis (LRA) manual, which was first introduced by Bangladesh Bank, and the credit risk grading (CRG) system, which was recently established, dominate the conventional credit risk management technique. However, the CRG system is not designed with funding an industrial project in mind. In order to address the shortcomings of the current LRA and CRG systems with regard to industrial project risk assessment, a better risk assessment model that provides a comprehensive solution for risk evaluation for every industrial project has been developed. (Kabir, Jahan et al. 2010)

This study looks at Bangladeshi commercial banks' credit risk management and profitability. Data is gathered from many news outlets, publications, and a few chosen banks to depict the current state of the banking industry in Bangladesh. We gather secondary data for five years (Y2007 to Y2011) from the organizations' Annual Reports in order to analyze the profitability and credit risk management of banks following the implementation of the Basel II standard.

The banks' income and balance sheets are interpreted and their profitability is measured using the horizontal and vertical analysis methods. In order to assess the banks' credit risk, ROE, NPLR, and CAR are computed for this study. Researchers employ the F-test statistics and build multiple regression models using these three ratios.(Hasan, Farid et al. 2014)

This paper serves as both a means of acknowledging the effectiveness of Bangladeshi banks' credit risk management and a definitive resource for researching the ways in which CRM practices contribute to the long-term viability and profitability of commercial banks. In order to carry out this study, I must gather secondary data about Basic Bank Ltd.'s financial situation. I have included a thorough review of CRM in several sections of my report as part of my study. First, I gave an overview of BBL's CRM performance and practice. After that, I examine how CRM affects the bank's financial results. The association between CRM and bank profitability is something I have used to compare. Some of my research paper's conclusive conclusions have been identified following analysis and discussion.(Lalon 2015)

An important part of economic development is played by banks. The economy struggles to mobilize the actual resources required for stability and economic progress in the absence of an efficient banking system, which is required to carry out this function. Economic development depends on two fundamental financing concerns: first, how best to supply external funds to business sectors, and second, how well financiers monitor the performance and behavior of these corporate borrowers under an efficient corporate governance system.
In order to assess the cointegration of the variables and gauge the effect of POCL on ROI, ROE, and ROA, this study was created. The study has discovered that the variables under investigation exhibit co-integration. (Noor, Das et al. 2018)

Credit risk is currently one of Bangladesh's biggest problems for commercial banks, which has hampered the nation's economic development. Investigating the ways and extent to which credit risk indicators impact Bangladeshi commercial banks' profitability is the aim of the study.
In this work, a panel dataset for 22 sample commercial banks from 2008 to 2017 was analyzed using quantile regression. According to the findings, the cost per loan ratio and the loan loss provision to non-performing loan ratio significantly improved return on assets (ROA), but the capital adequacy ratio and the leverage ratio significantly hurt banks' operating performance.(Islam, Akter et al. 2020)

This paper's primary goal is to determine how credit risk management affects private banks' profitability. to use regression analysis to examine the trends in credit risk management and demonstrate the effects. Ratios relating to credit risk management and profitability ratios The performance of the bank in managing its credit will be demonstrated by the credit risk management ratios, which illustrate how the bank is managing its credit in relation to total deposits, total assets, debt, and no-performing loan rate. To get a quick sense of the company's current state, trend analysis is performed to see whether the bank's ratios are trending upward or downward.(Anjum)

There are several internal and external elements that affect commercial banks' profitability. This study looks for the internal elements that have a major impact on Bangladeshi commercial banks' profitability. In this study, ROA and ROE are used to quantify profitability, and they may be strongly impacted by internal characteristics including the bank's SIZE, DG, LD, CTI, NIM, CAR, CR, and IRS. 23 commercial banks' published annual reports from 2014 to 2018 are the source of the data. Through the use of a basic regression model, it is discovered that CAR significantly affects ROA alone, while CR significantly affects profitability. Additionally, ICBs' profitability (ROE only) is significantly impacted by IRS and CTI, whereas profits (ROA only) are influenced by both.(Hosen 2020)

The study intends to examine how credit risk management affects the financial performance of commercial banks, given the influence credit risk has on Bangladesh's banking sector. Using secondary data from panel regression analysis, the study used a deductive research strategy to target six commercial banks in Bangladesh, all of which had data from 2010 to 2019. A total of four elements influencing the financial performance of Bangladeshi commercial banks were chosen and examined. The study uses return on assets (ROA), non-performing loans (NPL), loan to deposit ratio (LDR), and CAR as metrics for measuring bank performance. According to the findings of panel data regression analysis, non-performing loans (NPLs) had a statistically significant and adverse effect on commercial banks' financial performance.(Yeasin 2022)

This study aims to investigate how credit risk management metrics affect the state-owned commercial banks' performance in Bangladesh. The analysis uses board data and the viewpoints of six state-owned commercial banks. The analysis was carried out using Stata 14.2 software. An arbitrary variable that is essential to the informative index is distributed in order to ascertain its rationality. Then, in order to ascertain whether the variables employed were

stationary, the Leven Lin Chu and Hadri LM unit root tests were employed.(Islam and Rana 2022)

The study aims to determine how credit risk affects the profitability of a subset of Bangladeshi commercial banks. We have chosen 10 commercial banks out of 61 scheduled commercial banks to conduct this investigation. Four categories comprise the chosen banks. Ten factors have been chosen to demonstrate how credit risk affects profitability, and they are computed using data gathered between 2009 and 2018. Return on Equity (ROE) and Return on Assets (ROA) are the two dependent variables among the 10 variables, while seven bank-specific variables and one macroeconomic indicator are the independent variables.(Bhuiya, Miah et al. 2023)

The study's goals are to assess the present state of commercial banks' credit risk and profitability, analyze the connection between credit risk and sampled banks' financial performance, and investigate the effect of credit risk on selected banks' financial performance. The sample bank provides the secondary data. Three Nepalese commercial banks make up the sample bank. Profitability, credit risk, base rate, interest spread rate, liquidity ratio, and capital adequacy ratio are the variables under investigation. Using the provided raw data, the financial and statistical analysis is conducted after the goals have been met. Regression analysis, correlation analysis, and descriptive statistics are among the statistical and ratio analyses that make up the financial analysis.(Rimal 2023)

Through the use of panel data gathered from 23 conventional commercial banks listed on the Dhaka Stock Exchange (DSE) over a 13-year period from 2008 to 2020, this paper seeks to empirically investigate the long-term and short-term relationships between credit risk management and the performance of retail banks in Bangladesh. Return on asset (ROA) is taken into consideration as the performance metric, and the study uses the capital adequacy ratio (CAR), non-performing loan ratio (NPLR), and geographical loan concentration ratio (GLCR) as indicators of loan risk management. According to the findings, CAR and ROA have a strong positive correlation in both the short and long term. Despite not collecting any emergency money, the study indicates that commercial banks may have enough capital to sustain any significant loan loss.(Kabir and Nakib 2024)

The analysis of how credit risk management affects commercial banks' bottom lines. Study goals included evaluating the current credit and credit risk status of Nepalese commercial banks, examining the relationship between CAR, NPLR, MQR, and CDR and the commercial

banks' ROA and ROE, and analyzing the effects of these factors on the financial performance (ROA and ROE) of Nepalese commercial banks. The overall goal of the study was to determine how risk management affected the profitability of commercial banks. Out of 20 commercial banks in Nepal, three were selected as a sample for the researcher's full study using a descriptive and causal research approach. quantifiable information gathered from published sources, such annual reports.(Iqbal and Suhong)

Considering the above literature's, this study seek to address the existing gap in the literature by examining the panel and dynamic effects of bank-specific and macroeconomic factors on the profitability of ten selected Commercial Banks in Bangladesh through analysis selected bank’s annual report from 2014 to 2023.

Conceptual Framework and Hypothesis development

The figure presents a conceptual model that identifies the key factors affecting the profitability of ten selected Commercial Banks in Bangladesh and their interrelationships.

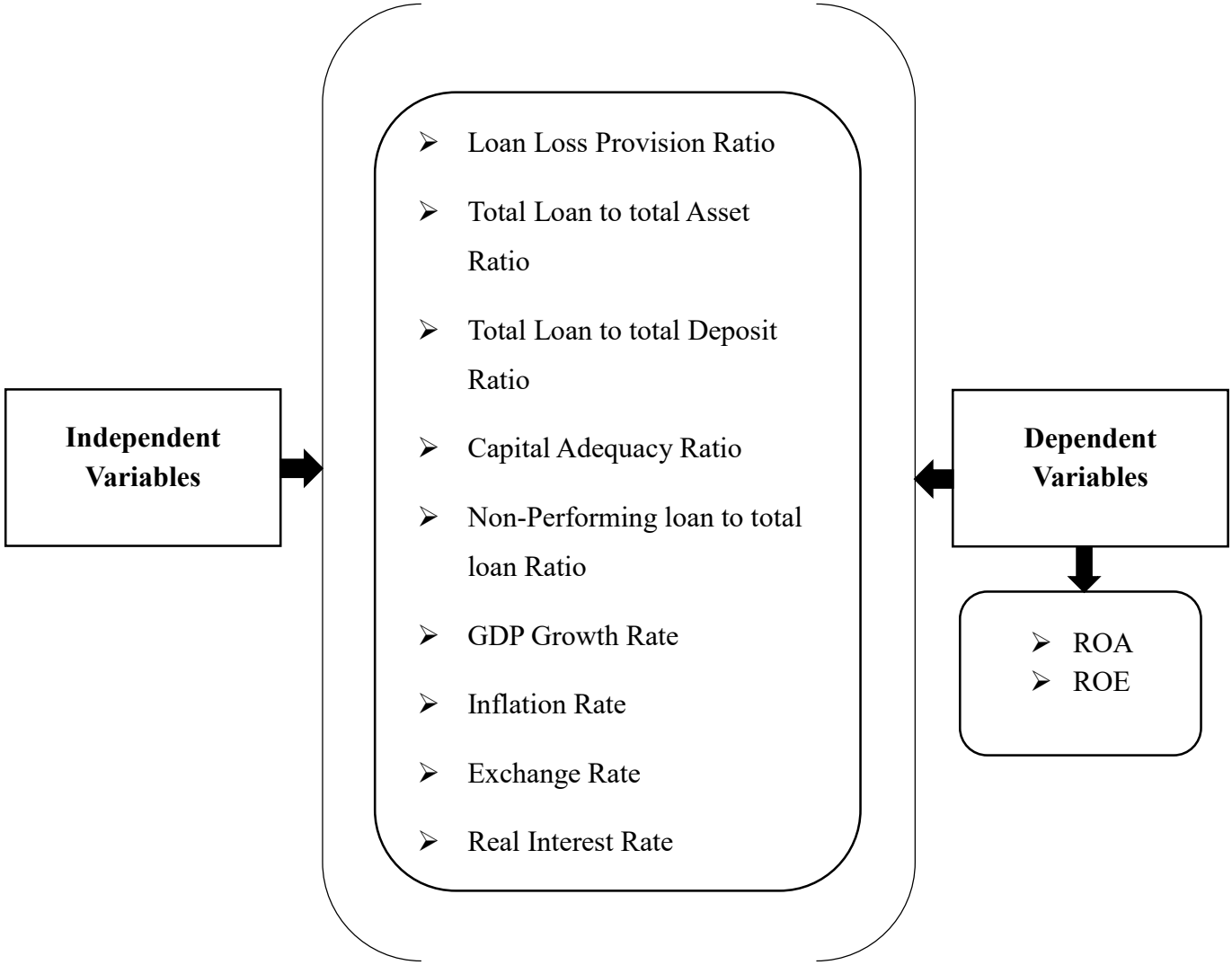

Figure 01: Conceptual Framework

Variables Definition

Dependent Variables (Profitability Measures):

ROA (Return on Assets): Measures how efficiently a bank uses its assets to generate profit.
Formula: ROA = Net Income / Total Assets

ROE (Return on Equity): A popular financial performance ratio that assesses a bank's (or any company's) profitability in relation to shareholders' equity is return on equity or ROE. It **i**ndicates the return on shareholders' equity which is showing how well a bank uses equity to generate profits.
Formula: ROE = Net Income / Shareholders' Equity

Independent Variables (Credit Risk Indicators):

Loan Loss Provision Ratio: Proportion of total loans set aside as a provision for bad loans.
Formula: LLP Ratio = Loan Loss Provisions / Total Loans

H1: There is a significant relationship between Loan Loss Provision Ratio and the Profitability of Commercial Banks.

Total Loan to Total Asset Ratio: Indicates the proportion of a bank's assets allocated to loans, it reflecting lending aggressiveness.
Formula: Total Loans / Total Assets

H2: There is a significant relationship between Total Loan to Total Asset Ratio and the Profitability of Commercial Banks.

Total Loan to Total Deposit Ratio: Measures the liquidity position and credit extension efficiency of banks. It shows the extent to which banks are lending from their deposit base, which has a direct impact on their profitability and credit risk.

Formula: Total Loans / Total Deposits

H3: Total Loan to Total Deposit Ratio have a significant impact on the profitability of Commercial Banks.

Capital Adequacy Ratio (CAR): The capital adequacy ratio assesses a bank's resilience by evaluating whether it holds sufficient capital to safeguard against unexpected losses.

Formula: Tier 1 Capital + Tier 2 Capital / Risk-weighted Assets

H4: Capital Adequacy Ratio have a significant effect on the profitability of Commercial Banks.

Non-Performing Loan: Percentage of loans in default or close to being in default. A higher NPL indicates higher credit risk.
Formula: NPL Ratio = Non-performing Loans / Total Loans

H5: Non-Performing Loans have a significant impact on the profitability of Commercial Banks.

Macroeconomic Control Variables:

GDP Growth Rate: Reflects the economic growth of the country, which can affect the overall performance of the banking sector.

H6: GDP Growth Rate have a substantial impact on the profitability of Commercial Banks.

Exchange Rate: The value of the local currency (BDT) against a foreign currency, typically the USD, which may impact foreign transactions and asset values.

H7: There is a significant relationship between Exchange Rate and bank's profitability.

Inflation Rate: Measures the rate at which the general level of prices for goods and services rises, which can influence interest rates and default risk.

H8: There is a significant relationship between Inflation Rate and bank's profitability.

Real Interest Rate: The nominal interest rate adjusted for inflation, affecting borrowing costs and investment returns.

H9: There is a significant relationship between Real Interest Rate and bank's profitability.

CHAPTER 3

Research Methodology

Research Methodology

In conducting this study, the following methodology was adopted in collecting data & information as well as preparation of the reports.

Study Design

This study employs a dynamic panel data analysis to examine the impact of credit risk management on the profitability of selected commercial banks in Bangladesh. This paper also presents an explanatory analysis of the impact of credit risk factors such as Loan loss provision ratio, Total loans to Total assets, Total loans to Total deposit, Capital adequacy ratio, NPL to total loan, and Macroeconomic factors on the profitability such as ROE and ROA of 10 selected Commercial Banks in Bangladesh.

The chosen 10 banks are Prime Bank, Dhaka Bank, City Bank, Dutch-Bangla Bank, AB Bank, NRB Bank, Trust Bank, Eastern Bank, Bank Asia Limited, Mercantile Bank.

Data Collection

The investigation uses data from ten listed Commercial Banks in Bangladesh's banking industry for 10 years (2014-2023). To prepare this report all the necessary information is collected from secondary source data. And it has been collected from the financial statements of these banks.

Industry and Macroeconomic data have been collected from International Monetary Fund, World Bank, and Bangladesh Bank.

General Model of the Study

The general model is applied in this study which is given below:

ROE= f ∑βit (Bank-specific factors) + ∑ βit (Macro-economic factors) + μ

ROA= f ∑βit (Bank-specific factors) + ∑ βit (Macro-economic factors) + μ

The specific models used in the study is:

ROE= β1 + ∑βit2 (LLPR, TLTA, TLTD, CAR, NPLTL) + ∑ βit3 (GDPRG, INFR, ER, RIR) +μ

ROA= β1 + ∑βit2 (LLPR, TLTA, TLTD, CAR, NPLTL) + ∑ βit3 (GDPRG, INFR, ER, RIR) +μ

Here,

ROE=Return on Equity

ROA=Return on Asset

β1= Represent the intercept

∑βit2 (Bank-specific factors) = All of the bank specific factors act as the determinants of the profitability of the selected commercial banks

∑ βit3 (Macro-economic factors) = All of the macro-economic factors act as the determinants of the profitability of the selected commercial banks

μ=Represent the error term

Data Analysis

Multivariate regression analysis is employed to determine whether there exists a relationship between the dependent variables and independent variables. Also used, the Breusch-Pagan test for heteroscedasticity, Correlation, the Multicollinearity test are used. Collecting information has been processed and complied with the aid of MS word, Microsoft Excel, STATA 17.

Organizational Profile

1. Prime Bank Limited

Credit Risk Focus: Maintains a moderate Non-Performing Loan (NPL) ratio, with strong loan recovery mechanisms.

Profitability Indicators: Stable ROA and ROE, supported by diversified loan portfolios in corporate and SME sectors.

Key Strength: Effective risk-based pricing in lending.

2. The City Bank Limited

Credit Risk Focus: Uses advanced analytic for loan default prediction and maintains a conservative Loan-to-Deposit Ratio (LDR).

Profitability Indicators: High ROE due to efficient capital utilization and digital banking revenue streams.

Key Strength: Strong retail and credit card segments with low default rates.

3. Dhaka Bank Limited

Credit Risk Focus: Implements strict collateral-based lending, keeping NPLs below industry average.

Profitability Indicators: Consistent ROA, supported by trade finance and foreign exchange operations.

Key Strength: Robust risk assessment framework for corporate loans.

4. Dutch-Bangla Bank Limited (DBBL)

Credit Risk Focus: Low NPL ratio due to high digital transaction volume (agent banking & mobile financial services).

Profitability Indicators: High ROA from fee-based income and efficient loan recovery.

Key Strength: Dominance in low-risk digital transactions reduces credit risk exposure.

5. Trust Bank Limited

Credit Risk Focus: Conservative lending policies, particularly for retail and defense-sector clients.

Profitability Indicators: Stable ROE, supported by low-cost deposits and secured lending.

Key Strength: Strong government and defense-sector clientele reduces default risk.

6. AB Bank Limited

Credit Risk Focus: High NPL ratio in past years but improved recently through restructuring.

Profitability Indicators: Moderate ROA, impacted by legacy bad loans but recovering.

Key Strength: One of the oldest private banks with deep corporate banking experience.

7. NRB Bank Limited

Credit Risk Focus: Focuses on NRB (Non-Resident Bangladeshi) remittances, which are low-risk.

Profitability Indicators: Growing ROE due to foreign currency inflows and low default rates.

Key Strength: Remittance-backed lending reduces credit risk.

8. Eastern Bank Limited (EBL)

Credit Risk Focus: Strong corporate governance with low Loan Loss Provision ratio.

Profitability Indicators: High ROA & ROE due to efficient risk-based lending.

Key Strength: Advanced credit scoring models for corporate clients.

9. Bank Asia Limited

Credit Risk Focus: Balanced Loan-to-Asset ratio, avoiding excessive risk exposure.

Profitability Indicators: Stable ROA, supported by SME and retail banking.

Key Strength: Strong due diligence in loan approvals.

10. Mercantile Bank Limited

Credit Risk Focus: Maintains a healthy Loan-to-Deposit ratio, avoiding liquidity risks.

Profitability Indicators: High ROE due to strong interest income from corporate loans.

Key Strength: Effective monitoring of large loan exposures.

Comparative Analysis Framework

Banks	ROA	ROE	NPL Trend	Loan Loss Provision	Loan to Deposit Ratio	Loan to Asset Ratio
Prime Bank	Stable	Stable	Moderate	Medium	Controlled	Balanced
City Bank	Good	High	Low	Low	Low	Conservative
Dhaka Bank	Stable	Good	Low	Medium	Balanced	Moderate
DBBL	High	High	Very Low	Low	Efficient	Low Risk
Trust Bank	Stable	Stable	Low	Low	Conservative	Secured
AB Bank	Recovering	Moderate	High	High	Moderate	Restructured
NRB Bank	Growing	High	Very Low	Low	Low	Remittance-backed
EBL Bank	High	High	Low	Very Low	Optimal	Efficient
Bank Asia	Stable	Good	Moderate	Medium	Controlled	Balanced
Mercantile Bank	Good	High	Low	Medium	Healthy	Optimal

CHAPTER 5

Theoretical Aspect

What is Credit Risk

Credit risk refers to the likelihood that a borrower or counterparts will not meet their financial obligations as agreed, leading to a financial loss for the lender or investor. It applies to all types of lending and credit arrangements—like loans, bonds, credit cards, and trade credit.

Who Faces Credit Risk?

- Banks and financial institutions, when giving loans or issuing credit.
- Investors, when buying corporate or government bonds.
- Businesses, when offering products or services on credit terms.

Types of Credit Risk

There are several types of credit risk, each focusing on different situations where a borrower might fail to meet their obligations. Here are the main types:

1. Default Risk: This is the most common form. It occurs when a borrower fails to make required payments on time or stops paying altogether.

2. Settlement Risk: Happens when one party fails to deliver a payment or asset as agreed in a financial transaction, even though the other party has already fulfilled their side.

3. Counter-party Risk: Common in trading and derivatives. Its the risk that the other party in a contract won't fulfill their side of the deal, often found in over-the-counter (OTC) transactions.

4. Sovereign Risk: The risk that a foreign government might default on its debt or refuse to honor its obligations. Can also involve currency restrictions or political instability.

5. Concentration Risk: Arises when too much credit exposure is tied to a single borrower, industry, or geographic area, increasing the risk of large losses if something goes wrong.

Each of these types plays a role in how financial institutions assess and manage their lending strategies.

Why It's Important

Credit risk is important because it directly affects the financial health, stability, and profitability of lenders, investors, and businesses. Here's is the reasons which is given below:

Prevents Financial Losses: If credit risk isn't properly managed, a borrower defaulting can lead to major losses for lenders or investors.

Protects Cash Flow: For businesses, unpaid debts disrupt cash flow, making it harder to pay employees, suppliers, or reinvest in operations.

Maintains Financial System Stability: In banking and finance, high levels of bad debt can shake confidence in institutions, and even trigger financial crises.

Supports Lending Decisions: By assessing credit risk, lenders can decide who to lend to, how much, and at what interest rate, ensuring smarter, safer lending.

Regulatory Compliance: Banks and financial institutions are required to measure and manage credit risk to meet regulations like Basel III, which helps keep the system stable.

Affects Credit Ratings and Interest Rates: Higher credit risk usually leads to higher interest rates, or denial of credit, which can impact borrowers' ability to grow or survive.

What is Credit Risk Management

Credit risk management is the process of identifying, assessing, controlling, and monitoring the risk that a borrower may not repay a loan or meet financial obligations. Its main goal is to minimize potential losses for lenders (like banks or financial institutions) while still allowing profitable lending.

The Process of Credit Risk Management

The credit risk management process is a structured approach to identifying, assessing, and controlling the risk of borrower default. Here's a step-by-step breakdown:

1. Credit Risk Identification

- Recognize where credit risk exists (e.g., loans, bonds, trade receivables).
- Identify potential borrowers and the nature of their obligations.

2. Credit Risk Assessment: Evaluate the borrower’s creditworthiness using financial analysis, credit scores, and historical behavior.

Tools used:

- Credit scoring models
- Financial ratios
- External credit ratings

3. Risk Measurement

Quantify risk using metrics like:

- Probability of Default (PD)
- Loss Given Default (LGD)
- Exposure at Default (EAD)

These helps estimate potential losses if a borrower defaults.

4. Risk Mitigation

- Reduce risk through measures like:
- Requiring collateral or guarantees
- Credit insurance
- Diversifying the credit portfolio
- Covenants in loan agreements

5. Credit Approval

A credit committee or officer reviews the risk assessment and decides whether to approve, deny, or modify the credit terms.

6. Monitoring and Review

- Continuously track borrowers' financial health and monitor repayments.
- Use alerts and risk rating systems to detect early signs of trouble.

7. Recovery and Collection: If default occurs, the institution activates collection efforts, sells off collateral, or initiates legal action.

The Process of Credit Rating

The process of credit rating involves evaluating the creditworthiness of an individual, corporation, or government entity to determine how likely they are to repay their debt. Credit rating agencies assess various factors to assign a credit rating, which reflects the borrower's risk level. Here's a step-by-step breakdown of the credit rating process:

1. Request & Engagement

- The issuer (company/government) requests a rating from a CRA and provides necessary financial data.
- A rating agreement is signed, outlining fees, confidentiality, and obligations.

2. Preliminary Analysis

The CRA assigns an analytical team to review:

- Financial statements (debt levels, cash flow, profitability).
- Business model, industry risks, and competitive position.
- Management quality and governance.
- Economic and regulatory environment.

3. Management Meeting

Analysts meet with the issuer's management to discuss:

- Strategy, future plans, and risk management.
- Contingency plans for financial stress.

4. Quantitative & Qualitative Assessment

Financial Metrics:

- Leverage ratios (Debt/EBITDA, Interest Coverage).
- Liquidity position (Current Ratio, Free Cash Flow).
- Profitability (ROA, ROE).
- Qualitative Factors:
- Industry outlook (growing/declining).
- Regulatory risks (e.g., environmental laws affecting energy firms).
- Country risk (for sovereign ratings).

5. Rating Committee Review

- Analysts present findings to a rating committee (independent of issuer influence).
- The committee debates and votes on the final rating (e.g., AAA, BB+, C).

6. Notification & Appeal (If Applicable)

- The issuer is informed and can appeal with additional data (rarely changes outcome).

7. Publication & Monitoring

- The rating is published and made available to investors.

- Regular reviews (quarterly/annual updates).
- Ratings can be upgraded/downgraded based on new data.

How Bangladeshi Commercial Banks are Managed Their Credit Risk

Commercial banks in Bangladesh manage their credit risk through a comprehensive system guided by Bangladesh Bank's regulations and internal policies. Key aspects include:

1. Regulatory Framework and Guidelines: Bangladesh Bank provides detailed guidelines on credit risk management, requiring banks to establish a strong risk culture and implement systematic credit risk grading systems to assess borrower risk accurately and timely.

2. Credit Risk Grading and Monitoring: Banks use credit risk grading manuals to classify loans based on risk levels, enabling early identification of potential defaults. Continuous monitoring of loan portfolios and preparation of management reports for credit committees and senior management are mandatory.

3. Credit Limit Systems: Banks impose credit limits at various levels-counter-party, branch, industry, and geographic-to control exposure and concentration risks. These limits are approved by the Board or delegated committees, ensuring decentralized but controlled decision-making.

4. Loan Approval and Security: Loans are disbursed following strict rules, including collateral requirements and value conditions +5. Capital Adequacy and Risk Coverage:

Maintaining adequate capital reserves (Capital Adequacy Ratio) is crucial to absorb potential losses from non-performing loans (NPLs). Studies show a positive relationship between capital adequacy and bank performance, highlighting its importance in credit risk management.

6. Organizational Risk Oversight: Risk management involves multiple layers: the Board of Directors oversees risk policies, the Executive Committee monitors ongoing risk, and the Audit Committee ensures compliance and operational controls.

7. Continuous Improvement and Compliance: Banks regularly update their credit risk management practices to align with evolving regulatory requirements and market conditions, aiming for sustainable profitability and growth.

CHAPTER 6

Findings and Statistical Analysis

Descriptive Statistics

In order to comprehend the distribution, central tendency, and variability of the major variables employed in the study, descriptive statistics offer an overview of them. This section provides a summary of the panel dataset's features, which include Bangladeshi commercial banks during the study period. Each variable used in the model has its mean, standard deviation, minimum, and maximum values displayed in the table below:

Variables	Obs.	Mean	Std. Dev.	Min	Max
ROE	100	8.8735	6.1588	0.0000	19.9
ROA	100	0.7334	0.5926	-.25	3.18
LLPTLR	100	0.8045	0.6300	-.2483725	2.28389
TLTAR	100	54.4363	27.7790	0.0000	81.86
TLTD	100	71.5822	37.1415	0.0000	111.5257
CAR	100	11.7203	6.9964	0.0000	41.7
NPLTLR	100	3.36085	2.1112	0.0000	7.82
GDPGR	100	6.4780	1.1687	3.4500	7.88
INFR	100	6.4380	1.35065	5.5100	9.88
ER	100	85.0430	1.3506	77.6400	106.31
RIR	100	3.8270	8.2243	0.6300	6.89

The average Return on Equity (ROE) is 8.87% with a standard deviation of 6.16% which indicating moderate profitability and variability among the sample Banks. The mean Return on Assets (ROA) is 0.73, ranging from -0.25 to 3.18, suggesting that while most banks are profitable some experience losses. Risk indicators such as the Loan Loss Provisions to Total Loan Ratio (LLPTLR) and Non-Performing Loan to Total Loan Ratio (NPLTLR) average 0.80 and 3.36, respectively reflecting varying asset quality across institutions. The Total Loan to Total Asset Ratio (TLTAR) and Total Loan to Total Deposit Ratio (TLTD) have means of 54.44 and 71.58, respectively, highlighting the significant role of lending in the asset and deposit structure of the banks.

The Capital Adequacy Ratio (CAR) averages 11.72%, with a wide range from 0.00 to 41.70, indicating differences in capital strength. Macroeconomic variables such as GDP Growth Rate

(mean = 6.48%), Inflation Rate (mean = 6.44%), Exchange Rate (mean = 85.04), and Real Interest Rate (mean = 3.83) show the economic environment in which these institutions operate.

Correlation Coefficient

The correlation coefficient is important because it provide the direction and the strength of the relationship between two variables. It shows whether variables move together and how much. A positive correlation means they increase or decrease together, a negative correlation means one increases while the other decreases and a zero correlation means no linear relationship. The correlation between dependent variables and independent variables in my paper is given below:

Variables	ROE	ROA	LLPTLR	TLTAR	TLTD	CAR	NPLTLR	GDPGR	INFR	ER	RIR
ROE	1.0000										
ROA	0.7932	1.0000									
LLPTLR	0.2572	0.1742	1.0000								
TLTAR	0.6917	0.5748	0.6382	1.0000							
TLTD	0.6490	0.5474	0.6634	0.9731	1.000						
CAR	0.6728	0.6289	0.4472	0.7658	0.7840	1.0000					
NPLTLR	0.5311	0.4137	0.6924	0.8082	0.7665	0.5064	1.0000				
GDPGR	-0.061	-0.031	0.2040	0.0193	0.0139	-0.029	0.0814	1.0000			
INFR	0.0842	0.0009	-0.1361	0.0099	-0.010	0.0187	0.0179	-0.1693	1.0000		
ER	0.0669	-0.055	-0.1607	0.0318	0.0141	0.0030	0.0257	-0.1510	0.8247	1.0000	
RIR	0.0320	0.0063	0.1413	-0.0365	-0.026	0.0163	-0.0110	0.0110	-0.543	-0.836	1.0000

The correlation matrix reveals a strong positive relationship between ROE and ROA (0.7932) indicating that higher asset returns are closely tied to higher equity returns in the sample banks. CAR and TLTD also show a strong positive correlation (0.7656), suggesting that banks with higher capital adequacy tend to have higher loan-to-deposit ratios. The extremely high correlation between TLTLR and TLTD (0.9731) indicates potential multicollinearity which should be addressed in further analyses. NPLTLR and CAR exhibit a moderate negative correlation (-0.5404), reflecting that increased non-performing loans are associated with lower capital adequacy. Macroeconomic variables such as GDP growth, inflation, and exchange rates display weak correlations with profitability, implying limited direct influence on bank performance.

Test of Multicollinearity

The VIF test is used to detect multicollinearity among the independent variables in a regression model.

Variables	VIF	1/VIF
LLPTLR	2.49	0.4009
TLTAR	24.74	0.0404
TLTDR	23.06	0.0433
CAR	2.85	0.3503
NPLTLR	3.91	0.2556
GDPRG	1.15	0.8709
INFR	4.04	0.2477
ER	9.73	0.1027
RIR	4.50	0.2222
Mean	8.50	

The VIF results indicate that most independent variables in the model have acceptable multicollinearity, with VIF values below 10. However, TLTAR (24.74) and TLTDR (23.06) show significantly high VIFs which is suggesting strong multicollinearity with other predictors. The mean VIF is 8.50 indicates that how overall the model maintains an acceptable level of multicollinearity (10). This suggests that most predictors provide distinct and valuable contributions to the regression analysis which supporting the reliability and robustness but it is advisable to address the high multicollinearity of TLTAR and TLTDR for improved model accuracy.

Summary of Wald test for Heteroskedasticity in Fixed Effect

Models	**ROE**	**ROA**
Chi2	150.40	108.49
P-value	0.0000	0.0000

This table shows the summary of Wald test for Heteroskedasticity in fixed effect. Here the null Hypothesis, H0 = sigma^2 = sigma^2 for all (constant variance). It has been seen from the table that the p value of ROE and ROA are less than 0.05. So, in that case, we rejected the null hypothesis. That means there is no constant error variance.

Multivariate Regression Analysis

Multivariate regression analysis is a statistical method used to analyze how several independent variables (predictor) and several dependent variables (response) are related. In essence, it's a continuation of multiple regression, in which you estimate the concurrent impact of multiple variables on multiple outcomes.

Equation	Obs	Parms	RMSE	"R-sq"	F	P
ROE	100	10	4.082109	0.6006	15.03962	0.0000
ROA	100	10	.4304413	0.5204	10.84931	0.0000

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
ROE						
LLPTLR	-3.01764	1.028376	-2.93	0.004	-5.060688	-.9745908
TLTAR	.1889169	.0734621	2.57	0.012	.0429716	.3348621
TLTD	-.0696988	.0530431	-1.31	0.192	-.1750781	.0356804
CAR	.3480628	.0990673	3.51	0.001	.1512484	.5448773
NPLTLR	.5221549	.3843147	1.36	0.178	-.2413534	1.285663
GDPGR	-.0376469	.3761418	-0.10	0.920	-.7849183	.7096244
INFR	.3203668	.6102879	0.52	0.601	-.8920767	1.53281
ER	-.0348947	.1556265	-0.22	0.823	-.3440739	.2742844
RIR	.0976195	.5197204	0.19	0.851	-.9348958	1.130135
_cons	.9477253	12.91926	0.07	0.942	-24.71864	26.61409
ROA						
LLPTLR	-.3437246	.108438	-3.17	0.002	-.5591555	-.1282936
TLTAR	.0113662	.0077463	1.47	0.146	-.0040231	.0267555
TLTD	-.004074	.0055932	-0.73	0.468	-.0151858	.0070378
CAR	.0413787	.0104462	3.96	0.000	.0206254	.0621319
NPLTLR	.0539533	.0405244	1.33	0.186	-.0265555	.134462
GDPGR	-.0032972	.0396626	-0.08	0.934	-.0820938	.0754994
INFR	.1121592	.0643523	1.74	0.085	-.0156879	.2400063
ER	-.0419194	.0164102	-2.55	0.012	-.074521	-.0093177
RIR	-.0999682	.0548023	-1.82	0.071	-.2088426	.0089062
_cons	3.263402	1.362282	2.40	0.019	.5569906	5.969813

Findings and Discussion

In ROE regression, at 5% level of significance; The p-value for the variable LLPTLR is 0.004 or 0.4%. Which implies that, LLPTLR has a statistically significant negative impact on ROE because this is less than 0.05. The p-value of 0.012 for TLTAR it is less than 0.05.

This indicates that there is a statistically significant relationship between TLTAR and ROE. The p-value of the CAR is 0.001 which implies that, there is a statistically significant relationship between CAR and ROE. The regression identifies that LLPTLR, TLTAR and CAR is the most influential predictors of ROE. In ROE regression, the p-value of NPLTLR is 0.178 which is greater than the significance level of 0.05. The value illustrates that, NPLTLR is statistically insignificant to the model. Finally in ROE model the indicators GDPGR, INFR, ER and RIR has p-value respectively 0.920, 0.601, 0.823 and 0.851. All of the indicators fall up to the significance level 0.05, which recapitulates that the variable are inefficient to predict the direction of ROA or bank's profitability.

In ROA regression, at 5% level of significance; the indicators LLPTLT, CAR, INFR, ER, and RIR has p-value respectively 0.002, 0.000, 0.085, 0.012 and 0.071 which indicated that those variables are is statistically significant and influential predictors of ROA. The indicators TLTAR, TLTD, NPLTLR and GDPGR has p-value respectively 0.146, 0.468, 0.186 and 0.934. All of the indicators fall up to the significance level, which shows that the variable are inefficient to predict the direction of ROA or bank's profitability.

Here, ROE regression, three major bank-specific factors were identified as statistically significant. The variables are- Loan Loss Provision Total Loans (LLPTL), Total Loan to Total Asset Ratio (TLTA) and Capital Adequacy Ratio (CAR). The crucial role of LLPTL suggests that increased provisioning for possible loan defaults has negative effects on the profitability which reflects obligation of related to credit risk. The favorable effects of TLTA imply that effective asset allocation for loans raises the return on equity. A robust CAR also boosts investor confidence and financial resilience which raises ROE. And, ROA regression, both macroeconomic and bank-specific were played a crucial role. The significance of internal credit risk management practices has been confirmed by keeping up the position of LLPTL and CAR. Additionally, there were also statistically significant relationship between ROA and macroeconomic factors such as- the exchange rate (ER), inflation rate (INFR) and real interest rate (RIR). These results highlight how operational profitability is sensitive to the nation of the economy. For instance, neither model showed any significant effects from variables such as-

Non-Performing Loans to Total Loan (NPLTL), Total Loan to Total Deposit Ratio (TLTD). The overall interpretation representations that, the credit risk factors (especially LLPTT and CAR) consistently affect both ROA and ROE. Macroeconomic factors primarily influence ROA rather than ROE. The significance of CAR in both models underscores the importance of maintaining capital adequate ratio, that suggesting that these volume-based credit risk measures might not adequately reflect the dynamic of profitability in Bangladesh's banking industry.

CHAPTER 7

Conclusion & Recommendations

Conclusion

The key objective of the investigation was to determine how bank-specific factors and macroeconomic factors are affected commercial bank's profitability. The goal of the study was to bridge the gap between bank-specific factors and macroeconomic factors that influence bank profitability. For this paper, I used data from 10 commercial banks between 2014 to 2023. In order to demonstrate the relationship between profitability as measured by ROE, and ROA of banks and various credit risk factors including the ratios of loan loss provision to total loan ratio, total loan to total assets ratio, total loan to total deposit ratio, capital adequacy ratio, NPL to total loans ratio. It also including macroeconomic factors such as-GDP growth ratio, inflation rate, exchange rate, and real interest rate to understand the financial success. This was achieved by forming a number of econometric models using dynamic panel data. In this paper, the LLPTR, TLTAR, CAR, INFR, ER and RIR are respectively statistically significance those are able to predict the direction of ROE and ROA. The overall interpretation representations that, the credit risk factors (especially LLPTT and CAR) consistently affect both ROA and ROE. Macroeconomic factors primarily influence ROA rather than ROE. The significance of CAR in both models underscores the importance of maintaining adequate capital. The findings suggest that operational profitability is influenced not only by internal credit practices but also by external economic conditions. The insignificant role of variables like NPLTL and TLTD in both models indicates that mere volume-based credit ratios may not effectively capture profitability dynamics in the selected Bangladeshi banks.

The results of this analysis make it clear that capital strength and credit risk management are essential to bank profitability in Bangladesh, although macroeconomic factors also matter especially as it comes to ROA. This study provides empirical evidence that both bank-specific strategies and macroeconomic dynamics significantly influence the profitability of commercial banks in Bangladesh. The findings can serve as a useful guide for improving financial performance, risk management practices, and policy formulation in the banking sector.

Recommendations

The following suggestions are made to improve risk control and financial performance in light of the study's findings about the effect of credit risk management on Bangladesh commercial banks' profitability:

1. Since the Loan Loss Provision to Total Loan Ratio (LLPTLR) has a significant negative effect on both ROE and ROA. This suggests that high loan loss provisions reduce profitability. Banks should strengthen credit risk assessment, improve loan monitoring, and enhance recovery processes to minimize non-performing loans.

2.The Total Loan to Total Asset Ratio (TLTAR) is positively significant for both ROE and ROA. This indicates that increasing the proportion of loans in total assets can enhance profitability, provided credit standards remain robust. Banks should consider prudent expansion of lending activities to improve returns.

3.The Capital Adequacy Ratio (CAR) is significantly positive for both ROE and ROA. Maintaining a healthy capital buffer not only ensures regulatory compliance but also supports profitability. Banks should continue to manage capital efficiently and consider raising additional capital when needed to support growth.

4.The Non-Performing Loan to Total Loan Ratio (NPLTLR) is not statistically significant in this regression, despite theoretical relevance.

5. Investigate why GDP growth showed insignificant results despite theoretical expectations.

6. As inflation rate, exchange rates, and real interest rates significantly affect profitability, macroeconomic policy should focus on stability and predictability to foster a conducive banking environment.

Limitations

In this study aims to showing the relationship between credit risk management on profitability of commercial banks in Bangladesh, there are several limitations are inherent in this report-

1. The study's inclusion of just ten Bangladeshi commercial banks may not adequately reflect the variety of the country's banking industry. The results may not be as broadly applicable if smaller banks, specialized organizations, or newly founded banks were excluded.

2. The primary sources of financial data were yearly reports and secondary databases, which can contain gaps or errors in the reporting. The dataset's uniformity is impacted by the fact that banks frequently differ in the frequency and level of information of disclosures pertaining to credit risk.

3. It may not be enough to capture long-term structural shifts or the full implications of significant economic or regulatory changes on bank performance, even though the 10-year period from 2014 to 2023 offers insightful longitudinal data.

4. The primary metrics used in the study to measure profitability are Return on Equity (ROE) and Return on Assets (ROA). Despite being widely utilized, these metrics fall short in capturing market success, stakeholder value, and operational efficiency, which might offer a more comprehensive picture of profitability.

References

Anjum, N. "Impact of Credit Risk Management on the Profitability of Commercial Bank in Bangladesh: A Study on Prime Bank Limited."

Kabir, T. B. and M. Nakib (2024). "Does Working Capital Management boost profitability of the Banking Sector in Bangladesh?" The Jahangirnagar Journal of Business Studies **1711019691**: 91.

Bhuiya, M. M. M., et al. (2023). "The impact of credit risk on the profitability of selected commercial banks of Bangladesh." Asian Journal of Managerial Science **12**(1): 19-25.

Rimal, R. (2023). Credit Risk and Profitability of Commercial Bank in Nepal, Doctoral dissertation, Faculty of Management.

Yeasin, H. M. (2022). "Impact of credit risk management on financial performance: A study of commercial banks in Bangladesh." Interdisciplinary Journal of Applied and Basic Subjects **2**(1): 14-22.

Islam, M. S. and M. Rana (2022). "The Influence of Credit Risk Management Indicators on Profitability Attributes: Empirical evidence from the State-Owned Commercial Banks in Bangladesh." Journal of Businesss Studies **3**(1): 43-60.

Hosen, M. Z. (2020). "Internal factors influencing the profitability of commercial banks in Bangladesh." International Journal of Economics and Financial Research **6**(7): 192-200.

Iqbal, M. T. and L. Suhong "The Impact Of Credit Risk Management On The Financial Performance Of Major Private Commercial Banks In Bangladesh."

Islam, M. N., et al. (2020). "Analyzing how credit risk influences the performance of commercial banks in Bangladesh: A quantile regression modeling." International journal of banking, risk and insurance **8**(2): 14-26.

Khan, H. A., & Sarker, M. N. I. (2018)"*Credit risk management practices in commercial banks: A study on Bangladesh". International Journal of Economics and Financial Issues, 8*(1), 235–241.

Islam, M. S., & Nishiyama, S. I. (2016) "*The determinants of bank profitability: Dynamic panel evidence from South Asian countries". Journal of Applied Finance and Banking, 6*(3), 77–97.

Mollah, M. B., & Zaman, M. M. (2015) **"***Shari'ah supervision, corporate governance and performance: Conventional vs. Islamic banks"16*(2), 106–116.

Ghosh, A. (2015),"*Banking-industry specific and regional economic determinants of non-performing loans: Evidence from US states"*

Hasan, M. N., et al. (2014). "Profitability and credit risk management: A comparative study of commercial banks in Bangladesh." IOSR Journal of Business and Management **16**(9): 53-64.

Kabir, G., et al. (2010). "Credit risk assessment and evaluation system for industrial project." International Journal of Trade, Economics and Finance **1**(4): 331-341.

Lalon, R. M. (2015). "credit risk management (CRM) practices in commercial banks of Bangladesh:"A study on basic bank Ltd."." International Journal of Economics, Finance and Management Sciences **3**(2): 78-90.

Kolapo, T. F., Ayeni, R. K., & Oke, M. O. (2012),"*Credit risk and commercial banks' performance in Nigeria: A panel model approach.*".*Australian Journal of Business and Management Research, 2*(2), 31–38.

Nahar, S. (2006). "THE CASCADING EFFECT OF CREDIT RISK AND PROFITABILITY OF COMMERCIAL BANKS IN BANGLADESH: A PRAGMATIC APPROACH."Noor, M. A., et al. (2018). "Impact of credit risk management on financial performance of banks: A study on major state-owned commercial banks in Bangladesh." The Cost and Management **46**(1): 12-19.