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

Internship Report On

Factors Affecting the Non-Performing Loans in Bangladesh: A Study on Non-Banking Financial Institutions

<u>Submitted To</u>

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LETTER OF TRANSMITTAL

Date: 25 May, 2025

Ferdous Jahan

Assistant Professor

Department of Finance & Banking

Faculty of Business Studies

Comilla University, Cumilla.

Subject: Submission of Internship Report titled ***“Factors Affecting the Non-Performing Loans in Bangladesh: A Study on Non-Banking Financial Institutions.”***

Dear Mam,

With due respect, it is my great pleasure to submit this report for the completion of my degree. I have checked every source that is available in collecting data and other variables that are significant. Almost everything I learned during the degree and during my internship period has been used to create this report. I hope that you will find this report to be up to par.

I would like to thank you cordially for authorizing this paper.

Sincerely,

Enamul Hossain

Id: 22117026

Finance and Banking

Comilla University

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to all those who have contributed to the successful completion of my internship report. Without their guidance, support, and encouragement, this endeavor would not have been possible.

First and foremost, I am deeply thankful to Ferdous Jahan, Assistant Professor, for his invaluable supervision and mentorship throughout the preparation of this report. Her expertise, constructive feedback, and unwavering support have been instrumental in shaping the content and structure of my work.

I am also indebted to Abul Fazal Mohamed Rubayat, Group Company Secretary & Group Chief Corporate Affairs Officer of the Corporate Affairs Department at IDLC Finance PLC, for providing me with the opportunity to intern within his team. His guidance, insights into the industry, and encouragement have been invaluable in enriching my learning experience during this internship.

Furthermore, I extend my sincere appreciation to all the team members of the Corporate Affairs team at IDLC Finance PLC who generously shared their knowledge, expertise, and time with me. Their willingness to answer my queries and offer assistance has been immensely helpful in gaining practical insights and understanding various aspects of the financial field.

I am grateful to my family for their unwavering support, understanding, and encouragement throughout this journey. Their belief in my abilities has been a constant source of motivation, enabling me to persevere through challenges and strive for excellence.

Last but not least, I extend my thanks to all others who have offered support, advice, and encouragement during this internship period. Your contributions, whether big or small, have played a significant role in shaping my learning and growth.

Declaration

I am Enamul Hossain, as a Student of Department of Finance & Banking. MBA 6th Batch bearing ID:22317026 hereby declare that the internship report on **"Factors affecting Non-performing loan in Bangladesh: A study of Non-banking financial institution"** represent the result of my own works, pursued under the supervision of Ferdous Jahan, Assistant Professor of Department of Finance & Banking, Comilla University, Cumila.

I also announced that the report is prepared for academic purpose which is a part of MBA program and in this paper, I used the actual present scenario of the sustainable finance impact on GDP.

....

Enamul Hossain

ID No: 22317026

Session: 2022-2023(6th Batch)

Department of Finance & Banking

Comilla University, Cumilla.

Certificate of supervisor

This certifies that, as a partial fulfillment of the requirements for the MBA program award, Enamul Hossain, a student in the MBA program (ID: 22317026) has successfully completed his "Internship Program" and turned in a report titled **"Factors affecting Non-performing loan in Bangladesh: A study of Non-banking financial institution"** under my supervision. In accordance with my supervision and direction, he completed his work. He has made every effort to complete this successfully. I believe that this program will aid in his future professional development.

I wish he finds success and wealth in his life.

………………..

Ferdous Jahan

Assistant Professor,

Department of Finance & Banking

Comilla University, Cumilla.

Experience Certificate

EXECUTIVE SUMMARY

Non-banking financial institutions (NBFIs) are one of the most growing industries of Bangladesh. There are in total of 36 NBFIs in Bangladesh who play a vital role in the economy of Bangladesh. Non-performing loan is one of the major terms that all NBFI are aware of. The growth of NBFI industry highly depends on the management of non-performing loans and this non-performing loan is affected by many factors and variables.

The study uses rigorous quantitative analysis to look at how variables like GDP, inflation, Advance-to-Deposit Ratio (ADR), Debt-to-Equity Ratio (DER), Return on Assets (ROA), Net Interest Margin (NIM), and Gross Domestic Product (GDP) affect top NBFIs in Bangladesh's Non- Performing Loans (NPL).The results provide important new information: ROA negatively affects NPL statistically, indicating that NBFIs must remain profitable in order to control non- performing loans and reduce credit risk. On the other hand, it was discovered that GDP and inflation had a positive and significant impact on NPL, suggesting that macroeconomic factors are crucial in determining the credit risk that these institutions confront. The paper makes extensive recommendations to solve the credit risk management issues that the NBFI sector in Bangladesh are facing by utilizing these insights. These include putting a high priority on managing profitability, keeping a close eye on macroeconomic developments, fortifying thorough frameworks for managing credit risk, and preserving portfolio diversification and regulatory compliance. By putting these suggestions into practice, NBFIs in Bangladesh will be able to efficiently reduce credit risk, handle non- performing loans, and preserve financial stability, all of which will ultimately support the industry's sustainable growth and provide people and companies hope for a better future.

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CHAPTER ONE: INTRODUCTION

1.1Background of the Study

Banks accept deposits, but they don't. Direct and indirect loans are financed by the proceeds from the sale of their shares. Additionally, they invest a portion of the funds in the stock market. Consequently, the efficiency of the capital markets is significantly impacted by financial firms. The majority of these financial non-bank firms are vertically integrated businesses. Among the many services they offer are securities trading, merger and acquisition, consulting, research coverage, and capital raising.

1.2 Origin of the Study

Since completing an internship is a prerequisite for earning a BBA, I was offered the opportunity to intern at IDLC Finance PLC, one of Bangladesh's leading NBFIs. I was fortunate to be able to gain real-world business experience at IDLC Finance PLC, one of Bangladesh's top NBFIs. I attempted to identify the factors influencing non-performing loans in the NBFI sector through this report.Through a thorough analysis, I attempted to discuss how NBFIs can overcome the difficulties associated with credit risk management.

1.3Objectives of the Study

Main Objective:

- ✓ Examine the factors affecting the non-performing loans of NBFIs in Bangladesh

Specific Objectives:

- ✓ Investigate the impact of DER on credit risk addressed as NPL of NBFIs in Bangladesh
- ✓ Understand the impact of ROA on credit risk addressed as NPL of NBFIs in Bangladesh
- ✓ Investigate the impact of NIM on credit risk addressed as NPL of NBFIs in Bangladesh
- ✓ Investigate the impact of GDP and Inflation on credit risk addressed as NPL of NBFIs in Bangladesh

These objectives collectively aim to provide a comprehensive understanding of the financial health, credit risk exposure, and the interplay between credit risk and performance for the NBFI industry of Bangladesh.

1.4. Methodology

This study conducts its analysis primarily using secondary data sources. Data sources for this study include annual reports from IDLC Finance PLC, IPDC Finance PLC, Bangladesh Finance PLC, and LankaBangla Finance PLC from 2018 to 2022, as well as official websites and academic articles on the topic.

1.5 Scope

The elements affecting the organization's credit risk are heavily focused in this study. Finding the company's critical elements and analyzing how they affect credit default and overall financial performance is the goal. The study aims to provide useful insights that can guide the organization's decision-making and enhance its overall financial resilience by utilizing a variety of statistical analyses. It is anticipated that the study's conclusions would advance knowledge of credit risk management techniques used by Bangladesh's non-bank financial institutions.

It is expected that the study's findings will advance understanding of credit risk management techniques used by Bangladesh's non-banking financial institutions.

1.6 Limitations.

The study on factors affecting non-performing loans in the NBFI industry provides valuable insights, but it is subject to certain limitations.

Scope: The study's sample size of only four prominent NBFIs listed on the DSE limits the scope of its findings. Including the entire population of NBFIs listed on the DSEX would provide a more complete picture of the industry's profitability drivers.

Timeframe: The study's validity is limited by its timeframe, as economic dynamics and regulatory frameworks change over time. Regular research updates are required to accurately capture the dynamic relationship between economic conditions and profitability in the non-bank financial sector.

Focus on NPLs: Using Non-Performing Loans (NPLs) as a profitability proxy may result in overlooking other important factors such as operational efficiency and market positioning.

Including additional variables could provide a more complete picture of the NBFI industry's financial performance.

Addressing these limitations is critical for improving the overall understanding of Bangladesh's financial sector. It would allow for the development of more informed strategies to improve financial performance and reduce credit risk for NBFIs.

Literature Review

Non-Performing Loans (NPLs) are an important indicator of financial health for lending institutions, including Non-Banking Financial Institutions (NBFIs). An increasing number of NPLs indicates deterioration in asset quality and poses a risk to financial stability. A growing body of research looks into the macroeconomic and institutional drivers of NPLs.

The debt-to-equity ratio is a measure of financial leverage. According to studies conducted by Louzis et al. (2012) and Makri et al. (2014), higher leverage may be associated with increased credit risk, potentially leading to higher NPLs. In the context of NBFIs, a high DER indicates a reliance on borrowed funds, which may increase default risk in the event of adverse economic conditions. ROA measures the profitability of financial institutions.

According to Klein (2013), there is a negative relationship between ROA and NPLs, indicating that more profitable institutions have fewer non-performing loans. Similarly, Saba et al. (2012) argue that low profitability may encourage riskier lending practices, increasing NPLs. The Net Interest Margin measures the efficiency of lending and investment. According to Boudriga et al. (2010), a higher NIM may indicate better credit risk management, which can lead to fewer nonperforming loans. However, some studies, such as Rajan and Dhal (2003), show that institutions with higher NIMs may engage in riskier lending, increasing the likelihood of NPLs.The ADR measures lending aggressiveness in relation to deposit mobilization. Empirical evidence (Khemraj & Pasha, 2009) suggests that a higher ADR is associated with increased risk exposure, which could result in a higher volume of NPL. When NBFIs lend aggressively above their deposit base, the quality of credit assessment may suffer.

Macroeconomic performance, particularly GDP growth, has a significant impact on loan performance. Nkusu (2011) and Beck et al. (2013) found a negative relationship between GDP growth and NPLs, implying that economic expansion improves borrowers' ability to repay loans, lowering NPLs.Inflation has a complex impact on non-performing loans. Inflation may reduce the real value of debt, allowing borrowers to repay loans more easily (Klein, 2013). However, high and volatile inflation can exacerbate uncertainty and reduce real income, limiting loan repayment capacity (Bofondi & Ropele, 2011). In Bangladesh, where inflation volatility is high, the impact varies depending on monetary policy transmission.

CHAPTER TWO:

Organizational profile

BRAC BANK, PLC

BRAC Bank PLC is a Bangladeshi private commercial bank that was founded in 2001. The bank is a subsidiary of BRAC, the country's largest development organization. BRAC Bank is well-known for its focus on small and medium-sized businesses (SMEs).Across the country, the bank operates over 190 branches, 74 sub-branch offices, 457 SME unit offices, and 329 ATMs, 10 CDMs, and 68 RCDMs. BRAC Bank provides digital banking services, such as online banking, mobile banking, and e-wallet services, in addition to traditional banking services like deposits, loans, and cards.

History:

Founded on July 4, 2001, BRAC Bank aimed to reach out to the unbanked population not served by traditional banks.[7] The bank's main concept was to help Small and Medium Enterprises.[7] BRAC Bank was founded by Fazle Hasan Abed, who also founded BRAC and BRAC University.BRAC Bank established BRAC Afghanistan Bank in 2006 as a new venture.Imran Rahman, BRAC Bank's CEO and managing director, passed away in Canada in February 2008.[13] In May 2008, the bank decided to acquire a majority stake in GSP Finance Company (Bangladesh) Limited. Muhammad A. (Rumee) Ali has been appointed chairman of BRAC Bank Limited.[15] Muhammad A. (Rumee) Ali was a deputy governor at Bangladesh Bank who joined BRAC in 2007.

In August 2009, BRAC Bank acquired 51% of Equity Partners Limited and Equity Partners Securities Limited.[16] They are subsequently renamed BRAC EPL Stock Brokerage Limited and BRAC EPL Investments Limited.[17] BRAC Saajan Exchange Limited was founded in 2011 by purchasing Saajan Worldwide Money Transfer Limited, which had been in operation since 2009.[18] BRAC Bank sponsored Wasfia Nazreen's seven summit expedition.[19]

In April, BRAC Bank received $30 million from the International Finance Corporation.[24] In August 2021, BRAC Bank planned to raise six billion BDT by issuing bonds.In September 2022, Bangladesh Bank ordered BRAC Bank to spend 50% of its profits from unethical foreign exchange trading on corporate social responsibility programs.[26] On September 28, it opened the 800th agent banking branch.[27] It had approved 15% dividends for stock holders.[28] It increased the salary of junior officers by 50%.[29] As of 2022, its total assets amounted to 611 billion BDT.[30] It introduced a digital loan app called

Shubidha.

On January 11, 2023, BRAC Bank borrowed US$50 million from the German Investment Corporation.[32] It provided 40 million BDT for Prime Minister Sheikh Hasina's Ashrayan-2 project.[33] BRAC Bank opened its 1000th agent banking location in February 2023.

- Financial Service:
- SME Banking & Retail Card Services (Credit and Debit)
- Foreign Exchange and Related Services
- Wholesale Banking & Custodial Services
- Probashi Banking

Distribution network:

- Business Region: Seven
- Total Branches (Including SME SC/KB): 193.
- There are 185 zonal offices,
- 18 premium lounges,
- 375 ATMs,
- 96 CDMS.
- SME Unit Office Number: 457
- There are 481 agent banking outlets
- 1800 remittance delivery points.

Subsidiary:

The subsidiaries include:

BRAC EPL Investments Limited,

EPL Stock Brokerage Limited,

BKash (Mobile Banking Service) Limited,

BRAC Saajan Exchange Limited

BRAC IT Services Limited – Astha

ATM Network:

BRAC Bank operates its own ATM network, which currently numbers 457. In addition, BRAC Bank is the primary arranger of the OMNIBUS shared ATM network. OMNIBUS, an association of member institutions, will provide shared ATM and POS network facilities to banks via a neutral mother switch. OMNIBUS was formed in response to the need for a neutral and centralized gateway. As a result, BRAC Bank took the initiative. Q-Cash, along with its members, approached BRAC Bank about forming OMNIBUS together.

2.1 Non-performing Loans and the NBFI Industry

Bangladesh's banking industry has a serious problem with non-performing loans (NPLs). Bangladesh had a 9.3% NPL-to-total loan ratio in 2017, which is high when compared to other Asian and Pacific countries. In Bangladesh, non-performing loans (NPLs) have fluctuated over the last few decades, but they have recently begun to rise again. By December 2023, Bangladesh's banks had disbursed close to Tk 16.18 trillion in loans, with approximately Tk 1.36 trillion, or 9%, non-performing.

As of 2024, Bangladesh had 35 non-banking financial institutions. Sixteen of these had a non-performing loan (NPL) ratio of more than 30%. The fact that six of the 16 had identified nearly 90% of their loans by the end of March 2023 is even more concerning.

As a result, NPL management is critical to the success and well-being of Bangladesh's NBFIs. Some NBFIs in Bangladesh have managed to defy the industry trend of high NPLs by maintaining a lower NPL ratio. However, Bangladesh's NBFI sector continues to face significant challenges due to its high percentage of non-performing loans.

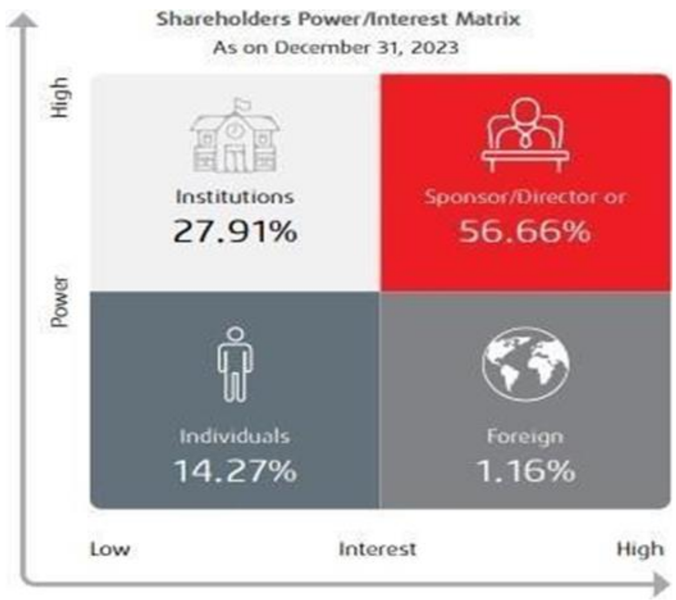
2.2. Introduction to NBFIs

2.2.1 IDLC Finance PLC.

Today, IDLC operates in more than 22 districts, with a network of 40 branches and booths, employing over 1,700 people and serving over 400,000 customers. However, it would be restrictive to say that they are only in the financing business as they attempt to do more. They work hard to help people realize their dreams, such as owning a home, sending their children to a better school, and going on a picnic in the family car, starting or expanding a business, creating more jobs, and propelling the country to greater heights.

IDLC Group consists of four companies: IDLC Finance Limited and three subsidiaries: IDLC Securities Limited, IDLC Investments Limited, and IDLC Asset Management Limited. The businesses of all four concerns are intertwined and operate under the IDLC Group umbrella.

IDLC approaches value creation from a stakeholder perspective, incorporating participation at every level. Value generation for customers, suppliers, workers, and the community is given top priority by the organisation, which recognises the significance of matching stakeholder expectations with corporate objectives. Their goal is to satisfy the various requirements and interests of stakeholders while fostering long-lasting connections.



What differentiates IDLC Group is their AAA credit score ratings for 12 consecutive years and their consistent thrive towards ESG leadership

2.2.2 IPDC Ltd.

IPDC is a prominent NBFI in Bangladesh, focusing on infrastructure development and project financing. The company provides a wide range of financial solutions, such as corporate finance, SME financing, lease financing, and structured finance. IPDC supports the country's development initiatives by promoting economic growth through infrastructure projects. IPDC's reputation for dependability and expertise in specialized financing segments creates a significant competitive challenge for IDLC in capturing market share, particularly in infrastructure financing.

2.2.3 Lanka Bangla Finance Limited.

LankaBangla Finance has established itself as Bangladesh's leading NBFI, providing a diverse range of financial products and services. The company serves both retail and corporate clients, offering retail lending, SME financing, corporate advisory, and investment banking services. LankaBangla Finance has built a loyal customer base and a robust distribution network throughout the country by emphasizing innovation and customer-centricity.

Its aggressive marketing strategies and innovative product offerings are a competitive threat to IDLC, especially in consumer finance and wealth management.

2.2.4DBH Finance Corporation Ltd.

DBH specializes in housing finance and related services, primarily for individuals and families looking for home financing options. The company offers a variety of products, including home loans, construction loans, and home improvement loans, to meet the diverse needs of homebuyers. With a focus on customer satisfaction and a thorough understanding of the local real estate market, DBH has established itself as a formidable player in the housing finance sector.

IDLC competes directly with DBH in the mortgage financing space, where both companies strive for market dominance by providing competitive interest rates, flexible terms, and exceptional customer service.

2.2.5 Bangladesh Finance and Investment Company Limited

Bangladesh Finance and Investment Company Limited is a long-standing NBFI that offers a wide range of financial services such as leasing, hire purchase, and investment advisory. The company caters to both retail and corporate customers, offering tailored financial solutions to meet their specific needs. Bangladesh Finance and Investment Company Limited has built long-term relationships with its customers and stakeholders thanks to its reputation for trust and dependability.

CHAPTER THREE:

Theoretical Background

This study uses a systematic approach to ensure the reliability of the analytical procedure and results. Secondary data is used quantitatively to back up the empirical analysis. The primary data source for this research is the annual reports published by Bangladesh's Non-Banking Financial Institutions (NBFIs) between 2018 and 2022. This choice is supported by the widespread use of annual reports as a reliable source of information about NBFIs in Bangladesh and other similar countries (Pal and Farah, 2019; Ghosh, Bhadra, and Mitra, 2021). Empirical studies (Sarkar, 2022; Zheng, Sarkar, and Nahar, 2018; Mamo, 2020) show that annual reports serve as a formal means of information dissemination.

3.1 Data Collection.

The dataset used in this study is panel data obtained from the annual reports of four NBFIs listed on the DSE, namely IDLC Finance PLC, IPDC Finance Limited, LankaBangla Finance Limited, and Bangladesh Finance Limited, resulting in a secondary data analysis. The selected time frame is five years (2018-2022). It is quantitative research because numerical data was collected using the secondary data collection method.

3.2 Sampling Method.

The study used a nonprobability purposive sampling method. Four leading NBFIs operating in the line of credit market are chosen based on their size, performance, industry relevance, and data availability.

3.2: Variable Selection

The study used secondary data over a five-year period. The financial statements and annual reports of IDLC Finance PLC, LankaBangla, IPDC, and Bangladesh Finance were used as the primary sources for this analysis.

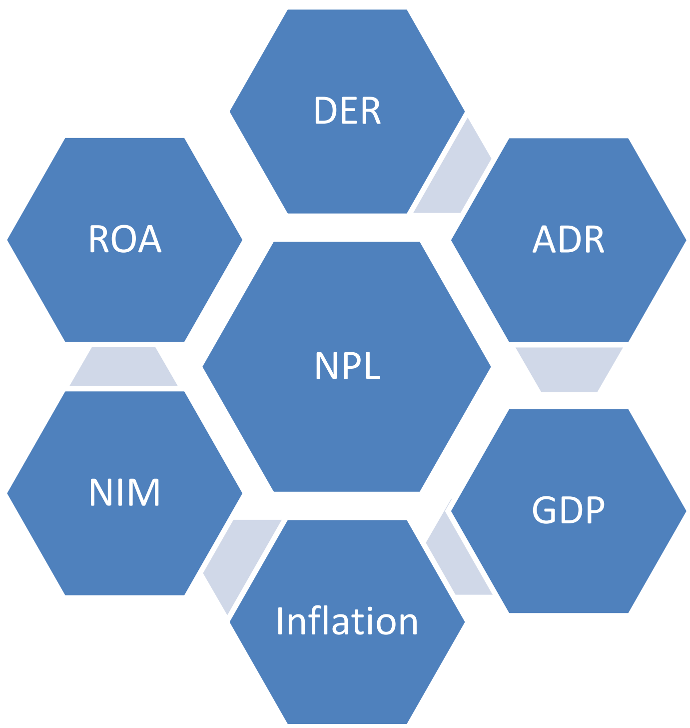
Variable Type	Variable Name	Definition	Calculation	References
Dependent Variable	Non-performing Loans (NPL)	Loans that borrowers have failed to repay according to the agreed	(Total Non-performing Loans / Total Loans) * 100	Zheng, Sarkar, and Nahar (2018), Pomuti (2021)

		terms.		
Independent Variables	Debt to Equity (DER)	A measure of how much debt a company uses compared to its equity.	Total Debt / Total Equity	Musah and Gakpetor (2017), Sarkar (2022)
	Return on Asset (ROA)	A ratio that shows how efficiently a company uses its assets to generate profits.	(Net Income / Average Total Assets) * 100	
	Net Interest Margin (NIM)	The difference between the interest income generated by banks and the amount of interest paid out to lenders relative to their total interest-earning assets.	(Interest Income - Interest Expenses) / Average Earning Assets	Zheng, Sarkar, and Nahar (2018)
	Advance to Deposit Ratio (ADR)	The proportion of loans a bank has compared to its deposits.	Total Loans / Total Deposits	Pomuti (2021)
	Gross Domestic Product Rate (GDP)	The percentage change in the total value of goods and services produced within a country over a specific period reflects its economic growth.	((Current GDP - Previous GDP) / Previous GDP) * 100	Zheng, Sarkar, and Nahar (2018),Pal and Farah (2019),Pomuti (2021)
	Inflation Rate (Inflation)	The percentage change in the general level of prices for goods and services over a specific period, indicates the rate	((Current CPI - Previous CPI) / Previous CPI) * 100	

		at which prices are rising.		

Table 2: Dependent Variable, Independent Variable, & Variable

Conceptual Framework



3.4 Model Specifications

Based on the variables listed above, the study develops the panel regression models shown below.

$NPLit = \beta 0 + \beta 1DERit + \beta 2ROAit + \beta 3NIMit + \beta 4ADRit + \beta 5GDPit + \beta 6INFLit + \varepsilon it$

This equation represents a linear regression model and can be interpreted as follows.

$NPLit = Non - Performing\ Loans\ for\ firm\ i\ in\ time\ t$, Function of independent variables with their respective coefficients indicating the magnitude and direction of their effect on NPL.

$\beta 0 = Coefficient\ of\ intercept$

$\beta 1 - \beta 6 = Coefficient$

$Coefficient\ of\ t□e\ independent\ variables\ impacting\ t□e\ dependent\ variable$

$DERit = Debt - to - Equity\ Ratio\ for\ firm\ i\ in\ time\ t$

$ROAit = Return\ on\ Assets\ for\ firm\ i\ in\ time\ t$

$NIMit = Net\ Interest\ Margin\ for\ firm\ i\ in\ time\ t$

$ADRit = Asset\ Deposit\ Ratio\ for\ firm\ i\ in\ time\ t\ GDPit = Gross\ Domestic\ Product\ (GDP)\ at\ time\ t$

$INFLit = Inflation\ rate\ at\ time\ t$

εit = This error term represents the unobserved factors influencing NPL that are not captured by the independent variables in the model and cannot be explained by the independent variables.

CHAPTER FOUR:

Analysis and Findings

This report includes a panel regression model used to investigate the study's outcomes, with a focus on causal relationships and hypothesis testing. We have moved forward step by step as shown below:

- To gain initial insights into data, Descriptive Analysis is conducted using IBM SPSS software.
- Secondly, Stata is used to perform Inferential Analysis. This includes tests like Correlation Analysis, which assess the relationships between variables.
- Third, we analyzed panel data using Fixed or Random Effect Models to identify the impact of independent variables on the dependent variable.
- Furthermore, we used the Hausman Test to determine whether Fixed or Random Effects models were appropriate for the data.
- To assess variable heterogeneity, we also used the Heteroskedasticity Test. The VIF test also addresses variables' multicollinearity. All of these tests determine whether the variables are appropriate.

4.1 Descriptive Analysis.

The descriptive analysis table displays the minimum and maximum observation values, as well as the mean and standard deviation for each independent and dependent variable in relation to the four NBFIs. The test will provide information about the variables' central tendency, dispersion, and distribution shape.

Descriptive Statistics

Variable Name	Unit	N	Mean	Std. Dev.	Maximum	Minimum
NPL	Percentage	180	0.03728	0.01648	0.07220	0.01380
TOTAL_DEBT	Number	180	66,000,000,000	37,100,000,000	130,000,000,000	13,100,000,000
TOTAL_EQUITY	Number	180	7,790,000,000	3,980,000,000	14,200,000,000	2,390,000,000
DER	Decimal	180	3.906	3.165	9.420	1.300
NET_INCOME	Number	180	960,000,000	598,000,000	2,200,000,000	193,000,000
TOTAL_ASSETS	Number	180	73,700,000,000	40,800,000,000	144,000,000,000	15,900,000,000
ROA	Percentage	180	0.026	0.022	0.073	0.010
INTEREST_INCOME	Number	180	2,290,000,000	1,440,000,000	4,650,000,000	379,000,000
NIM	Percentage	180	0.030	0.005	0.037	0.021
LOANS_AND_ADVANCES	Number	180	55,300,000,000	29,200,000,000	104,000,000,000	12,800,000,000
DEPOSITS	Number	180	46,700,000,000	25,800,000,000	82,000,000,000	8,620,000,000
ADR	Percentage	180	1.242	0.143	1.491	1.022
GDP_GROWTH	Percentage	180	0.065	0.016	0.079	0.035
INFLATION	Percentage	180	0.060	0.009	0.077	0.055

Table 1: Descriptive Statistics for Company Data Variables, 2018-2022

Advance-to-deposit ratio (ADR) and Debt to Equity Ratio (DER) have a significant standard deviation which doesn’t assure a closer value to the mean for all four NBFIs. Other than these two, the descriptive statistics show a more normal distribution for all other variables. Based on the descriptive statistics provided, Some inferences about potential impacts or relationships between the variables are in the following:

Non-Performing Loans (NPL): The relatively low mean NPL of 0.03728 suggests that, on average, the entities in this study have a manageable level of non-performing loans. However, the maximum NPL of 0.072 indicates that some NBFIs may have higher levels of problematic loans, which could potentially impact their financial performance and stability. Debt to Equity Ratio (DER): The high mean DER of 3.90550 and a maximum of 9.420 suggest that, on average, the entities have a relatively high level of debt compared to their equity.

Advance to Deposit Ratio (ADR): The mean ADR of 1.24171 suggests that, on average, NBFIs generate higher interest income but also increase credit risk exposure. The maximum ADR of

1.491 indicates that some NBFIs have extended loans significantly higher than their deposit base, which could be a risk concern if not managed properly. It's important to note that these are general inferences based solely on the descriptive statistics provided. To fully understand the impacts and relationships between these variables, further analysis has been conducted in the following

4.2 Correlation Matrix.

This analysis will be used to determine the relationship between the dependent variable (NPL) and the independent variables (DER, ROA, NIM, ADR, GDP, and inflation).

Table 2: Correlation Matrix

	NPL	*DER*	*ROA*	*NIM*	*ADR*	*GDP*	*Inflation*
NPL	1.0000						
DER	-0.3064	1.0000					
ROA	0.5921	-0.3317	1.0000				
NIM	-0.5806	0.5215	-0.4441	1.0000			
ADR	0.5232	-0.1369	0.0713	-0.2278	1.0000		
GDP	0.2658	-0.0089	-0.0112	0.1880	0.1514	1.0000	
Inflation	0.4467	0.0092	-0.0358	-0.3721	0.2129	0.1214	1.0000

The weakest correlation (-0.5806) exists between NIM and NPL, indicates Net Interest Margin has a very minor impact on Non-performing Loans. On the other hand, a strong correlation (0.5921) between ROA and NPL, indicating Return on Assets has a significant influence on Non- Performing Loans.

In the Correlation Matrix, the coefficients range from -0.7 to 0.7, with -0.7 indicating a strong negative correlation, 0.7 indicating a strong positive correlation, and 0 indicating no correlation. All the variables are set between -0.7 and 0.7, which shows a moderate correlation with each variable

4.3 Random Effect Model

We conducted Random Effect Model to have insights regarding the unobserved heterogeneity. It accounts for differences through the incorporation of random effects.

Table 3: Regression results of Random effect model

Non-performing Loans (NPL)	Coef.	Std. Err.	z	P> |t|	[95% Conf. Interval]	
Debt to Equity (DER)	0.000148	0.008359	0.18	0.859	-.0014904	.0017864
Return on Asset (ROA)	.3648146	.1148282	3.18	0.001	.1397555	.5898737
Net Interest Margin (NIM	-.8085768	.6459438	-1.25	0.211	-2.074603	.4574497
Advance to Deposit Ratio (ADR)	.0396594	.0157911	2.51	0.012	0.0087095	0.0706094
Gross Domestic Product Rate (GDP)	.2407438	.1454349	1.66	.098	-.0443033	.525791
Inflation Rate (Inflation)	.5148783	.2951779	1.74	.081	-.0636598	1.093416
_cons	-.044445	.0360708	-1.23	.218	-.1151425	.0262525
R-sq: within = 0.5056 between = 0.9969 overall = 0.7814						Wald chi2(6)= 46.46 Prob > chi2=0.0000

4.1 Fixed Effect Model

Table 4: Regression results of Fixed effect model

Non-performing Loans (NPL)	Coef.	Std. Err.	z	P> |t|	[95% Conf. Interval]	
Debt t oEquity (DER)	.0061494	0065897	0.93	0.373	-.0085335	.0208322
Return o nAsset (ROA)	-1.153477	.4877422	-2.36	0.040	-2.240234	-.0667195
Net Interest Margin (NIM	.0896873	.6347573	0.14	0.890	-1.32464	1.504015
Advance to Deposit Ratio (ADR)	.0079736	.0332129	0.24	0.815	-.0660294	.0819766
Gross Domestic Product Rate (GDP)	.2073889	.1097466	1.89	0.088	-.0371418	.4519197
Inflation Rate (Inflation)	.672457	.2777588	2.42	0.036	.0535718	1.291348

_cons	-.0230617	.0511812	-0.45	0.662	-.1371005	.090977
R-sq: within = 0.7830 F(6,10)= 6.01 between = 0.6794 Prob > F=0.0068 overall = 0.2050						

Now, we need to find out which model between random effect model and fixed effect modelis preferred more to analyze the impact of independent variables (DER, ROA, NIM, ADR, GDP, Inflation) on the dependent variable (NPL) for NBFI industry.

4.1Hausman Test

The Hausman test is used to determine the appropriate model choice between fixed effects and random effects models. It tests if the unique errors are correlated with the independent variables. The null hypothesis assumes no correlation, favoring the random effects model, while the alternative hypothesis suggests correlation, favoring the fixed effects model.

---- Coefficients ----				
	(b) FE	(B) RE	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
Debt to Equity (DER)	0.0061494	0.000148	0.0060014	0.0065365
Return on Asset (ROA)	-1.153477	0.3648146	-1.518291	0.4740327
Net Interest Margin (NIM)	0.0896873	-0.8085768	0.8982641	.
Advance t	0.079736	0.0396594	-0.0316858	0.0292188

oDeposit Ratio (ADR)				
Gross Domestic Product Rate (GDP)	0.2073889	0.2407438	-0.0333548	.
Inflation Rat e(Inflation)	0.672457	0.5148783	0.1575786	.

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg Test: Ho: difference in coefficients not systematic

chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B) 13.69

Prob>chi2 = 0.0334

(V_b-V_B is not positive definite)

The Hausman test statistic (chi2 (6) = 13.69) and the interpretation suggest that the null hypothesis is rejected. As a result, the fixed effects model is preferred over the random effect model for analyzing the impact of independent variables (DER, ROA, NIM, ADR, GDP, Inflation) on the dependent variable (NPL) for non-banking financial institutions in Bangladesh

4.6 Outcome Analysis. Using Fixed Effects Model

The Fixed Effect model achieves a high level of statistical significance, with an F-statistic of 6.00 and a Prob > F value of 0.0068. This suggests that the independent variables have a significant effect on the dependent variable (NPL).

According to the test, ROA has a statistically significant negative impact (Coefficient = -1.153477, P-value = 0.040) on NPL at the 5% significance level. A higher ROA is associated with a lower NPL, which is understandable given that higher profitability generally leads to better credit risk management.

On the other hand, GDP has a positive and significant impact on NPLs, implying that higher economic growth influences increased lending and credit risk. Inflation has a statistically significant positive impact on NPLs because higher inflation rates can reduce borrowers' repayment capacity and increase credit risk.

The findings indicate that the ROA, GDP, and inflation all have a significant impact on the credit risk of NBFI. As a result, maintaining profitability (ROA), managing macroeconomic conditions (GDP and inflation), and implementing effective credit risk management strategies are critical for NBFIs in order to reduce non-performing loans and ensure financial stability.

4.7.1 Heteroskedasticity Test.

Breusch-Pagan/Cook-Weisberg test for heteroskedasticity. Ho: Constant Variance.

Variables: fitted values of NPL.

chi2(1) 0.51

Probability > chi2: 0.4747.

Table 5: The Heteroskedasticity Test

The Breush-Pagan test for heteroskedasticity indicates that Prob > chi2 is 0.4747, which is greater than 0.05. This implies that heteroscedasticity does not exist in the data. The variance of errors is constant across the observations, so the regression analysis can proceed without corrective measures to address heteroskedasticity.

4.11.VIF

Variable	VIF	1/VIF
NIM	2.33	0.429630
DER	1.53	0.652967
Inflation	1.42	0.702191
ROA	1.35	0.738816
GDP	1.18	0.847331
ADR	1.11	0.897926
Mean VIF	1.49	

The Mean VIF is 1.49, so there is no evidence of multicollinearity among the variables. This suggests that there is no significant concern that could impede the regression analysis.

So, we can conclude that the error variance is constant across observations, and the regression analysis can proceed without the need for corrective measures to address heteroskedasticity. Furthermore, there is no evidence of multicollinearity between the variables. This suggests that there is no significant concern that could impede the regression analysis.

4.8 NBFI's Credit Risk Mitigation Actions

Many NBFIs have implemented strict policies to mitigate credit risk and manage Non-Performing Loans, ensuring the organization's credibility and performance, as well as the secure repayment to customers and clients. All of the initiatives propose a better solution to credit risk management for the company, ensuring its sustainability and profitability. These actions are as follows.

NBFIs use stringent credit risk management frameworks to reduce potential losses. This framework evaluates a borrower's payment history before extending credit.

- Conducting annual creditworthiness assessments for existing clients.

- Ensure proper insurance coverage for financed assets.
- hiring a specialized team to monitor and collect outstanding debts.
- Ensure strict adherence to credit policies by the Credit Administration Department.
- Vetting collateral thoroughly to reduce risk.
- Utilizing legal counsel, both internal and external, to address credit agreement issues.
- Monitoring market conditions and industry exposure to ensure a diverse portfolio.

In addition to industry best practices for risk assessment, identification, and measurement, NBFIs should consider Bangladesh Bank's Guidelines for Managing Core Risks of Financial Institutions.

Credit Evaluation:

NBFIs' Credit Evaluation Committees (CECs) review market and credit risk on a regular basis, implement risk mitigation measures, and critically evaluate projects in light of the global financial climate. The Risk Grading Model (RGM) aids in understanding the various dimensions of risk, distinguishing individual and group credits, and maximizing returns.

Credit Report and Opinions:

NBFIs generally obtain credit reports from Bangladesh Bank's Credit Information Bureau (CIB), which are then reviewed by CRM and CEC to better understand client liability and repayment behavior. Bankers, suppliers, and buyers' perspectives provide valuable insights into market position and client reputation. Most NBFIs hope to effectively manage credit risk and optimize their credit portfolios by implementing these strategies and practices.

Credit Quality and Portfolio Diversification.

NBFIs prioritize product and sector diversification in order to effectively manage credit risk. The company follows Central Bank guidelines, establishing sectoral threshold limits to mitigate the impact of industry-specific challenges. Credit concentration is carefully avoided in order to mitigate risk.

NPL Management:

To manage non-performing loans, most NBFIs closely monitor payment arrears and conduct regular impairment assessments on loans and advances. Here is an example of a three-layered CRM Strategy.

Figure : 3-layered CRM Strategy)

Safeguarding against NPLs:

Most NBFIS prioritize proactive measures to mitigate the risk of Non-Performing Loans (NPLs). Regular monitoring of loan accounts is conducted to ensure early identification of potential defaults. Also, with maintaining a robust credit risk management framework, NBFIs aim to minimize NPL occurrences and safeguard its financial health.

Defending against the NPLs:

In response to potential defaults, NBFIs employ a proactive defense strategy to reduce losses and maintain asset quality. The company works with borrowers and personal guarantors to negotiate repayment terms and find alternative ways to resolve delinquent accounts. Furthermore, NBFIs work with recovery agencies to collect receivables directly from clients or, if necessary, take possession of collateralized assets. NBFIs use this approach to reduce the impact of NPLs on their financial performance while maintaining investor confidence.

Crisis Managing NPLs:

Most NBFIs have a dedicated Special Asset Management (SAM) team that is in charge of effectively managing crises caused by nonperforming loans. The team takes a systematic approach, beginning with negotiation as the primary strategy for encouraging timely repayment from clients. In cases where direct recovery efforts fail, recovery agencies are hired to help recover receivables and, if necessary, take possession of clients' assets. NBFIs seek to minimize NPL losses while maintaining the stability of their loan portfolio.

Counterparty Credit Rating:

Most NBFIs work with recognized external credit assessment institutions to rate corporate clients, with the goal of increasing the proportion of rated clients to reduce credit risk.

Methods for Measuring Credit Risk

Many NBFIs use the 'The Standardized Approach' mandated by Bangladesh Bank to effectively measure credit risk.

CHAPTER FIVE:

Conclusion and Recommendation

5.1 Conclusion.

The report "Factors Affecting Non-Performing Loans in Bangladesh: A Study on Non-Banking Financial Institutions" identifies the factors that have the greatest impact on non-performing loans in NBFI. To identify this, we used a panel regression model and panel data containing information from four of Bangladesh's top NBFIs. First, we performed descriptive analysis and created a correlation matrix. Then we moved on to the random effect model and the fixed effect model, which were completed using the software "Stata". Following that, we used the Hausman test to determine which model was best suited for our analysis. After running the Hausman test, we determined that the fixed effect model is the best fit for this analysis. Following the analysis, we performed the Heteroskedasticity Test to assess variable heterogeneity. The VIF test also addresses multicollinearity of variables. All of these tests determine whether the variables are suitable for regression analysis.

As for the analysis, we discovered that the Fixed Effect model has a high level of statistical significance, with an F-statistic of 6.00 and a Prob > F value of 0.0068. This suggests that the independent variables have a significant effect on the dependent variable (NPL). At the 5% level of significance, ROA has a statistically significant negative impact on NPL (Coefficient = -1.153477, P-value = 0.040). A higher ROA is associated with a lower NPL, which is understandable given that higher profitability generally leads to better credit risk management.

On the other hand, GDP has a positive and significant impact on NPLs, implying that higher economic growth influences increased lending and credit risk. Inflation has a statistically significant positive impact on NPLs because higher inflation rates can reduce borrowers' repayment capacity and increase credit risk.

Finally, we can conclude that ROA and macroeconomic factors such as GDP and inflation have the greatest impact on non-performing loans in the NBFI industry.

5.2 Recommendations.

Based on the findings of the report, the following recommendations are proposed:

- NBFIs must prioritize profitability to reduce credit risk and effectively manage non-performing loans. This can be accomplished through credit evaluation, portfolio diversification, and regular loan performance monitoring.
- Monitoring macroeconomic indicators, such as GDP growth and inflation rates, is crucial for NBFIs to effectively manage credit risk. NBFIs should continue to closely monitor these factors and incorporate them into their risk management strategies.
- Effective Credit Risk Management Strategies: NBFIs' current strategies, such as three-layered CRM and early warning systems, are effective in mitigating credit risk. These strategies should be refined and implemented to improve NBFI risk management capabilities.
- NBFIs should prioritize portfolio diversification and sectoral threshold limits to manage credit risk effectively. To ensure portfolio resilience, continued monitoring and maintaining a balanced sector exposure is recommended.
- The NBFI's commitment to regulatory compliance and collaboration with relevant authorities strengthens its risk management framework. Maintaining this level of compliance and fostering collaboration can help to strengthen the NBFI's stability and contribute to sector resilience.

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