IMPACT OF NONPERFORMING LOANS ON PROFITABILITY OF BANKS OF BANGLADESH

The Dissertation submitted to University of Dhaka

For the Degree of

Doctor of Philosophy

In

Finance

By

Muhammad Monirul Hoque Juwel, M.Phil.(DU)

Under Supervision of

Professor Dr. Jamal Uddin Ahmed

Department of Finance

University of Dhaka

Dhaka, Bangladesh

May, 2019

DEDICATION

To

My dearest respected persons whose sacrifices,

affections and bent my life:

Mrs. Mafia Khatoon

&

Mr. Md. Shamsul Hoque (Freedom Fighter)

My Parents

DECLARATION

I hereby declare that the research work entitled "Impact of Nonperforming Loans on Profitability of Banks of Bangladesh" has been carried out under the Department of Finance, Faculty of Business Studies, University of Dhaka in fulfillment of the requirement for the Degree of Doctor of Philosophy is solely my own work unless otherwise references or acknowledged from published literature. This has not been submitted in part of full to this University or to any other Institution for the award of any Degree or Fellowship.

Dhaka
May 24, 2019

Muhammad Monirul Hoque Juwel M.Phil.(DU)
PhD Researcher
Department of Finance
University of Dhaka
Dhaka, Bangladesh

CERTIFICATE OF SUPERVISOR

I have the pleasure to certify that the dissertation entitled "**Impact of Nonperforming Loans on Profitability of Banks of Bangladesh**" submitted by Muhammad Monirul Hoque Juwel is an original work carried out under my guidance and supervision. I assert that to the best of my knowledge, this research work has neither in part nor in full been submitted to any other university or institution for the award of any Degree or Fellowship.

Furthermore, I acclaim that the submission of the dissertation is ascertained after a thorough review of the final draft.

Dhaka
May 29, 2019

Dr. Jamal Uddin Ahmed
Supernumerary Professor
Department of Finance
University of Dhaka
Dhaka, Bangladesh
&
Supervisor

Acknowledgement

"In the name of ALLAH, The Beneficent and The Merciful"

Praise be to Almighty ALLAH who stretches me an opportunity to complete this research.

At the beginning, I am very much grateful and indebted to my distinguished supervisor Professor Dr. Jamal Uddin Ahmed, Department of Finance, University of Dhaka for his persistent encouragement, scholastic direction and creative suggestions to carry out the research without which this works would not have been come to light.

I am extremely thankful to Professor Shibli Rubayat Ul Islam, Dean of Faculty of Business Studies for his advice and support while conducting the research. I am also prodigious thankful to Professor Shabbir Ahmad, Chairman, Department of Finance, University of Dhaka for their sincere cooperation and moral support.

I would like to extend my sincere thanks to Prof. Dr. Mahmod Osman Imam, Prof. Dr. M. Sadiqul Islam, Prof. Dr. A. A. Mahboob Uddin Chowdhury and Prof. Dr. M. Masud Rahman, Department of Finance for their valuable advice during of the first and second seminars. Also, my thank goes to other faculties, the administrative officials and all other staffs in the Department of Finance for their kind support over the years. Finally, my sincere appreciation goes to Dr. Gazi Mohammad Hasan Jamil, Associate Professor of Finance Department for editing the final draft of this thesis.

I would like to extend my gratitude and appreciation to the officials of BIBM and Bangladesh Bank for providing me with the necessary information and data.

Last but certainly not least, I owe to the most special group of people in my life. My family act a pillar of support for me during this PhD process. My noble mother and father have always played the most special and important roles in my life journey. They are always encouraging me and constantly giving me the full support. I am eternally indebted to them. I must with gratitude give thanks to my wife, Mrs. Nargis Akter and my children Fatima Hoq Sumaiya and Abdullah Al Yasa Hoq for the endurance they went through during the five years of study and research. I also thank my only younger brother Abdullah Omar Hoq for his brotherly love and moral support.

Above all, I remain absolutely grateful to Almighty Allah for his great love, protection, wisdom, mercies and guidance and also for making this study and my other areas of interest a huge success and continuing. He remains glorified in my life forever. I thank Almighty Allah for all mercies.

ABSTRACT

PhD Thesis Title: Impact of Nonperforming Loans on Profitability of Banks of Bangladesh

Supervisor: Professor Dr. Jamal Uddin Ahmed **Department: Finance**

Background: The reforming financial sector of Bangladesh is progressing towards a sustainable economy. However, some crucial factors such as nonperforming loan (NPL), high provision and extensive credit risk are encumbering the profit growth of commercial banks. These issues are not only alarming for Bangladeshi banker, but also for the global policy makers. Different measures are reinforcing the credit policy to fend the loan loss. This thesis focuses on the NPL status of Bangladesh and global perspectives, it also scrutinizes the sector-wise loan provisioning status in banking industry of Bangladesh.

Purpose: To empirical investigate the impact of nonperforming loans and other determinants on profitability of banks in Bangladesh using multiple regression models.

Methods: This study adopted an explanatory approach and causality research design by employing balance panel data to fulfill the above purposes. This thesis completed custom of data acquired from the financial statements and annual reports for a period of one decade (2008- 2017) of 20 commercial banks in Bangladesh. Statistical packages like STATA, EViews and Microsoft Excel were employed to investigate the data and to build interpretations. This study was to evaluate the effects of bank-specific factors; NPL, credit risk, loan growth, ADR, cost efficiency, bank size and economic & industry factors on profitability of banks in Bangladesh. The research employed descriptive statistics, correlation analysis and multiple regression estimation methods such as, Ordinary Least Squares (OLS), Fixed Effects (FE), Random Effects (RE) and General Methods of Moments (GMM). A retrospective exploratory case study approach was also used.

Findings: The Research findings emphasized the need for improvements in commercial banks' management of NPL. Finally, the empirical results indicate that nonperforming loans are negatively associated with the level of profitability of banks of Bangladesh.

Conclusion: The bank-specific factors determine nonperforming loans more than macroeconomic & industry factors in Bangladesh. It is recommended that macroeconomic policy should be directed at sustaining economic growth as it curbs nonperforming loans in the banking industry. Finally, this study explores the positive recovery trend of NPLs as a sign of improvement, mainly due to the prudent policies taken to strengthen the instruments of default loan recovery.

Keywords: Commercial Banks, Nonperforming Loans, Credit Risk, Bank Profitability.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF CASES

LIST OF ACRONYMS

Acronyms/ Abbreviation	Expressions/ Elaboration
ABBL	AB Bank Limited
AGM	Annual General Meeting
AMC	Asset Management Company
BB	Bangladesh Bank
BDBL	Bangladesh Development Bank Limited
BEA	Bangladesh Economic Association
BHBFC	Bangladesh House Building Financing Corporation
BIBM	Bangladesh Institute of Bank Management
BL	Bad & Loss
BRPD	Banking Regulatory and Policy Department
BSEC	Bangladesh Securities and Exchange Commission
CAR	Capital Adequacy Ratio
CIB	Credit Information Bureau
CL	Classified Loans
CPD	Centre for Policy Dialogue
CRAB	Credit Rating Agency of Bangladesh
CRAR	Capital to Risk Weighted Assets Ratio
CRG	Credit Risk Grading
CRM	Credit Risk Management
CSE	Chattogram Stock Exchange
DF	Doubtful
DSE	Dhaka Stock Exchange
ECAIs	External Credit Assessment Institutions
EWS	Early Warning System/ Signals
FCBs	Foreign Commercial Banks
FE	Fixed Effects
FSIBL	First Security Islami Bank Limited
FSRP	Financial Sector Reform Program
GDP	Gross Domestic Product
GMM	Generalized Method of Moments
GNPL	Gross Nonperforming Loans
HSBC	Hong Kong Shanghai Banking Corporation

IBBL	Islami Bank Bangladesh Limited
IBs	Islamic Banks
ICB	Investment Corporation of Bangladesh
ICRRS	Internal Credit Risks Rating System
IDRA	Insurance Development and Regulatory Authority
IDRA	Insurance and Regulatory Authority
IFRS	International Financial Reporting Standards
KYC	Know Your Customer
LLP	Loan Losses Provision
LRA	Lending Risk Analysis
MFIs	Micro Financial Institutions
MoF	Ministry of Finance
MRA	Micro-Credit Regulatory Authority
MTB	Mutual Trust Bank Limited
NBFIs	Non-Bank Financial Institutes
NBR	National Board for Revenue
NNPL	Net Nonperforming Loan
NPL	Nonperforming Loans
NPM	Net Profit Margin
OLS	Ordinary Least Square
PCBs	Private Commercial Banks
PEPs	Politically Exposed Persons
RE	Random Effects
RM	Relationship Manager
ROA	Return on Assets
ROE	Return on Equity
RU	Recovery Units
SCBs	State Owned Commercial Banks
SDBs	Specilaized Banks
SMA	Special Mention Account
SS	Sub-Standard
UC	Unclassified
VIF	Variance Inflation Factor

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

The banking system demonstrations a dominant role in the economic progress of a nation. In Bangladesh, the financial sector is controlled by the banking sector and the macroeconomic performance mainly depends on the efficiency of the banking sector that accounted for more than 73 percent of the total assets of the financial system in the year 2017. Therefore, the banking sector is known as pillar of the Bangladesh economy and acting a significant role of financial intermediary. All banks and NBFIs of Bangladesh were nationalized after independence in 1971. To ensure good governance, sound lending, to provide better services quality, to make finances accessible to the individual entrepreneurs as well as to corporate body, and government allowed the establishment of the banks in private sector from 1983 to accelerate the growth of national economy as whole. Through its intermediary actions, the banking sector produces the flow of funds as like fuels in the macro economy. The efficiency of banking sector is calculated on its profitability and assets quality it possesses as like to other business organization. Lending operations of a bank is the major sources of income to a bank in Bangladesh. The lending operations comprise origination, disbursement, monitoring and supervising of loan. Loans and advances are considered as assets of a bank. Bangladesh bank issues various prudential regulations from various aspects to maintain asset to a regular quality such as, single borrower exposure, loan classification principles, provisioning rate, loan rescheduling, loan restructuring, write-off policy, risk diversification etc. Moreover, following the operation of Bangladesh Bank's Banking Regulatory and Policy Department (BRPD), a series of prudential regulations and measures were formulated in accordance with international standards to speech the issues of asset quality and business operations in Bangladesh's banking system.

In the absence of a robust capital market, Bangladesh relies on the banking sector for a smooth financial intermediation. Since the 1990s, the banking sector has been charged with the growth crisis of massive nonperforming loans. All commercial banks that are specially owned by state-owned commercial banks face the daunting amount of default loans. The developing countries' central banks have accepted the "prudential norms for asset classification" for ensuring 'good governance' and 'quality of the banks' loan portfolios of since 1980s as like developed countries. It is known as FSRP (Financial

Sector Reform Program). After several major economic overheating, nonperforming loans in Bangladesh became a serious problem in the 1990s. The financial quality of the banking system has turned to be worse; especially the state owned commercial banks (SCBs), which account for the predominant share of banking assets in the financial sector, with high volume NPLs, inadequate capital base, and weak profitability. Bangladesh's rapid economic growth over the past two decades has been accompanied by massive accumulation of NPLs in the SCBs. By the end of 1990, according to international practice, the total volume of NPLs in commercial banks had reached 25% to 50%, far beyond the serious alert line.

A large scale of NPLs not only undermined the banking sector's stability and efficiency, but also significantly hampered the real economy's development. Because of their tremendous NPLs, banks' profitability and competitiveness suffer severe damage. Over the past decades, the Bangladesh Bank has taken a wide variety of reform measures to address these serious asset quality issues and improve banking system performance.

These measures, however, have still removed the banks' fundamental problems, and concerns about corporate governance and substantial transformation in the entities are expected to take further steps towards full marketing, with a clear objective of preventing the emergence of new NPLs. However, further research is needed to conduct a comprehensive analysis of the nature of the NPLs problem in order to provide more effective solutions to this problem. This research is such an effort to investigate the causes of the NPLs problem with an attempt to propose appropriate remedies. By examining the evolution of the financial system in Bangladesh and causing a large volume of NPLs to emerge, it is affirmative that a robust legal and regulatory framework driven by incentives is crucial to an independent, transparent and commercialized financial system. Nonperforming loan, on the other hand, is a key tool related to a bank's balance sheet and adversely affects a bank's profitability. It can be observed that NPLs reduce banking sector profitability as banks are unable to earn interest income from default loans. NPLs' negative impact on bank financial health as obviously replicated in Bangladesh's banking sector. Bank disasters with nonperforming loans in the Bangladesh economy are focused on nonperforming loans themselves in the numerous studies without corresponding studies. Those suggest that the study on the determinants of nonperforming loans has been overlooked as a major factor in bank failures. It is clear that nonperforming loans are still a major threat to Bangladesh's banking sector. The aim of this research is therefore to analyze the sensitivity of the "Impact of Nonperforming

Loans on Profitability of Banks of Bangladesh." This study is an attempt to investigate the bank sector's nonperforming loans and to assess the different facets of NPL and its management in Bangladesh's banking industry. The objective is to explain the impact of nonperforming loans on the profitability of banks in Bangladesh by identifying macroeconomic, industry and bank-specific factors based on prevailing international evidence.

1.2 Statement of the Problem

Although nonperforming loans are the worldwide incident that hinders any bank's profitability, NPLs showed an alarming increase in the case of Bangladesh between 2008 and 2017 due to unexpected factors that are of concern to the country's banking industry. The banking industry in Bangladesh was isolated from the global framework and dominated by government controls over targeted credit delivery, limited interest rates, and investment structure failed until the early 1990s to contribute to the exciting global banking revolution. Banks are willing to face many credit risks that frequently convey unsustainable loans. Many banks collapsed mainly due to large amounts of nonperforming loans indicating that the portfolio of nonperforming loans is a sign of imminent bank failure rather than an indicator of bank profitability. It was expected that the cash flow of borrowers would have improved to ease their repayment capabilities, but the volume NPLs Tk.743.03 billion in 2017. The Bangladesh Bank and other regulatory bodies are making results-oriented efforts to reflect the positive GDP in loan repayments in order to close the gap created. As one of the macroeconomic variable determinants of nonperforming loans in the banking industry, the researcher mentioned also inflation rate. Upper inflation can enhance borrowers' loan repayment by reducing the actual outstanding liability value. It can also weaken the borrowers' ability to repay loans by lowering real income. The calculation of the researcher has shown that Bangladesh's inflation trend has fluctuated widely. It finished loan repayment plans difficult, consequently, increasing NPLs. There was no strong economic blueprint by the government to close the wide inflation gap to lower level as in most economies. One of the key objectives of banking sector modifications was to foster operational competition in the system and self-sufficiency and to improve banking standards in Bangladesh to international standard practices.

Research on published works on nonperforming loans in commercial banks in Bangladesh showed that; (1) The majority of studies focused on the NPL ratio i.e. gross

NPL ratio and net NPL ratio to measure the quality of assets and credit risk management effectiveness. (2) The relationship between NPLs and bank profitability with macroeconomic indicators has been observed in very few studies. There is no thorough study of the negotiation or moderation effect of these variables on asset quality. (3) In assessing asset quality, the fresh NPL produced in a particular year, the gross NPL generation rate and the net additions to NPL were not highlighted, (4) Only a few studies have been carried out using the banker's perception of the incidence, impact and management of the NPL, and (5) since 2000 many measures have been initiated to effectively manage the NPL threat. The issues surrounding nonperforming loan portfolio and adverse bank profit can be attributed to corporate governance shortcomings, compromising sound credit risk procedures, inadequate supervision and other insider abuses. Thus, the review of the available literature on nonperforming loans highlighted the need to study NPL with a specific focus since the post-millennium period (1) whether NPL is effectively managed in Bangladesh's banking industry, which holds a significant share of bank deposits and advances; (2) the decreasing effect of bank profitability and macroeconomic indicators on NPL; and (3) the main causes of NPLs and the various measures to be taken to improve the Bangladesh banking credit risk management system. In consideration of the above stated problems, the purpose of this study is therefore to analyze and evaluate banks' profitability in overall types of default risk so as to determine the relationship between nonperforming loans, macroeconomic factors, industry factors, namely bank-specific factors, and terms of credit operations in Bangladesh's commercial banks. Thus, the impact of nonperforming loans on profitability of banks, which is the research objective, needs to be investigated.

1.3 Research Questions

According to the above mentioned problem statement, the following research questions were addressed in the thesis include:

1. What are the different reasons for creating NPLs and their significance?
2. What are the principal causes of nonperforming loans of banks?
3. What has been the trend of banks' NPLs over the past decade?
4. What measures were taken to deal effectively with NPLs?
5. Does macroeconomics variable giving the impact on nonperforming loans and bank profitability of banks?
6. How far is the effect on ADR of Banks on NPLs and Bank profitability of

Bangladesh?

7. To what extent is the effect of credit risk on bank profitability in Bangladesh?

8. How far does the bank's loan growth affect nonperforming loans of banks?

9. What is the relationship with bank profitability between NPLs?

10. What are the policy recommendations in Bangladesh to resolve the NPLs problem?

For the guidelines, these research questions will obviously be convenient to answer the problem statement. According to the result of the research question, it is expected that the answer which bank-specific, macroeconomic and industry factors have the impact of nonperforming loans on the profitability of bank of Bangladesh.

1.4 Objectives of the Study

Specific aim: To investigate the impact of nonperforming loans on profitability of banks of Bangladesh. In order to understand the disorder and probability of commercial banks it is necessary to analyze the nonperforming loans of the banks that are working under the banking industry of Bangladesh.

To achieve the specific aim, this research embarks on the other rational objectives are as follows:

i. To access the present magnitude and trend of nonperforming loans of banks of Bangladesh.
ii. To determine the causes, impacts and remedies of nonperforming loans of banks of Bangladesh.
iii. To examine the bank-specific, macroeconomic and industry factors affecting nonperforming loans of banks of Bangladesh.
iv. To explore the interactions between nonperforming loans and bank profitability of Bangladesh.
v. To recommend strategic suggestions and methods for the efficient and effective management of nonperforming loans of banks of Bangladesh.

1.5 Hypotheses of the Study

The hypotheses for this study are set as follows:

1. The upper the gross nonperforming loans, the lower the bank profitability of Bangladesh.

2. Net NPL is related negatively and significantly to bank profitability.

3. Credit risk does not affect positively to bank profitability.

4. Loan growth ratio bears a negative relationship with bank profitability.

5. Advance deposit ratio bears a positive relationship with bank profitability.

6. Cost efficiency has no positive relationship with bank profitability.

7. Bank size is not related positively to bank profitability.

8. There is a significant relationship exists between bank profitability and rate of GDP growth.

9. There is a significant relationship exists between bank profitability and rate of inflation.

10. Bank concentrations have a negative relationship effect on bank profitability.

11. Banking sector development is positively related to bank profitability.

12. Stock market development has a positive relationship effect on bank profitability.

1.6 Motivation of the Study

With the expansion of Bangladesh's economic reform to maintain sustainable economic growth, resolving the NPL issue of banks and restructuring banks has not only become an urgent issue for the government, but has also stimulated strong researchers' interest and concern. This research also places great emphasis on the causes of the NPLs of Bangladeshi bank as well as relevant options for addressing these issues. The Bangladesh government also agreed that enhancing the legal regime is an important component of a sound and sustainable banking system that is vital to solving banking issues. These important studies have undoubtedly aroused my strong interest in the issue of how the legal system works in the development of the banking sector in Bangladesh or, more specifically, the role of the legal and non-legal system in the development of NPLs. Obviously, this research interest in the resolution of NPLs in the banking sector also extends to the function of the legal and non-legal system.

The research has the potential for connecting to efficient system of management of nonperforming loans and measuring the long term effects thereof to improve the banks' asset quality. This study will also focus on Bangladesh's banking system reform measures along with the reform measures' economic outcomes. Since the 1990s, the banking system has followed a broad-based FSRP reform program. Later, it undertook BRC programs, adopted risk based capital adequacy norms and flexible interest rate policy to short-term competiveness and efficiency in the banking system. That's why this research tries to examine the efficacy of financial reforms measures on the banking sector particularly, in respect to their contribution towards NPLs of banks. Because,

accurate and sound lending decision methods may improve NPL in the banking system as a whole which is very essential for a sustained economy of Bangladesh. In addition, estimates of the determinants of NPL provision, bank profitability and inter-relationships between NPLs and bank profitability of Bangladeshi banks provide useful evidence to the government of Bangladesh and the regulatory authorities of banking.

Finally, a key contribution to the present literature is that this study emphasis on examining the different relationships between (1) nonperforming loans and macroeconomic variables, (2) nonperforming loans and bank specific variables (3) loan classification & provision and (4) nonperforming loans and bank profitability. The investigation of these relationships is valuable for the government to mark applicable policies to regulate the banking sector's development, improve bank profitability and reduce nonperforming loans in banks of Bangladesh.

After considering the importance of such strategic affairs in banking region, it is felt necessary to carry out the research entitled "Impact of Nonperforming Loans of Banks of Bangladesh".

1.7 Contributions of the Study

There are several outcomes that can be occupied from this study, such as:

Academic world: Bank credit risk, there is an expected risk of non-repayment before the loan will finally become nonperforming and impact harmfully on the bank. A bank that has a very high appetite for profit usually relaxes her credit risk management policies to increase its risk loan portfolio. Therefore, to overcome the risk of nonperforming loans, every borrowing must be supported with adequately and acceptable security values. The causes of nonperforming loans have been attributed to many factors by researchers who have applied various methodologies both descriptive and quantitative to arrive at their conclusions which have shown conflicting results. This research is very important because the dynamic nature of the global economies defends the need for continuous research.

Regulators: The study of nonperforming loans causes which considers other macroeconomic pointers and banks specific variables give credence to greater significance for regulators and policy makers and within the financial system to take proper actions that will ease the rising level of nonperforming loans in banks. The study will be significant to the regulatory authorities like Bangladesh Bank, Securities and Exchange Commission (SEC), Insurance Development and Regulatory Authority

(IDRA), Microcredit Regulatory Authority (MRA), National Board for Revenue (NBR), the Investment Bank of Bangladesh (ICB), the Institute of Chartered Accountants of Bangladesh (ICAB), Bangladesh Institute of Bank Management (BIBM) and other Professional bodies, according to the guidelines establishing them.

Investor /Potential borrowers: Lending and borrowing are the commercial bank's core business. Banks become opposed to further lending despite high demand from borrowers and estimated high interest income. The borrowers may not understand the basis for such opposing reactions from commercial bankers, which have been due largely to high nonperforming loans. Consequently, the findings from this thesis will be beneficial to the various borrowers such as the Importers, Exporters, Manufacturers, Traders, Transporters, Airlines operators, Multinationals, Agriculture, Marine Agencies, Private investors in real estates and Capital Markets in terms of understanding how their inability to repay borrowed funds from banks will affect the entire financial system stability.

Credit rating agencies: In Bangladesh, the study is significant as it will identify, analyze and show how to mitigate the various risk types (Credit, Operational, Reputational, Liquidity, Market and Human Resources) risks. The study is significant as it will expose the major challenges facing the banks in her loan administrations and control. Such challenges identified is the dearth of professionals and the absence of strategic partnerships and alliances with local and global professional bodies like Credit Rating agency of Bangladesh (CRAB), which creates skill and capacity gaps.

Government: The study will be significant at this period of globalization where the USA, Canada, Europe, World Bank, International Monetary Fund (IMF), and other world financial blocs like the SAARC, ASIAN, OIC, ADB battles with regional and global financial crises, the various levels of government might mediate to rescue the financial system by considering packaging economic financial stimulus to the citizenry through lowering lending rates, releasing more public sector funds to the banks for onward lending to borrowers, buying over the 'toxic assets' of the banks, thus, releasing much needed liquidity to the banks and financial crises, or injecting much needed capital to the sick banks.

Banking and NBFIs: Banks and NBFIs can recognize the factors that pay for NPLs to be created and regulate their lending approach.

Industries: As for investors, it will also give industry the outline of the bank's fluctuated performance due to economic conditions. This is useful knowledge for making sound industry investment. Hence, this research is both topical and important, and it is also

timely and appropriate in trying to identify key refrains in the debate on how to solve the NPLs problem. Studying nonperforming loans and investigating into the scope of unwarranted macroeconomic indicators is more important for all policymakers within commercial banks and regulators accountable for the country's economic unpredictability to take proper schedules to get rid of this position quo as soon as possible. The present study huts light on the loan default's inherent reasoning. The banks can recognize the factors that contribute to the formation of NPLs and also adjust their lending policy.

1.8 Structure of the Study

The thesis description is planned and organized under the following nine chapters:

Chapter-1: Introduction

This chapter contains the broader research perspectives such as background, statement of the problem, research questions, objectives with specific aim, motivation, hypothesis used in the research, contributions, structure and lastly limitations of the study.

Chapter-2: Literature Review

This chapter has reviewed mainly the literatures on nonperforming loans and bank portability. In the chapter, the reviewed literatures are classified into (1) NPLs in the Bangladesh context (2) NPLs studies in the International context and (3) NPLs related variables.

Chapter-3: Research Methodology

This chapter delivers the methodologies used to investigate NPLs and bank profitability of Bangladesh. Firstly, describe the variables used as the profitability indicator such as bank specific, industry and macroeconomic factors of bank profitability are designated. Regression analysis estimators like OLS, Fixed Effects, Random Effects and Generalized Method of Moments (GMM) are employed so as to explore the determinants of bank profitability. Furthermore, different diagnosis tests are explained.

Chapter-4: Banking System of Bangladesh

This chapter deals with Bangladesh's banking sector, its background and phases of development. The major changes since the post-liberalization period in the banking sector are explained. In addition, the development of the banking sector in terms of number of branches, offices, deposits and advances is explained during the study period. The banks are also divided into four separate bank categories, depending on the nature of their activities and the nature of their ownership.

Chapter-5: Theoretical Approach: Nonperforming Loans

The emphasis of this chapter is on the conceptual core of nonperforming loans. The term NPL is defined in conjunction with a detailed evaluation of NPL, current loan classification, its provision and write-off scheme as well as the implications of the regulatory system in Bangladesh has been discussed.

Chapter-6: Nonperforming Loans in Bangladesh: Causes, Impact & Remedies (Objective-1, 2 & 5)

Chapter six focuses on the problem of NPLs in banks of Bangladesh. It discusses the NPLs' outstanding amounts, how they originated, and also provides a perspective on how serious the issue is in Bangladesh. It also looks at the effects NPLs have had on various economic aspects. This chapter also discusses the suggested remedial strategic measures for the defaulted borrowers. The chapter concludes by discussing the causal factors and makes an assessment of the measures taken to deal with NPLs covering specific measures, international experience, relevant legal and regulatory environment, as well as possible improvements.

Chapter-7: Empirical Results on Bank Profitability (Objectives-3 & 4)

This chapter explores the empirical results through regression estimator models and diagnostic tests on impact of nonperforming loans on profitability of banks of Bangladesh. More specifically, the following issues are examined and discussed: 1) the impact of bank-specific factors, particularly NPLs, on bank profitability 2) the impact of macroeconomic factors on bank profitability and lastly 3) the impact of industry factors on bank profitability.

Chapter-8: Summery of Findings and Discussions

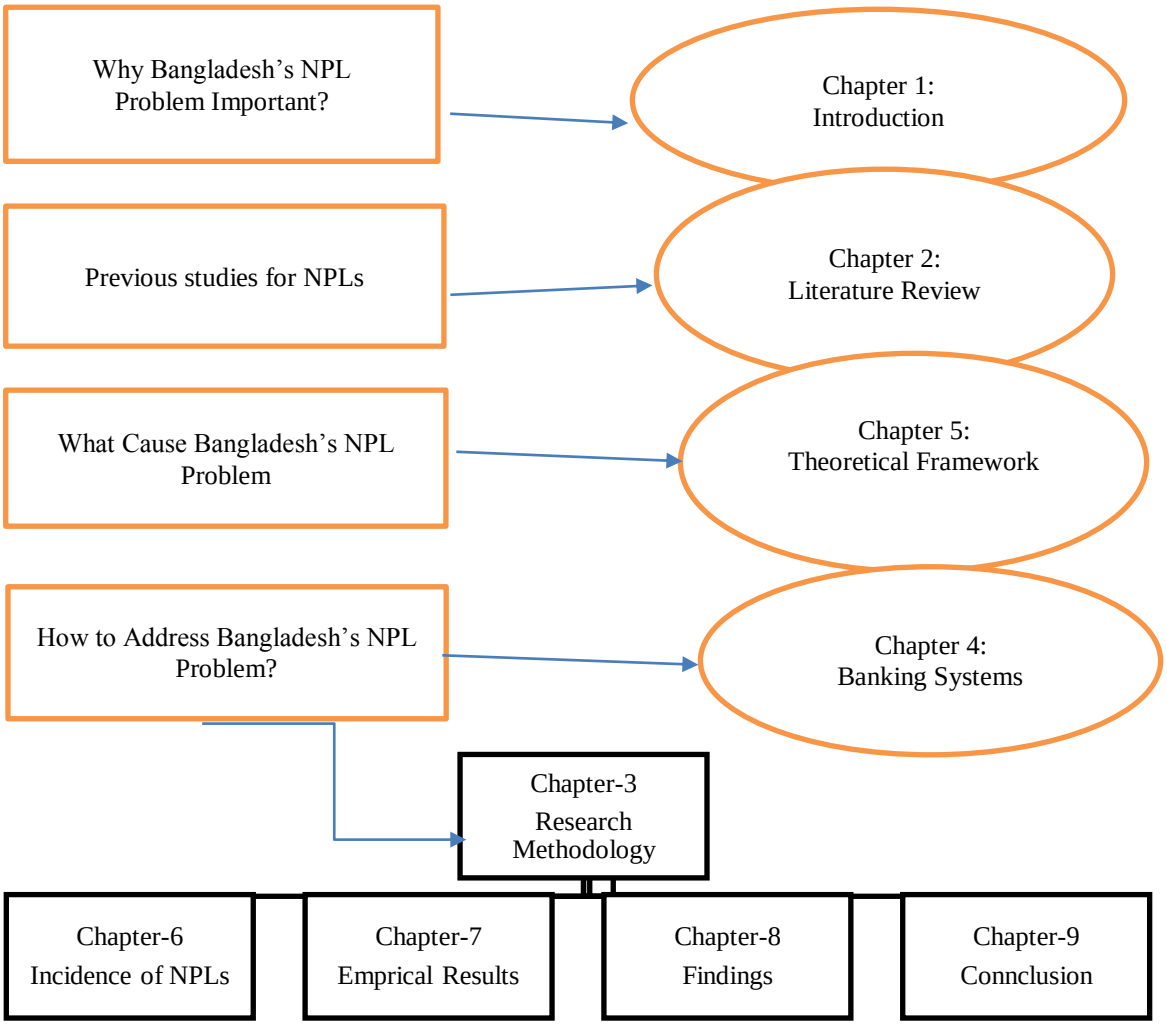
This chapter presents summaries the study and the main finding from previous chapters. Specific contributions made by this study and attention is drawn to the findings and short comings are outlined in this chapter.

Chapter-9: Conclusion and Recommendations

Concluding comments in chapter nine reflects on policy recommendations for the study based on summery of findings. This chapter summarizes the preceding chapters' key findings. The implications of the policy are also being discussed. To finish, attention is drawn to the areas identified for future research.

Lastly bibliographically references and appendices have been quoted.

Figure 1.1: A Systematic Layout of the Research



1.9 Limitations of the Study

Although, in all aspects of this research, utmost care has been exercised, several limitations have been faced and are recognized herewith.

The study is delimited as financial intermediaries to commercial banks. A limitation in this research is that, due to the monopoly status of commercial banks in the banking sector and their large volume of NPLs, the thesis focuses mainly on the study of commercial banks in Bangladesh without much concern for other levels of banking institutions. Bangladesh Bank statistics show that commercial banks accounted for 72% of total banking assets as of December 2017, and more than 10% of NPLs in the banking system. Since collecting information from all banking sectors in Bangladesh within this limited resource is extremely difficult, the research focuses on commercial banks' study. Despite its' certain limitations, commercial banks, as the largest and most powerful

players in Bangladesh's banking industry, typically represent the operational issues within the banking system, and can provide adequate and valuable information about them. The study's main limitations are resource constraints. The study depends on having access to organizational data or documents, and due to the confidentiality of the information, access was somewhat limited for whatever reason. The study is primarily driven by secondary data, but this study is limited by the lack of available and/or updated data. It will be better if any further study is conducted using primary sample data as primary data has more credibility and reliability although more time and effort is required. The study is suffering from inherent limitations due to economic value rather than physical value. More shortcomings are given below:

- The study will be conducted between 2008 and 2017.
- In spite of all precautionary measures taken to ensure its reliability, the respondent's bias would have affected the data quality to some degree.
- The study has been undertaken on only single country experience i.e. Bangladesh.
- Study of the analysis of NPLs is restrained to commercial banks and non-scheduled banks & NBFIs are not taken into consideration.
- Defensive actions which are introduced by the banks to reduce the NPLs are not accessible to the researcher.
- At macro level the data is obtainable but at micro level the data is not obtainable.
- The study considers the impact of NPLs on the exclusive parameters of financial performance of banks.
- The percentage and averages as tools of analysis lack absolute accuracy as they are adjusted to the nearest decimal points.

In conclusion, in spite of these, limitations of the study may effect a very little adverse on the findings. However, these shortcomings and limitations do not insipid the academic quality of the research.

CHAPTER TWO
LITERATURE REVIEW

This chapter explores the empirical work conveyed by various researchers in relation to economic disaster as generated by credit risk quality that ultimately transforms bank institutions into nonperforming loans. Besides this chapter, the review of prior studies on the impact of nonperforming loans on bank profitability distressed. Research has been completed on the bank system's nonperforming loans and profitability in economic and financial research. The researcher found as a root concept some previous study of each research goal. The variables used to detect the NPL in recent years have been financial ratios, such as ROA, ROE and NPM, and macroeconomic variables such as GDP & Inflation. The researchers also used similar variables in the last decade in banking, industry and macroeconomics in this study. Most studies divide profitability factors in banks into two groups, e.g. internal influences and external influences. This research also addressed the internal factors of nonperforming loans that affect banks' profitability of Bangladesh.

2.1 Banking System

Banking system historically acting a significant role in economic development (Cameron, 1972). The banking system has become an essential component of each country's economic actions (Teker et al., 2011). Nazim & Yousuf, (2003) supposedly links a country's economic development desperately with the country's banking sector's development. The economic condition depends on its banking system's soundness. Banks provide general people's savings security; then again, lend money to entrepreneurs to start a news business or expand an existing business that ultimately generates money speed and job creation in an economic territory. The modern banking system is complicated from lending money to exchanging money now in several financial services actions (Woelfel, 1993). The banking sector fuel a country's development engine primarily (Aspal & Malhotra, 2013). Therefore, any trouble for this banking sector will certainly have a severe impact on the country's economic growth. The problems in encouraging economic and industrial development in Bangladesh that hinder the effective running of the banking system (Jahan and Nail, 2003). The findings include (a) a relatively poor legal environment in banks, (b) a lack of credit discipline despite financial sector reform programs, (c) loan penalties are mostly verbalized by political

decisions, (d) loan-taking entrepreneurs are not honest, and the fund is diverted, and (e) there is a gap between banks and entrepreneurs. Numerous usual problems in the banking sector as immature business environment, lack of capital, liquidity crisis, loan default, incompetent investment and loan field, problem with adequate deposit collection, corruption & nepotism and restriction of modern information technology etc. (Kamal, 2006). Banks are working with outdated banking processes, lack of coordination between manpower and banking systems development, lack of market research to analyze client psychology, incompetent banking services, and lack of long-term planning, creating bottlenecks that prevent local banks from reaching international values (Ali, 2005). The empirical literature and subsequently mentioned Bangladesh's bank profitability: include four performance indicators such as return on average assets, net profit margin, added economic value, and return on average equity (Heffernan and Fu, 2010). Furthermore, use both the fixed effects estimator and the GMM system estimator to scrutinize the bank profitability determinants. Banking is one of the world's most severely controlled industries. Banking system regulations as a whole include regulation on entry status, ventures, mergers and acquisitions, establishment of new branches. Straight bank management regulations cover interest rates, loan policy, deposit policy and requirements for liquidity (Edwards, 1977).

Central Bank: The adoption methods suggested by the central bank perspective of the country, the banking industry can avoid their unsuccessful loans. Nonperforming loans are increasing day after day due to the lack of a risk management system for banks that threatens the profitability of banks (Haneef and Riaz, 2012). Over the past few years, the works on nonperforming loans has used many authors' interest mostly in accepting variables that are answerable to the higher NPL. Two factors were identified in the literature to explain NPL growth over time. One group highlights external factors as general macroeconomic situations, which are likely to disturb the ability of borrowers to pay their loans, while the another group, which expressions more closely at the inconsistency of NPLs diagonally banks, features the level of nonperforming loans to bank-level influences.

Consequently, ineffective banking institutions monitoring may clarify the reasons for high loan defaults. The development of the banking sector was higher than in the previous period (Shamsuddoha, 2008). Bangladesh Bank has achieved a significant trade and commerce landmark, moving from conservative banking to the new e-commerce outline; a massive step concerning digital Bangladesh (Rahman, 2010).

2.2 Bank Profitability

Vong & Chan (2005) conducted with five different banks on bank profitability determinants that examined bank-specific variables. He originates that a higher loan-to-total ratio of assets may not essentially indicate a higher profit level. Because of the sound situation of the credit market and the successive interest rate cuts, or the spread of interest, i.e. the major cause of profitability, becomes smaller. A lower spread composed of a higher loan loss results in lower profitability. Consequently, it is the spread and quality of the loan that matters instead of the size of the loan The elements of profitability of commercial banks and the outcomes were that separately from the quality of assets, higher returns on assets are linked to larger bank sizes, diversification of businesses (Flamini, McDonald & Schumacher, 2009).

Return on asset (ROA): Avery & Godlewski (2004) employed return on asset (ROA) as a performance proxy to show that the profitability of banks has a negative impact on the NPL ratio. Salas & Saurina (2002) revealed in investigating the problem loans in commercial and saving banks in Spain that the variation in NPLs is explained by quick credit growth, bank size, capital ratio and market control.

Return on equity (ROE): The impact of nonperforming loans on bank profitability in Nigeria was examined by Adebisi J. F., & Matthew, O.B. (2016). The secondary data obtained from the NDIC's annual report and account statement were analyzed using the regression model for a seven-year period 2006-2012. Researchers found significant negative relationships between nonperforming loans (NPL) and return equity returns (ROE), but found a positive but insignificant relationship between Nigerian banks' nonperforming loans (NPL) and asset returns (ROA).

Net profit margin: Based on regression analysis such as random effects to discover the underlying causes of the performance of the banking industry in Tunisia, provided figures on the size and breakdown of the bank margin and profitability consuming bank data for the period 1980-2000 in Tunisia (Samy Ben Naceur, 2003). In addition, bank and profitability net profit margin (NPM) determinants are included through a comprehensive set of internal features. He also found that the profitability of bank loans has a positive and significant impact. This outcome may simply reflect inefficiencies on the scale. The study was documented by Abreu and Mendes (2000) through a positive relationship between the profitability and loan ratio.

2.3 Nonperforming Loans

The various governments, having liberalizes their economies started experiencing large capital inflows with increasing demand for goods and services. The channel for these huge international banking transactions were the banks both local and international banks. The resulting economic boom led to the banks to develop high appetite for profitability through the expansion of their total loans and advances portfolio. This led to the deterioration of average bank asset quality across the emerging economies as most of these loans could not be repaid following the impact of the cyclical nature of the individual emerging economic environment which result into banking crises and often banking failures (Roland et al. 2013). The fact that loan performance is tightly linked to the economic cycle is well known. During economic crash, most of these loans could not be repaid as at when due. The implication was nonperforming loans for the banks. Inadequate preparation for financial liberalization increased the pressure on the banks to engage in riskier activities that led to nonperforming loans. Another common causes of banking crisis in the emerging economies include excessive optimism about lending to rapid expanding manufacturing firms and speculative property developers, whose booming output and rapid rising collateral values gave banks false sense of security and allowed firms to become highly leverage.

Reddy & Mohan (2003), Sinkey (1991) and Dash & Kabra (2010) have shown that loans are the main product and the banks' decision to grant loans is very important because it determines the banks ' profitability on Indian banks covering the 1998-2009 period. Currently, banks are so much aware of shunning bad loans or nonperforming loans in customer selection. The issue concerned over the last few decades is nonperforming loans. The alarming of increasing nonperforming loans is facing in developing countries as well as developed countries. The banks' lending policy puts a decisive pressure on unsuccessful loans. A default is not an unreasonable pronouncement altogether. Rather a defaulter takes into account his decision's probabilistic assessment of a variety of costs and benefits. Idle banking reflects significantly on the investment portfolio and loan policy of the bank. Typically, the reasons for nonperforming loans are attributed to the banks' lack of effective supervision and monitoring, the lack of efficient bankers, the failure of legal infrastructure and the lack of effective loan recovery systems. There was no criterion for describing the nonperforming loans at the practical level (Hou, 2001). In the classification of loans, scope, and content, there are several disparities. Non-linear negative effects of nonperforming loans on the lending behavior of banks. An adverse

effect on lending with NPLs above the threshold (Tracey, 2011). A bank's lending behavior could restrict economic action, especially when NPLs are high in times of stress. NPLs are withdrawn from three sets of loan-related factors, bank size encouraged risk preference, and economic jolts (Ranjan and Dhal, 2003). The models of panel regression show the loan variables expressions to be noteworthy. Because of the anticipation of high interest rates, the estimated coefficient on changes in loan costs is positive. Not at all, the possibility of loan maturity, better loan culture and favorable economic conditions diminish the incomplete loans. An empirical outcome of an econometric model based on a Guyana study showed that any country's GDP growth is negatively associated with nonperforming loans. Lower rates of unsuccessful loans indicate the country's real economy improvement. Khemra, Saba & Pasha (1987) showed that NPL are negatively associated with GDP growth. Good loan helps any country's economy develop. On the other hand, it is easy to find that banks are claiming higher interest rates and excessively lending to borrowers, indicating the increase in nonperforming loans. Fan & Shaffer (2004) found that the efficiency of large commercial banks ' profitability depends on reducing unsuccessful loans. Big commercial banks' profit efficiency is through accounting for nonperforming loans. Calice, (2012) identified that nonperforming loans and profitability are negatively related, it is not statistically significant that poor bank management results in poor credit quality, indicating an increase in nonperforming loans. Large volumes of NPLs in a bank are compulsory to bear the costs of carrying non-income assets that not only strike at a bank's portability but also at a bank's capital adequacy and, as a result, the bank surfaces problems with increasing capital resources (Muniappan, 2002). Nonperforming loans signaled future problems in increasing loan write-offs for banks that approved requirements for capital adequacy (Berger et al., 1991). Miller & Noulas (1997) suggested that financial institutions are visible to high-risk loans and upsurge the buildup of unpaid loans and reduce profitability.

NPA and Islamic bank's profitability: The research object was the effect of CAR, BOPO, NPA and FDR on ROA during the period 2005-2010 (Pratiwi & Mahfud, 2012). The result showed that NPA (nonperforming asset term used in Islamic banks instead of NPL) has a negative and significant impact on ROA. Padmantyo (2011), the research objective of was to analyze the variable that affected Indonesian bank's nonperforming assets, and the outcome showed that the number of Islamic bank financing and the level of GDP significantly affected the level of NPA. Besides that, the researchers find

something eye-catching, which are macroeconomic variables such as inflation and interest rates. The researchers have not found the earlier research using Islamic bank instance inflation and interest rate. Islamic bank does not have a system of custom interest. In elementary theory, if inflation occurred and interest rates raised the value, commercial banks' NPL would rise. In this research, the researchers would like to know how interest rate and inflation might affect Islamic bank NPA in Indonesia. ROA is the indicator for measuring the business ' efficiency in order to obtain profit and use its assets. If NPA drops, the likelihood of ROA becomes higher, so the bank's efficiency is decent. Mawardi (2005), found that ROA was adversely affected by NPA. If NPA got higher, the productive cost of reserve assets would get higher. FDR shows the liquidity of the bank that shows the bank's ability to meet credit demand by using the assets of the bank. If NPA gets higher, it is possible that FDR also gets higher. Ding Lu et al. (2001) would run the chance of increasing the NPL ratio if a bank gives the company "over" credit demand.

2.4 Bank-Specific Determinants

Unlike macroeconomic factors, banking industry's unique characteristics and individual banks' policy choices have a decisive influence on increasing NPLs. The link between bank-specific factors and NPLs was examined by a component in the literature. Keeton (2003) highlighted a robust relationship between credit growth and declining assets. The results have shown that quick credit growth has been associated with lower credit standards that have contributed to higher loan losses. Guru & Bala (2003) divided internal determinants into two sub-categories such as variables of financial statements and variables of non-financial statements. The variables of the financial statement are linked to the decisions that directly affect the balance sheet' items and the profit & loss accounts where the variables of the non-financial statement are factors that do not directly affect the financial statements.

Bank size: Sufian (2009) Ramlall (2009); Molyneux and Seth (1998), Koasmidou (2008); Spathis, Koasmidou & Doumpos (2002), Demirguc-Kunt and Maksimovic (1998) recognized the positive relationship between bank size and profitability and examined the fact that bank size was subject to economies of scale as larger banks were more profitable than smaller banks. They originated that higher funds can easily meet their rigid capital so they can have additional funds to give borrowers loans and thus increase their profits and levels of earnings. The positive relationship between bank size

and bank profitability was discussed by Pilloff and Rhoades (2002). A positive effect with bank size was identified by Misra & Dhal (2010) and Das & Ghosh (2007). Their justification is that because of the restraint of the balance sheet, large banks are more likely to have relatively more NPLs. But Hu et al. (2006) decided that the size of the bank was negatively associated with non-performing loans. The bank size is measured as an internal determinant on the assumption that by acquiring additional assets and liabilities, bank management is responsible for expanding their organization. Boyd and Runkle (1993) showed that a bank's size is also related to the economic concept. Athanasoglou et al. (2006) specified that a bank would increase its earnings as a result of gaining market share, thus increasing its profitability. Large banks are supposed to enjoy economies of scale, so they can deliver their services cheaper and more efficiently than smaller banks. As a result, if entry is restricted, larger banks will make higher profit rates. The idea was supported by Merton (1977) as banks with a low capital-to-asset ratio really selected the maximum risk composed of a least diversification.

Loan loss provision: Al-Smadi & Ahmad (2009) acknowledged provision for loan losses (LLP) as being positively linked to credit risk, but not worthy of note. But Ahmad and Ahmad (2005), LLP was a major credit risk analyst. An increase in the level of LLP is an indicator of a loan quality deterioration. Huge LLP is required to accommodate higher NPLs, and credit risk can be increased. Bouvatier & Lepetit (2007) offered clarification on the part of loan-loss provisioning capital buffers. Developing a partial equilibrium model, they assumed that generating capital buffers to shelter likely losses not included in loan-loss provisions is a substitute form of a forward-looking supply system. Banks use retained earnings to increase capitalization rather than increase dividends during economic growth, thereby balancing the effect of the business cycle on capital buffer provisions. Kim & Kross (1998) observed that differences in the regulatory treatment of banks that are sufficiently or low-capitalized compared to well-capitalized banks could also subsidize the asymmetry of loan-loss provision of banks' behavior in certain economic situations. Compared to well-capitalized banks, sufficiently capitalized banks may have regular regulatory reviews and more regulatory restrictions on banking action. Well-capitalized banks may have less regular audits by regulatory agencies, especially during economic upswings. Because well-capitalized banks have fewer restrictions and less regulatory control, they may be more motivated to take a temporary view of the loan portfolio's credit cycle and thus tend to act procyclically relative to low-capitalized banks. Prior research provided evidence of asymmetry in bank capitalization's

influence on loan-loss delivery conclusions due to varying banks ' risk approaches across altered capitalization levels (Stolz, 2007). Beaver et al. (1996); Hasan & Hunter (1999); Lobo & Yang (1996) expressed the flexible component of the provisioning choices made by banks as a result of the ambiguity in the estimation procedure of expected losses. Empirical lessons have shown that loan-loss provisions are frequently used in the following three types of discretion: 1) horizontal income; 2) capital achievement; and 3) financial power signaling.

Credit risk: In the study, Baral JK (2005) concluded that credit risk is one of the factors that disturb a single bank's health, although asset quality analysis includes taking into account the likelihood that borrowers will pay back loans. The credit risk scope depends on the quality of a single bank's assets. A bank's asset quality depends on contact with specific risks, trends in nonperforming loans, and bank as well as borrowers' health and profitability. Credit managers found an idea that credit managers' years of experience were positively correlated with nonperforming loans as credit managers' decision-making was influenced by external factors such as personal gain and political corruption (Omar, Bellalah, Walid & Frederic, 2010). The negative relationship between credit risk and profitability was identified by Ramlall (2009) and Miller & Noulas (1997). It shows that there is a negative relationship between them, and it means that higher loan-related risk, higher the level of loan-loss supplies that result in a bank's profit-maximizing strength and suffering. Naceur & Goaied (2001) found the factors affecting the performance of the Tunisian bank during the 1980-1995 period. They determined that the best developing banks are those who have an effort to achieve better labor and productivity of capital, those who have balanced a high level of deposit accounts compared to their assets, and finally those who have been able to strengthen their equity for the performance of banks. Boudriga et al. (2009) initiated that bank-specific determinants such as credit growth are negatively related to NPLs and credit-focused banks experience low NPLs, specifying that banks agree to improve credit risk assessment by focusing on loan activities.

Loan growth: The most broadly investigated in literature aspect of this is the relationship between credit growth and performance of banks (Gorton, 2009, Demyanyk & Van Hemert, 2009). Foos et al. (2010) and Amador et al. (2013) showed the important relationship between credit growth and bank risk taking behavior explored, with the exception of two recent contributions. Foos et al. (2010) analyzed whether loan growth affects the riskiness of individual banks. They found that loan growth had a negative

impact on the risk-adjusted interest income, which suggested that loan growth was an important driver of the riskiness of banks. Numerous studies have found that excessive credit growth can lead to asset price bubbles developing. Borio et al. (2002) and Borio & Drehmann (2009) showed that extreme credit growth was the leading indicator of a twelve-month financial crisis in cases where loan flows appeared to continue to be high for the rest of the year on the basis of forward-thinking indicators. Therefore, there was nearly common evidence that banks with risk appetite were compromised by loan-related experiences. An increase in NPL was expected to indicate a decrease in banks ' credit lines, hence the negative relationship between NPL and loan growth rate. Das & Ghosh (2007) found a strong and positive impact of credit growth on problem loans.

Cost efficiency: Berger & Humphrey (1992); Wheelock & Wilson (1994) identified a number of important ways of connecting non-performing loans and cost efficiency. Banks approaching failure tend to have lower cost efficiency as well as high ratios of problem loans. Kwan & Eisenbeis (1995), even among banks that are not failing, found a negative relationship between efficiency and problem loans. DeYoung (1997), found a positive relationship between asset quality and cost efficiency and advises that the relationship between problem loans and cost efficiency is negative. In Taiwan's banking sector, Tsai & Huang (1999) examined the relationship between quality management and cost efficiency. They exposed the connection between asset quality and cost efficiency; the non-value-added bad asset activities have a negative impact on operating performance through the use of a translog cost function. Studied on bank efficiency, Altunbas et al. (2000), Fan and Shaffer (2004) and Girardone et al. (2004) took into account the quality of assets, specifically nonperforming loans. Mester, (1996) found a variable lapse could result in an inaccurate measure of bank efficiency. This is mainly true as a large proportion of nonperforming loans can indicate that banks are using fewer resources than usual in their credit assessment and loan monitoring process. In addition, nonperforming loans lead to banking sector inefficiency. Berger & DeYoung (1997), highlighted the better management of their credit risk by efficient banks. Altunbas et al. (2000) found that nonperforming loans were positively related to bank inefficiency by taking into account risk and quality factors such as cost-effectiveness banks in Japan's commercial banks for the period 1993 to 1996. After observing risk factors, Hughes & Mester (1993) and Girardone et al. (2004) assessed banks ' inclination to experience a decline in their scale efficiency level. This result also coincides with U.S. and Italy bank efficiency levels. By accounting for non-performing loans, Fan & Shaffer (2004)

analyzed the profit efficiency of large commercial banks in the U.S. They find that it is not statistically noteworthy, although nonperforming loans are negatively related to banks' profit efficiency. Fiordelisi, et al. (2010) specified that rising bank risk could temporarily lead to a decline in cost efficiency associated with lower credit display. In banks, weak monitoring can indicate both customer credit quality and operating costs, which will persuade high capital loss levels. Peristiani (1996) and Berger & DeYoung (1997) found a positive relationship between cost efficiency and the quality of bank management. Under the Berger & DeYoung (1997) bad management hypothesis, managers were incapable of effectively assessing and controlling the risks incurred when lending to new clients. Kwan & Eisenbis (1997) show that higher bank inefficiency levels can lead to higher bank loan ratios. Bank profitability can also control managers' risk-taking behavior. High bank profitability is less stressed on the formation of revenue and therefore less compelled to engage in risky credit offerings.

2.5 Macroeconomic Determinants

GDP: Based on literature review, the supreme influential macroeconomic indicators are identified as the main cause for creating nonperforming loans and the most suitable methodology for assessing the relationship with nonperforming loans. Foglia, (2008) stated that loan performance is related to macroeconomic indicators such as nominal interest rate, inflation rate, real GDP change, economic growth, unemployment, and trade change. One of the problems with such an approach, taking macroeconomic variables as exogenous, is that they are simultaneously affected by the banking industry's distress. As exogenous forces influencing bank performance, macroeconomic factors are observed. Banks argue that if a recession occurs, companies and households will encounter a shortage of liquidity, which in turn would increase the likelihood of delays in meeting their financial needs (Jimenez & Saurina, 2006). Das & Ghosh (2007), Al-Smadi & Ahmad (2009), Warue (2013) and Brownbridge (1998) found the relationship between problem loans and GDP to be significant and negative. That specified a decline in economic activity helps to increase nonperforming loans. The factors that caused NPLs empirically and found evidence that economic growth, real appreciation of the exchange rate and the real interest rate contributed to the increase of NPLs (Fofack, 2005). Salas & Saurina (2002) revealed that real GDP growth explains NPL variations. Jimenez et al. (2005) provided evidence that, together with the economy's GDP, NPLs are determined by high real interest rates and mild credit terms. Keeton (1999) and Borio et al. (2002)

found in several elements of the literature the relationship between loan growth and bank risk, especially credit losses, but there was little research on cross-sectional relationship differences

Inflation: Al-Smadi & Ahmad (2009) identified inflation as having a significant negative impact on credit risk. Warue (2013) also concluded that the impact of inflation on commercial banks was negative. Hoggarthet al. (1998) concludes that high and variable inflation can cause loan forecasting and negotiation problems. The relationship between inflation and profitability was found to be diverse by Guru et al. (2002). Jiang et al. (2003) showed that, through empirical studies in Malaysia and Hong Kong, high inflation rates lead to higher bank profitability. Demirguc-Kunt & Huizinga (1999) noted that in inflationary environments they tend to be less profitable, mainly when they have high capital ratios in developing country banks. Indeed, bank costs growth faster than those countries' inns of bank revenue.

2.6 Industry Determinants

Stock market development (SMD): Bangladesh's banking sector assets organize a large 92 percent share of the financial economy. Demirguc-Kunt & Huizinga (1999) and Bashir (2000) showed better chances of profit in countries with well-developed share markets through empirical evidence from banks. They claimed that the greater equity markets in these countries provide greater opportunities for banks operating in these countries to expand their profits.

Banking sector development (BSD): BSD is one of the industry-specific determinants, is theoretical to affect bank profitability. Demirguc-Kunt and Huizinga (1999) argue that banks operating in a higher development banking sector normally have lower profitability.

Concentration (C5): Smirlock (1985), Bourke (1989), and Staikouras & Wood (2011) suggested concentration in the industry would have a positive impact on banking performance. But there are also different studies reporting inconsistent results. For example, a negative coefficient between bank profitability and concentration in Tunisia was reported by Naceur (2003). Karasulu (2001) argues that the increasing concentration of banks in Korea does not essentially contribute to bank profitability.

2.7 Bangladesh Context

Bangladesh's banking system depends on banks' liquidity, profitability, and performance (Adhikary, 2007). It is alarming for the country's economy that nonperforming loans are increasing in both state-owned commercial banks (SCBs) and other financial institutions (FIs), together with the preservation of insufficient loan provisions, moderates Bangladesh's overall credit quality. Poor enforcement of laws unfolding to resolve of nonperforming loans, followed by inadequate debt recovery appraises on the part of the banks, has also exaggerated the financial depression. Adhikary (2006) found that both bank failure and economic slowdown are the immediate consequences of large amounts of NPLs in the banking system. The causes of nonperforming loans are usually attributed to banks' lack of effective monitoring and oversight, lack of effective recourse from lenders, weak legal infrastructure, and lack of effective debt recovery strategies. Adhikary (2008) noted that poor enforcement of NPL settlement laws, followed by adequate bank debt recovery measures, is also seriously affected by financial sickness, although there has been a decline in NPLs since 2000. Islam (2012), in a study on BHBFC found that 97.6 percent of the inconsistency in the volume of classified loans can be described by total advances, provisions, legal charges and spread. The legal charge was found to be statistically irrelevant. Alam et al. (2011) in their study concluded that ranking of banks differ as the financial ratio changes. Lata (2014) used a linear regression model of econometric technique and several ratios to study the NPLs time series scenario, its growth, provisions and relationship with bank profitability. For the past eight years, empirical results have denoted that NPL as a percentage of total SCB loans is very high, holding more than 50 percent of total banking sector NPLs, on the other hand, private commercial banks and foreign commercial banks grip a maximum of 5-10% of the total. The author concluded that NPL is one of the major factors influencing the profitability of banks and for the study periods it has statistically significant negative impact on net interest income (NII) of SCBs. Haneef & Riaz (2012) examined banks in Bangladesh with an ultimatum to lower their soaring nonperforming loans to less than 10 percent of their respective outstanding loans. The causes of nonperforming loans are often attributed to banks' lack of effective monitoring and supervision, lack of effective lenders recourse, legal weaknesses in infrastructure, and lack of effective strategies for credit recovery. In the supervisory side of the financial sector, Wallach (2006), pre-election has a persuasive power. Because of this, the government and the Bangladesh Bank appear to be under pressure from some quarters.

Obviously, this is not an easy environment to work in and specific steps should be taken to prevent further deterioration and depression of the banking sector. Sufian & Habibullah (2009) studied the performance of 37 commercial banks in Bangladesh from 1997 to 2004 and observed that bank-specific characteristics, such as loan intensity, credit risk and cost, had a positive and significant impact on bank performance, while non-interest income had a negative relationship with bank profitability. Empirical findings indicated that size had a negative impact on average equity return (ROAE), while the opposite was true for average asset return (ROAA) and net interest margins (NIM). Regarding the impact of macroeconomic indicators, they found no significant impact on bank profitability except for inflation that had a negative profitability relationship with banks. In addition, the profitability of banks is expressively influenced by three macroeconomic determinants such as GDP growth, inflation and concentration. By taking 25 commercial banks from 2006 to 2012 in Bangladesh, Rahman et al (2015) studied possible determinants of bank profitability. Three different profitability factors viz. the study employs ROA (return on assets), net profit margin (NPM) over total assets and ROE (return on equity). Empirical results suggest that capital strength (both regulatory capital and equity capital) and intensity of loans have a positive and notable impact on profitability. Results also showed that the impact of cost efficiency and off-balance sheet activities on bank profitability was negative and significant. The impact of other variables on different profitability measures was not uniform. As an important determinant for NPM, non-interest income, credit risk, and GDP growth rate are found. Bank Size reflected an impact on ROA that was positive and significant. Inflation had an impact on ROA and ROE that was negative and significant. Jahangir et al (2007), while analyzing data on 15 commercial banks listed on the Dhaka stock exchange, found that market concentration and bank risk do little to explain the return on equity of the bank, whereas the bank's market size was the only variable explaining the bank's return on equity (ROE) for the period 2000-2005 in Bangladesh. Analyzed data from 38 commercial banks by regression models for the period 2001-2008, Uddin & Suzuki (2011) found that sample banks' income and cost efficiency increased by 37.84% and 15.28% respectively in 2008 compared to 2001. Likewise, bank performance is also reported by non-performing loans and asset returns. Private ownership, on the other hand, had a favorable impact on income efficiency, asset return, and nonperforming loans, while negative impact on cost efficiency.

Sayeed et al. (2012) observed on 18 commercial banks using the 1995-2006 Statistical Cost Accounting (SCA) methods found that high-earned banks experienced higher returns from banks ' assets and lower returns from banks ' liabilities than low-earned banks. Results regarding the returns of private banks and public banks were unsatisfactory. This study found that the management of the assets of large commercial banks was better than those of small banks, but in terms of liability management they were no better than small banks. Samad (2015) examined with a panel data the impact of bank-specific characteristics and macroeconomic variables in determining Bangladesh bank profitability. A total of 42 financial reports from commercial banks were analyzed; and bank-specific features such as financial risk, operational efficiency and bank sizes as well as macroeconomic variables such as economic growth ware were examined to estimate the impact of bank profits. Results indicate that bank-specific factors such as loan-deposit ratio, provision of loan-loss to total assets, equity to total assets, and total asset operating expenses were significant factors. In this regard, bank sizes and macroeconomic variable have no impact. Abdullah et al. (2014), 26 DSE listed Bangladeshi banks in 2008 to 2011 on the basis of bank-specific, industry-specific and macroeconomic determinants on the profitability of the bank. The empirical results showed that bank size, higher cost efficiency, capitalization, and higher concentration determined the profitability of the Bangladesh banking sector, irrespective of whether ROA or NPM was used as the dependent variable. There was a negative relationship between credit risk and ROA, while the relationship with NPM was positive. Inflation was related significantly to NPM but not to ROA, labor productivity and non-traditional activity only had a positive effect on ROA. Hossain (2010) analyzed interest rate spreads and margins in Bangladesh's banking sector for the period 1990-2008 applying the dynamic panel regression model Arellano-Bover / Blundell-Bond to a panel of 43 banks for the period 1990-2008 reveals persistence in interest spreads and margins. The model also identified that the key determinants of persistently high interest rate spreads and margins were high administrative costs, high nonperforming loan ratio and some macroeconomic factors. In the post-liberalization period (after 1999), persistently high spreads and margins in old private banks (established before 1999) were attributed to some degree of market power. These compounding factors imply a lack of competition and efficiency in Bangladesh's banking sector despite financial reforms. Jahan (2012) conducted a randomly nominated study of six Bangladesh commercial banks. This study widely used profitability determinants of banks, which were ROA, ROE, and ROD

(Return on Debt), and these were used by Bangladesh Bank criterion to evaluate the performance of banks. Regression analysis results found that explanatory factors such as operational efficiency, ROD and asset size were positively related and asset utilization was negatively related to ROA, but these relationships were statistically insignificant.

2.8 International Context

Laeven & Majnoni (2003) identified the determinants of loan losses that had been studied globally and outside the United States and analyzed data from 45 countries to investigate factors that influenced banks' provision of loan losses and smoothing their income during the 1988–1999 period. They showed that banks in the cycle are forced to overreact in bad times, making too little provision in good times. Fonseca & Gonzalez (2008) stressed a similar feature: the determinants of income smoothing in banks globally by managing loan-loss provisions. They found that when investor protection was strong, and when accounting disclosure, banking restrictions, and official and private supervision were healthy, there was less smoothing of bank income. Instead, there was more revenue smoothing with stronger country financial system market orientation and development. Similarly, Sinkey & Greenwalt (1991) have a positive relationship with the NPLs to identify some factors, i.e. higher interest rates, excessive lending and economic downturn. Caprio & Klingebiel (1996) have accumulated a study on multiple episodes of separated banking crises for each country over the respective period, scope and estimated loss of crises, mostly based on macroeconomic data, describing poor management, supervision, regulations, corporate governance and unnecessary government intervention as the main causes. Flannery (1989), Genotte & Pyle (1991), argued that high-capitalized banks are additional risk-averse compared to others, selecting less risky investments and loans, with a commonly conservative pool of borrowers, including default risks in downturn times or market conditions reversal.

In Europe: Messai & Jouini (2013) studied the determinants of nonperforming loans in Spanish, Italian, and Greek banks and observed that when unemployment rates rise, real interest rates rise, problem loans also rise, and fall when GDP growth rate and bank asset profitability drop. In Spain's banking industry, Salas & Saurina (2002) conducted a study covering the period from 1985 to 1997 also provides that real GDP growth, bank size, market influence, and credit growth explain the variation in nonperforming loans. Louzin, Vouldis & Metaxas (2010) assessed 09 of Greece's largest banks covering the 2003-09 period and found that real GDP growth rate; lending rates and unemployment

rates influence NPL level. Dimitrios Angelos & Vasilios (2011) compiled their study containing panel data from nine largest Greek banks using a generalized movement method covering the period from 2003 to 2009 to examine the determinants of nonperforming loans in the Greek banking system separately for each category of loans, such as consumer loans, business loans and mortgage loans. Adela and Iulia (2010) presented the idea by using Pearson's correlation coefficient that how the average interest rate of these banking elements is linked to nonperforming loans also suggests that there are other indirect channels affecting nonperforming loans in the Romanian banking system from 2006 to 2010. Sofolis & Eftychia (2011) measured the impact on Romanian banking system's nonperforming loans and provided inflation, unemployment rate, external debt to GDP. Money supply and investment with construction expenditure in conjunction with country (Greek) crises influences the credit risk of the banking sector through the use of univariate regression. Abreu & Mendes (2001) calculated numerous European countries and found that, despite their positive impact on net profit margins, operating costs had a negative impact on profit measures. Similarly, Davydenko (2010) found that a bank's operating costs have a negative correlation with profitability as a percentage of its profits. Bourke (1989) and Molyneux & Thorton (1992) studies found a significant relationship between the profitability of the bank and the management of expenses. ECB Financial Stability Review (2011), European Central Bank compiled the results for a panel of data from 80 countries through econometric analysis to determine banks ' credit quality by assessing the overall asset quality associated with credit risk and real GDP growth as the key driver of nonperforming loans over the past decade. By using the Granger causality model developed by Berger and GMM dynamic panel estimators on the Czech bank panel, Podpiera & Weill (2008) and De Young (1997) use the results of the "bad management" hypothesis, which precedes cost-effectiveness increases in nonperforming loans, and rejects the "bad luck" hypothesis for the period 1994 to 2005. In a study based on a sample of Spanish banks, Borio et al. (2002) highlighted problem loans growth during recession as a result of the financial distress of firms and households. When the economy grows, organizations are asking for new loans and are able to reimburse them more easily, but when the economy is up, organizations are more distressed and more difficult to repay debts. It has also been found that bank loans are strongly procyclical, and that banks are more expected to lend credit to low-credit organizations in periods of expansion. This leads to future problems and default with an estimated time lag of approximately three years, typically during downturns.

Berrospide and Edge (2010) explained how bank capital affects the behavior of bank loans, measured by loan growth, and found that capital has a small effect on loans. Bridges et al. (2014) examined the effects on lending behavior of a change in bank capital requirements. Their results suggest that both capital and lending are affected by changes in capital requirements. In response to an increase in capital requirements, banks are slowly raising their capital ratios to restore their original buffers above the regulatory bottom. Banks also lower the growth of loans, mostly returning to normal within 3 years. Panetta (2013) found that the Bank of Italy published a major contribution to Italian credit growth. The main obstacle to credit growth was the credit risk deterioration caused by the prolonged recession. Panetta (2013) and Stringlitz & Weiss (1981) showed a positive relationship through bank lending behavior between nonperforming loans and decreasing credit. He pointed out that indefinite economic forecasts, high default risk, and the difficulty of judging each debtor's soundness produce counter-selection and aversion to rising bank risk, thus accepting lending restriction policies

In India: Siraj & Sudarsanan (2011) explored Indian commercial banks ' performance by using urged nonperforming assets, ratios and absolute figures is a major threat to banks ' credit risk management and banks ' stability depends on asset performance and quality before and after the global financial crises they hold between 1999 and 2011. Rajaraman et al. (1999) identified high NPLs from the public sector in India. The puzzle is that in carrying out the intermediation function, public institutions were the least effective. The above finding was also supported by Micco et al. (2004). Kiran & Jones (2016) assessed the effect on bank profitability of nonperforming loans. It collected data from SBI (State Bank of India) and 5 nationalized banks and measured the relationship between their gross nonperforming loans and net profit. The authors found that all the other banks except for SBI exhibit a negative correlation between gross nonperforming loans and net profits. But for SBI, gross nonperforming loans do not affect the net profit at all and it is only in continuous profits. Micco et al. (2004) also supported the above finding.

In Pakistan: Hardi & Di Pitti (2001) observed with their study with the functional trans log to assess the effects of financial reforms on the profitability and efficiency of Pakistani banks and identified in one of those aspects that credit managers are directly responsible for bank failures because their involvement was found to use substantial amounts of funds for their own purposes. There is a weak short-term relationship

between inflation and exchange-rate non-performing loans. Macroeconomic indicators are the significant determinants of NPLs. (Badar, M., & Yasmin Javid, A., 2013)

In Nepal: Shrestha (2011) investigated the trend of NPLs and the effect of NPL on the share price of the 18 sampled commercial banks in Nepal using the descriptive statistics, trend and one factor econometric model. The stratified method of sampling was used to select the banks for the study. The author stated that commercial banks' NPL is in a decreasing trend, but the total loan performance to total deposit ratio in the banking industry is a growing trend during the period of study. The author also concluded that commercial banks ' real stock price has a negative association with their NPL levels.

In China: Lu et al. (2005) discussed the relationship between banks' lending behavior and NPL in a study based on a sample of publicly listed companies in China. They showed that the banking sector in China presents a bias, as banks are more likely to lend to state-owned organizations, although they may pose a high credit risk.

In Malaysia and Singapore: Abd Karim, M.Z., et al (2010), through the Tobit simultaneous equation regression model, investigated the relationship between nonperforming loans and bank profitability. The result shows that higher NPLs reduce cost efficiency and also lower cost efficiency increases nonperforming loans. During 1986-1995, Guru et al. (2002) observed Malaysia's bank profitability. The results show that one of the most important issues in defining bank profitability is effective expenditure management. The macroeconomic variable as inflation is found to have a positive relationship with bank profitability. On a sample of 31 commercial banks, Sufian & Kamarudin (2012) studied bank specific characteristics and macroeconomic determinants of profitability in the banking sector in Bangladesh between 2000 and 2010. The results of multiple regression found five bank-specific determinants important to influence profitability, capitalization, non-traditional activities, liquidity, quality of management, and bank size.

In Indonesia: The major source of their inefficiency and vulnerability is large volumes of nonperforming loans (NPL). Viverita & Ariff (2011) analyzed the effectiveness of Indonesian bank efficiency measurements and determinants. They demonstrated that the risk of bank credit (nonperforming loans) has a negative impact on cost and profit efficiencies. Hutapea & Kasri (2010) assessed that Islamic and conventional banks' margin determinants in Indonesia. The result showed that volatility of interest rates has a significant and positive effect on conventional bank margins, but has a negative impact on the margin of Islamic banks. The nonperforming loan (NPL), the loan to deposit ratio

(LDR), the size of the bank, the cost efficiency ratio (CER) and the capital adequacy ratio (CAR), the bank's efficiency in Indonesia is significantly affected. (Berger, A. N., & Humphrey, D. B., 1997).

In Hong Kong: Jiang, Tang, Law & Sze (2003) accepted cost-effectiveness studies on banking industry profitability that found both bank-specific and macroeconomic factors to be important determinants of bank profitability. Exactly, to contribute to higher returns on assets, operational efficiency and business diversification were created.

In Japan: Drake & Hall (2003) are important in regulating the exogenous impact of problem loans, especially in Japanese banking for smaller regional banks.

In Tanzania: The occurrence of nonperforming loans in commercial banks in Tanzania is negatively associated with the level of profitability. The results further expand the theory of information asymmetry and the hypothesis of bad management. The study findings have theoretical and managerial implications for practitioners and policy makers alike. (Stephen Kingu, P., et al. 2018). Qin, X., & Dickson, P. (2012) found a study to examine the determinants of banks' business performance in Tanzania. The findings highlighted the positive impact of liquidity and asset quality, although NPLs had a negative impact on profitability.

In Malawi: Chimkono, E. E., Muturi, W., & Njeru, A. (2016) examined the effect on the financial performance of commercial banks in Malawi's banking sector of the nonperforming loan ratio and other determinants. Secondary data were collected and analyzed from 2008 to 2014 using a seven-year regression method. The researcher concluded that the nonperforming loan ratio, cost-effectiveness ratios and average interest rate on loans had a significant impact on bank performance in Malawi.

In Tunisia: Yosra & Anis (2009) analyzed Tunisia's annual professional APTBEF (Banks and Financial Institutions Association) covering the 1999-2009 period. They showed that Tunisian banks' low profitability associated with international standards is generated by the high volume of NPL. Results show that environmental variables make a significant and positive contribution to Tunisian banks ' difference in cost-effectiveness scores. Our results also show that Tunisia's private banks are more efficient than public banks, but private banks differ (Ochi, A., & Saidi, Y., 2012).

In Kenya: In Kenya, the effect of nonperforming loans on the financial performance of microfinance banks was observed by David, W., Nemwel, B., & George, G. (2014). The researchers stated that credit risk in Nakuru city had a significant negative impact on the financial performance of MFBs. They concluded that rising credit risk would reduce the

financial performance of the MFBs significantly. The effects of sectoral banking factors; capital adequacy, asset quality, liquidity, cost effective had a statistically significant effect on profitability of commercial bank while none of the industry factors had a significant impact (Olweny, T., & Shipho, T. M., 2011).

In Guyana: The GDP growth is inversely related to nonperforming loans based on the empirical result of the econometric model, meaning that an improvement in the real economy is interpreted as lower nonperforming loans. They also found that banks with relatively higher interest rates and unreasonably lending are likely to incur higher levels of nonperforming loans (Khemraj, T., & Sukrishnalall, P., 2014).

Concluding the above critical literature assessment, it is clear that commercial banks around the world are familiar with the NPL phenomenon. But in developing countries, this issue is more critical. Literature showed that NPLs are influenced by bank-specific factors together; credit risk taking, loan growth, cost efficiency diversification and macroeconomic factors; economic growth (GDP), inflation rate, real interest rate, unemployment and legal issues. The maximum number of related empirical studies is in agreement that NPL is one of the major factors in manipulating bank profitability. The relationship between NPL and profitability of banks, however, is silently found unclear. This study therefore investigates the relationships between NPL and bank profitability in Bangladesh.

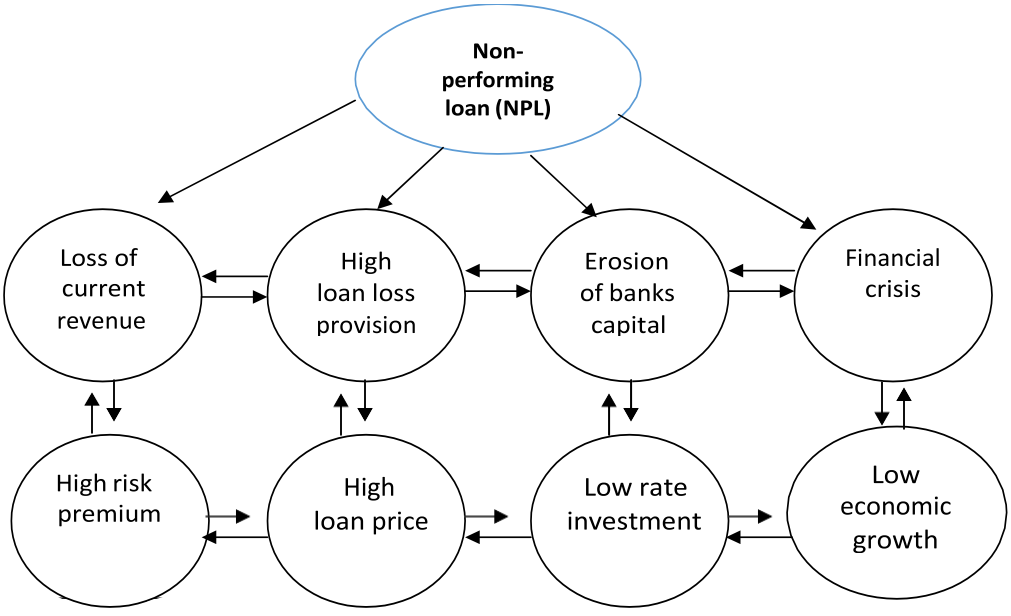


Figure 2.1: Economic and Financial Implications of NPLs

[Bonin, J. P., & Huang, Y. (2001)]

2.9 Summary of Literature

Sl#	Author(s)	Title of work	Sample/ Country/ Period	Estimator/ Model	Findings
01	Stephen. et al. (2018)	Impact of Non-Performing Loans on Bank's Profitability	16 Banks in Tanzania	OLS, FE, RE	There is a decrease in ROA associated with an increase in NPLs.
02	Badar, M., & Yasmin Javid, A. (2013)	Impact of Microeconomic Forces on Nonperforming Loans: An Empirical Study of Commercial Banks in Pakistan	36 Commercial banks in Pakistan	OLS	NPLs require provision on expense side reduce overdue profitability into one half of the bank.
03	Amin, A. S., Imam, M. O., & Malik, M. (2019)	Regulations, Governance, and Resolution of Non-Performing Loan: Evidence from an Emerging Economy	26 commercials banks in Bangladesh	Panel data model	Economic growth as well as financial development paved the way for banks operating in this macroeconomic surroundings to over time decrease nonperforming loans.
04	Ranjan, R., & Dhal, S. C. (2003)	Non-Performing Loans and Terms of Credit of Public Sector Banks in India: An Empirical Assessment	Public Sector Banks in India	Panel Regression model	Credit variable terms and problems with borrowers have a significant impact on NPL banks.
05	Khemraj, T., & Sukrishnalall, P. (2014).	The determinants of non-performing loans: an econometric case study of Guyana.	Guyana	A panel dataset and a fixed effect model	The effective real exchange rate has a significant positive impact on nonperforming loans, but growth in GDP is inversely linked to nonperforming loans.
06	Olweny, T., & Shipho, T. M. (2011).	Effect of Banking Sectoral Factors on The Profitability of Commercial Banks in Kenya.	38 Kenyan commercial banks from 2002 to 2008	Multiple linear regressions method	Bank-specific factors; capital adequacy, asset quality, liquidity, cost effective had a statistically significant effect on profitability.
07	David, W., Nemwel, B., & George, G. (2014).	Impact of non-performing loans on financial performance of microfinance banks in Kenya.	Microfinance banks (MFBs) in Kenya	A structured questionnaire	MFBs ' financial performance has been significantly affected by credit risk
08	Ochi, A., & Saidi, Y. (2012).	Ownership Structure and Efficiency of Tunisian Banking Sector. Journal of Finance and Investment Analysis	17 Tunisian banks during the period 1999-2009	A stochastic frontier model (SFA)	Tunisian private banks are more efficient than government banks,
09	Qin, X., & Dickson, P. (2012).	Commercial Banks Profitability Position: The Case of Tanzania.	National Microfinance Bank, National Bank of Commerce and CRDB (2000-2009)	ANOVA test & the regression model	Liquidity and asset quality have a positive impact on profitability except for non-performing loans that have a negative impact on profitability.
10	Chimkono,	Effect On Non-	Commercial	correlation	NPL ratios, cost-efficiency

	E. E., Muturi, W., & Njeru, A. (2016).	Performing Loans and Other Factors On Performance of Commercial Banks in Malawi.	banks from 2008 to 2014	al research technique and regression analysis	ratios and interest rates had a significant impact on bank performance.
11	Adebisi J. F., & Matthew, O.B. (2016).	The Impact of Non-Performing Loans on Firm Profitability: A Focus on the Nigerian Banking Industry.	NDIC for a period of years (2006-2012)	the regression statistical tools	No relationship exists between Non-performing Loans (NPL) and Return on Assets (ROA), but a relationship exists between Nigerian banks ' Non-performing Loans (NPL) and Return on Equity (ROE).
12	Drake, L., & Hall, M. J. B. (2003).	Efficiency in Japanese banking: An empirical analysis.	Japanese banking	Cross-section sample	The exogenous impact of problem loans is important, particularly for smaller regional banks.
13	Berger, A. N., & Humphrey, D. B. (1997).	Efficiency of financial institutions: International survey and directions for future research.	Financial institutions in 21 countries.	empirical estimates	Financial institutions in the policy, research and management performance areas of government.
14	Widiarti, A. W., Siregar, H., & Andati, T. (2017).	The Determinants of Bank's Efficiency in Indonesia.	108 conventional banks in Indonesia	Data Envelopment Analysis (DEA)	The Nonperforming Loan (NPL), the Loan to Deposit Ratio (LDR), the size of the bank, the Cost Efficiency Ratio (CER) and the Capital Adequacy Ratio (CAR) ; the bank's efficiency in Indonesia is significantly affected.
15	Siraj, K. K., & Sudarsanan Pillai, P. (2013).	Efficiency of NPA Management in Indian SCBs – A Bank-Group Wise Exploratory Study.	Public sector Banks	Exponential growth equation	Nonperforming Asset (NPA) is the main threat to stability and growth in the banking sector.
16	Cucinelli, D. (2016).	The Impact of Non-performing Loans on Bank Lending Behavior: Evidence from the Italian Banking Sector.	Italian banks observed 2007-2013	OLS regression	The negative impact of credit risk on bank lending behavior in relation to both credit risk measures: the non-performing loans and the credit loss provision ratio.
17	Borio, C. E. V., & Lowe, P. W. (2005).	Asset Prices, Financial and Monetary Stability: Exploring the Nexus.	Cross-country	Empirical analysis	Monetary responses to credit and asset markets may be appropriate to maintain financial and monetary stability.
18	Berrospide, J. M., & Edge, R. M. (2010).	The effects of bank capital on lending: What do we know, and what does it mean? International Journal of Central Banking, 6(4), 5–54.	USA	Panel-regression techniques & Morgan's (2006) VAR model,	Bank capital's effect on lending is a critical determinant of the connection between financial conditions and real activity, and has been given particular attention in the recent financial crisis.
19	Podpiera, J., & Weill, L. (2008).	Bad Luck or Bad Management? Emerging Banking Market Experience	Czech banks between 1994 and 2005	GMM dynamic panel estimators	bad management" hypothesis, which precedes cost-effectiveness increases in nonperforming loans
20	Ahmad, R.,	Determinants of Bank	Balanced		GDP growth has a negative

	Shaharuddin, S. S., & Tin, L. M. (2011).	Profits and Net Interest Margins	panel of 84 banks from 4 countries		but insignificant relationship with net interest margin and inflation has a positive but insignificant net interest margin relationship.
21	Yixin, H. (2008)	The Non- Performing Loans: Some Bank Level Evidence	Japan	Panel data regression model	NPLs have non-linear effects as higher level of NPLs reduces banks aspiration to increase lending
22	Berger, A. N., & DeYoung, R. (1997).	Problem Loans and Cost of efficiency in Commercial Banks	USA	Granger-Causality Techniques	Problem loans precede reductions in measured cost
23	Fofack, H.(2005)	Non-Performing Loans in Sub-Saharan Africa: Casual Analysis and Macroeconomic Implications	Sub-Saharan Africa	Pseudo-Panel based model	Economic growth, real exchange rate appreciation, the real interest rate, net interest margins, and inter-bank loans are significant determinant of NPLs in those Countries.
24	Hu, J. L., Li, Y., & Chiu, Y. H. (2004).	Ownership and Non-Performing Loans: Evidence from Taiwan's Banks	Taiwan	Panel data regression model	Rate of NPLs decreases as the Government shareholding in a bank increases in that Country. Banks size are negatively related to the rate of NPLs. Revenue source diversification cannot effectively reduce the rate of NPLs.
25	Siddiqui, S., Malik, S. K., & Shah, S. Z. (2012),	Impact of interest rate volatility on non-performing loans in Pakistan	Pakistan	Regression Model	Nonperforming loans are affected by the volatility of interest rates.
26	Adebola, A. J., Wan Yusoff, and Dahalan, G. (2011).	An ARDL approach to the determinants of Non- performing loans in Islamic banking system in Malaysia	Malaysia	Auto-regressive distributed lag model (ARDL).	Lending rate has a positive significant relationship with NPLs. Inflation rate has a negative and significant relationship with NPLs in Malaysia.
27	Bercoff, Jose J., Julian di, Giovanniz and Franque Grimardx (2002)	Argentinean Banks, Credit Growth and the Tequila Crisis: A Duration Analysis	Argentina	Survival Analysis model	NPLs have a negative relationship with GDP growth, inflation rate, and increase in property prices, but with a positive relationship with lending rate.
29	Demirguc Kunt, Asli & E. Detragiache, (1998),	The Determinants of Banking Crises in Developing and Developed Countries	Developed and developing countries in 1980-1994	Multivariat e logic Econometri c model	Countries with an explicit deposit insurance scheme, like countries with weak law enforcement, were particularly at risk.
30	Waweru, N. M.,& Kalani, V.M., (2009)	Commercial Banking Crises in Kenya: Causes and Remedies	Kenya	Questionna ire distribution , collation and analysis.	Credit expansion, poor credit risk management, weak banking system, moral hazard, maturity mismatch of assets and liabilities were major causes of NPLs in that

					country.
31	Espinoza, R., and Prasad, A. (2010).	Non-Performing Loans in the GCC Banking System and their Macroeconomic Effects	Gulf Cooperative Countries (GCC)	Panel data regression model	Both macroeconomic and Bank-Specific factors contributed to the buildup of NPLs in the GCC countries. NPLs increases as economic situation deteriorates and interest payment rise. Banks with high levels of NPLs are more sensitive to macroeconomic shocks like global financial crisis and government regulations. Credit growth in the past could generate higher NPLs in the future.
32	Fuentes, R., and C. Maquieira, (2003)	Institutional arrangements, credit market development and loan repayment in Chile	Chile	Panel data regression model	Breaches in the loan contract by either the bank or borrowers.
33	Hayati, N. A, and Mohamed A. (2007)	Multi-Country study of bank credit risk determinants	Malaysia	Cross-sectional Panel data regression model	Management quality is critical in the cases of loan dominant banks. Leverage is irrelevant to credit risk of banks. Increase in loan loss provision (LLP) is a major determinant in that Country.
34	Hoggarth G., Sorensen S.and Zicchino L. (2005)	Stress tests of UK banks using a VAR approach	UK	Multivariate logic econometric model to data from a large panel of countries	The aggregate write off ratio of UK banks would increase by around 0.7 percentage points, and still equate to one-third of the major UK banks average pre-tax annual profits. The finding suggests that the UK banking system as a whole would appear to be robust in large adverse macroeconomic shocks
35	Kalirai H., And Scheicher, M. (2002)	Macroeconomic stress testing: Preliminary evidence for Austria	Australia from 1990-2001	Panel regression model taking data	Lending rate, production of Industry, Stock market returns and business confidence index are the factors which determine the level of loan quality in Australia
36	Keeton, W.R., (1999)	Does Faster Loan Growth Lead To Higher Loan Losses?	USA from1982-1996.	Vector Auto regression model	Evidence of a strong relationship between credit growth and impaired assets.
37	Lis, S.F. de, J.M. Pages, and J. Saurina (2000)	Credit Growth, Problem Loans and Credit Risk Provisioning in Spain	Spain	Simultaneous equation model	GDP growth, bank size, capital asset ratio (CAR) have negative effect, while loan growth, collateral, net interest margin, debt-equity, market power regulation regime have positive effect on problem loans

38	Louzis, D., Vouldis, A., Metaxas, V., (2011)	Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios	Greece	Dynamic panel data methods	NPLs can be explained mainly by Macroeconomic variables (GDP, Unemployment, Interest Rates) and management quality.
39	Rajan, R. & S.C., Dhal, (2003)	Non-performing loans and terms of credit of public sector banks in India: an empirical assessment	India	Panel regression model	Favorable macroeconomic conditions (measured by GDP) and financial factors such as maturity, cost and terms of credit orientation impact significantly on the NPLs of banks in India.
40	Salas, V., Saurina, J., (2002)	Credit Risk in Two Institutional Regimes: Spanish Commercial and Saving Banks	Spain from 1984-2003.	Dynamic model and Panel data set panning	High lending rates, GDP growth, soft credit conditions determine the NPLs.
41	Sinkey, J. F.,and Greenwhalt, M., (1991)	Loan-loss experience and risk-taking behavior at large commercial banks	USA	Simple log linear regression model	High level of lending rate, loan expansion, depressed regional economic conditions have positive relationship with NPLs
42	Somoye, R.O.C., (2010)	The Variation of risks on Non-Performing Loans on Bank Performance in Nigeria	Nigeria	A multiregression model of the OLS	GDP growth, Exchange rate appreciation, interest rate, net interest margins and interbank loans are significant determinants of NPLs in Nigeria.
43	Vogiazas, S, D. and E, Nikolaidou, (2011)	Investigating the determinants of nonperforming loans in the Romanian Banking Systems: An empirical study with reference to the Greek crisis	Romania from Dec. 2001 to Nov. 2010.	Time series modeling taking Panel data set	Macroeconomic variables especially the Construction and Investment expenditures, Inflation and Unemployment rates, External debt to GDP, and Broad Money Supply (M2) influences the credit risk of Romanian banking system.
44	Ariful Islam, Md., & Hasan Rana, R. (2017)	Determinants of bank profitability for the selected private commercial banks in Bangladesh: a panel data analysis	Bangladesh from 2005-2015	Panel data analysis	The experimental results found strong evidence that nonperforming loan (NPL) and operating expenses have a major impact on profitability. Furthermore, the results showed that higher NPL may result in lower profit due to classified loans being provided.
45	Mohiuddin, M., (2016)	The Determinants of Profitability of Private Banks in Bangladesh: An Empirical Analysis	Bangladesh from 2009 to 2012	Least Square method	The bank's profitability was significantly affected by bad credit, loan default and high deposit collection rather than credit creation.
46	Banik, B.P. & Das, P.C., (2015)	Classified Loans and Recovery Performance: A Comparative Study	Bangladesh from 2000 to 2010	a regression model	Such classified loans have a significant impact on both government-owned commercial banks and

		between SOCBs and PCBs in Bangladesh			private commercial banks of the first generation.
47	Chowdhury, T. A., & Ahmed, K. (2014)	Performance Evaluation of Selected Private Commercial Banks in Bangladesh	Bangladesh from 2002-2006	Square of correlation coefficient (r2),	The branch, deposit and net income r2 is over 0.5. It shows that the prospect of Bangladesh's private commercial banks is very bright.
48	Adhikary, B.K., (2006)	Nonperforming Loans in the Banking Sector of Bangladesh: Realities and Challenges	Bangladesh 2000-2015	Loan regulations	Preventing the ' bad loan flow problem ' accompanied by other resolution measures could help to resolve the non-performing loan mess in Bangladesh.
49	Ahsan, M. (2014).	Lending Risk Analysis of the Nationalised Commercial Banks of Bangladesh	Nationalised Banks, Bangladesh from 1993 to 2012	Regression model, T test, F test	All the above-mentioned devices can protect the SCBs from poor lending performance and can also contribute to their banks ' sustained profitability.
50	Shingjergji, A., & Shingjergji, I. (2013)	An Analysis of the Nonperforming Loans in the Albanian Banking System	Albania from 2009-2012	a simple regression model	The real effective exchange rate is positively linked to the nonperforming loans according to which an important determinant of credit risk is the international competition of a country's economy.
51	Craigwell, R.C. & Elliott, W.A., (2011)	Loan loss provisioning in the commercial banking system of Barbados: practices and determinants	Local commercial banks, Barbados 1996-2009	Panel dynamic ordinary least squares,	Larger banks can screen loans and avoid defaults in Barbados.

CHAPTER THREE
RESEARCH METHODOLOGY

This chapter examines the methods used to gather empirical data on banks' nonperforming loans in Bangladesh. This chapter defines the bank population, sample population and populations of respondents and the methods of research used to examine the data. The research clarified the profitability pointers and variables used as the factors of profitability, as well as the bank-specific factors used for the purpose of reduced form. In addition, econometric methods were used to measure bank profitability determinants and their determinants. The researcher used a joint method to understand the stated objectives that embraces structures of both descriptive and analytical research designs. While numerous NPL research studies are available in Banks of Bangladesh, studies on a closer look challenge authenticated NPL using secondary data and most often depended on ratio analysis to classify whether NPL is professionally accomplished. A closer look at the studies highlighted insufficient analytical studies of banks' NPL incidence on the interaction between various bank-specific performance indicators and macroeconomic indicators. Taking into account the above characteristics, the methodology for this research is intended to evaluate the asset quality of banks explained using the trend in movement of nonperforming loans.

3.1 Research Design

Research means searching over and over again. The study is based on research design ex-post-facto. Ogunniyi, (1992) said that research is a methodological way of discovering the value or otherwise of a particular issue. It is a process of obtaining adequate information to solve a particular problem. Research methodology refers to the process of assembling, planning and analyzing the relevant data in order to achieve the purpose of the research. It also reflects the different sources that are assumed to be relevant to the study in assembly information. Based on widespread contextual literature, the relationships between the independent and dependent variables are evaluated in this research. Previously collected ex-post-facto research customs data, but not necessarily for research purposes. The study focuses on both quantitative (applying econometric model) and qualitative in order to gain a better understanding of the results. The study is also intended to analyze customized secondary data.

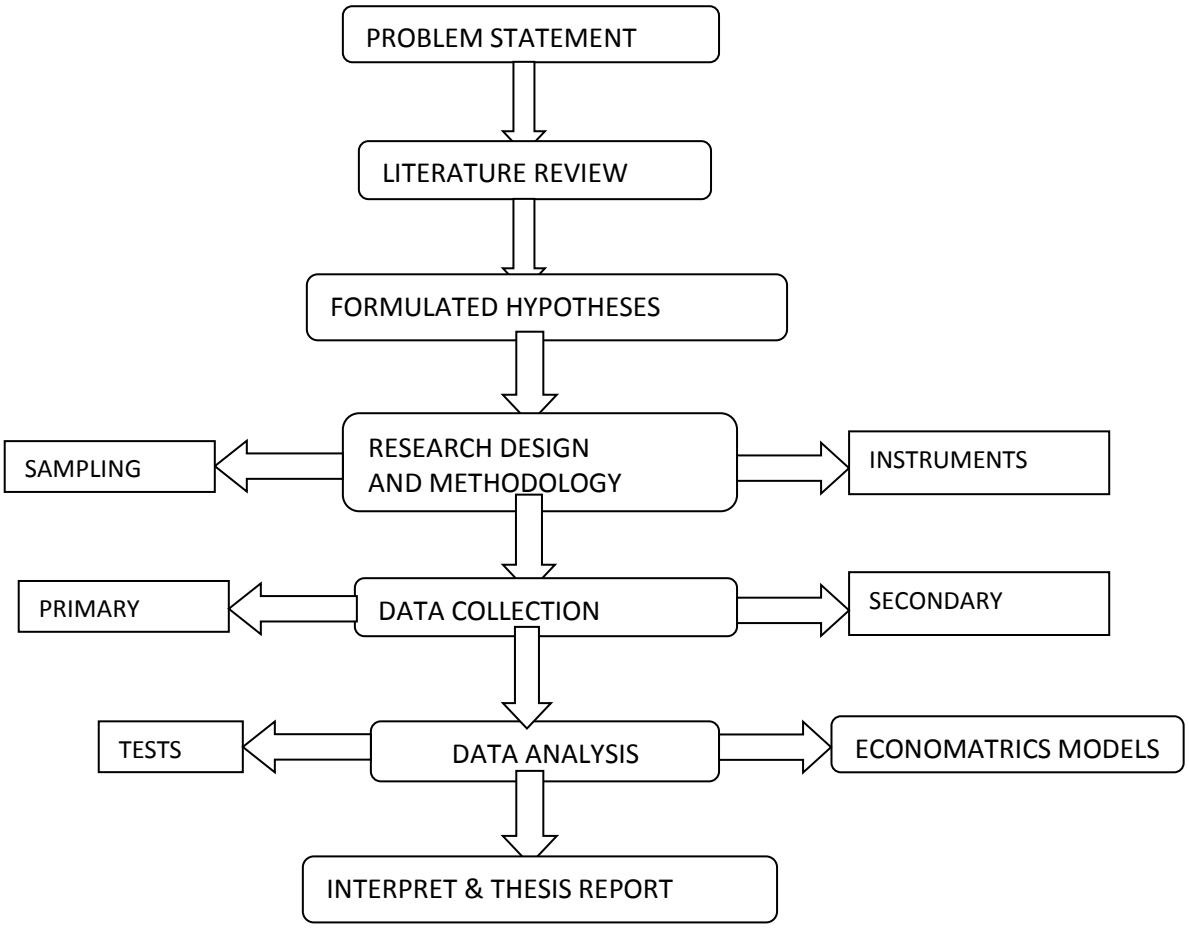


Figure 3.1: Flow Chart of Research works

3.2 Population of the Study

As of December 2017, there are six state-owned commercial banks (SCBs), two specialized banks (SDBs), 40 private commercial banks (PCBs) and nine foreign commercial banks (FCBs). There are 30 banks out of 58 banks already listed on Bangladesh's Dhaka and Chittagong stock exchanges; henceforth these banks' profitability is extremely important to stockholders.

Table 3.1: Types of Banks in Bangladesh

Types of Banks	Denote	Numbers of banks
State Owned Commercial Banks	SCBs	06
Specialized Banks	SDBs	03
Private Commercial Banks	PCBs	40
Foreign Commercial Banks	FCBs	09
	Total	**58**

3.3 Sample Size of the Population

Since most banks do not have information available for the year 2008-17, we choose not to misplace degrees of freedom for a balanced panel. The research sample includes 200 theory-consistent observations.

Table 3.2: Size of Observations (Commercial Banks as on December 2017)

Types of Commercial Banks	Populations	Sample size	Observations
SCBs	06	04	40
PCBs	32	10	100
IBs	08	04	40
FCBs	09	02	20
Total	**55**	**20**	**200**

3.4 Period of the Study

This study covered the data accessibility period from 2008 to 2017. To magnify the actual representation of NPLs and profitability of banks of Bangladesh, data from the last ten years (10 years) were used and these data were published primarily in the annual reports of commercial banks and Bangladesh Bank.

3.5 Sources of Data

To achieve the specified goals, this research exploited both printed and electronic in nature. This empirical research work was secondary and weighs the coverage of commercial banks in Bangladesh whose audited annual accounts have been published and returns to Bangladesh Bank have been made. Bank data were collected from 20 Bangladeshi banks' annual report over the 2008-2017 period. Data are composed from numerous sources and embrace to achieve the specified goals:

(1) News reports, research reports, articles available and NPL-related conference proceedings at national and international level. For serious evaluation of the subject, the information obtained from these sources is recycled and research gap identified in the field of study.

(2) Bank specific information obtained from individual bank web sites and annual report of the banks (2008-17). The researcher collected the balanced panel data from selected 20 banks for each year after the AGM (Annual General Meeting). The bank-specific

factors were obtained from three major sources: (1) the annual report of the banks (2) Bangladesh Bank and (3) BIBM. On the other hand, the industry-specific and macroeconomic variables have been retrieved from database of the websites of Bangladesh Bank, Ministry of Finance, International Monitoring Fund (IMF) and World Bank.

3.6 Research Variables

Research variables are serious analytical factors. A variable is anything unfixed with the characteristic that assumes dissimilar values under different conditions. Variables used for this study are different, such as:

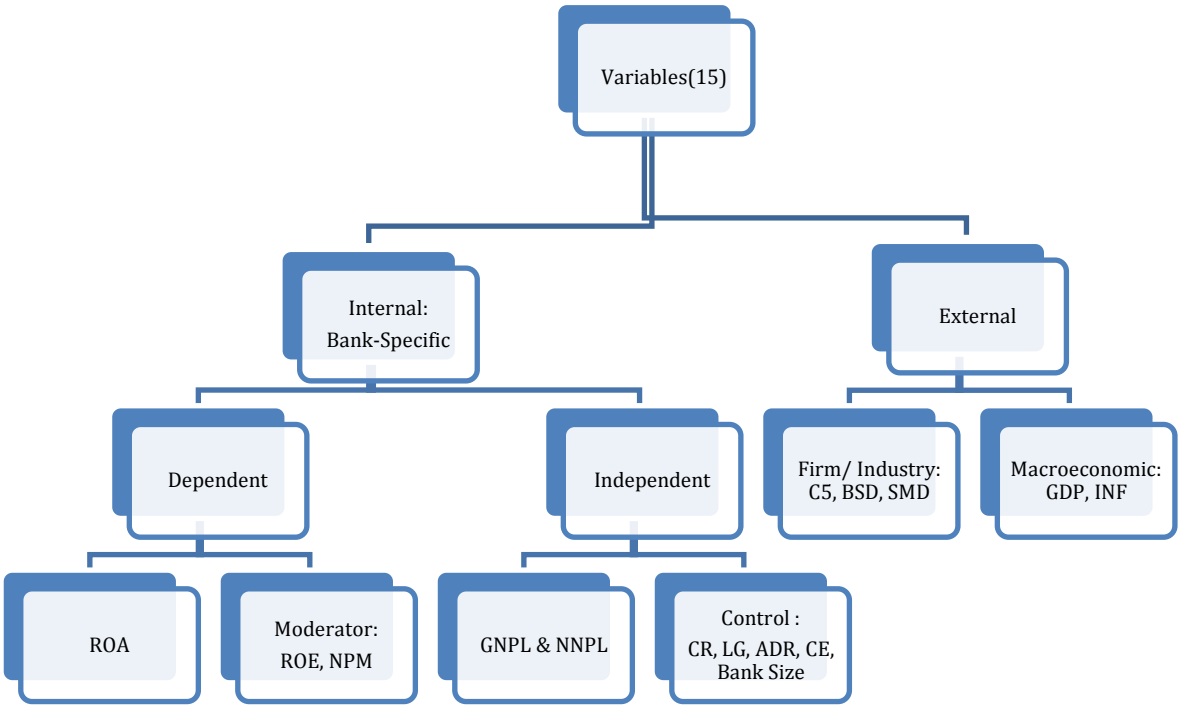


Figure 3.2: Variables used in the Research Work

3.6.1 Dependent variables

According to Woodridge (2009), dependent variable in a multiple regression model sometimes called the criterion variable or explained variable, the answer variable, the predicted variable, or the regress. A dependent is what the investigation measures and what the investigation affects. The variable dependent responds to the variable independent. Because it "depends" on the independent variable, it is called dependent. In this study, ROA was the dependent variable.

Return on asset (ROA): Most of the earlier literatures used the profitability measure, like the ROA. ROA is widely used to combine banks' efficiency and operating performance as it generates returns from bank-funded assets. Hence, we choose ROA as one of the major dependent variable. We also offered convenience in comparing the results with other findings described in the literature by using ROA as a dependent variable.

Return on equity (ROE): ROE is another determinant of bank profitability that reflects a bank's ability to make profit from its equity. It is not widely used, but a standard indicator for comparing financial performance in developed countries between different banks.

Net Profit Margin (NPM): Although different earnings and profitability indicators exist, the most representative and widely used one is asset return (ROA), complemented by equity return (ROE) and net interest margin (NIM). NPM is used as a variable that absorbs profit from loans, investments, financing and financing actions. ROE and NPM will be designated as Sufian's (2009) bank performance measures.

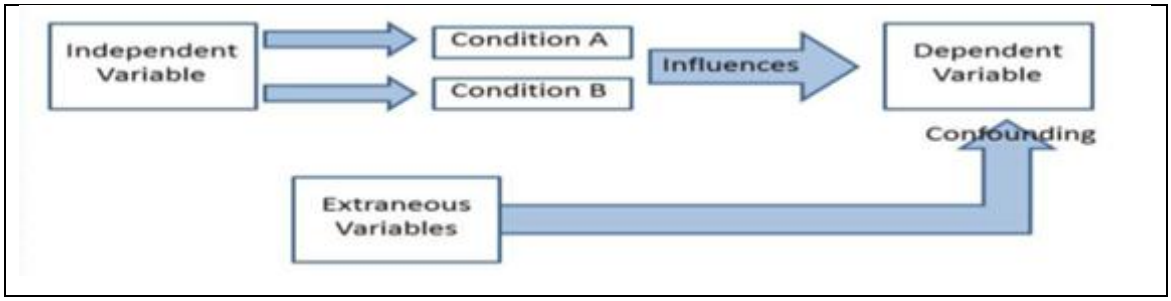


Figure 3.5: Independent Variables Vs Dependent Variables

3.6.2 Independent variables

Independent variable is a variable used in regression analysis to explain variation. It is also referred to as the explanatory variable, control variable, predictor variable, or regressor. The independent variables in this study ware Gross NPL, Net NPL, Credit Risk, Loan Growth, ADR, Cost Efficiency and Bank Size.

A. Bank-specific variables

The banks can control the unsystematic factors or internal factors. For the purposes of this research, the bank-specific variables involved in empirical analysis are credit risk (loan loss provision/ total loans), LG (total loans/ total assets), ADR (Advance deposit

ratio), CE (operating expenses/ operating income) and bank size, LTA (log to total asset).

Credit risk (CR): Cooper et al. (2003), credit risk variations can replicate changes in the health of the bank's portfolio, which can affect the performance of the banks. Duca and McLaughlin (1990) concluded that variations in bank profitability are primarily attributable to differences in credit risk as converse credit risk disclosure is associated with reduced company profitability.

Loan growth (LG): A vital determinant of bank profitability is measured by rising from banks' likely incapacity to accommodate liability reductions or to fund asset growth on the balance sheet side. Because of the higher risk, a larger share of loans to total assets should suggest more interest revenue.

Cost efficiency (CE): One of the key financial measures is the cost efficiency, which is particularly important in measuring productivity, efficiency and corporate valuation. It shows the company's cost relative to its revenue. Divide the operating costs by operating income in order to get the ratio. It gives investors a clear view of how the company is running efficiently. It is also known as the ratio of efficiency.

Bank size (LTA): Bank size is used in the banking system to detain potential economies or scale disadvantages. This variable controls cost differences, product diversification and risk diversification. Eichengreen & Gibson (2001) recommended that up to a certain limit on its profitability, the effect of bank size could be positive. Because of bureaucratic and additional factors, the impact of bank size could be adverse beyond this point. The size and profitability relationship can be predictable to be non-linear.

3.6.3 Macroeconomic variables

These are universal factors outside the banks and therefore not within the banks' direct control. These are identified in this study as Gross Domestic Product (GDP) and Annual Inflation Rate (INF).

Gross Domestic Product (GDP): GDP is defined as market values for goods and services produced in a country's fiscal year. In other hand, it usually deals with the total market values of all final goods and services produced in the economy within the period of one year. GDP growth rate is hypothetical to have an impact consistent with empirical literature on bank profitability.

In the below Figure 3.1 shows the GDP growth rate in Bangladesh over 2008-2017. The advanced growth rate of GDP can be clarified by the detail that the government retains

huge building infrastructure such as roads & highways, policy promises and governmental planning that stimulates the consumer, such as loan interest rate decreases for developing industries and infrastructure over the period under review.

Figure 3.2: The Annual GDP Growth Rate (2008-2017)

Inflation rate (IR): Inflation is the rate of percentage increase in the overall price level of goods and services is an alternative factor that could affect banks ' total loans and advances. The annual inflation rate is controlled to measure the link between economic conditions and bank profitability. Inflation is a major determinant of the profitability of banking. High inflation rates are generally associated with high interest rates on loans and high income. Perry (1992) stated that it is expected or unexpected that the effect of inflation on banking performance depends on inflation.

The inflation rate in 2011 is the highest in figure 3.2 below and the inflation rate in Bangladesh is stable from 2012 to 2017. In 2008, the inflation rate is 6.19, while in 2016 it reaches the highest point of 7.2 and the highest point of 7.3 in 2017. Bangladesh's consumer goods price and the world's oil price influence inflation rate instability over the period 2008-17 examined. From 2012, the rate of inflation is gradually declining.

Figure 3.2: The Annual Inflation Rate (2008-2017)

3.6.4 Industry specific variables

Concentration (C5): Total assets of largest 05 banks assets are divided by total banking assets.

Stock market development (SMD): Growth in the stock market leading to improved profitability for banks indicates complementarities between investment, growth and development in the banking and share market. Share market development, resulting in increased accessibility of equity financing to firms, decreases banks ' loan default risks, increases their borrowing capacity, and agrees on better capitalization.

The list of the following variables are used in this research in Table 3.3.

Table 3.3 Variables, Code, Dimension, Hypo, Proxy and Source Conferred

Bank- Specific Variables (Internal determinants)					
Variables	Code	Dimension	Hypo	Proxy	Source
Dependent variable					
ROA		Net Income/ Total Assets	N/A	Profitability	Banks' Financial Statement
Moderator variables					
ROE		Net income/ Shareholder Equity	N/A	Profitability	Do
NPM		Net Profit Income/ Earning Assets	N/A	Profitability	DO
Independent variable					
NPL%	NTL	NPL/ Total Loan	-	Asset Quality	Do
Net NPL%	NNPL	Net NPL/ TA-Provision	-	Assets Quality	DO
Extraneous variables					
Credit Risk	LLPTL	Loan Loss Provisions/ Total Loans	-	Asset Quality	
Loan Growth	LG	Total Loans/ Total Assets	+/-	Loan Growth	Do
Advance Deposit Ratio	ADR	Total Loan/ Total Deposit	+/-	Liquidity	D0
Bank Size	LTA	Log of Total Assets	?	Size	D0
Cost Efficiency	CE	Operating Expense/ Operating Income	-	Management Quality	
Macroeconomic Variables (External Determinants)					
Gross Domestic Product	GDP	Annual GDP growth rate	+/-	Macro	Bangladesh Bank/ MoF
Inflation	IR	Annual inflation rate	+/-	Macro	Bangladesh Bank/ MoF
Industry Specific Variables (External Determinants)					
Concentration	C(5)	Total Assets of Largest 5 Banks/ Total Assets in Banking Industry	?	Industry-specific	Bangladesh Bank
Banking sector Development	BSD	Total Bank's Asset/ GDP	?	Industry-specific	Bangladesh Bank/ MoF
Stock Market Development	SMD	Market Capitalization of listed Banks/ GDP	?	Industry-specific	DSE/ MoF

Follow-ups: (+) means affirmative effect, (-) means adverse effect, (?) means no symptom.

3.7 Methods of Data Analysis

With the purpose of succeed the five objectives stated, the data composed were arrived, arranged and offered employing STATA, EViews and Microsoft Excel. The secondary data composed for the study was specified and the percentage was used for early analysis, wherever necessary. Charts were used to simplify the systematic resolution of the data. To attain the first objective of the study, i.e. to analyze the present magnitude and trend of nonperforming loans of banks in the statistical measures exploited includes averages, ratio, growth rate; were employed as other analytical tools. Bank-specific variables such as management level and experience level are subject to descriptive analysis using average and percentage. Furthermore, hypothesis testing was employed in the study. When appraising profitability of a bank, either dignified by the ROA as dependent variable, ROE and NPM as moderator variables, a number of tests are offered. **Statistical techniques:** Data analyzed in tabular, chat and graphical methods by statistical and accounting ratios. Multiple regression methods included Ordinary Least Square (OLS), GMM, Fixed Effects, and Random Effects. The STATA and EViews statistical package used to analyze and authenticate the hypothesis when necessary.

3.7.1 Ordinary Least Square (OLS)

In this research, the ordinary least square regression techniques (OLS) was used. OLS accepts that all issues are homogeneous under the regression model, which reduces the heterogeneity (individuality or uniqueness) that could exist between different issues (Woodridge, 2010). It is best matched with the OLS method to test specific hypotheses about the nature of the economic relationship and OLS has been used in a wide range of economic relationships with appropriate results. The method employs an appropriate and standard sound statistical technique for empirical issues (Koutsoyianis, 1977). In addition, this method's consistency lies in its attractive properties, which are efficiency, consistency and unbiasedness (Gujarati, 2004).

3.7.2 Fixed Effect (FE)

In most previous studies, the Fixed Effects (FE) were used. Woolderidge (2002) argues that the coefficients are impartial and reliable assumptions of the fixed effects model products. Maudos & Fernandez de Guerara (2004) and Claeys & Vennet (2008) also employed the Fixed or random effects, whereas Angbazo (1997) and Demirguc-Kunt & Huizinga (1999) used the Generalized Least Square and Weighted Least Square. The

Fixed Effects (FE) model income by hire each entity has its own interrupt value, taking into account heterogeneity or uniqueness between cross-section units (Gujarati & Porter, 2009).

3.7.3 Random Effects (RE)

Random Effects (RE) Model was used on the assumption that the individual heterogeneity overlooked is uncorrelated to the model's independent variables. The RE estimator accepts that an individual unit's interrupt is a random module that is tired with a constant mean value from a larger population. Arellano & Bover (1995) and Blundell & Bond (2000) argue that a lagged dependent variable is included as an explanatory variable and a random effects estimator is expected to produce more efficient results.

3.7.4 General Method of Moments (GMM)

The General Method of Moments (GMM) initially employed by Arellano & Bond (1991). GMM is widely involved in examining banks' profitability determinants. For example, GMM was approached by Dietrich & Wanzanried (2011), Liu & Wilson (2010), Athanasoglouet al. (2008) to a panel of Greek banks, Japanese banks, and Swiss banks. The GMM estimator uses lagged values of the exogenous regressors' dependent variable and lagged values as instruments that could possibly suffer from endogeneity.

3.8 Diagnosis Tests

Econometric criteria: To evaluate the true position of the statistical position model, numerous econometrics tests were involved. They are subordinate tests accepted to provide additional proof of statistical test validity, reliability. Additional econometric tests showing Hausman test, Heteroscedastic test, Multi-colinearity, Unit root test, and Granger casuality test. They are briefly discussed below:

3.8.1 Hausman test

Hausman Test (known as Hausman Specification Test or Durbin–Wu–Hausman (DWH) Test) in a regression model perceives endogenous regressors. Endogenous variables have values determined in the system by other variables. As one of OLS ' assumptions is that there is no correlation between a predictor variable and the error term, having endogenous regressors in a model will cause ordinary least square estimators to fail. Also

used for endogeneity is this test. Hausman test can help you choose from a fixed model of effects or a random model of effects.

3.8.2 Heteroscedastic test

If there are sub-populations with different variables from others, a group of random variables is heteroscedastic. The absence of homoscedasticity is heteroscedasticity. The existence of heteroscedasticity is a major concern in applying regression analysis, including variance analysis, as it may invalidate meaningful statistical tests. For instance, while in the presence of heteroscedasticity the ordinary least square estimator is still unbiased, it is inefficient because the true variance and covariance is underestimated.

3.8.2 Multi-Collinearity test

Multi-collinearity styles exist that it is difficult to separate the influences of the individual explanatory variables. To distinguish the existence of this malaise, the existence of multi-colinearity was taken from the coefficient of pair-wise or zero-ordered correlation between two regressors exceeding 0.8 (Farrar & Glauber, 1967 and Gujarati, 2004).

3.8.3 Unit root test

A unit root is an eye of growing procedures over time that can cause problems with time series models in statistical implications. If 1 is a root of the equation of properties of the process, a linear stochastic process has a root unit. A unit root test studies whether a time series variable is non-stationary using an autoregressive model in statistics.

3.8.4 Granger causality test

The Granger-Causality test is a statistical hypothesis test to determine whether one-time series is useful in forecasting another. For example, if Granger-Cause Y can be exposed, a time series X is supposed to provide statistically significant information about Y's upcoming values. Granger had well defined the causality relationship based on two principles: the event occurs before its effect; and the event has unique information about future effect values.

Criteria of results evaluation: There are three basic criteria for evaluating the results obtained from the model as economic, statistical and econometric were used. If the signs of the coefficient of variables emulate economic theory, the economic criteria notified. The emphasized statistical criteria are to test the meaning of the variables using T-test. F-statistics used to measure the general regression's common meaning. The econometric criterion evaluated tests as autocorrelation and multi-collinearity. The autocorrelation

helped verify the reality of serial correlation between variables, and the multi-colinearity test helped verify whether the variables are collinear.

Ratio analysis: To show the effect of the NPLs on bank profitability, the study employed several ratios such as profitability ratio, nonperforming loan ratio, liquidity ratio, return on asset ratio and return on equity ratio, etc. The ratio details are given below:

1) Return on asset ratio = Net Income/ Total assets.
2) Return on equity ratio = Net income/ Shareholder's equity.
3) Net profit margin ratio= Net Profit Income/ Earning Total assets
4) Gross nonperforming loan ratio = Gross nonperforming loan/ Total loan outstanding.
5) Net nonperforming loan ratio = (Gross net nonperforming loan – Provision)/ (Total loan-Provision)
6) Credit risk ratio = Loan loss provision/ Total loan
7) Cost efficiency ratio = Operating Expenses/ Operating Income
8) Loan growth ratio = Total loans/ Total assets
9) Advance deposit ratio = Total Loans/ Total deposit

Trend analysis: Trend analysis of different variables of commercial banks has been employed to measure the impact of nonperforming loans on the banks profitability of Bangladesh. The research embraced the following:

1) Trends of ROA, ROE & NPM of SCBs, SDBs, PCBs & FCBs,
2) Trends of Gross NPL of SCBs, SDBs, PCBs & FCBs,

3.9 Econometric Specification

The following econometric model is established on the basis of designated variables and literature review to realize the impact of likely determinants on bank profitability in Bangladesh.

$$ROA=\alpha+\beta1GNPLit+\beta2NNPLit+\gamma3CRit+\gamma4LGit+\gamma5ADRit+\gamma6CEit+\gamma7LTAit+\gamma8GDPit+\gamma9INFit+\gamma10C5+\gamma11BSD+\gamma12SMD+\varepsilon i \text{ ---------- Equation (1)}$$

$$ROE=\alpha+\beta1GNPLit+\beta2NNPLit+\gamma3CRit+\gamma4LGit+\gamma5ADRit+\gamma6CEit+\gamma7LTAit+\gamma8GDPit+\gamma9INFit+\gamma10C5+\gamma11BSD+\gamma12SMD+\varepsilon i \text{ ---------- Equation (2)}$$

$$NPM=\alpha+\beta1GNPLit+\beta2NNPLit+\gamma3CRit+\gamma4LGit+\gamma5ADRit+\gamma6CEit+\gamma7LTAit+\gamma8GDPit+\gamma9INFit+\gamma10C5+\gamma11BSD+\gamma12SMD+\varepsilon i \text{ ---------- Equation (3)}$$

Where the cross-sectional measurement across banks is offered by subscript i, and the time dimension is offered by t. εit signifies error term. As previously specified, the

study's key objective is to investigate the major profitability determinants of banks in Bangladesh. In this study, ROA, NPM, and ROE are three different profitability measures. Three different measures of risk (GNPL, NNPL and CR) are used to see the impact of risk on profitability. The natural logarithmic value of total assets is used as a proxy for bank size to understand the likely effect from LTA. CE is used as a proxy for operating expense to operating income to demonstrate the impact of cost efficiency. As proxy for annual economic growth and annual inflation rate, macroeconomic factors on profitability GDP, INF and FD are used for apprehensive effects.

The following equation were used to indicate the hypothesis of this study (Pasha & Khemraj, 2009):

Hypothesis: The higher the nonperforming loans, the lower the profitability of banks of Bangladesh.

Symbolize to the study model:

Profit(ROA/ROE/NPM)= $\alpha+\beta 1GNPLit+\beta 2NNPLit+\gamma 3CRit+\gamma 4LGit+ \gamma 5ADRit+ \gamma 6CEit+ \gamma 7LTAit+ \gamma 8GDPit+ \gamma 9INFit+ \gamma 10C5+ \gamma 11BSD+ \gamma 12SMD+ \varepsilon i$ ---------- Equation (4)

Where:

Profitability of Banks= Three components such as ROA, ROE and NPM[1]

GNPLs = Gross nonperforming loans

NNPLs = Net nonperforming loans

CR= Credit risk

LG = Loan growth

ADR = Advance deposit ratio

CE = Cost efficiency

LTA = Log of total assets

GDP = Gross domestic product rate

INF = Inflation rate

C5 = Concentration of 05 large banks' total assets

BSD = Banking sector development

SMD = Stock market development

εi = Error term

[1] Annual reports of Bangladesh Bank 2016-2017

CHAPTER FOUR

BANKING SYSTEM OF BANGLADESH

4.1 Financial System of Bangladesh

Before the begin of reforms in the 1990s, Bangladesh government have employed a collection of banking reforms to decorate the stability, enhance the performance and create an extra manageable environment in the banking industry. This chapter provides the structure and an overview of the banking area as well as emphasizing is given to unique pointers, containing the market share of bank assets, quantity of nonperforming loan and nonperforming loan ratio and profitability of banks in Bangladesh.

Based on the degree of regulation, the financial system in Bangladesh usually consists of three sectors. The formal sector includes controlled institutions like banks, financial institutions (FIs), insurance companies, capital-market mediators like brokerage houses, merchant banks, etc., and micro-financial institutions (MFIs). The quasi-formal sector includes institutions controlled by their own acts, e.g., under different ministries of government. Bangladesh House Building Finance Corporation, Bangladesh Samabaya Bank Limited, Grameen Bank, NGOs, and separate government programs. The informal sector includes shadow banking entities and activities of other financial intermediaries that are either unregulated or less regulated. Bangladesh Bank oversees as the regulatory authority the activities of banks and financial institutions (FIs). Six state-owned commercial banks (SCBs), two specialized development banks (SDBs), 40 domestic private commercial banks (PCBs), nine foreign commercial banks (FCBs), six non-scheduled banks, and 34 financial institutions (FIs) currently exist. The Bangladesh Securities and Exchange Commission (BSEC) oversees the capital market, which consists of two stock exchanges: Dhaka Stock Exchange (DSE) and Chattogram Exchange (CSE). Commercial bankers, stock brokers, dealers, security custodians and asset management companies are the main intermediaries on the capital market. As of December 2017, on the capital market in Bangladesh, 577 merchant banks, 8 credit rating firms, 488 depository participants (stock dealers, brokers, security custodians, 32 asset management firms, etc.). The Insurance and Regulatory Authority (IDRA) and the Regulatory Authority for Micro-Credit (MRA) oversee insurance companies and microfinance institutions. Bangladesh currently employs 78 insurance companies and 784 micro-institutes registered. The Cooperatives Registrar regulates cooperatives and credit unions. In addition, Bangladesh House Building Finance Corporation (BHBFC)

and Bangladesh Investment Corporation (ICB) as well as five non-scheduled banks are regulated by the Ministry of Finance itself.

Table 4.1: Financial System of Bangladesh

Sectors	Financial Markets	Institutions	Regulators
Formal Sector	Money Market	Scheduled Banks (58): 01. SCBs (6) 02. PCB (40) 03. FCBs (9) 04. SDBs (3)	Bangladesh Bank
		Financial Institutions (34): 01. Govt. Owned (2) 02. Others (32)	
	Capital Market	Stock Exchanges (02) Merchant Banks (57) Credit Rating Companies (9) AMCs (32) Depository Participants (488)	BSEC
		ICB	Ministry of Finance
	Insurance Market	Insurance Companies (78): Govt. Owned (2) Foreign (1) Others (75)	IDRA
	Micro Credit Market	MFIs (784)	MRA
Semi-formal Sector	01. BHBFC 02. PKSF 03. Grameen Bank 04. Jubilee Bank 05. Ansar VDP Unnayan Bank 06. Karmasangsthan Bank 07. Palli Sanchay Bank		Ministries of the Government
Informal Sector	Shadow banking (not yet regulated)		

Source: Bangladesh Bank

4.2 Development of Banking Sector in Bangladesh

The country's central bank, Bangladesh Bank, was established by the 1972 Bangladesh Bank Order on 16 December 1971. The government acknowledged the assets and liabilities of the State Bank of Pakistan's Deputy Governor's office in Dhaka and retitled it as the country's fully operating and permanent central bank. The bank is responsible for circulating currency, governing credit, interest rate and monetary policy, and controlling both exchange and foreign reserves. In the beginning, the government of Bangladesh nationalized the entire domestic banking system, reorganizing and renaming a few banks. Foreign banks were allowed to remain in Bangladesh doing business. The

value of the taka, the currency unit of Bangladesh, was set at the time of independence between 7.5 and 8.0 to US$ 1. With the exception of FY 1978, the dollar value of the taka declined from 1971 to the end of 1987 every year. Bangladesh first used the International Monetary Fund (IMF) compensatory funding facility in FY 1974. Nevertheless, the government was primarily unwilling to meet the conditions of the IMF on monetary and fiscal policies due to the growing need for assistance. All banks must have licenses from the Bangladesh Bank under the Bank Companies Act 1991 to conduct banking in Bangladesh. In order to obtain a license, all intending banks must be registered under the Companies Act 1994 with the Registrar of Joint Stock Companies and collect an Incorporation Certificate. In addition, in order to collect capital by means of public offerings of shares, banks must obtain permission from the Securities and Exchange Commission of the country. All such banks operating in Bangladesh with various paid-up capital and reserves having at least Tk's aggregate value. Section 37(2) of the Bangladesh Bank Order 1972 declared 50 lakes and their affairs to the satisfaction of the Bangladesh Bank as scheduled banks. It was 100 Crore since 30 March 2003. It has been raised to minimum size Tk.200 crore since October 2007. However, after 2011, minimum capital requirements were raised to Tk.400 crore for all banks, of which minimum Tk.200 crore will be the paid-up capital. Banking institutions can be categorized under various clusters in Bangladesh. All banks fall under the branch banking category, i.e. the banks operate under the headquarters governor through branches at home and abroad. Foreign branches of banks in Bangladesh must comply with the regulations of the host country.

4.3 Banking Reforms in Bangladesh

As one significant component of the banking system, banking sector plays a vital role in the development of the economy of Bangladesh. So as to have a healthy and well-developed banking sector, the Bangladesh government has executed a series of reforms which can be mostly divided in to three periods, as follows: (a) from 1971 to 1982, (b) from 1982 to 1990, and (c) after 1991 when Bangladesh joined the WTO. Banks and Financial Institutions Originating during Pakistan period and start functioning being amalgamation after independence of Bangladesh as follows:

Banks	Amalgamated Banks
1. Agrani Bank	Habib Bank Ltd. Commerce Bank Ltd.

2. Janata Bank	United Bank Ltd. Union Bank Ltd.
3. Rupali Bank	Muslim Commercial Bank Ltd., Standard Bank Ltd.
4. Sonali Bank	National Bank of Pakistan, Bank of Bahawalpur Ltd. Premier Bank Ltd.
5. Pubali Bank	Australasia Bank Ltd., Eastern Mercantile Bank Ltd.
6. Uttara Bank	Eastern Banking Corporation
7. Bangladesh Shilpa Bank	Industrial Development Bank of Pakistan (Predecessor ADFC, ABP)
8. Bangladesh Krishi Bank	Agricultural Development Bank of Pakistan (Predecessor ADFC, ABP)
9. Bangladesh Shilpa Rin Shangasta	Pakistan Industrial Credit Investment Corporation (PICIC) National Investment Trust

Following independence, Bangladesh's banking industry began its journey with six nationalized commercial banks, two state-owned specialized banks, and three foreign banks. With the admission of private banks, the banking industry achieved significant expansion in the 1980s. Bangladesh's financial system was a typical example of what economists dubbed' financial repression' before reforms began in the 1980s. The system, both the market and institutions, faced major structural problems in the post-independence period, both in banking and other monetary market components as well as in the capital market. The reform of the financial sector was initiated in 1982 with the denationalization of commercial banks in order to overcome these problems, followed by the establishment of the National Commission on Money, Banking and Credit in 1984. Early in 1987, the National Commission on Money, Credit, and Banking proposed broad structural changes to Bangladesh's financial intermediation system, many of which were incorporated into a three-year compensatory financing facility contracted with the IMF by Bangladesh in February 1987. However, major reforms in the sector were launched in the early 1990s. Given the poor outcome of earlier reforms, wide-ranging banking reform measures were undertaken under the aegis of the World Bank's Financial Sector Reform Project (FSRP) in the 1990s. Since denationalization, increased private participation and market-based pricing of financial products did not produce the anticipated results until the late 1990s, the focus in the early 2000s had shifted to risk-based regulations and supervisions. This was largely due to the Bangladesh Bank's lack of firm oversight and effective regulations. While the issue of regulation and supervision was outlined in FSRP

and the banks adopted Basel I standards (maintaining adequate capital to withstand crisis) in 1996, it was in fact the post-2000 reforms that focused de facto on risk-based banking supervision. In addition, the Central Bank Strengthening Project launched in 2003 focused on effective banking sector regulatory and supervisory systems, in particular strengthening the Bangladesh Bank's legal framework, automation and human resource development and capacity building. The Enterprise Growth and Bank Modernization Project was adopted by the World Bank in 2004 to help the government achieve a competitive private banking system by phasing out a substantial shareholding in the three public sector banks (Rupali, Agrani and Janata) and by divesting a minority shareholding in the largest state bank, Sonali Bank Ltd, The banking sector reform faced a strong resistance from organized labours, but political support favoured various reforms in the sector as the entry of private players provided them with considerable incentives. The share of nationalised banks' in total banking assets and deposits has declined over the years. Even in the early 2000s, the NCBs/ SCBs constituted 47 percent of industry assets and half of the industry deposits. However, the private commercial banks (both local and foreign) emerged as a dominant player in the sector constituting 65 percent of industry assets.

4.4 Structure of Banking Sector

According to ownership-based classification, banks in Bangladesh are categorized as state owned banks (commercial, specialized and non-scheduled), private banks (including joint venture) and foreign banks. In Bangladesh, after liberation, the all banks operating was nationalized. These banks were merged and grouped into six commercial banks. Pubali Bank Ltd. and Uttara Bank Ltd. were subsequently transferred to the private sector with effect from January 1985 out of the total six commercial banks. The rest four State Owned Banks (SCBs) are operating as public limited company from October, 2007. The state owned specialized banks were retitled as Bangladesh Shilpa Bank and Bangladesh Krishi Bank. Bangladesh Krishi Bank is, a specialized agricultural banking institution, lending to farmers radically expanded. Denationalization and private industrial development run the Bangladesh Bank and the World Bank to emphasis their lending on the developing private manufacturing sector. Bangladesh Krishi Bank was bifurcated and another specialized bank for the development of the Agriculture sector was emerged as Rajshahi Krishi Unnayan Bank (RAKUB) for Rajshahi Division in March 1987. Bank of Small Industries & Commerce Ltd. (BASIC) started its operation

as a private bank from January 1989. Later on BASIC was brought under direct control of the Government and was reckoned to as a specialized bank with effect from June 1993. From July 1995 again the BASIC was categorized as a private bank. In 1997, Government decided to treat this bank as a specialized bank again. So in this booklet, the BASIC has been treated as a specialized bank. In 2015, Government again decided to treat BASIC Bank and BDDL as state owned commercial bank instead of specialized bank. BSB & BSRS were merged and renamed as BDBL from 31 December 2009. Two foreign banks operating in Bangladesh - Standard Chartered and Grindlays Bank were merged to start operations in the name of Standard Chartered Bank in 2003. American Express Bank was also sold to Standard Chartered Bank in 2005. The Oriental Bank Ltd., an Islamic private bank was sold to foreign investors and was renamed as ICB Islamic Bank Ltd. in 2008. Probashi Kallyan Bank is the latest specialized scheduled bank as declared by the government on 30 July 2018.

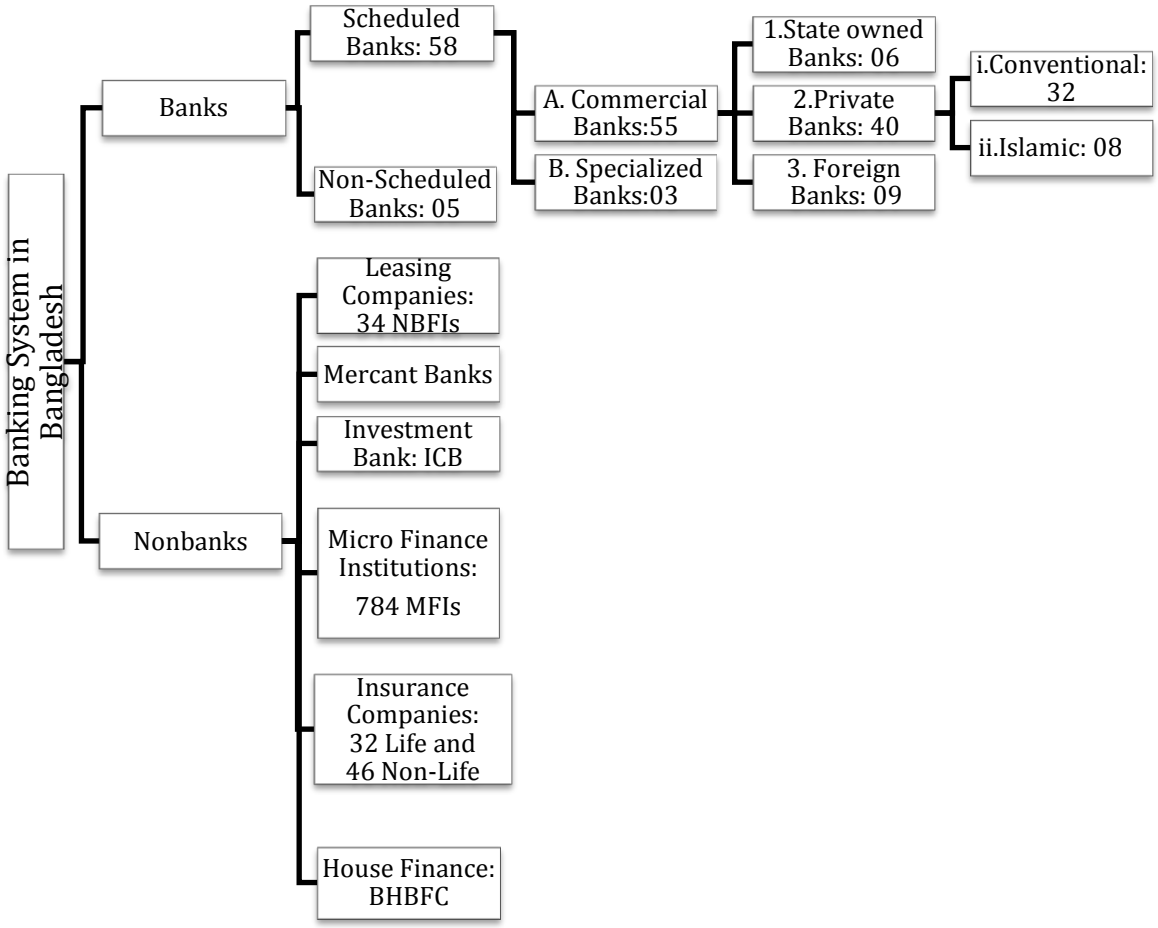


Figure 4.1: The Banking System in Bangladesh as on July 2018

4.5 Regulator of the Banking System

In Bangladesh, the regulatory authority of banking system is Bangladesh Bank. Through the enactment of Bangladesh Bank Order 1972- President's Order No. 127 of 1972 (Amended in 2003), Bangladesh Bank deeds as the Central Bank of Bangladesh which was established on December 16, 1971. Bangladesh Bank has been entrusted to a 9 members' Board of Directors which is headed by the Governor who is the Chief Executive Officer for the general superintendence and direction of the activities and business. Bangladesh Bank has 10 branch offices and 45 departments. In Strategic Plan over the period 2010-2014, the vision of BB has been specified as, "To develop continually as a forward looking central bank with competent and committed professionals of high ethical standards, conducting monetary management and financial sector supervision to maintain price stability and financial system robustness, supporting rapid broad based inclusive economic growth, employment generation and poverty eradication in Bangladesh".

The main purposes of Bangladesh Bank are (Sec. 7A of Bangladesh Bank Order, 1972)

1. To convey and appliance monetary policy;
2. to articulate and appliance mediation policies in the foreign exchange market;
3. To give guidance to the Government on the interface of monetary policy with fiscal and exchange rate policy,
4. To grip and fare the foreign reserves of Bangladesh;
5. To support, control and confirm a secure and efficient payment system;
6. To control and manage banking concerns and financial institutions.

Core Policies of Central Bank

Monetary policy: The key objectives of Bangladesh Bank monetary policy are:

- Internal & external Price stability
- Sustainable development and growth
- Employment growth
- Economic and resources efficient use
- Financial & payment system stability

Bangladesh Bank announces the Monetary Policy Statement (MPS) is issued twice in a year i.e January and July. In Bangladesh, the instruments for implementation of monetary policy are Repurchase agreements (Repo) & Reverse Repo, Bank Rate, Open Market Operations (OMO) and Statutory Reserve Requirements (SLR & CRR).

Functions of Central Bank: Bangladesh Bank like other central bank has the important functions as under:

- Bank Note Issue
- Monetary and Credit Policy
- Credit control are as under:
    - Bank Rate
    - Open Market Operation
    - Variable Reserve Requirements
    - Selective Credit Control
    - Credit Rationing
    - Margin Restrictions
    - Direct Interference
- Banker to the Government
- As Regulator and Supervising Authority of Banks and Financial Institutions
- As Bankers' Bank

Bangladesh Bank is the banker to the banks. As bankers' bank, all the commercial banks maintain their accounts with Bangladesh Bank. Commercial banks can sell purchase foreign currencies, treasury bills, bonds, prize bond etc. from Bangladesh Bank. At times of need, commercial banks also have the opportunity of availing borrowing facility from Bangladesh Bank and banks are allowed re-discounting facilities against treasury bills, bonds or other government securities.

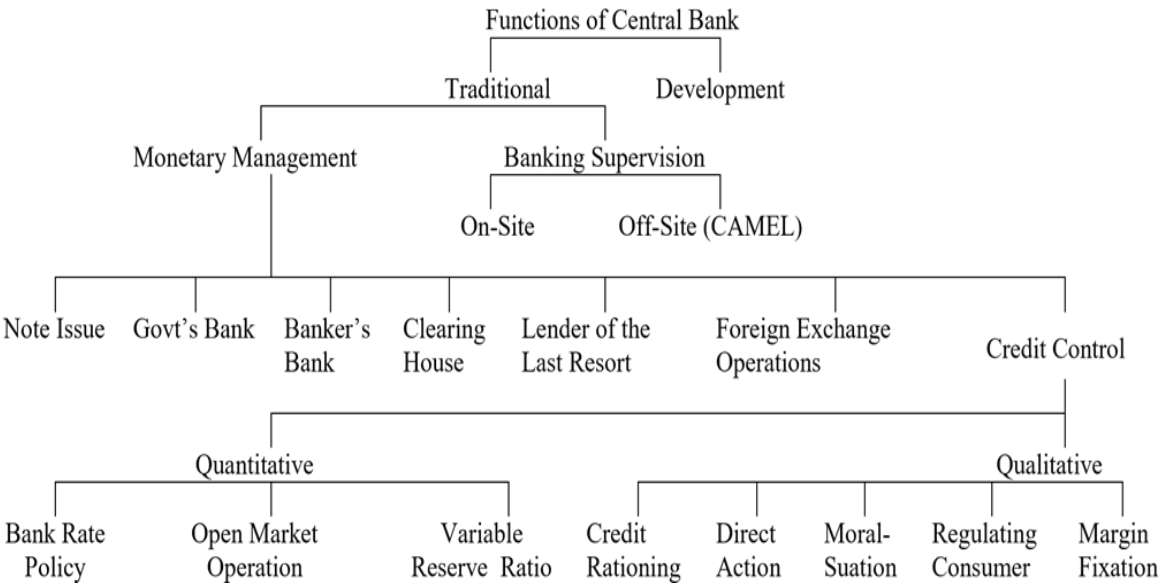


Figure 4.2: Function of Central Bank

Monetary Management:

Note issuance: Previously almost every bank could issue notes. It led to over issue of notes very often and as such it created many troubles. Then Government decided to give the power of issuing notes to a single institution. Now the central bank enjoys the sole right to issue notes. Notes are issued according to requirements on the basis of a certain principle.

Banker to the Government: The central bank acts as the banker to the Government in the following ways:

a) It acts as the custodian of all the funds of the Government. The bank usually pays no interest on these balances.

b) All payments of the Government are made through the central bank.

c) The central bank also acts as the lender to the Government in times of financial difficulties. The loans are allowed on short-term basis against treasury bills and other securities.

d) It acts as the adviser to the Government about financial matters.

e) It manages the public debt on behalf the Government.

Banker's Bank: The central bank acts as the banker to the commercial banks. The commercial banks, either by law or custom, have to maintain a certain percentage of their deposits as cash reserves with the central bank. The reserve maintenance allows the central bank to exercise control over the activities of those banks.

Clearing House Operation: The central bank acts as the clearing house for other banks. Its function in this respect is to help the settlement of their mutual claims that arise by way of collection and payment to cheques. All banks have their reserves with the central bank. The central bank will settle clearing differences by means of debit and credit entries in their accounts with it.

Lender of the last Resort: The central bank not only maintains the reserves of the commercial banks; it also acts as the lender of the last resort to them. Sometimes they fail to meet the depositor's demand for cash. They may not get funds from other sources to meet their demand. Then they can approach the central bank for help in such and other emergency needs. The funds are allowed by rediscounting their bills of exchange, promissory notes and other commercial papers or against approved securities. Thus, the central bank acts as the lender of the last resort or the ultimate source of cash to other banks.

Foreign Exchange Operations: The value of national currency may fluctuate both at home and abroad. The central bank is to keep certain reserves for maintaining confidence in home currency. This reserve is the safeguard against domestic monetary circulation. Similarly, it is to keep necessary foreign exchange reserves for maintaining stability in the external value of national currency.

Controller of Credit: The very important function of a central bank is that it acts as the controller of credit. Expansion and contraction of credit may be associated with many evils. As the leader of the money market, the central bank controls the volume of credit according to the total needs of the economy. The supply of credit takes place through the commercial banks.

Bank rate policy: Bank rate is the rate at which the central bank would rediscount bills of exchange or promissory notes and grant loans on approved securities. Bank rate is also known as discount rate.

Open market operations: Open market operations refer to purchase and sale of securities by the central bank in the open market on its own initiative. When commercial banks possess more reserves for credit expansion purpose, the central bank will sell securities in the market. The buyers will pay the central bank with cheques drawn on their own banks. As a result, the reserves of these banks will fall, and this will reduce their credit operations. Similarly, when it buys securities it will pay the sellers in cash or with cheques drawn on it. This will increase credit expansion capacity.

Variable reserve ratio: The central bank can control volume of credit by varying cash reserve ratio whenever necessary. If central bank raises the reserve ratio, it will monitor of the compliance with such rules. Bank examination, on the other hand, ensures compliance with the rules and regulations and assesses the soundness of individual institutions. Sometimes, the function of bank regulation and examination are centered in one department, while in some central banks, they are separated into different departments as matter of policy.

Qualitative Methods: Among qualitative methods, the following are important:

i) Credit Rationing
ii) Direct Action
iii) Moral persuasion
iv) Regulating Consumer Credit
v) Margin Fixation

Developmental Functions: In the under-developed countries, the central bank takes keen interest in the promotion of economic development. It also takes part in the development of commercial and other banking institutions. This development function does not fall within the traditional functions of a central bank.

Autonomy of Central Banks: Performing central banking functions without any interference from government.

4.6 Present Banking Scenario in Bangladesh

The banking industry in Bangladesh ongoing its journey with 06 Nationalized commercialized banks, 03 State owned Specialized banks and 09 Foreign Banks after the independence. The banking industry attained significant growth with the entrance of private banks in the 1980's. At present, banks in Bangladesh are mainly of two types:

- Scheduled Banks: The banks that remain in the list of banks sustained under the Bangladesh Bank Order, 1972.
- Non-Scheduled Banks: The banks which are established for special and definite objective and govern under any other act. These banks cannot execute all activities of scheduled banks.

According to Bangladesh Bank Order, 1972 and Bank Company Act, 1991, there are 58 scheduled banks in Bangladesh who operate under full control and supervision of Bangladesh Bank. Scheduled Banks are categorized into following types:

- State Owned Commercial Banks (SCBs): There are 6 SCBs which are fully owned by the Government of Bangladesh.
- Specialized Banks (SDBs): For specific objectives like agricultural or industrial development, 3 specialized banks are now operating which were established. These banks are also fully owned by the Government of Bangladesh.
- Private Commercial Banks (PCBs): There are 40 private commercial banks which are majorly owned by the private entrepreneur. PCBs can be classified into two groups:
- Conventional PCBs: 32 conventional PCBs are now working in the banking industry. They perform the banking functions in interest based operations.
- Islami Shariah based PCBs: There are 8 fully Islami Shariah based PCBs in Bangladesh and perform banking actions as per Islami Shariah based principles i.e. Profit-Loss Sharing (PLS) mode.

- Foreign Commercial Banks (FCBs): 9 FCBs are working in Bangladesh as the branches of the banks which are incorporated in overseas.

There are now 5 non-scheduled banks in Bangladesh which are:

- Ansar VDP Unnayan Bank,
- Karmashangosthan Bank,
- Grameen Bank,
- Jubilee Bank,
- Palli Sanchay Bank

4.7 Categorize of Commercial Banks

State-owned commercial banks (SCBs): The Big Four state-owned commercial banks (SCBs) are the Sonali Bank Limited, Agrani Bank Limited, Janata Bank Limited and Rupali Bank Limited. Another large scale private commercial bank is Islami Bank Bangladesh Limited (IBBL). Sonali Bank Limited is Bangladesh's leading state-owned commercial bank. It's the country's largest bank. Sonali Bank was established in 1972 under the Bangladesh Banks (Nationalization) Order by amalgamating and nationalizing branches of the National Bank of Pakistan, the Bank of Bahawalpur and the branches of the Premier Bank located in East Pakistan until the 1971 Bangladesh Liberation War. Janata Bank Ltd. is a Bangladesh-based state-owned commercial bank founded in 1971. Its headquarters are located in Dhaka, Bangladesh's capital city, Motijheel. It is Bangladesh's second-largest commercial bank. By merging the assets of United Bank Limited and Union Bank Limited, the 1972 Bank Nationalization Ordinance was used to form Janata Bank. Janata Bank has been listed with the Joint Stock of Registrars and restructured in 15 November 2007 as a public limited company called Janata Bank Limited. Agrani Bank Ltd. was founded in 1972 as a state-owned Bangladesh commercial bank. Its headquarters are located in Dhaka, Bangladesh's capital city, Motijheel. Founded on 26 March 1972, Agrani Bank Limited combined two abandoned Pakistani banks, Commerce Bank and Habib Bank. The Bank is owned by Bangladesh's government. Rupali Bank Ltd. is a state-owned Bangladesh commercial bank. With the merger of 3 former commercial banks, i.e. Rupali Bank Limited was formed. Muslim Commercial Bank Limited, Australasia Bank Limited, and Standard Bank Limited, operating under the 1972 Bangladesh Banks (Nationalization) Order in East Pakistan on March 26, 1972. Until December 13, 1986, Rupali Bank worked as a nationalized

commercial bank. Rupali Bank Ltd. emerged on December 14, 1986 as the country's largest Public Limited Banking Company.

Specialized Banks (SDBs): There are two specialized banks that have been set up for specific purposes such as agricultural or industrial development. These banks are wholly owned by the Bangladesh government. Bangladesh Krishi Bank (BKB) is a Bangladesh specialized bank owned by 100 percent of the government. BKB has been financing remarkably in the agricultural sector since its inception. The Bangladeshi people's biggest occupation is "Krishi." Krishi is a Bengali word meaning' farming.' Approximately 85 percent of the population is directly or indirectly dependent on farming, which contributes significantly to GDP. Rajshahi Krishi Unnayan Bank (RAKUB) is a state-owned, regional-oriented specialized bank in Bangladesh. The bank emerged as the government's plan of Rajshahi and Rangpur administrative divisions ' intensive care for agriculture providing livelihood for 35 million people in the area. Divisions of Rajshahi and Rangpur characterized by their surplus food grain production are popularly referred to as "the country's grenary." In addition to catering for agricultural credit, RAKUB, as it is acronymised, provides all 377 branches with deposit banking services. Specialized banks (SDBs) mostly encourage agricultural and rural development through the following actions: 1) increase funds for agricultural policy businesses 2) assume government-specified agricultural policy credit trading, agricultural-related commercial industries; 3) assist as a state treasury agent in allocating special funds to support agriculture. The two specialized banks ' total assets reached Tk by the end of 2017. 3,176 million.

Private Commercial Banks (PCBs): After financial institutions were independent, particularly banks played a vital role in rebuilding Bangladesh's war-torn economy. As reported by BSB (P. 29, 1993), "Bangladesh's banking system is a mixed one consisting of nationalized commercial banks, both private and foreign. Bangladesh Bank is the country's central bank and is responsible for the government's monetary policies and controls all commercial banks. "Bangladesh's financial sector is dominated by the commercial banking system. Bangladesh Bank is Bangladesh's central bank and the industry's chief regulator. For the first time in the 80's, a number of private-sector banks were allowed. Subsequently, some more private sector banks began operations in the mid-1990s. They are inclined to offer superior product and service. In terms of market

share, they are small in size. There were 40 commercial banks by the end of 2017, with Tk's total assets. 87.583 million, representing 67% of Bangladesh's total banking sector assets, with a 2.9% growth rate compared to the previous year. Private commercial bank ownership consists of private companies with the former holding significantly larger shares. The stronger private entrepreneurial interventions result in the accumulation of unsuccessful loans in PCBs. National Bank Limited was born as the first hundred percent Bangladeshi owned Bank in the private sector. Islami Bank Bangladesh Limited is the pioneer of Bangladesh's Islamic banking. It was incorporated as a limited public company under the 1913 Companies Act on 13 March 1983. It has 36.91% of local shareholders and 63.09% of foreign shareholders. IBBL has 332 branches, including 59 AD Branches & 03 Offshore Banking Units, and more than 13,500 employees, up until Dec 2016. IBBL is therefore Bangladesh's largest private banking network. When IBBL was established, it was South East Asia's first bank to provide Shariah-based banking service. As of 2017, Islami Bank Bangladesh commands 90% of Islamic-banking assets and deposits in Bangladesh, is the country's biggest private lender overall, has 12 million depositors and a balance-sheet of $10 billion. Islami Bank Bangladesh Limited is a Joint Venture Public Limited Company engaged in commercial banking business based on Islamic Shari'ah with 63.09% foreign shareholding having largest branch network (total 341 Branches) among the private sector Banks in Bangladesh. It is listed with Dhaka Stock Exchange Ltd. and Chittagong Stock Exchange Ltd.

Foreign Commercial Banks (FCBs): Nine FCBs are working in Bangladesh as the branches of the banks which are incorporated in abroad. There are 09foreign commercial banks (FCBs) at the moment: Citi NA, HSBC, SCB, Woori bank, Commercial Bank of Cyclone, Habib Bank Limited, National Bank of Pakistan and State Bank of India. According to the 2017 annual statement from the Bangladesh Bank, the total assets of Foreign Commercial Banks were Tk. 6,039 million, accounting for 4.62% of total assets in Bangladeshi banking sector, which was 1% higher than 2016. Foreign commercial banks are permitted to engage a wide range of banking services, including accepting deposits, extending loans, and providing foreign exchange and international transaction services. The foreign commercial banks (FCBs) are primarily providing credits to corporate clients rather than making loans to large companies.

Table 4.2 Banking System Structure as on December-2017

(Tk.in million)

Bank Type	Number of banks	Number of branches	Total assets	Share in Industry assets	Deposits	Share in deposits
SCBs	6	3721	33,795	25.88%	27,006	27.35%
SDBs	2	1407	3,176	2.43%	2,733	2.77%
PCBs	40	4758	87,583	67.07%	65,082	65.91%
FCBs	9	69	6,039	4.62%	3,928	3.98%
Total	57	9955	130,593	100%	98,749	100%

Source: Bangladesh Bank. Annual Report 2017-18.

4.8 The Overview of Banking Sector over the Period 2008-2017

Figure 4.3 shows the total assets of the Bangladeshi banking sector as on 2016-2017. The assets of the banking sector in Bangladesh keep growing to the highest point in 2017 in the figure indicates. This growth of assets in the banking sector proposes that there is an increasing demand for banking services in Bangladesh, and also specifies that the banking sector still shows a leading role in financial services of Bangladesh. Additionally, the figure displays the total assets of different ownerships of Bangladeshi banks. The assets of all groups of banks keep increasing to 2017; this indicates that different ownerships of Bangladeshi banks have experienced good development over the examined period. In terms of the state owned bank, specialized banks and foreign commercial banks the market share keeps declining to the lowest point in 2017, while on

Table 4.3 Banking Systems Structure, Assets and Deposits

(Tk. in Billion) (In percent)

Year	**2016**					**2017**				
Bank types	No. of banks	Total assets	Share in industry assets	Deposits	Share in deposits	No. of banks	Total assets	Share in industry assets	Deposits	Share in deposits
SCBS	6	3209.5	27.6	2535.4	28.38	6	3379.5	25.88	2700.6	27.35
SDBs	2	299.5	2.6	249.4	2.79	2	317.6	2.43	273.3	2.77
PCBS	40	7560.0	65.0	5788.0	64.79	40	8758.3	67.07	6508.2	65.91
FCBS	9	557.6	4.8	361.1	4.04	9	603.9	4.62	392.8	3.98
Total	57	11626.6	100	8933.9	100	57	13059.3	100	9874.9	100

Source: BRPD and DOS, BB.

the other hand, the market shares of only private commercial banks keep increasing over the period. This figure indicates that although the private banks still dominate in the Bangladeshi banking market, their competition with other groups of Bangladeshi banks has been improved. On the other hand, the market shares of private commercial banks in Bangladesh keep increasing. This figure shows that, although Bangladeshi private

commercial banks are the biggest banking group in Bangladesh, its market power has slightly increased and that competition in the Bangladeshi banking sector is growing.

(Tk. in Crore)

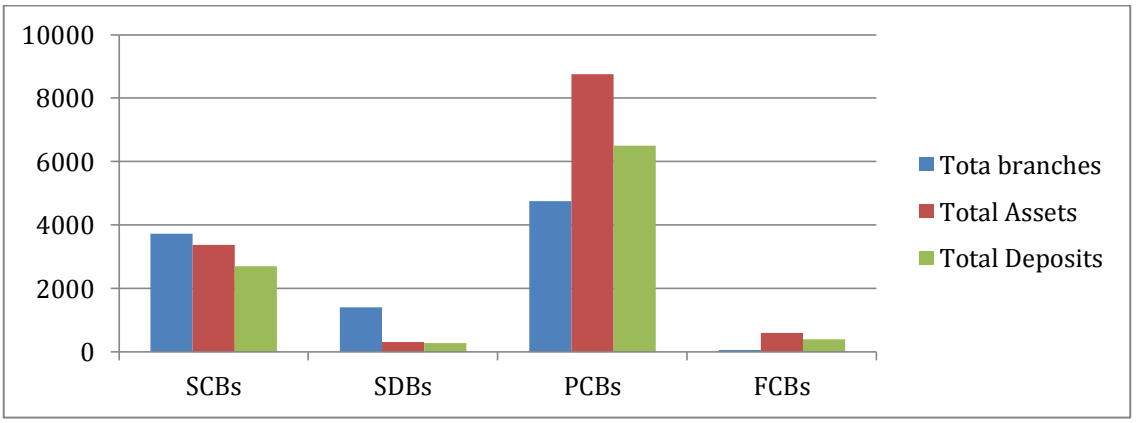


Figure 4.3 Total Assets and Deposits of Banking Sector over 2017-2018

Profitability: Niresh, (2012) states that profitability is a measure that exceeds the relevant expenses of banks ' revenues. A bank's sound earnings and profitability shape reflects its ability to support sound current and future operations, absorb future contingent blows, and enhance resilience capacity. A low profit would advise ineffective management and investment in the bank would be uncertain. While there are numerous earnings and profitability indicators, the most widely used indicator is asset return (ROA), complemented by equity return (ROE) and net profit margin (NPM). ROA is primarily an indicator of managerial efficiency and it indicates how capable the management of the banks has been converting the institution's asset into net earnings. ROE measures the rate of return flowing to the bank's shareholder. The NIM measures how large a spread between interest revenues and interest costs management able to achieve by close control over the bank's earning assets and the pursuit of the cheapest sources of funding. ROA in the banking industry decreased gradually to 0.74 percent in 2017 from 1.20 percent in 2008. In 2017 the ROA of SDBs decreased and became negative at -0.62. The DFIs situation is not better due to persistent operating losses incurred by Bangladesh Krishi Bank (BKB) and Rajshai Krishi Unnayan Bank (RAKUB). The ROA of the FCBs showed a consistently strong position until 2017. This decrease in ROA was mainly due to profit income is taken into account in the interest income and BASIC bank and BDBL included in SCBs.

Table-4.4: Trend in Return on Assets (ROA) by types of Banks

(In percent)

Bank types	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
SCBs	0.7	1.0	1.1	1.3	-0.56	0.59	-0.55	-0.04	-0.16	0.21
SDBs	-0.6	0.4	0.2	0.1	0.06	-0.40	-0.68	-1.15	-2.80	-0.62
PCBs	1.4	1.6	2.1	1.6	0.92	0.95	0.99	1.00	1.03	0.89
FCBs	2.9	3.2	2.9	3.2	3.27	2.98	3.38	2.92	2.56	2.24
Total	**1.2**	**1.4**	1.8	1.5	0.64	0.90	0.64	0.77	0.68	0.74

Source: Bangladesh Bank.

Loan concentration in the commercial banks: Since the decade, Bangladeshi commercial banks have been increasing the volume of loans made. In addition, Bangladeshi commercial banks prefer to deal credit to large companies rather than small size initiatives. However, the share of loans obtained by private enterprises from all banking institutions accounts for only 3.4%. The Bangladeshi commercial banks make loans to large size enterprises mainly for the following reasons: first, the loans made to larger scale enterprises are safer compare to smaller scale enterprise. Secondly, large-scale enterprises have larger demand for funds; the commercial banks can obtain economies of scale, which further reduces the costs. The heavy loan concentration is not good for the strong development of the banking sector, as signposted by the Economist; the concentration of banking loans on large corporations substantially upsurges the credit risk of commercial banks. The calculated 1372.3-point Herfindahl-Hirschman Index (HHI) indicates a moderate level of loan and advance sector concentration in the banking system. Although some changes in loans and advances are observed by sector categories, the data still reveal that the loans from the banking sector were concentrated in year of 2017 within a few sectors. Large industries, in particular, showed concentration in the total loan portfolio at 24.1 percent, followed by wholesale and retail trade with a 19.5 percent share. The index value shown in Appendix-3, slightly higher in the year of 217 compared to that of the year of 2017 (1372.31 points), indicates that during this period, loans and advances have been somewhat concentrated, as it still maintains a consideration.

SMEs difficulties in accessing bank loans: The difficulty for small and medium size enterprises (SMEs) in gaining loans from commercial banks has been an issue since 1990s. As one important part of the economy, the private sector subsidizes to the development of the country's economy, the hitch to their finding funds from commercial banks can be mainly attributed to the following reasons: first, compared to the large scale

enterprises, making loans to small and medium size enterprises lacks guarantees, which is expected to lead to higher volume of nonperforming loans and lower bank profitability. Secondly, the SMEs have unreliable accounting practice which avoids them from finding funds from commercial banks. Cottage, Micro, Small and Medium Enterprises are financed under the purview of this sector. Both the working capital loans and term loans (fixed assets/project finance/BMRE of existing units) are allowed to this sector as per range applicable for the sector.

Table 4.5: Categories of SMEs

Categories	Nature	Total Fixed Assets in BDT (Excluding land & building)	No. of employees (Including Permanent, Part-time & Temporary)
Medium Enterprise	Trading	10.00 million to 150.00 million	50 to 100
	Service	10.00 million to 150.00 million	50 to 100
	Manufacturing	100.00 million to 300.00 million	100 to 250
Small Enterprise	Trading	0.50 million to 10.00 million	10 to 25
	Service	0.50 million to 10.00 million	10 to 25
	Manufacturing	5.00 million to 100.00 million	25 to 99
Micro Enterprise	Trading	Below 0.50 million	Not exceeding
	Service	Below 0.50 million	Not exceeding
	Manufacturing	0.50 million to 5.00 million	10 to 24
Cottage Industry/Enterprise		Below 0.50 million	Not exceeding 10 (Including family members)

4.9 Recent Developments in Banking Sector of Bangladesh

In order to conduct monetary management and financial sector supervision to maintain price stability and strengthen financial system, supporting rapid broad based inclusive economic growth, employment generation and poverty reduction in Bangladesh the following initiatives have been taken by Bangladesh Bank so far:

1. To address the growing demand for a fast, secure and effective payment system in Bangladesh, Bangladesh Bank took initiatives to establish country wide electronic payment infrastructure replacing the traditional paper based clearing and settlement system. The changed initiatives are:

- Payment Systems Strategy
- Automated Cheque Processing System
- Electronic Funds Transfer
- Mobile Financial Services
- E-Commerce and m-Commerce
- National Payment Switch
- Legal & Regulatory Framework for electronic payment systems
- Real Time Gross Settlement (RTGS)

Bangladesh Automated Clearing House (BACH), the first ever electronic clearing house has started live operation in Dhaka from October, 2010. It has two components Bangladesh Automated Cheque Processing System (BACPS) and Bangladesh Electronic Fund Transfer Network (BEFTN).

Real-Time Gross Settlement' (RTGS) systems are specialist funds transfer systems where transfer of money or securities takes place from one bank to another on a "real time' and on "gross" basis. Settlement in real time" means payment transaction is not subjected to any waiting period. The transactions are settled as soon as they are processed. "Gross settlement" means the transaction is settled on one to one basis without bundling or netting with any other transaction. Once processed, payments are final and irrevocable.

2. A detailed guideline on Environmental Risk Management has been introduced to assess Environmental Risk along with the Credit Risk for an overall credit rating prior to disbursement of loan credit facility.
3. To cope with the international best practices and to make the bank's capital more risk sensitive as well as more shock resilient, banks in Bangladesh have entered into Basel II regime from January 01,2010 after one-year parallel run period (2009) with Basel- I. Meanwhile, Basel III has been published by Basel Committee for Banking Supervision(BCBS) and BB is planning to adopt the same. In addition to level of risk management, Basel III has suggested that in calculating capital adequacy bank will consider its size (leverage ratio), Liquidity Coverage Ratio (LCR) and countercyclical position.
4. Bangladesh Bank has prepared a Guideline for Information and Communication Technology (ICT) Security for scheduled banks and Financial Institutions for all their information systems. The ICT Security Guideline defines the minimum requirements to which each bank must adhere.

5. Bangladesh bank has promulgated Stress Testing Guidelines for the scheduled banks in April 2010 and in February 2011 to gauge the resilience of the banking sector against plausible shocks. The development of credit, market and liquidity risks is being analyzed to and help the banks to take necessary corrective measures through stress tests. This will continually address risks that the banking industry is exposed
6. Introduced Financial Stability Report (FSR) for the first time in October 2011. The FSR contains analysis on macroeconomic developments impacts on the banks and financial institutions and evaluation on current and future risk factors.
7. With a view to developing a world class risk management environment in the banking sector of Bangladesh, an elaborate risk management guideline was introduced in 2012. This document promotes an integrated, bank-wide approach to risk management that will propel banks in Bangladesh to the forefront in the region in adopting contemporary methods to identify, measure, monitor, and control risks.
8. Investment policies related to capital market activities for scheduled banks were formulated and implemented, which helped the banking sector to remain unaffected from the capital market price correction of 2010-2011
9. Repo transaction has become more transparent and accountable after the implementation of a uniform accounting guidelines for Repo transactions.
10. The amendment of Islamic Bond Rule, 2004 (draft placed for enactment) and introduction of Islamic Interbank Fund Market (IIFM) in 2012 to solve the liquidity problem and reduce liquidity risk of the Islamic banks.
11. A detailed reporting system named as Diagnostic Review Report (DRR) to analyze banks' overall condition and financial disclosure requirements was initiated.
12. Financing to Agriculture, SME &Women Entrepreneurship by the banks are also being considered in the 'Management segment during composite CAMELS rating.
13. Introduced web-based data uploading by banks, which helps to process data and generate reports regarding deposit, advance, liquidity, capital adequacy etc. of the banking sector faster than before.
14. Relaxation in Foreign Exchange Policy has been made by Bangladesh Bank in the following cases:
    - Issuance of Proceeds Realization Certificate (PRC)
    - Advance from Exporter's Retention Quota (ERQ)
    - Foreign Currency (FC) for regular study

- Remittance of legal expenses
- In Forward sales
- Outward Remittance for IT Firms
- Purchase of usance import bill
- Enhancement of Travel quota
- Allowing use of ICC for online payment of fees, admission, examination (TOEFL. SAT etc.). In connection with admission into foreign educational institutions. This has also allowed that individuals not holding ICCs in their names may also make such online payment through internet using 'Virtual Card for the required amount by an ICC issuing bank, for use through its designated bank branch.

15. To facilitate smooth repatriation of remittance against Off-shore IT/Business Process Outsourcing services provided by Bangladeshi freelancers in non-physical form, Bangladesh Bank has allowed the Authorized Dealers to offer the facility of repatriation of remittances against such service exports through Online Payment Gateway Service Providers (OPGSPs).
16. Money Laundering Prevention Act (MLPA), 2012 has been promulgated repealing the Money Laundering Prevention Act, 2009 and the Anti-Terrorism (Amendment) Act, 2012 has been promulgated amending the Anti-Terrorism Act, 2009 to meet the international standards and to make an effective AML/CFT regime in Bangladesh. The Bangladesh Financial Intelligence Unit (BFIU) has performed a major role in drafting both of the Acts.
17. Corporate social responsibility (CSR) initiatives by banks have been formalized and monitored by Agricultural Credit and Financial Inclusion Department of BB. The goal of CSR is to embrace responsibility for the company's actions and encourage a positive impact through its activities on the environment, consumers, stakeholders, communities, public and employees as well, CSR activities of banks broadened substantially in last three years.
18. To foster green banking practices in the country, Bangladesh Bank formulated the 'Green Banking Policy and Strategy framework' and 'Environmental Risk Management Guide lines'in a consultative manner. Many banks are now financing environmental friendly projects.

Bangladesh Bank has introduced a refinance scheme worth BDT 2 billion (USD 25 million) to refinance loans to effluent treatment plants (ETPs), solar panels, bio-gas plants and HHK Financial Institutions. Technology in brick making industry at a 5% interest rate provided by banks and Non-Bank.

19. Bangladesh Bank inaugurated its Credit Information Bureau (CIB) online on 19th July, 2011. Main objective behind setting up the Bureau was to minimize the extent of default loans by providing banks and financial intuitions with credit reports of loan applicants thereby reducing credit risk.
20. Bangladesh Bank recently made its vast repository of data accessible to the general public. Data from the various publications of Bangladesh Bank can now be easily downloaded by anyone free of cost and into an Excel format. This includes time series, historical data on balance of payments, money supply, various consumer price indices, national accounts, stock price indices, interest rates, remittances, exchange rates, commodity prices, tax revenues etc.

CHAPTER FIVE

THEORETICAL APPROACH: NONPERFORMING LOANS

5.1 Meaning of Nonperforming Loans

There is no worldwide standard for the practical definition of nonperforming loans. A NPL is a loan that is whichever in default or near to being in default. A lot of loans become nonperforming after being in default for 03 months, according to the contract terms. The classification of NPLs is strictly associated to loan classification systems of a bank. The classification is based on actual loan performance and whether there has been a delay in repaying the principle and interest. For example, it would classify those loans with repayments that have been delayed for more than three months as SS. Those who have been delayed for a shorter period would be put in past due / overdue, and those who have not been repaid are classified. This approach, however, underestimated the seriousness of NPLs as it did not include high-risk loans that still paid interest and were not overdue (Lardy, 1998). The internationally accepted five-category classification system was eventually adopted by the Bangladesh Bank in 2012. This system classifies bank loans as: 'standard', 'special mention account (SMA)', 'sub-standard (SS)', 'doubtful (DF)' and 'Bad/loss (BL)', with the last three categories being recognized as NPLs.

The three letters "NPL" strike terror in banking sector and business circle today. NPL is short form of "Nonperforming Loans". A performing loan is an advance which creates income to the bank by way of profit/interest and other charges. A nonperforming loan in the banking sector may be referred to an asset not contributing to the income of the bank or which does not generate income for the bank. In other words, an advance account, which ceases to yield income, is a nonperforming loan. If the customers do not repay principal amount and interest for a certain period of time, then such loans become nonperforming loans. Thus nonperforming assets are fundamentally nonperforming loans. Banks are not allowed to book any income from NPLs. They have to make provision for NPLs or keep money aside in case they cannot collect from the borrower, which affects profitability adversely.

A Nonperforming loan is a loan that is in default or close to being in default. Many loans become no-performing after being in default for 90 days, but this can depend on the contract terms. The dreaded NPL rule says simply this: when interest or other due to a bank remains unpaid for more than 90 days, the entire bank loan automatically turns a

nonperforming loan. A nonperforming loan is a default or near-default loan. According to the IMF, the definition of NPLs is: A loan is non-performing when interest and principal payments have been overdue by 90 days or more, or at least 90 days of interest payments have been capitalized, refinanced or delayed by agreement, or payments have been overdue by less than 90 days, but there are other good reasons to doubt that payments will be made in full (Wikipedia, NPL definition). Nonperforming loans by bank regulatory definition consist of:

a. Loans that are past due to interest for 90 days or more and still accrue, and

b. Loans placed on non-accrual loans (i.e. loans for which interest is no longer accrued and posted on the statement of income).

The loan is classified as nonperforming once a payment becomes late (usually 30 days). NPL is a sum either of the borrowed money upon which the debtor has not made his/her scheduled payments, which is in default or close to being in default. If the debtor starts making payments against a nonperforming loan, it becomes a performing loan. Loan may also be nonperforming if it is used in a different way than that for which it has been taken. As per Section 5 (cc) of Bank Company Act 1991, 'defaulting debtor' means any person or institution served with advance, loan granted in favor of him or an institution involving interest or any portion thereof, or any interest which has been overdue for six months in accordance with the definition of Bangladesh Bank. Nonperforming loans are also called nonperforming assets (NPA), which are loans, classified by a bank or a financial institute, at the instruction of the regulatory authority, on which repayments or interest payments are not being made on scheduled time. A loan is an asset for a bank as the interest payments and the repayment of the principal create a stream of cash inflows. Interest cash inflow is excess money over principal, which is called profit. If payments are late for a short time, a loan is classified as past due. Once a payment becomes late (usually 60-90 days), the loan is classified as nonperforming. NPL is a sum either of the borrowed money upon which the debtor has not made his/her scheduled payments, which is in default or close to being in default. Once a loan is nonperforming, the odds that it will be repaid in full are considered to be substantially lower. If the debtor starts making payments against a nonperforming loan, it becomes a performing loan. An asset, including a leased asset, becomes nonperforming when it ceases to generate income for the bank. A ‘nonperforming loan’ is defined as a credit facility in respect of which the interest and/or installment of principal has remained ‘past due’ or a specified period of

time. NPL is cleared as an advance for which interest or repayment of principal or both remain outstanding for a period of more than 90 days.

Types of NPLs: NPLs are broadly divided into two types: Gross NPLs and Net NPLs

Gross NPL: Gross NPLs are the sum total of all loan assets that are classified as NPLs as per Bangladesh Bank guidelines as on Balance Sheet date. Gross NPL reflects the quality of the loans made by banks. It consists of all the non-standard assets like as sub-standard, doubtful and loss assets. It can be calculated with the help of following ratio:

$$Gross\ NPLs\ Ratio\ = \frac{\text{Gross NPLs}}{\text{Total Loans}} X\ 100$$

Net NPL: Net NPLs are those type of NPLs in which the bank has deducted the provision regarding NPLs. Net NPL shows the actual burden of banks. Bank balance sheets contain a huge amount of NPLs and the process of recovery and write off of loans is very time consuming, the provisions the banks have to make against the NPLs according to the central bank guidelines, are quite significant in Bangladesh. That is why the difference between gross and net NPL is quite high. It can be calculated with the help of following ratio:

$$Net\ NPLs\ = \text{Gross NPLs} - \text{Loan loss Provisions} - \text{Interset Suspense}$$

$$Net\ NPLs\ Ratio = \frac{\text{Gross NPLs} - \text{Loan Loss Provisions} - \text{Interst Suspense}}{\text{Total Loans} - \text{Loan Loss Provisions} - \text{Interst Suspense}} X\ 100$$

It is mentioned that, compared to other Asian countries and the US, the gross nonperforming loans figures in Bangladesh seem more alarming than the net NPL figure. The problem of high gross NPLs is simply one of inheritance. Historically, state owned Banks in Bangladesh have been poor on credit recovery, mainly because of very little legal provision governing foreclosure and bankruptcy, lengthy legal battles, sticky loans made to government public sector undertakings, loan waivers and priority sector lending. Net NPLs are comparatively better on a global basis because of the stringent provisioning norms prescribed for banks.

5.2 Prudential Accounting and Loans Terms

Lending is one of the principal functions of banks. Lending always carries a risk, usually known as credit risk, arises out of the inability of the borrower to satisfy their obligations to the financial institutions. The problem of bad loans (explained in banking terms as

NPL) existed right from the days of Goldsmith banking in 17th Century England, where many Goldsmiths' failed because they could not fulfill their obligations due to non-recovery of their loan amounts. The economic crises of many nations that were dominated by the banks in their financial structure began from the bad loans of banks. The prudential accounting standards are based on the **NPL** concept as follows:

N	No income
P	Provisioning and
L	Loan classification

The prudential accounting norms comprise of the following: (1) Income Recognition; (2) Loan Classification and (3) Provisioning Terms.

Income recognition: For the purpose of income recognition, banks are required to classify their loan account into two categories: (a) Performing Loans (b) Nonperforming Loans [NPL]. If the loan is 'Performing', income is recognized on an accrual basis. If the loan is 'Nonperforming' interest thereon is to be recognized only on cash basis, i.e., when it is actually realized. Banks may book dividend income on shares of corporate bodies on accrual basis, provided dividends on the shares have been declared in the AGM (Annual General Meetings) and the owners' right to receive the payment is established. Hence if dividend is not declared before finalizing the accounts, it cannot be taken to income account. In respect of income from Government securities and bonds and debenture of corporate bodies where interest rates are predetermined, income could be booked on accrual basis, provided interest is serviced regularly and is not in arrears.

5.3 Loans Types

Banks make loans and advances in different forms. All types of credit facilities can be mostly categorized into two sets:

- Funded credit
- Non-funded credit

Funded Credit: Any type of credit facility, which involve direct outflow of banks fund is termed as funded credit facility. Funded credit facilities may be classified into four major types: Loan, Cash credit, Overdraft, Bill purchase and discount etc.

Loans: When credit facilities are made in a lump sum repayable either in fixed monthly installments or in lump sum. It allowed for a definite purpose a for a specified purpose to

those parties who have either fixed source of income or who desire to pay it in lump sum loans are granted for short, medium, and long period. Short-term loans are usually granted to meet the working capital of the borrower. Medium terms loans are repayable over a period of 2 to 5 years are granted for the purpose of durable goods like vehicles, equipment, and other tools and machineries. Long-term loans are generally term as "term loan" bank extended term loans for a period of five years and above for meeting the requirement of capital investment.

A. Continuous loan: The loan accounts in which transactions may be made within certain limit and which have no fixed installment or repayment schedule but have an expiry date for full adjustment or renewal will be treated as Continuous Loan. Examples are: Cash Credit, Overdraft, etc.

Overdraft: The overdraft is a kind of advance allowed on a current account operated upon by cheques. The customer may be sanctioned a certain limit upon which he can withdraw his current account within a stipulated period. Here withdrawals or deposits can be made any number of times at the convenience of the borrower, provided that the total amount overdrawn does not at any time exceed the agreed limit.

Cash Credit: Cash credit is the favorite mode of borrowing by traders, industrialists, agriculturalists etc for meeting their working capital requirement. Working capital requirement is an elastic form of borrowing. A cash credit or overdraft account is treated as NPL if the account is not out of order for two quarters or more on the date of balance sheet. Before an account is treated as out of order, it should be identified as irregular. After an account is identified as irregular for six months basing on the above three criteria, it will be treated as out of order. A CC/ OD account is treated as NPL if it continues to be out of order for a further period of six months. It is elastic because the limits fluctuate according to the needs of the business of the borrower. There are two types of cash credit

- **Cash Credit Pledge**: This type of facility always provided against pledge of goods, products, merchandise which remain in the godown under the possession of the bank with effective control but ownership remains with the borrower.
- **Cash Credit Hypothecation:** Cash Credit is sometimes allowed against hypothecation of goods. It is called cash credit hypothecation. For example, in a manufacturing company whose stocks of raw materials and manufactured goods constantly fluctuate, it is difficult for the banker's to control such changes. In case of hypothecation both ownership and possession remain with the borrower although by

virtue of the hypothecation agreement the bank can take possession of the goods if the borrower defaults

B. Demand Loan: The loans have no fixed installment or repayment schedule that becomes repayable on demand by the bank treated as Demand Loan. If any contingent or any other liabilities are turned to forced loan as Demand Loan. Such as: Forced Loan against Imported Merchandise (LIM), Payment against Document (PAD), Foreign Bill Purchased (FDBP), and Inland Bill Purchased (LDBP), etc.

Bill Purchasing: Discounting and Purchasing of bill of exchange is another way of employing the banks funds. Bank allows advances to the clients by discounting usance bills, which matures after a fixed period say 30 days, 60 days etc. In this method the bank calculates and realizes the interest at a prefixed rate and credits the amount after deducting the interest from the amount of instrument. Financing against sight /demand bills are treated as purchase of bills. In this case bank becomes the purchaser or owner of the bill, which is treated as security for advance. In case of purchase of bill the charges are less because the bank can collect the payment immediately. Bills which remain overdue and are unpaid for a period of two quarters or more from the due date will be treated as NPL on the date of balance sheet.

C. Fixed Term Loan: The loans, which are repayable within a specific time period under a specific repayment schedule by paying fixed installments, will be treated as Fixed Term Loan.

D. Short-Term Agricultural Credit and Micro-Credit: Short-term Agricultural Credit will include the short-term credits as listed under the annual Agricultural Credit Policy and Program issued by the Agricultural Credit Department (ACD) of Bangladesh Bank. Credits in the agricultural sector repayable within 12 (twelve) months will also be included herein. Short-term Micro-Credit will include any micro-credits not exceeding an amount determined by the Agriculture Credit Department of Bangladesh Bank from time to time and repayable within 12 (twelve) months. Installment/interest which remains unpaid after past due for two harvest seasons or two half years shall be treated as NPL.

Other important funded facilities are:

- Consumer Loan
- Micro Credit
- Syndicated Loan
- Lease Financing
- Transport Loan

Non-funded credit facilities:

Non-funded credit facilities do not require fund involvement directly. Though these types of credit facilities are primarily non-funded in nature but at times it may turn into funded facilities. As such liabilities against these types of credit facilities are termed as "contingent liability". The major non-funded facilities are

(i) Letter of credit: Letter of credit is an under taking issued by a bank on behalf of his customer for availing credit facility from the beneficiary. A letter of credit is issued at the request of the client (the importer) guaranteeing the payment to the beneficiary (the exporter) against shipment of goods it is called a documentary letter of credit.

(ii) Bid bond: One kind of bank guarantee issued by the bank on behalf of its clients (Mostly contractor) to enable him to submit his bid in a tender. For issuing bid bond bank usually obtain cash margin and counter guarantee from the clients.

(**iii) Performance bond:** A bond or guarantee issued by a bank on behalf of the client guaranteeing that that he will perform the contract or to pay damage up the bond money. Bank while issuing such bond takes certain cash margin and counter indemnity from the client to secure his position.

(iv) Deferred/ Payment Guarantee: Importer of capital goods like plant, equipment may find it difficult to pay the full price of the goods immediately on their receipt. Therefore the supplier of the capital goods extends deferred payment credit terms. Deferred payments guarantee issued by a well-known bank is one of the acceptable securities to the suppliers by the buyer.

(v) Custom and Excise Guarantee: This guarantee is issued by the bank on behalf of their clients in favor of the custom authority to make payment on account of their custom duties/ excise duties on imported goods or export of commodities on future date. For the purpose of loan classification, loan and advances have been grouped into four categories:

5.4 Loan Classification

Irrespective of credit score obtained by a particular obligor, grading of the classified accounts should be in line with the latest guidelines of Bangladesh Bank, which are presently as follows:

Basis for Loan Classification: A loan/ credit account can be classified on the basis of the following two criteria:

a) Objective criteria
b) Qualitative judgment

Objective Criteria: Under this principle, loan accounts are classified based upon repayment records with the bank. The definitions are as follows:

(1) Past Due/ Over Due: (i) Any Continuous Loan if not repaid/ renewed within the fixed expiry date for repayment or after the demand by the bank will be treated as past due/overdue from the following day of the expiry date.

(ii) Any Demand Loan if not repaid within the fixed expiry date for repayment or after the demand by the bank will be treated as past due/overdue from the following day of the expiry date.

(iii) In case of any installment(s) or part of installment(s) of a Fixed Term Loan is not repaid within the fixed expiry date, the amount of unpaid installment(s) will be treated as past due/overdue from the following day of the expiry date.

(iv) The Short-term Agricultural and Micro-Credit if not repaid within the fixed expiry date for repayment will be considered past due/overdue after six months of the expiry date.

(2) All unclassified loans other than Special Mention Account (SMA) will be treated as Standard.

(3) A Continuous loan, Demand loan or a Term Loan which will remain overdue for a period of 02 (two) months or more, will be put into the "Special Mention Account (SMA)". This will help banks to look at accounts with potential problems in a focused manner and it will capture early warning signals for accounts showing first sign of weakness. Loans in the "Special Mention Account (SMA)" will have to be reported to the Credit Information Bureau (CIB) of Bangladesh Bank. Loans except Short-term Agricultural & Micro-Credit in the "Special Mention Account" and “Sub-Standard” will not be treated as defaulted loan for the purpose of section 27 KaKa (3) [read with section 5(GaGa)]of the Banking Companies Act, 1991.

(4) Any continuous loan will be classified as:

i. ‘Sub-standard’ if it is past due/overdue for 03 (three) months or beyond but less than 06 (six) months.

ii. ‘Doubtful’ if it is past due/overdue for 06 (six) months or beyond but less than 09 (nine) months

iii. ‘Bad/Loss’ if it is past due/overdue for 09 (nine) months or beyond.

(5) Any Demand Loan will be classified as:

i. ‘Sub-standard’ if it remains past due/overdue for 03 (three) months or beyond but not over 06 (six) months from the date of expiry or claim by the bank or from the date of creation of forced loan.

ii. ‘Doubtful’ if it remains past due/overdue for 06 (six) months or beyond but not over 09 (nine) months from the date of expiry or claim by the bank or from the date of creation of forced loan.

iii. ‘Bad/Loss’ if it remains past due/overdue for 09 (nine) months or beyond from the date of expiry or claim by the bank or from the date of creation of forced loan.

(6) In case of any installment(s) or part of installment(s) of a Fixed Term Loan is not repaid within the due date, the amount of unpaid installment(s) will be termed as ‘past due or overdue installment’. In case of Fixed Term Loans: -

i. If the amount of past due installment is equal to or more than the amount of installment(s) due within 03 (three) months, the entire loan will be classified as "Sub-standard".

ii. If the amount of past due installment is equal to or more than the amount of installment (s) due within 06 (six) months, the entire loan will be classified as "Doubtful".

iii. If the amount of 'past due installment is equal to or more than the amount of installment(s) due within 09 (nine) months, the entire loan will be classified as "Bad/Loss".

(7) The Short-term Agricultural and Micro-Credit will be considered irregular if not repaid within the due date as stipulated in the loan agreement. If the said irregular status continues, the credit will be classified as 'Substandard ' after a period of 12 months, as 'Doubtful' after a period of 36 months and as 'Bad/Loss' after a period of 60 months from the stipulated due date as per the loan agreement.

Special Mention: i. Assets must be classified no higher than Special Mention if any of the following deficiencies of bank management is present: the loan was not made in compliance with the bank’s internal policies; failure to maintain adequate and enforceable documentation; or poor control over collateral.

ii. Assets must be classified no higher than Special Mention if any of the following deficiencies of the obligor is present: occasional overdrawn within the past year, below-average or declining profitability; barely acceptable liquidity; problems in strategic planning.

Sub-standard: i. Assets must be classified no higher than Sub-standard if any of the following deficiencies of the obligor is present: recurrent overdrawn, low account turnover, competitive difficulties, location in a volatile industry with an acute drop in demand; very low profitability that is also declining; inadequate liquidity; cash flow less than repayment of principal and interest; weak management; doubts about integrity of management; conflict in corporate governance; unjustifiable lack of external audit; pending litigation of a significant nature.

Doubtful: Assets must be classified no higher than Doubtful if any of the following deficiencies of the obligor is present: permanent overdrawn; location in an industry with poor aggregate earnings or loss of markets; serious competitive problems; failure of key products; operational losses; illiquidity, including the necessity to sell assets to meet operating expenses; cash flow less than required interest payments; verypoor management; non-cooperative or hostile management; serious doubts of the integrity of management; doubts about true ownership; complete absence of faith in financial statements.

Bad/Loss : Assets must be classified no higher than Bad/Loss if any of the following deficiencies of the obligor are present: the obligor seeks new loans to finance operational losses; location in an industry that is disappearing; location in the bottom quartile of its industry in terms of profitability; technological obsolescence; very high losses; asset sales at a loss to meet operational expenses; cash flow less than production costs; no repayment source except liquidation; presence of money laundering, fraud, embezzlement, or other criminal activity; no further support by owners.

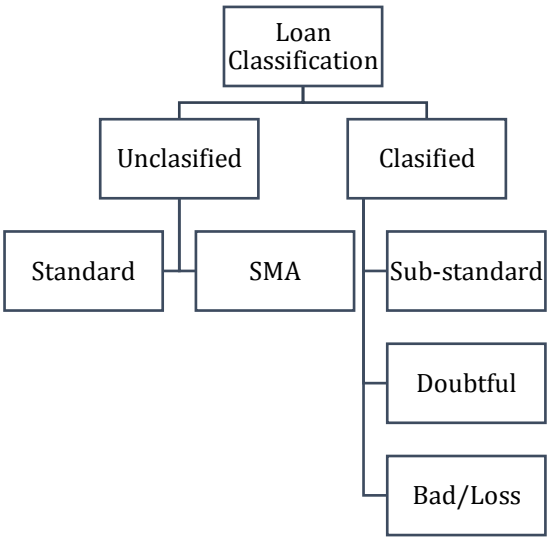


Fig. 5.1 Classifications of Loans

Table-5.1: Loan Classification and Provisioning in Bangladesh

Type of Loan	Period/ Duration	Classification	CIB/ Provision Rate
Continuous Loan (CC, OD etc)	Not repaid/ renewed with in expiry date	Past due/ Overdue	1% (0.25% SME, 5% CF, 2% Credit cards) No CIB report
	02 (two) months or more	SMA	05% To be reported to CIB
	03 months - <09 months	SS	20%
	09 months – <12 months	DF	50%
	12 months and above	BL	100%
Demand Loan (Forced LIM, PAD, FBP, IBP etc)	Not repaid/ renewed with in expiry date	Past due/ Overdue	1% (0.25% SME & 5% CF) No CIB report
	02 (two) months or more	SMA	05% To be reported to CIB
	03 months - <09 months	SS	20%
	09 months - < 12 months	DF	50%
	12 months and above	BL	100%
Fixed Term Loan amounting up to Tk.10.00 lac	EMI or partial Not repaid/ renewed with in expiry date	Past due/ Overdue	1% (0.25% SME, 5% CF, 1& Housing Loan) No CIB report
	02 (two) months or more	SMA	5% To be reported to CIB
	EMI due within 03 - <09 months	SS	20%
	EMI due within 09 - <12 months	DF	50%
	EMI due 12 months or more	BL	100%
Fixed Term Loan amounting more than Tk.10.00 lac	EMI or partial Not repaid/ renewed with in expiry date	Past due/ Overdue	1% (0.25% SME & 5% CF) No CIB report
	02 (two) months or more	SMA	5% To be reported to CIB
	EMI due within 03 - <09 months	SS	20%
	EMI due within 09 - <12 months	DF	50%
	EMI due 12 months or more	BL	100%
Short-term Agricultures & Micro-Credit	Less than 12 months	Past due/ Overdue	1% No CIB report
	Not applicable	No SMA	Not applicable
	After 12 months	SS	5% , To be reported to CIB
	After 36 months	DF	5%
	After 60 months	BL	100%

Sources: BRBP Circular No.14 dated September 23, 2012 and its subsequent modifications (Including latest circulars on Aril 21, 2019), Bangladesh Bank

5.5 Loan Provisioning

Bangladesh Bank has focused banks to provide provisions in respect of NPL accounts on the basis of classification of assets into substandard, doubtful and loss assets. BB states that the provisioning should be made taking into account the time lag between an account becoming doubtful of recovery, the realization of the security and the erosion over time in the value of security charged to the bank. The minimum amount of provision required to be made against a loan asset is different for different type of asset as follows;

Unclassified Loan (Standard & SMA)

a) **General Provision:** Banks will be required to maintain General Provision in the following way:

Table 5.2: Provision rate for Unclassified Loan

Loan Products	Provision rate	Types of Credit
SME (Standard & SMA)	0.25%	SME Credit
Unclassified Loans	1%	Commercial/ Corporate loan
Housing Finance Loan	1%	Consumer
Professional loans	2%	Consumer
Loan to Brokerage House, Merchant Bank, Stock dealers	2%	Consumer
Credit Cards	2%	Consumer
Consumer Financing	5%	Consumer
Off-balance sheet exposures (Expect Bill for collection)	1%	Non-Funded
Guarantees	0-1%	Based on BB rating grade

b) Specific Provision: Banks will maintain provision at the following rates in respect of classified Loans:

Sub-standard and Doubtful loans and advances for Short Term agri. credit & Micro credit	5%
Sub-standard loans and advances except Short Term agri. credit & Micro credit	20%
Doubtful loans and advances except Short Term agri. credit & Micro credit	50%
Bad and Loss loans and advances	100%

Base for Provision: For eligible collaterals of the following types, provision will be maintained at the stated rates in above mentioned the outstanding balance of the classified loans less the amount of Interest Suspense and the value of eligible collateral:

a. Deposit with the same bank under lien against the loan,

b. Government bond/savings certificate under lien,

c. Guarantee given by Government or Bangladesh Bank.

For all other eligible collaterals, the provision will be maintained at the stated rates above mentioned on the balance calculated as the greater of the following two amounts:

i. outstanding balance of the classified loan less the amount of Interest Suspense and the value of eligible collateral; and

ii. 15% of the outstanding balance of the loan.

The calculation of provision requirements can be determined by the following formula;

$$i.\ P = \mathrm{B} - (\mathrm{I} + \mathrm{S})$$

$$ii.\ P = 15\%\ \mathrm{B}$$

Where;

P = Total Provision

B = Outstanding Balance in classified loan.

I = Interest Suspense

S= Realizable value of the eligible security available.

However, the base for provision shall be further reviewed towards closer convergence with international best practice standards.

5.6 Loan Rescheduling

Bangladesh Bank acknowledges that a legitimate banking practice may allow a continuous loan or credit line to be renewed in some cases. Sometimes even a term loan is renewed or extended in unfortunate circumstances beyond the borrower's control and does not mean that the borrower's willingness or ability to repay has deteriorated the loan. This circular is issued by Bangladesh Bank to communicate its policy position that rescheduling should only be carried out under limited circumstances and restrictions.

Time Limit for Rescheduling: Banks shall comply with the following instructions while considering application for loan rescheduling of non-performing loan (loans classified as Sub-standard, Doubtful and Bad/Loss) and the rescheduling shall be for a minimum reasonable period of time. Time limit for rescheduling of different categories of loans will be as follows:

Time limit for rescheduling Continuous Loan: The loan account in which transactions may be made within certain limit and have an expiry date for full adjustment will be treated as Continuous Loan:

Frequency	Classified as Sub-standard	Classified as Doubtful	Classified as Bad/Loss
First Rescheduling	Maximum 18 (eighteen) months from the date of rescheduling	Maximum 12 (twelve) months from the date of rescheduling	Maximum 12 (twelve) months from the date of rescheduling
Second Rescheduling	Maximum 12 (twelve) months from the date of rescheduling	Maximum 09 (nine) months from the date of rescheduling	Maximum 09 (nine) months from the date of rescheduling
Third Rescheduling	Maximum 06 (six) months from the date of rescheduling	Maximum 06 (six) months from the date of rescheduling	Maximum 06 (six) months from the date of rescheduling

Conditions: During the rescheduled period all required principal and interest payments must be made. Rescheduled amount should be repaid in monthly installments. If the amount of defaulted installments is equal to the amount of 3(monthly) installments, the loan will be classified as Bad/Loss.

Time limit for rescheduling Demand Loan:

The loan which becomes repayable on demand by the bank is treated as Demand Loan.

If any contingent or any other liabilities are turned to forced loan (i.e. without any prior approval as regular loan) those too will be treated as Demand Loans:

Frequency	Classified as Sub-standard	Classified as Doubtful	Classified as Bad/Loss
First Rescheduling	Maximum 12 (twelve) months from the date of rescheduling	Maximum 09 (nine) months from the date of rescheduling	Maximum 09 (nine) months from the date of rescheduling
Second Rescheduling	Maximum 09 (nine) months from the date of rescheduling	Maximum 06 (six) months from the date of rescheduling	Maximum 06 (six) months from the date of rescheduling
Third Rescheduling	Maximum 06 (six) months from the date of rescheduling	Maximum 06 (six) months from the date of rescheduling	Maximum 06 (six) months from the date of rescheduling

Conditions: During the rescheduled period all required principal and interest payments must be made. Rescheduled amount should be repaid in monthly installments. If the amount of defaulted installments is equal to the amount of 3(monthly) installments, the loan will be classified as Bad/Loss.

Time limit for rescheduling Fixed Term Loan:

The loan which is repayable within a specified time period under a prescribed repayment schedule is treated as Term Loan.

Frequency	Classified as Sub-standard	Classified as Doubtful	Classified as Bad/Loss
First Rescheduling	Maximum 24 (twenty-four) months from the date of rescheduling	Maximum 18 (eighteen) months from the date of rescheduling	Maximum 18 (eighteen) months from the date of rescheduling
Second Rescheduling	Maximum 18 (eighteen) months from the date of rescheduling	Maximum 12 (twelve) months from the date of rescheduling	Maximum 12 (twelve) months from the date of rescheduling
Third Rescheduling	Maximum 12 (twelve) months from the date of rescheduling	Maximum 09 (nine) months from the date of rescheduling	Maximum 09 (nine) months from the date of rescheduling

Conditions: During the rescheduled period all required principal and interest payments must be made. Rescheduled amount should be repaid in monthly/quarterly installments. If the amount of defaulted installments is equal to the amount of 6 monthly or 2 quarterly installments, the loan will be classified as Bad/Loss.

a) Time limit for rescheduling for Short-term Agricultural and Micro-Credit

First Rescheduling	Repayment time limit for rescheduling should not exceed 2 (two) years from the date of rescheduling.
Second Rescheduling	Maximum 1(one) year from the date of rescheduling.
Third Rescheduling	Maximum 6(six) months from the date of rescheduling.

b) If the loan becomes default after third rescheduling, the borrower will be treated as a habitual loan defaulter and the bank shall not consider for further loan rescheduling.

c) Approval of loan rescheduling cannot be made below the level at which it was originally sanctioned. A detailed appraisal report including implications of such loan rescheduling on the income and other areas of the bank must be placed to the approving authority at the time of placing the rescheduling proposal.

The issue has been reviewed and it has been decided that the borrowers whose credit facility has been rescheduled will get new loan facility subject to fulfillment of the following conditions:

a) The defaulting borrower who has availed interest waiver must settle at least 15% of the compromise amount (excluding the down payment on rescheduling as per present guidelines) to avail any further credit facility from any Bank.

b) In case of borrowing from other Banks, the same rule will be applicable, i.e. the borrower will have to settle at least 15% of compromise amount (excluding the down payment on rescheduling as per present guidelines), then, will be allowed to take regular facility from other Banks subject to the submission of NOC (No Objection Certificate) from the rescheduling bank.

c) If there is any Principal waiver, no fresh facility will be allowed till the full settlement of compromise amount.

d) Export borrowers may be granted further credit facility (after being identified as not a willful defaulter), if required, subject to settle at least 7.5% of the compromise amount (excluding the down payment on rescheduling as per present guidelines) being paid.

e) Prior approval of Bangladesh Bank shall have to be obtained if the loan is related to the director/ ex-directors of a Bank Company.

f) If any such issue is already there (such fresh facility has already been allowed after allowing waiver), the same will not fall under purview of this circular.

5.7 Policy for Loan Write-off

All scheduled banks in the country have to create a separate debt cancellation unit to recover write-off loans. Bangladesh Bank has issued the BRPD circular no -01 instruction on 06 February 2019 in its latest circular on loan or investment write-off policy. The latest instruction also bars banks to reschedule or restructure loans already written-off by the banks. Loan write-off is an accounting practice to remove bad loans

from banks' balance sheets and reduce their overall tax liabilities. But claim on these loans are not scrapped and banks have to keep adequate provision against the amount written-off. The central bank first issued loan write-off policy in 2003. Two revised instructions were also issued in 2004 and 2013 through official circulars. With the latest circular comes into effect, all the previous instructions become null and void, according to the BB's latest circular. The circular issued by the country's central bank late last week on revision of the policy guideline for writing off loans is unlikely to produce any impact on an otherwise deplorable situation concerning banks' soured loans. Yet the guideline, if adhered to, might help banks hide a part of the actual volume of bad loans and present relatively healthy pictures in their financials. The size of non-performing loans (NPLs) in the banking sector would also get reduced, to some extent, if all the banks write off their bad loans simultaneously. The provisions in the new guideline that allow banks to write off loans classified as bad/loss for three consecutive years and small-size loans, up to Tk 200,000, without any court case might prove to be handy tools for achieving that purpose. However, the meeting of provisioning requirement against the written-off loans might appear a major problem for many banks. Banks having problems with their financial health may not be interested to initiate any large-scale write-off move. For instance, nearly 44 per cent of the written-off loans belong to the state-owned banks that need immediate capital replenishment. There is no denying that cancellation of non-recoverable bad loans from the balance sheets by banks and other financial institutions is an internationally-accepted norm. But the act of writing off bad loans does not absolve either banks from recovering or borrowers from repaying the same. Rather, the process eats up a part of the profits earned by banks as they have to provide for an amount equivalent to the written-off loans. Moreover, banks are legally bound to continue efforts to recover the written-off loans. However, the practice of writing off bad loans---banks wrote off nearly Tk.500 billion in bad loans until September last--- comes as an encouragement to the bank loan defaulters. The main problem with the written-off loans is that banks are not found serious about recovering the same. Though the banks, in most cases, file cases with the money loan courts against delinquent borrowers, the process is a lengthy and expensive one. That is why borrowers concerned do have reasons to celebrate banks' decision to write off their borrowed amounts. There are also legal ways to stall execution of verdicts delivered by the money loan courts by the delinquent borrowers. The central bank with a view to enabling banks to take right moves in written-off loan recovery has, in the new guideline, asked the banks to form 'debt-

collection unit'. It has also reminded the banks of the existing provision of appointing third parties (recovery agents) for collecting written-off loans. The banks, unfortunately, have not been enthusiastic enough about getting back their money using the services of recovery agents. The latest guideline on loan write-off is, in fact, one of the prescriptions that the central bank writes from time to time either to control or cure the symptoms of a disease, named, loan default. The banking industry, seriously affected by it, is gasping for an effective and early remedy.

5.8 Policy on Single Borrower Exposure

In order to comply with the recently incorporated section–26(Kha) of the Banking Companies Act, 1991 and further improve the credit risk management of the bank, Bangladesh Bank is issuing this circular consolidating all the instructions issued on the subject so far and making some modifications.

1) Definition and Interpretation – For the purpose of this circular:

a) "Capital" – means the capital held by banks as per Clause (1) of Section-13 of

the Banking Companies Act, 1991.

b) "Exposure" – means credit exposure (funded and non-funded) and refers to all claims, commitments and contingent liabilities arising from on and off-balance sheet transactions, which include, but not limited to, outstanding loans/financing facilities, advances and receivables. These amounts comprise outstanding balance (i.e. principal amount and accrued interest/profit) which has not yet been repaid as at reporting date;

i) "Funded Exposure" – means the exposure for which the bank has provided or shall provide funds to the borrower or to a third party on behalf of the borrower;

ii) "Non-funded Exposure" – means the off-balance sheet exposure which has not yet been funded by the bank and may or may not be converted into funded facilities in future. Examples, letter of credit, guarantee, acceptance, commitment etc;

iii) "Large Loan" – defined in Paragraph-2(b)(i) of this circular as per Clause (2) of Section-26Kha of the Banking Companies Act, 1991.

c) "Non-conforming Exposure" – if an exposure is within the limit [limit set forth in Paragraph-2(a)] when made but subsequently exceeds the limit, the exposure will be treated as 'non-conforming' which may arise from any of the following circumstances:

i) the bank's capital declines;

ii) the borrower merges or forms a common enterprise with another borrower;

iii) the bank merges with another bank which also holds exposures to the borrower;

iv) capital rules or the lending limits undergo changes;

d) “Person” – means a natural person or a legal person i.e., company, corporation, associate, trust, joint venture, partnership or other business enterprise etc.

e) “Group” – two or more persons shall be deemed to be a group if one person has the ability, directly or indirectly, to control the other person(s) or to exercise significant influence over the financial and operating decisions of the other person(s), or if both persons are subject to common control or common significant influence. Group exists if at least one of the following criteria is satisfied:

i) Control Relationship: If one person has control over the other person(s), directly or indirectly. The criterion is met automatically to assess connectivity through control if one person owns more than 50 percent of another person's voting rights. Control can also be assumed, however, if one person has significant influence on the other person (owns 20 percent or more but less than 50 percent of voting rights). In addition to establishing control-based connectivity, banks must consider the following criteria to a minimum:

(1) Voting agreements (e.g. control of a majority of voting rights pursuant to an agreement with other shareholders);

(2) Significant influence on the appointment or dismissal of an entity’s administrative, management or supervisory body, such as the right to appoint or remove a majority of members in those bodies, or the capacity to appoint a majority of members solely as a result of the exercise of an individual entity’s voting rights;

(3) Significant influence on senior management, e.g. one person has the power, pursuant to a contract or otherwise, to exercise a controlling influence over the management or policies of another person (e.g. through consent rights over key decisions);

(4) Banks are also expected to refer to criteria specified in appropriate internationally recognized accounting standards for further qualitatively based guidance when determining control.

ii) Economic Interdependence: Economic dependence of one party on another or more other parties’ results in all of them being considered connected. That is, if one of them were to experience financial problems, in particular funding or repayment difficulties, the other or all of the others would, as a result, also be likely to encounter funding or repayment difficulties. For guidance on establishing connectedness based on economic interdependence, banks shall consider, at a minimum, the following qualitative criteria:

(1) When 50 percent or more of one counterparty's gross receipts or gross expenditures (on an annual basis) is derived from transactions with the other counterparty;

(2) When one counterparty has fully or partly guaranteed the exposure of the other counterparty, or is liable by other means, and the exposure is so significant for the guarantor that it is likely to default if a claim occurs;

(3) When the expected source of repayment for each loan is the same and neither counterparty has another source of income from which the loan may be fully repaid;

(4) Where it is likely that the financial problems of one counterparty would cause difficulties for the other counterparties in terms of full and timely repayment of liabilities;

(5) Where the insolvency or default of one of them is likely to be associated with the insolvency or default of the other(s).

2) Exposure Limits – The following limits shall apply:

a) Single Person/Counterparty or Group:

i) The outstanding amount of exposure, both funded and non-funded, to a single person/counterparty or a group shall not exceed 35% of the capital at any point of time.

ii) The aggregate outstanding principal amount of funded exposures shall not exceed 15% of the capital at any point of time.

iii) In case of export financing, the outstanding amount of exposure, both funded and non-funded, at any point of time to a single person/counterparty or a group shall not exceed 50% of the capital.

However, the aggregate outstanding principal amount of funded exposures shall not exceed 15% of the capital at any point of time.

b) Large Loan

i) Large loan refers to any exposure to a single person/counterparty or a group which is equal to or greater than 10% of the capital.

ii) The banks may sanction large loans as per the following limits set against their respective classified loans:

Rate of Net Classified Loans	**Large Loan Portfolio Ceiling against Bank's Total Loans & Advances**
Upto 5%	56%
More than 5% but upto 10%	52%
More than 10% but upto 15%	48%
More than 15% but upto 20%	44%
More than 20%	40%

In order to determine the above Large Loan Portfolio Ceiling of any bank, 50% credit equivalent of all non-funded credit facilities shall be included in the Total Loans and

Advances (i.e., 100% funded exposures plus 50% non-funded exposures). However, the entire amount of non-funded credit facilities shall be included in the Large Loan Portfolio.

Submission of Statement regarding Top-20 Loan Defaulters: Bangladesh Bank has been monitoring the status of the Top-20 loan defaulters of each bank based on the information submitted by the banks. To accommodate the changing environment in the banking sector, it has been decided to upgrade the reporting system. A set of suitable formats has been developed for this purpose and all banks are advised to follow the new instructions provided in prescribed format for proper reporting of information regarding Top-20 Loan Defaulters (Public & Private) and Top-20 Loan Written-off account (Public & Private) of each bank. The said information in the prescribed formats to be submitted each quarterly from December'2015, based on the outstanding balance of last day of the reporting quarter, within the last working day of the following month according to BB DOS circular letter no. 04/2015 dated December 29, 2015.

5.9 Collateral for Awareness of NPL

Collateral is one of the most extensively used structures of debt contracts. A striking theoretical literature – dating back at least to Stiglitz & Weiss (1981) – inspires collateral as arising from information gaps between borrowers and lenders. Collateral taken against credit facilities shall be properly valued in accordance with the laws of the country. An appropriate margin of security will be taken to reflect such factors as the disposal costs or potential price movements of the underlying assets. Delegation of approval authority shall be awarded based on different scale of security availability, preferably. For eligibility of security, the Bank shall follow the directives of the Central Bank and time to time review shall be conducted to be competitive in the market. For proper credit risk management, Bank must keep track of which loans are collateralized by which types of collateral. "Concentrations of collateral" are nearly as dangerous as concentrations by type of loan or industry. The following scheme for categorizing loans by collateral/security type is recommended:

1) Shares and securities
2) Commodities/export documents
    a) Export documents
    b) Commodities

- Export commodities
- Import commodities
- Other commodities pledged or hypothecated

3) Machinery/fixed assets (excluding land, building/flat)
4) Real estate
    a) Residential Real estate
    b) Commercial Real estate
5) Financial obligations
6) Guarantee of individuals (personal guarantee)
7) Guarantee of institutions (corporate guarantee)
    a) Guarantee of bank or NBFI
    b) Other corporate guarantee
8) Bills receivables against work order/supply order (as assignment)
9) Book debts/receivables (Assignment/hypo on book debts)
10) Ownership of vehicles (Cars/busses/watercrafts/vessels etc. under hypothecation and joint ownership)
11) Acceptance of LC Issuing Bank (For IDBP)
12) Letter of Indemnity for purchasing foreign export bill (FDBP)
13) Export LC (As lien against BTB LC)
14) Miscellaneous
    a) Hypothecation of crops
    b) Other
15) Unsecured loans

Whereas, following securities shall be discouraged (but shall not be prohibited):

i) Vacant land without demarcation
ii) Third party property
iii) Agriculture Land
iv) Dwelling House (in case of village property)

Amount and type required: Bank will try to have as much security coverage as possible against each and every credit facility sanctioned to the customers. Security requirement will be determined on case to case basis based on customer's business strength, level of risk bank is undertaking. However, Bank will always prefer to have

security equivalent to 1.00 times of the total funded limit except SOD (FO), SOD (WO), SOD (EM), SOD (EDF), FDBP, IDBP, Bid Bond.

The Bank will try to have a loan-to-value ratio low as much as possible to absorb declines in the value of the collateral that may occur with a small, though not insignificant probability. The most valuable collateral is cash and easily cashable financial collateral stipulated in Risk Based Capital Adequacy Guidelines (in line with Basel III). Other collateral in order of its quality and marketability would be marketable securities, real estate and a personal guarantee. The order of collateral mentioned is the same as the operating cycle of the company. The further away from cash, the more tenuous the value becomes. Real estate, taken as collateral, is less liquid and marketable in the short run but is controllable and dependable in value.

Features of Security/ Collateral:

i) Security to be easily traceable, marketable and non-perishable

ii) Preferably land and building located within city corporations/municipal areas having defect less title in the name of first party. However, property outside municipal area and/or having defect less title in the name of 3rd party may be accepted on the basis of Banker-Customer relationship. In case of third party property relation between the borrower and the owner of the collateral security shall be clearly mentioned after proper verification by the Branch where involvement of credit administration department (branch/ Corporate Head Office) is mandatory.

iii) Lease hold properties from RAJUK/ CDA/ KDA/ BSCIC/ Public Works Department (PWD) or any other Government/ Semi Government/Autonomous bodies may be accepted after obtaining necessary NOC from the lessor for mortgaging the lease hold property.

iv) Primary security to have adequate market value.

v) Financial instruments to be preferably of first party title.

vi) Receivable bills against work order/ supply order to be backed by adequate funding arrangements of the work order/ supply order entrusting agency.

vii) Documents to be accepted for negotiation which are drawn in conformity with the export L/C terms (i.e. documents which do not have discrepancies).

viii) Personal guarantee shall be obtained from those persons who have high/satisfactory net worth, satisfactory commitment fulfillment track record and no record of any irregular/ classified advances.

ix) For syndicated loans/joint financing, MTB prefers mortgage/hypothecation of property on pro rata Pari-passu 1st charge basis.

x) Rural home stead is not taken as collateral security.

xi) Perishable/ seasonal goods are discouraged as primary security.

Insurance Coverage: Bank must take adequate insurance coverage from the enlisted Insurance Companies of the Bank against the security/assets which are offered by the customer for credit facility. While approving any credit facility, the bank must ensure that appropriate insurance clause is appended. The bank must ensure that insurance Policy is current and renewed in time. Adequacy and the extent of insurance coverage to be assessed. Minimum insurance coverage is 110% of the value of items insured. Preferable insurance policies under mortgage clause are:

Table 5.3: Insurance for Loan Operations

Description	**Risk Coverage (Minimum)**
Marine	ICC (A/B/C) with adequate value of sum insured. Even ICC-A does not cover all perils (risks) viz. War and Strike Riot & Civil Commotion (SRCC). As such additional coverage if necessary irrespective of any sort of institute of cargo clauses may be obtained to cover such perils.
Air/Rail/Road	All Air/Rail/Road Coverage, if not, adequate other coverage including TPND, SRCC etc.
Cross Border	Cross Border transportation must be always covered by Non-delivery (ND) clause
Inland Transit	Inland Transit insurance coverage is to be taken for imported goods from port of delivery to final destination i.e. factory, godown, shops etc.
Machinery/ Equipment	Fire, Riot and Strike Damage (RSD), Machinery Break Down (MBD), Flood, Cyclone, Earthquake
Stocks	Theft, Burglary, Fire, RSD, Flood, Cyclone, Earthquake, Tidal Bore, Deterioration of Stock (DOS) (for perishable items)
Building	Fire, RSD, Flood, Cyclone, Earthquake
Vessel	Hull and Machinery Insurance (H & M), Protection and Indemnity Insurance (P & I)
Vehicle	Comprehensive 1st class Insurance.

In taking insurance policy all types of risks, the insurable object is exposed to, must be covered. Customer's preference for not taking required insurance should be avoided. If allowed, under unavoidable circumstances, that must be justified and mentioned as deviation and the said deviation can be approved by the respective approving authority. The customer will provide a separate undertaking to indemnify the bank in case of any risk which may arise for not taking insurance coverage in different areas.

Loan Covenants: Appropriate covenants of the credit facility must be established according to the nature of advance, security arrangements, ownership pattern, mode of acquisition, institutional norms / instructions, guidelines of the central bank / regulatory authority. However, following General Covenants shall be followed:

1) Excess over approved limit/facility is strictly prohibited.
2) The credit facility will be disbursed after completion of all documentation and security formalities through Bank's legal counsel and after full satisfaction of Branch Manager in this regard and after obtaining 'Disbursement Approval' from Credit Administration Department, Corporate Head Office. Where deferral of any terms and conditions are required, the same to be obtained from Head Office.
3) Debit balance confirmation, as on the day of advising the limit, and also on 30th June and 31st December of each year shall be notified to the client and confirmation there against shall be obtained.
4) Branch shall be satisfied that all audit objections (internal as well as external) have been rectified/complied with before allowing the facilities.
5) The borrower shall obtain and maintain in full force and effect all authorizations, licenses, permissions, approvals, NOCs etc. required to set up/ implement and operate the business.
6) An undertaking to be obtained from the client stating that it will deposit its sale proceeds to bank regularly and shall make satisfactory transaction in the account and will route all business through bank and will not open any business account/make transaction with any other bank without bank's written consent/permission, if applicable.
7) Stock report to be obtained on monthly basis, to be verified by the RM/Sr. RM.
8) The client shall pay all fees, charges, duties, taxes etc. that are due to the Government of Bangladesh

9) The borrower shall bear all fees related to conduct of accounts, documentations, charge creation, survey and valuation of securities and all other expenses related with the operation of credit facilities.
10) The credit facility shall have be availed by the client within 2 (two) months from the date of communication of the sanction.
11) The borrower shall not borrow from any other bank/financial institutions without written prior approval of the Bank.
12) Ownership/shareholding structure shall not be changed without prior written approval of the Bank.
13) The Bank will be at liberty to obtain and gather full financial and credit information from any other bank and financial institutions.
14) The bank reserves the right to set off any outstanding in one account against credit balance of any other account in the name of the borrower or any other allied account.
15) The borrower shall submit annual audited/un-audited/projected financial statements where applicable.
16) The borrower shall not make any amendment /alteration in the company's Memorandum/Articles of Association without prior written permission of the Bank.
17) The borrower shall not create any charge, mortgage or any encumbrances over any of its assets/other security interest without prior written consent of the Bank.
18) The borrower shall not execute disposal/sale of any of its assets without prior written approval of the Bank.
19) The borrower shall not enter into any investment activities other than regular business for which the loan facility is approved without the prior written consent of the Bank.
20) Disbursement shall be allowed subject to availability of funds with the Bank.
21) The Bank reserves the right to inspect the security/shop/goods/ godown/factory/project site and its operation at any time without client's prior consent/notice. Such visit to be made at least once annually, which shall be properly documented. Client will extend all kind of co-operation during such visit.
22) Original title deed in respect of the property to be mortgaged to the Bank as security along with the related documents/papers such as bia-deed, mutation,

khatian, parcha, up to date rent receipt, up-to-date non-encumbrance certificate etc. to be retained by the branch.

23) Mortgage formalities to be accomplished through legal adviser/panel lawyer of the bank. Opinion regarding acceptability of the property as security for the bank to be taken from the legal adviser/panel lawyer of the bank. Observations, if any, given by the legal adviser/panel advocate must be complied with before disbursement of loan.
24) Before creating mortgage on the property, Branch Manager must be satisfied that the property is free from any prior acquisition.
25) Branch manager /Relationship Manager will ascertain the identification of the mortgagors, the management / owners of the borrowing concern and also the location, title & physical possession of the proposed collateral.
26) The bank reserves the right to inspect the security- primary/collateral at any time without any prior notice. Such visit to be made at least once annually. Inspection to be properly documented.
27) Complete renewal/review proposal, along with all required papers and documents shall be sent to CHO 2 (two) months before expiry date.
28) Transaction Profile Form to be obtained from the client duly filled in and signed and KYC Form to be maintained by the branch properly and the same to be preserved carefully.
29) Branch shall exercise proper monitoring of the credit facility provided to the client and ensure deposit of sale proceeds.
30) Undertaking to be obtained from the client to the effect that all information supplied by them in connection with availing of the credit facility is correct.
31) The borrower will conduct business and maintain property in compliance with all environmental & social issue related laws.
32) The borrower will provide environmental clearance certificates which must be renewed from time to time, as appropriate.
33) All rules, regulations and norms circulated by Bangladesh Bank and all instructions, circulars & directives issued by bank from time to time shall be strictly followed.
34) The facility will be entertained within the purview of the credit norms/ restrictions of Bangladesh Bank/subject to Banking Regulations.

35) The bank reserves the right to review the facility, revise its any terms & conditions including rate of interest, commission and other charges, terminate the facility and call back money due there under during its currency at any time without assigning any reason whatsoever.
36) Standard sanction letter containing the above terms and conditions and all other terms as considered appropriate by the branch to protect interest of the bank shall have to be communicated to the client in writing and client's written consent to abide by the terms and conditions shall have to be obtained.

CHAPTER SIX
NONPERFORMING LOANS IN BANGLADESH: CAUSES, IMPACT AND REMEDIES

6.1 Overview

The chapter delivers around perception into the present conceptual framework the causes, impact and remedies of the NPLs in banking industry of Bangladesh. The chapter concludes by explaining what the government of Bangladesh especially legal issue is doing to resolve the problem. Although a foremost threat of banking sector is prevalence of nonperforming loans. The problem of nonperforming loans is one of the biggest and most intimidating issues that surprised an earthquake in Bangladesh's all-inclusive banking industry. Like a cancer worm, the banking sector has been drinking from within for a long time. It has grown like a cancer, infecting all of the banking system's limbs. Like any other business, banking success is evaluated on the basis of profit and asset quality that it possesses. The bank has assumed unlimited importance to accumulate huge nonperforming loans. The debt of default debt issue was recognized for the first time in the early 1990s. NPL is a banking sector virus. It disturbs liquidity and profitability, as well as the posing threat to asset quality and banks' survival. This has therefore been measured as the banking sector's most challenging problem.

As a result, one of the most important challenges facing Bangladesh's domestic banking sector is how to resolve the NPLs issue. The incidence of a big volume of NPLs and the resulting insufficiency of banks' capital is one of the most vital matters facing banks. As a result, considerable emphasis has already been positioned on reading the accrued NPLs problem in the both bad organic loans from previous and new loans that will depreciate and ultimately be classified as default loans. However, while banks' NPLs have deteriorated, in recent years, the amounts have not altered so much (Alicia & Daniel, 2005). Furthermore, financial institutions' NPLs have deteriorated since the late 1990s. The topic of nonperforming loans is not a new spectacle in Bangladesh. In reality, the stones were grown during the initial stage of the liberation period (1972-1981), on the one hand by the "growth of credit" policies of the government and weak banking infrastructure combined with an unqualified workforce. In fact, the growth of credit policy during the initial liberation stage, which was aimed at relatively easier distribution of credit, has magnified nominally credit in the economy. But it also produced a big

number of willful background defaulters who subsequently reduced banks' economic strength through the "sick industry syndrome."

6.2 Overall Nonperforming Loans Scenario of Bangladesh

Pre Liberation Periods: Earlier the liberalization of Bangladesh, Pakistan's economic development strategies focused on growth – an innovation model in which automation was allocated the utmost urgency in distributing investment funds from formal credit sources in the name of providing jobs to the massive gathering of the self-styled disguised unemployed labor force. This effort of industrial development in Pakistan failed unhappily to deliver sufficient quantity of proper industrial employment in West Pakistan. This is considered one of the key influences behind the quick evolution of the two Pakistani provincial economic inequality. Then banking was responsible as a main instrument for siphoning off East Pakistan's capital and consequently, bank nationalization became one of the most popular topics in the political parties' election manifesto during Pakistan's 1970 election.

Post liberation period: Following the liberation of Bangladesh, the government's decision to nationalize the banks operating in Bangladesh should be measured as a logical step, but the task of reorganizing the nationalized banks in the chaotic, war-ravaged and crisis-ridden years of post-liberation and the rapid growth of the banking system in rural Bangladesh has created some problems for the banking sector. After nationalization there was no time as the most fraudulent, disorderly, manned and mishandled concerns mired in the sea of repeated losses in the background of the political and administrative immaturity of the post-liberation regime. Non-performing loans have been a matter of concern for the last few decades. Table 6.1 shows the amount of nonperforming loans in the Bangladeshi banking sector over the period 2008-2017. These two reasons contribute to the increase in the volume of nonperforming loans in state-owned banks. Comparing to an increase in the volume of nonperforming loans in state-owned commercial banks, there is a slight decrease in the volume of nonperforming loans in foreign banks, which is attributed to the greater experience of risk management of foreign banks. Loans and advances constitute the largest share of assets. The high concentration of loans and advances can upsurge credit risk. The most important tool of asset quality is the nonperforming loans (NPLs) ratio. PCBs had the lowest and SCBs had the highest ratio of gross NPLs to total loans at the end of December 2017. PCBs' gross NPLs to total loans ratio was 4.9 percent, whereas that of SCBs, DFIs and FCBs

were 26.5, 23.4 and 7.00 percent respectively (Table 4.5). Table 4.5 shows that gross NPLs to in different types of Banks over the period 2008 to 2017.

Table 6.1 Gross NPLs to Total Loans by Type of Banks

Bank types	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
SCBs	25.4	21.4	15.7	11.3	23.9	19.8	22.23	21.5	25.1	26.5
DFIs	25.5	25.9	24.2	24.6	26.8	26.8	32.81	23.2	26.0	23.4
PCBs	4.4	3.9	3.2	2.9	4.6	4.5	4.98	4.9	4.6	4.9
FCBs	1.9	2.3	3.0	3.0	3.5	5.5	7.30	7.8	9.6	7.0
Total	**10.8**	**9.2**	7.3	6.1	10.0	8.9	9.7	8.8	9.2	9.3

Source: Bangladesh Bank

Table 6.2 Country's Defaulter Loans Rise by 300% over the last 10 years

(Tk.in Crore)

Types of Bank	Default loans on Dec 31, 2008	% of default loans of total outstanding loans 2008	Default loans as of June, 2018	% of default loans of outstanding loans 2018
SCBs	12,764	25.44	42,852	28.24
PCBs	5,698	4.44	38,975	6.01
FCBs	28,631	1.90	2,271	6.66
Total	**47,093**		**84,098**	

Sources: The Daily Dhaka Tribune, published on November 29, 2018

Non-performing loans (NPLs) in the banking sector have seen a tremendous 300 percent increase over the past decade as bad governance has harassed the financial sector in the absence of a strong central bank and political leadership. According to economists and senior bankers, the culture of impunity, political interference in approving loans, and bankers' professional ineptitude in dealing with the pressing issue has exacerbated the already battered banking industry. In reinforcing the trend of uncontrolled toxic loans, they urged the government to halt trade facilities such as cash incentives and tax waivers in favor of loan defaulters in order to put pressure on them effectively. Total NPLs in the country's banking sector in 2008 were Tk.22,481 crore, and as of June 2018 stood at Tk.89,340 crore, up by Tk.66,860 crore or 297 percent, according to data from Bangladesh Bank (BB). Default loans as of June 2018 were 10.41 percent of Tk.8,58,522 crore total loan disbursement by the country. Of the Tk.89,340 crore, state-owned commercial banks (SCBs) NPLs were Tk42,852 crore, state-owned specialized banks were Tk.5,241 crore, private commercial banks were Tk.38,975 crore, and foreign commercial banks' NPLs were Tk 2,271 core.

6.3 Objective-1: To access the present magnitude and trend of nonperforming loans of banks of Bangladesh.

A series of dodges have recently occurred in a great way intimidating the banking industry. Few years ago, the incident occurred with Sonali Bank loan fraud and remains on a large scale with loan scam, BASIC Bank and Farmers Bank loan scam. The level of all episodes is almost similar and a sequence follows. According to BB, it had about Tk.250 crore classified loans on the eve of merging. The scandal of the Farmers Bank, The Farmers Bank became a focus for financial misdeeds near the end of 2017, just three years after the inauguration. According to BB, the bank was set up in 2013 to siphon off more than Tk.3,500 crore. In December 2017, its NPLs represented 58 percent of its total outstanding loans. As a result, depositors began to extract money from the bank as of January 2018, encouraging the central bank and government to step in and rescue the bank. Later, the bank was bailed out by four state-owned commercial banks: Sonali Bank, Janata Bank, Agrani Bank, and Rupali Bank and Bangladesh's Investment Corporation, purchasing its Tk.715 crore equity. Janata Bank loan scam, a loan scam carried out by the state-owned Janata Bank came to light in August 2018. In clear violation of the Bank Company Act of 1991, Janata Bank lent about Tk.5,500 crore as it provided 25 percent of the capital base of the state-owned bank. The law set a single exposure limit of 10% for the borrower. Janata Bank currently has the most default loans, valued at Tk.14,376.46. As of September 2018, this bank's capital shortfall stood at Tk.3,923.34 crore. Once Janata Bank has been considered a strong performer among state-owned banks, it is going through troubled times and there is no plan of action in sight to solve the crisis. A lack of good governance and widespread corruption are the main reasons for Janata Bank's current dire situation. According to experience banker, the politically-appointed bank directors influence bank officials to sanction loans which cannot be recovered later. In addition, loyalty to vested groups, corruption and lack of experience make the bank's situation worse. By the end of 2018, bank-sector default loans for the first time in the country's history hit nearly Tk.1,00,000 crore. At the end of September 2018, the amount of NPLs stood at Tk.99,370 crore, or 11.45 percent of disbursed loans. Bad bank loans have risen since 2017 with a staggering Tk.19,063.71 crore. Bangladesh's commercial banks have a serious problem with unsuccessful loans. According to Bangladesh Bank, loan defaults rose by Tk.181.35 billion over the first nine months of last year 2017. Defaults in the cumulative loan stood at Tk.803.07 billion. If this is added to the written-off amount of Tk.450.00 billion, the real default of the loan

was Tk.1253.07 billion. Bank shares recorded decline in the stock market due to default loan media reports. In 2017, the nonperforming loan ratio remained largely stable. However, from the perspective of financial stability, high NPL ratio in SCBs and SDBs in recent years appears to be a concern for the banking sector.

The gross nonperforming loan (NPL) ratio in the banking industry increased to 9.3 percent in 2017 from 9.2 percent in 2016. Appropriately, insufficient due diligence in credit management is one of the main reasons for insistent high NPL in some banks. The gross NPL ratios of all groups of banks except FCBs and SDBs went up between End-December 2016 and End-December 2017. FCBs practiced a reasonable decline of 2.6 percentage points in their gross NPL ratio during this period. Though SDBs attained improvement but their NPL ratio still remained high. Along with this, increasing NPL ratio in SCBs is another reason behind high overall NPL ratio in the banking industry. The gross NPL ratio of SCBs increased to 26.5 percent in 2017 from 25.1 percent in 2016. Asset quality declined for the PCBs as their gross NPL ratio increased to 4.9 percent in 2017 from 4.6 percent in 2016. If rescheduled and restructured loans were measured, then the gross stressed loan would have been even higher for each type of banks. It increased from Tk. 6217 million in 2016 to Tk. 7432 million in 2017 recordkeeping a growth of 19.5 percent.

The total value of NPLs rose by almost one-fifth last year. Default loans increased to Tk.74,303 crore in 2017 from Tk.62,172 crore in 2016 to Tk.12,131 crore or 19.5 percent year-on-year. Default loans accounted for 9.31 percent in 2017 and 9.23 percent in 2016 as a proportion of the total outstanding loans. Bangladesh Bank's latest report shows that commercial banks disbursed Tk.798,195 crore as loans as of December last year. Default loans amounted to Tk.74,303 crore or 9.31 percent of the amount, whereas in September that year default loans amounted to Tk.80,307 crore or 10.67 percent. That means NPLs were dropped in three months by Tk.6,000 crore. Analysts say the loan ratio came down to single digit due to efforts to realize default loans and rescheduling of loans at the eleventh hour. Banks publish audit reports at the end of December. To show a good position in the reports, banks take up numerous strategies including rescheduling of default loans. These loans have now ended up being defaulted. According to sources, as of December last year, six state-owned banks distributed Tk.140,769 crore as loans. Of the amount, Tk.37,326 crore or 26.52% of the total outstanding loans became defaulted. As of September that year, default loans stood at Tk.38,517 crore or 29.25%. As of December last year, private sector banks disbursed loans of Tk.603,603 crore. Of the

amount, defaulted loans amounted to Tk.29,396 crore or 4.87% of the total outstanding loans. As of September, the amount of default loans was Tk.33,973 crore or 5.97%. Foreign sector banks gave Tk.30,622 crore as loans as of December, out of which defaulted loans amounted to Tk.2,154 crore. The amount was Tk.2,298 crore as of September. Meanwhile, default loans given by scam-hit Farmers Bank stood at Tk.723 crore or 14.10% of the total outstanding loans at the end of December. As of September, defaulted loan amounted to Tk.378 crore or 7.45%. During a regional banking conference on March 4, 2018 speakers voiced concern over the culture of default loans in Bangladesh's banking sector that is putting the entire sector in risk. Saying that Bangladesh has the greatest ratio of nonperforming loans (NPL), the speakers called on the central bank and the government to take a zero-tolerance approach on NPLs. Bangladesh's banking sector is witnessing a pile up of bad loans at an alarming rate with the borrowers showing a rising tendency of defaulting on loan payments. Experts have blamed the situation on the lack of good governance in the banking sector.

Figures provided by the central bank revealed that the defaulted loans stood at Tk.22,644 crores at the end of 2011. Six years later, the amount swelled to Tk.74,303 crores. Currently, state-owned Sonali Bank has the highest amount of defaulted loans, or nonperforming loans, followed by BASIC, and Janata Bank. Among the private banks, Islami Bank tops the list of banks with highest default loans, according to the central bank. The amount is zero for Shimanto Bank Ltd, which is fully owned by Border Guard Bangladesh Welfare Trust. Sonali Bank had accumulated Tk.13,771 crores of nonperforming loans until December last year, the Bangladesh Bank report showed. The amount is Tk.7,599 crores for BASIC Bank, Tk.5,819 crores for Janata Bank, Tk.5,116 crores for Agrani Bank and Tk.4,251 crores for Rupali Bank.

Bangladesh Development Bank has a total of Tk.771 crores of bad loans, while state-owned Bangladesh Krishi Bank has Tk.4,263 crores and Rajshahi Unnayan Bank has Tk.1,162 crores. the private banks, the Islami Bank has a total defaulted loan amount of Tk.2,529 crores. It is followed by Pubali Bank with Tk.1,898 crores and United Commercial Bank with Tk.1,807 crores, National bank with Tk.1,611 crores and Exim Bank with Tk.1,340 crores of defaulted loans. The Bangladesh bank report showed that private AB Bank had nonperforming loans of Tk967 crores, Al-Arafah Islami Bank Tk992 crores, Bangladesh Commerce Bank Tk434 crores, Bank Asia Tk723 crores, BRAC Bank Tk721 crores, Dhaka Bank Tk761 crores, Dutch-Bangla Bank Tk962 crores, and Eastern Bank Tk325 crores. Apart from them, First Security Islami Bank had

Tk839 crores, ICB Islami Bank Tk707 crores, IFIC Bank Tk1,048 crores, Jamuna Bank Tk525 crores, Meghna Bank Tk93 crores, Mercantile Bank Tk693 crores, Midland Bank Tk43 crores, Madhumati Bank Tk8 cores of default loans. The amount is Tk495 crores for Mutual Trust Bank, Tk662 crores for NCC Bank, Tk55 crores for NRB Bank, Tk77 crores for NRB Commercial Bank and Tk61 crores for NRB Global Bank. According to the central bank, One Bank has a total default loans of Tk829 crores, Premiere Bank Tk561 crores, Prime Bank Tk926 crores and Shahjalal Islami Bank has default loan of Tk630 crores. Default loan of SIBL stands at Tk909 crores. South Bangla Agriculture Bank has accumulated default loans of Tk30 crores, Southeast Bank Tk1,131 crores, Standard Bank Tk935 crores, City Bank Tk1,001 crores, Farmers Bank Tk723 crores, Trust Bank Tk578 crores, Union Bank Tk57 crores and Uttara Bank Tk695 crores. Bangladesh Bank data show that among foreign banks, Al-Falah Bank has a total defaulted loan amount of Tk25 crores, Citibank NA Tk22 crores, Commercial Bank of Ceylon Tk32 crores, Habib Bank Tk42 crores, HSBC Bank Tk157 crores, National Bank of Pakistan Tk1,377 crores, Standard Chartered Bank Tk474 crores, State Bank of India Tk15 crore and Woori Bank Tk7 crores. Until December, 2017, six state-owned banks have disbursed loans of Tk1,40,769.93 crores. Of the amount, Tk37,326 have turned into default loans which is 26.52% of the loans disbursed by these banks. During the same period, private banks have given out loans of Tk6,03,603.24 crores. Tk29,396.19 of the amount have turned into default loan. It is 4.87% of these banks' disbursed amount. Two state-owned specialized banks have so far given out loans of Tk23,199.69 crores. Of them, Tk5,426.30 crores or 23.39% of these banks' disbursed loans have become bad loans.

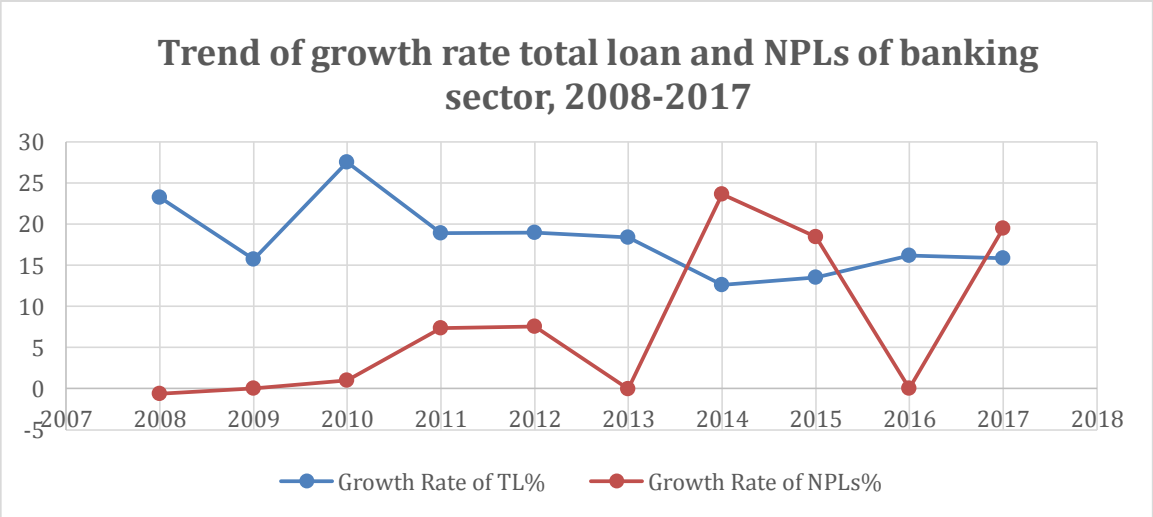


Figure 6.1: Trend of total loan and NPLs of banking sector, 2008-2017

Table 6.3 Trend of Growth of Total Loans and Total NPLs in Bangladesh

(Tk.in millions)

Year	Total Loan/ Credit	Growth Rate of TL%	Gross NPLs	Growth Rate of NPLs%
2008	21089	23.26	224.8	-0.62
2009	24398	15.69	224.82	0.01
2010	311096	27.51	227.1	1.01
2011	369901	18.90	243.8	7.35
2012	41353	18.94	427.3	7.53
2013	448215	18.40	405.8	-0.05
2014	572898	12.61	501.6	23.61
2015	665476	13.50	594.1	18.44
2016	772340	16.16	621.8	0.05
2017	899493	15.84	743.0	19.49

Source: BRPD, Bangladesh Bank; Annual Reports (2008-2017) of Bangladesh Bank

Total loans, total classified loan and growth of classified loan for all banks from 2008 to 2017. The trend of total loans in Bangladesh has shown uptrend from 2008 to 2017. On the other hand, total classified loan and trend of growth classified loan for all banking system in Bangladesh has shown a sliding downtrend since the year 2008 and 2017. The growth of total classified loan 7.35% in 2011, 7.53% in 2012, 23.61% in 2014, 18.44% in 2015 and 19.49% in 2017, that is, shown before 2013 downward trend of growth of total classified loan and after 2008 steady state trend of growth of total classified loan at Table 6.3 and Figure 6.1.

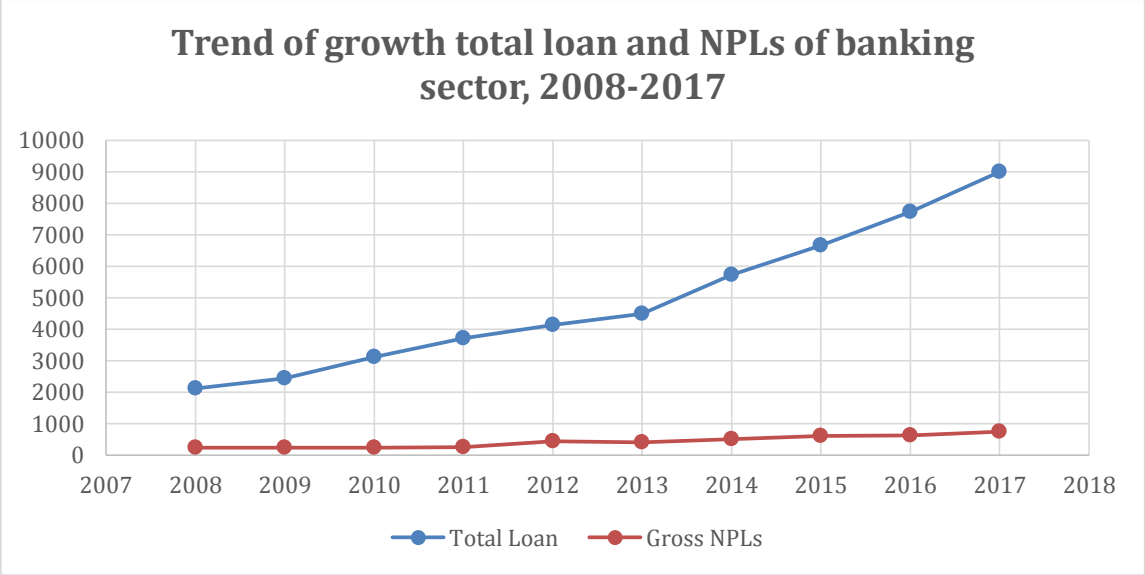


Figure 6.1: Trend of growth total loan and NPLs of Banking Sector, 2008-2017

Table 6.4: Percentage of Sub-standard, Doubtful and Bad Loans

(In percentage)

Year	Gross NPL to Total Loans Outstanding	Sub-Standard Loans to Gross NPL	Doubtful Loans to Gross NPL	Bad Loans to Gross NPL
2008	10.8	9.4	9.4	81.1
2009	9.2	12.2	8.4	79.4
2010	7.1	13.4	8.4	78.1
2011	6.2	14.8	11.5	73.8
2012	10.0	19.1	14.2	66.7
2013	8.9	11.2	10.1	78.7
2014	9.7	11.0	11.2	77.8
2015	8.8	8.9	6.5	84.6
2016	9.2	10.2	5.4	84.4
2017	9.3	7.5	5.5	87.0

Source: Banking Regulation and Policy Department, Bangladesh Bank.

Table 6.5: Bank Sector Loan Loss Provision (2008-2017)

(Tk. in Billion)

Year	Required Provision	Provision Maintained	Surplus/(Shortfall)
2008	136.1	126.2	(9.9)
2009	134.7	137.8	3.1
2010	150.8	146.8	(3.9)
2011	139.3	148.9	9.6
2012	242.4	189.8	(52.6)
2013	252.4	249.8	(2.6)
2014	289.6	281.6	(8.0)
2015	308.9	266.1	(42.8)
2016	362.1	307.4	(54.7)
2017	443.0	375.3	(67.7)

Source: Banking Regulation and Policy Department, Bangladesh Bank.

The key reason for the deficit in the provision was the incapability of some SCBs and PCBs, counting those in the problem bank category because of an upsurge in classified loans, poor quality and collateral inadequacy, low profit and write-off provision handover. On the other hand, as they were able to maintain adequate provisions, the FCBs were in a much healthier position. A relative position of loan loss provisions of four types of banks as of end 2008 to 2017 is shown in Table 6.4.

Table 6.6: Bank Category Wise Status of Loan Loss Provision (2008-2017)

(BDT in Billion)

2008	Required Provision	73.1	17	41.3	4.6
	Provision Maintained	75.6	8.6	37	5.0
	Provision Maintenance Ratio	103.4	50.6	89.6	108.7
2009	Required Provision	66.0	17.5	46.5	4.6
	Provision Maintained	79.5	8.9	43.6	5.9
	Provision Maintenance Ratio	120.5	50.9	93.8	128.3
2010	Required Provision	70.60	19.10	53.30	6.20
	Provision Maintained	69.90	13.30	51.80	7.40
	Provision Maintenance Ratio	99.00	69.60	97.10	119.40
2011	Required Provision	60.80	21.70	58.30	7.40
	Provision Maintained	69.00	13.90	61.20	8.50
	Provision Maintenance Ratio	113.50	64.10	105.00	114.90
2012	Required Provision	119.22	29.83	84.73	8.91
	Provision Maintained	81.90	13.64	84.94	9.29
	Provision Maintenance Ratio	68.69	45.72	100.25	104.27
2013	Required Provision	107.8	38.3	94.8	11.6
	Provision Maintained	122.3	17.4	97.8	12.3
	Provision Maintenance Ratio	113.5	45.5	103.2	106
2014	Required Provision	128.6	37.1	108.7	15.3
	Provision Maintained	135.3	14.7	115.3	16.2
	Provision Maintenance Ratio	105.2	39.6	106.1	105.9
2015	Required Provision	140.4	26.4	126.0	16.1
	Provision Maintained	94.7	28.4	126.6	16.5
	Provision Maintenance Ratio	67.5	107.6	100.5	102.5
2016	Required Provision	174.0	27.8	144.2	16.0
	Provision Maintained	113.2	28.4	149.4	16.4
	Provision Maintenance Ratio	65.1	102.2	103.6	102.5
2017	Required Provision	216.9	26.1	184.3	15.6
	Provision Maintained	134.3	26.2	198.2	16.5
	Provision Maintenance Ratio	61.9	100.4	107.5	105.8

Source: Compiled from Annual Reports, Bangladesh Bank

Bank-wise NPLs: NPL specifies that banks have dispersed large amounts of non-performing loans. Based on their gross NPL ratio, bank delivery shows that in both 2016 and 2017, the number of banks with 10% or higher gross NPL ratios remained at 12. A total of 9 banks had a gross NPL ratio of more than 20 percent, comprising 4 SCBs (Sonali, Rupali, Agrani, & Janata), 2 SDBs (BKB & RAKUB), 2 PCBs (ICB & Farmers) and 1 FCB (Pakistan National Bank). The NPL scenario in the industry declined marginally due mostly to an increase in the SCBs and PCBs NPL ratio. However, the industry's 29 banks maintained a lower NPL ratio of less than 5 percent. Eight out of nine FCBs (expect National Bank Pakistan) recorded a single-digit gross NPL ratio in December 2017, while all PCBs except 2 had less than 10 percent gross NPL ratio. Conversely, there was a low NPL ratio for new banks that started operating except one in 2013. The SCBs and SDBs have had the highest NPL ratios for the last few years and the scenario continues. At December 2017, the net non-performing loan (net NPL) ratio15 was 2.2 %, which at December 2016 was 2.3 %. This ratio did not fail much because of an increase in the supply deficit in SCBs, although some improvement for other bank categories. In 2017, the banking industry's collective supply deficit was Tk.677 million, while SCBs had a Tk deficit. 82.6 million. However, few banks met the supply deficit and had impartial regulatory forbearance, while over the same period PCBs, FCBs and SDBs maintained supply surplus. The lower the net NPL ratio of banks, the more resilient they are thought to be to resist solidity threats (endogens or exogenous). Because PCBs, holding the largest share of industrial assets with a low net NPL ratio, indicate the operational resilience of private sector banks to any stability shock. Although SDBs own lower gross and net NPL ratios compared to SCBs, the net NPL ratio remained high (around 10 percent) in both categories of banks, indicating a weaker resilience of these banks to withstand threats to stability. Both the gross and net NPL ratios of FCBs were higher than the PCBs in 2017. In 2017, loan-loss provisions were maintained by all banks except 3 SCBs, 5 PCBs and 1 SDB as per BB's regulatory requirement. Deficit in supply was not a system-wide phenomenon, and most banks were adequately supplied. Tk has increased the gross NPLs. From 2016 to 2017, 1213 million. Both these new and older NPLs required banks to maintain Tk's cumulative provisions. By December 2017, 4429 million against which the banks had actually maintained provisions amounting to Tk.3753 billion. Although the preserved provision is about Tk in 2017. The provision preservation ratio of banks fell marginally from 84.9% to 84.7% in the review period, 679 million higher than in 2016. Conserved gross NPL provision

increased marginally over the same period from 49.4 percent to 50.5 percent. Increase in this ratio is attributable primarily to PCBs and FCBs that maintained surplus supply. The substantial rescheduled loans also reduced to some extent the banking provision requirement. SCBs experienced a Tk provision shortfall among various categories of banks. In 2016, 608 million and Tk. In 2017, there were 826 million. In addition to SCBs, 5 PCBs and 1 SDB had a collective insufficiency of Tk in 2017. One hundred and one million. In 2017, both the deficit amount and the number of banks in the category of deficit increased from 2016. The rest of the banks, however, were able to maintain the necessary provisions and some retained surplus provision. With no provision shortfall, the SDBs showed signs of improvement, rather recording a provision surplus of Tk.15 million in 2017, which was 5 million in 2016. Although the surplus had increased, in 2017 one SDB experienced a shortage of provision. The chart shows the deteriorating trend since 2014 in the supply deficit. Gross NPL's attention among banks decreased marginally in 2017. Most SCBs and SDBs were listed on the basis of gross NPL amount in the top 5 and top 10 banks. As of December 2017, the gross NPLs concentration ratios of the top 5 and top 10 banks (based on the size of gross NPLs) were 49.2 and 65.5 percent compared to the corresponding figures of 51.8 and 65.9 percent in 2016 respectively. It is mentioned that in SCBs the gross NPLs were higher than in other bank groups. In 2017, 5 SCBs, 4 PCBs, and 1 SDB are the top 10 banks in terms of NPL size. Considering the highest gross NPL ratio, 5 are SCBs among the top 10 banks, 2 are PCBs, 2 are SDBs, and 1 is FCB. The presence of SCBs and SDBs in the top 10 list (in terms of quantity and ratio) may weaken the financial system's stability as these banks play serious roles in financial intermediation.

Table 6.7: Amount of Default Loans among State-owned Bank

(Tk. in Million)

Banks	**NPLs -2017**	**NPLs-2018**	**Increased of NPLs**
Agrani Bank	51,158	57,500	6,342
BDBL	7,712	8,867	1,155
BASIC	75,989	86,318	10,329
Janata Bank	58,186	172,249	114,063
Rupali Bank	42,508	41,409	(1,099)
Sonali Bank	137,708	120,610	(1,7098)
Total	**373,261**	**486,953**	**113,692**

Source: Bangladesh Bank

Janata Bank, with default loans worth Tk.172,249 million, has the highest amount. Six state-owned banks accounted for 52% of the banking sector's total default loans of Tk.939,114 million, at the end of December 2018, according to the Bangladesh Bank data. The total amount of these six banks' nonperforming loans (NPLs) stood at Tk.486,953 million, which was Tk.373,261 million in December, 2017. NPLs of all six banks amounted to 29.96% of their total outstanding loans, with Janata Bank having the highest amount of default loans worth Tk.172,249 million (35.72% of total outstanding loans), followed by Sonali Bank at Tk.120,610 million (30.06% of its total outstanding loans). Agrani Bank's default loans stood at Tk.57,505 million (16.65% of its total outstanding loans), Bangladesh Development Bank's default loans stood at Tk.8,867 million (56.54% of its outstanding loans), BASIC Bank's at Tk.86,318 million (57.55% of total outstanding loans), and Rupali Bank's at Tk.41,409 million (17.95% of total outstanding loans). In the last one year, Janata Bank's default loans rose by Tk.114,060 million to Tk172,249 million, which was caused default loans taken from the bank. The state-owned bank lent over Tk.10,000 crore, a Bangladesh Bank report revealed, suggesting Janata Bank did not comply with the central bank's single borrower exposure limit criteria. The bank has given loans of about Tk.55000 million crore, which is a clear violation of Bank Company Act 1991, as it provided 25% of the state-owned bank's capital base. According to the act, the single borrower exposure limit is 10%. Although Sonali Bank's default loans decreased in the last one year by Tk.17,097 million to Tk.120,610 million, the bank still holds the second-largest share of NPLs in the sector.

Sector-wise NPL: In 2017, there was little concentration of NPL in any specific sector in the sector-specific NPL distributions. Table 6.1 shows that non-performing loans (NPLs) were distributed at a modest concentration level across various economic sectors in 2017. Compared to their 23.1% and 11.7% of total outstanding loans in the banking sector, commercial loans and RMG sector with the highest share of NPLs (23.9% and 14.5% respectively). However, the overall scenario does not explain to any particular sector of the economy any significant concentration of the loan portfolio of the banking sector. It implies that any sector-specific economic shock can withstand the loan portfolio of the banking sector. The loan disbursement sector-wise share consists of 13

sectors with a few sub-sectors. Five major sectors (e.g., commercial loans, working capital, industrial loans, RMG &

Table 6.8: Sector-wise Nonperforming Loans in the year of 2017

(Tk.in Million)

Sl. No.	Name of Sector	Total loans	Gross NPL	Gross NPL (%)	% share of loans extended to a particular sector	% share of NPLs of a particular sector
1	**Agriculture**	3794	628	16.6%	4.8%	8.5%
2	**Industrial (Manufacturing):**					
2.1	RMG	9303	1079	11.6%	11.7%	14.5%
2.2	Textile	6199	749	12.1%	7.8%	10.1%
2.3	Ship building and Ship breaking	1177	191	16.2%	1.5%	2.6%
2.4	Agro-based Industry	4832	564	11.7%	6.1%	7.6%
2.5	Other Industries (Large Scale)	11748	608	5.2%	14.7%	8.2%
2.6	Other Industries (Small, Medium and Cottage)	3298	434	13.2%	4.1%	5.8%
3	**Industrial (Services):**					
3.1	Construction Loans	5422	426	7.9%	6.8%	5.7%
3.2	Transport and Communication	1399	152	10.8%	1.8%	2.0%
3.3	Other Service Industries	3139	178	5.7%	3.9%	2.4%
4	**Consumer Credit:**					
4.1	Credit Card	367	21	5.7%	0.5%	0.3%
4.2	Auto (Car) Loan	193	6	2.9%	0.2%	0.1%
4.3	Housing Finance	1399	96	6.9%	1.8%	1.3%
4.4	Personal	2339	74	3.1%	2.9%	1.0%
5	**Trade and Commerce (Commercial Loans)**	18448	1774	9.6%	23.1%	23.9%
6	**Credit to NBFI**	815	13	1.5%	1.0%	0.1%
7	**Loans to Capital Market:**					
7.1	Merchant Banks	197	0.0	0.0.%	0.1%	0.0%
7.2	Other than Merchant Banks	283	1	0.4%	0.4%	0.0%
8	**Other Loans**	5466	436	8.0%	6.8%	5.9%
	Total	**79819**	**7430**	**9.3%**	**100.0%**	**100.0%**

Sources: Bangladesh Bank

textile and construction) had used approximately 64 percent of total lending disbursement in 2017. There was a large variability in different sectors with respect to the sector-wise share of the loan. Over 60 percent of the year of 2016 contributed to the lion's share of the classified loan absorbed by the four major sectors, namely commercial loans, RMG & textile, industrial loan and working capital. The NPL scenario was relatively better for ship building & ship breaking and transport & communication; share of these two sectors were 2.6% and 1.8% respectively for 2017. The NPLs of all banks in Bangladesh are shown in Annexure 2.

6.4 Objective-2: To Determine the Causes, Impacts and Remedies of Nonperforming Loans of Banks of Bangladesh.

There are many reasons why a loan is going default. It might be because it doesn't take off for a business. Such a situation may ascend as a result of sudden spending on health or loss of work or death. It can often be due to over-leveraging when consumers borrow against most of their assets and possibly also have unsecured loans. Any income hit can expose all repayments in such a case. Due to banks aggressively pushing loans, even unsecured ones, to individuals to prevent idle assets on their books, the situation in Bangladesh has deteriorated. Most of Bangladesh's customers are not trained and banks lure them to take on more and more loans, often without checking their financial position. The banking sector has met the increasing NPLs with serious problems. But, compared to PCBs and FCBs, the problem of NPLs is more in state-owned banks. Large amounts of NPLs can generate momentous financial problems for banks, and consequently the researchers have attached countless importance to empathetic the causes of NPLs.

6.4.1 Academic aspect:

In general, three NPL causes are identified:

A. Problems with the primary agent;
B. Moral hazard problems due to low capital levels; and,
C. Market discipline failed.

A. Problems with the primary agent: The first description for the high level of NPLs states that there is little incentive for bank managers to monitor borrowers or select appropriate loan projects. Bangladesh recognized the four SCBs in 1984 and the government has since tried to increase the bank system's efficiency by encouraging banks to accept a more commercial orientation. Bank managers, however, often lack the skills needed to engage in effective project selection, and there is still high pressure to make loans for social and personal purposes. Furthermore, the weak legal system and framework in Bangladesh makes collecting non-performing loans very difficult. Therefore, lenders do not always expect their loans to be repaid, and this consideration has reduced bank managers ' incentives to monitor loans and select appropriate projects. Another reason for banks ' lack of incentives to engage in appropriate loan project selection is political interference (Liu, 2001; Victor, 2004). A very important reason for building up NPLs in Bangladesh, for example, is the government's reliance on policy

lending to support social projects that are unable to earn a business return. Despite the abolition of direct credit quotas on bank loans in 1996, quotas were still allocated to the SCBs to match lending to favored infrastructure projects funded by special bonds issued in 1998. This means that the government implicitly sent mixed messages to bank managers, hampering the development of a strong credit culture.

B. Moral hazard problems due to low capital levels: The second explanation concerns moral hazard and concerns the very spirit or essential feature of banking actions. There is no banking theory but there are banks like all firms since they have some comparative advantages. Banks work in defective markets where information asymmetries are predominant and banks use these inadequacies effectively by gathering as much information as possible about actual and possible customers. This information provides the banks with exclusivity and comparative advantages and is the basis for prudent lending. Consequently, the amount to which this information is imprecise or untrue undermines banks ' ability to make good lending decisions and undermines efficient banking. In this regard, moral hazard, which refers to the possibility of unscrupulous customers providing banks with inaccurate or misleading information to obtain loans, is a potentially significant issue. In emerging economies, this can be a particularly acute problem where bribery and corruption can be rife and where accurate and reliable customer information and potential borrowers can be difficult (if not impossible) to obtain. These issues can also be compounded in situations where banks believe government will bail them out, and customers think it doesn't really matter if they pay back their loans. Well-intended policies can also compound these considerations. A financial system that offers "rescue packages," for example, could encourage borrowers and lenders to undertake low-quality or high-risk investments, thereby increasing the likelihood of a crisis. In a situation with NPLs, moral hazard means that banks that are technically insolvent lose the incentive to accurately pricing new loans, leading to financial losses. The Asian Development Bank argued that NPLs could perpetuate a culture of banks ' failure to pay and risk seeking behavior. Similarly, Enrico (1993) argued that banks have a perverse incentive to fund former debtors such as SOEs although they are less efficient and riskier than private companies. This leads to lower investment productivity and higher risk concentration.

C. Market discipline failed: The third clarification for high NPLs is market discipline failure. Lane (1992) defined market discipline as financial markets that deliver signals that lead borrowers (i.e. banks) to obey with their creditworthiness. Lane also

emphasized the circumstances obligatory for effective market discipline, specifically capital market competitiveness; obtainability of information on outstanding obligations of the borrower; no hope of bailout; and the capability and willingness of the borrower to respond to market signals provided by interest rate changes. Failure in any of these circumstances will lead to the failure of market discipline. Budget constraints have not been hardened in the situation in Bangladesh and public money has remained readily available, so market discipline has not worked effectively. The soft budget constraint and market discipline failure in both SCBs and SOEs resulted in the financing of loss-making activities, resulting in large amounts of NPLs. Another aspect of market discipline is that bank owners, i.e. equity investors and even subordinated debt holders, can impose a disciplinary element on banks by selling their investments when they think the bank is behaving imprudently or taking excessive risks. They also have the option to vote at general meetings in the case of equity investors and could pass a motion of no trust if they believed the management was acting recklessly. The stock exchange and capital markets are still in their infancy in Bangladesh, however, and therefore lack the sophistication to impose such action. Similarly, depositors, in particular, those active in the interbank markets may impose some form of discipline on banks by removing deposits from banks that were perceived as high risk but, as with the interbank markets in Bangladesh, are not sufficiently developed to make this happen in any meaningful manner. Market discipline is also hampered by Bangladesh's prevailing culture, which still believes that the government is going to bail out the banks, even in the face of imprudent management.

6.4.2 Entrepreneurs related internal factors

Fresh hand: Young age is one of the motives behind regular loan failure. People are distress from a lack of business experience owing to their young age. On the other hand, they do not generally have adequate experience in banking industry. So, it may be one of the causes for NPLs because they are young and absence experience.

Deficiency of business experience: Individuals occasionally want to do something without previous business experience. It may happen that people want to start a business after retiring from government, military or private service, which is not very applicable to his past experience. They are also looking for bank finance for their own equity. In such projects, banks usually do not finance where key personnel do not have sufficient background in that particular business. When banks finance the key personnel in the

projects here lack relevant business experience, it becomes risky for the bank. In such projects, the likelihood of failure tends to be higher.

Absence of business training: Business experience is related to the background of business somehow. Business background here means the background of family business. While family business has a role to play in business orientation, there is no direct relationship between business background and loan repayment business performance. It's true that young people from business backgrounds are familiar with business and banking, but there are other ways of getting the same oriented, not necessarily from business family.

Unwillingness to pay: This is one of the most frequent reasons behind Bangladesh's default culture. It can occur in some situations, such as when the security loan is weak; the customer feels that defaulting on the loan will not do him much harm. He tends to be default in that case. In other cases, such as when business cash flow is not impressive, people are unwilling to repay the loans. Even sometimes, without reason, the default loan from customers is purely psychological and absolute reluctance to repay the loan. There are borrowers who are able to pay back loans but are intentionally withdrawing it. These groups of people should be identified and proper measures should be taken in order to get back the money extended to them as advances and loans.

Deficiency of supporting facilities: Other sources such as government authority sometimes require support from businesses. It needs feeding when the cash flow is lean and the project is in lull. Without additional feeding company can get sick and lose in consecutive periods of time. Most companies in our country do not have the supporting sources they can withstand the turmoil that occurs from time to time in their business.

Interest rate: Higher interest rate as well as service charges and concealed charges enlarged the installments of borrowers that run to default. Maximum borrowers demanded that interest rate was very high. They could not pay the full amount in time due to compound interest accounting context.

Stay order: Defaulted customers changed their fundamental right to get ' stay order ' and extend the period of stay order that extended the period of recovery. Inappropriately, there is still no option to avoid customers from the stay order's frequent extension.

Competition: It was seen that Non-Bank Financial Institutions (NBFIs) selected banks ' borrowers on a regular basis and encouraged them to come to their FIs for loans. This shaped corrupt banking and NBFI competition. In many cases, the study team found that

banks had unhealthy competitions to offer the borrowers more lending facilities without seeing their eligibility. Especially in many loan takeover cases, it occurred.

Diversify the risk of loan: The aptitude of the bankers was not up to the mark. They did not have good management quality and good networking to recover the loans. They were completely ignorant about the assessment of the necessity of loans. They were not capable to diversify the risk of loan.

Bankers' target: Loan-oriented bank fulfillment created huge NPLs due to bankers ' unscrupulous and aggressive banking. Bank managers have been overloaded by the targets uploaded by their respective banks ' higher authorities. That's why the market has become more competitive; bankers have offered enormous money and have made the customer more valuable than real. The buy-out of customers or loans is a common term on the financial market. When a bank set a loan target for any of its officers or branch managers that prompted it to disburse risky loans or disburse loans that violated the set loan penalty procedure. That's why the bankers created the risky loan in the banks that ultimately failed.

Over collateral assessment: After two consecutive years, the Bank evaluated the value of its collateral. Asset assessment agency is overvalued, client-influenced collateral properties. Some banks ' loan sanction procedure had some flaws, as they didn't verify a mortgage property's legal documents. It happened because of their lack of truthfulness and knowledge. Even because they lacked the proper mechanism, they failed to properly evaluate the mortgaged property.

Politically exposed persons (PEPs): PEPs had the tendency to be defaulted. Occasionally managers were in the deep burden to disburse loan to the PEPs which finally became defaulted.

Political unrest: Political unrest was the main reason for defaulting the borrowers within the considered time period. This caused stagnation in business activities and slowed the business cycle that forced customers to become irregular in the case of repayments and threw them into the classification basket. Business performance, on the other hand, was very sensitive to govt. decisions. A few govt. Decisions have also caused borrowers a disaster and increased NPL.

Fund alteration: Fund diversion was one of the root causes for NPL creation. Management diversified their business in this case and diversified the fund as well. Business money market share investment was a notable type of fund diversion. In

addition, funds were diverted for the purpose of treatment, family affairs, repaying loans from different sources, building houses, and other businesses, etc.

Lack of good governance: Large enterprises suffered from the lack of good corporate governance and culture. So sometimes there was a wrong decision for business survival that was not necessarily or prudent.

Banker promise: Banks have failed to maintain the commitment, though previously assured borrowers that they would give loans on specified time. Borrowers invested in the business / project based on the commitment of banks and ultimately lost due to lack of timely financing. In this case, borrowers only incurred the business loss because of an excessive delay in the loan sanction.

Business partnership destitute: When the business partnership broke or one partner withdrew him from the business, due to lack of experience and loss, the remaining partner was unable to continue the business in maximum cases.

Sales on credit: Small businessmen faced losses in businesses as a result of credit sales in many cases. When they failed to recover the money in due time from the debtors, they failed to run businesses and became defaulted.

Documentation was not properly kept: Bank managers living in the same area for a long time have in many cases sanctioned loans without adequate collateral and proper business analysis, but depending solely on personal relationships. Documentation was not properly maintained in most of these cases, which is why these types of loans were defaulted.

Government Strategy: Some clients said government change suddenly. Strategy has hampered their continued market flow due to dumping and that's why their business' regular cash flow has stagnated.

6.4.3 Business related internal factors

Non-attractive industry: Non-attractive industry sometimes acts as the primary cause of default on loans. Companies operating in non-attractive industries are more likely to perform poorly. Due to poor financial performance, the cash flow of the company is affected. The company becomes less liquid due to cash flow, which contributes to bank loan default. Not necessarily that no non-attractive industry performs poorly in all businesses.

Robust competition: Strong competition does not contribute directly to the default loan. Strong competition occurs when many companies enter an industry where so many

companies are unable to accommodate the industry. Only effective players survive in strong competition. So the inefficient companies find it difficult to make profit and sale their product. The company is likely to default its loan installment in the bank once they fail to make profit.

Poor management competence: Before a loan banks are sanctioned, look at how the company's management is. If the bank feels the management is capable of running the business successfully and using bank financing, then the bank agrees not to finance otherwise. Even banks sometimes set conditions as some of the key staff should not leave the organization before the loan is repaid.

Low financial performance: The most important cause of loan default is definitely poor financial performance. Once a business is not solvent, its loan is unlikely to be repaid. Poor financial performance is the main reason for maximum default on loans. Poor financial performance may arise from a number of other reasons outlined above.

Short cash flow: Poor cash flow is the consequence of poor financial performance in most cases. Primarily default loan due to poor cash flow companies. Because of irregular cash flow, business becomes unstable and illiquid. In that case business does not have enough cash to service loans payment and interest. Even if a company is profitable, the company may default because of cash flow.

Capacity to pay depends upon: Tangible assets and business willingness to pay success depends on: borrower's character, honesty and reputation. Therefore, the banker should be very careful to ensure that the company or business for which a loan is sought is a sound one and that the borrower is capable of successfully carrying it out.

6.4.4 Lending related internal factors

Late assessment of loan proposal: Banks sometimes delay in evaluating business firms ' loan proposals. When the firm badly needs money, due to the bank's delayed evaluation, it does not get enough funds. This infuses their business operations with a shortage of cash. They are hardly managing their daily business expenses let alone loan repayment.

Deferred disbursement of loan amount: Even after evaluating the proposal and taking positive decisions, banks will not disburse funds until the formalities for security documentation have been completed. As a result, when it actually requires it, business does not get fund. Some of the defaulters complained about disbursements that followed.

Absence of proper monitoring: Monitoring is one of the financial institutions' most important components. By monitoring lenders come to know whether or not their fund is

being used for the desired purpose. Sometimes disbursed money is used for non-specific purposes. In this case, the default loan risk becomes higher. Banks sanction loan based on the project's feasibility. As a lender, the bank expects the loan to be serviced by the cash flow generated by the business. But if credit is used in some other areas, the desired cash flow may not come from the business and there is a high likelihood of loan default. Therefore, banks monitor the borrower's activities whether the fund is being properly used or whether or not the business generates sufficient cash flow. Banks use specialized loan monitoring formats. Bank periodically reviews the borrower's performance and decides whether or not to renew the facilities on the basis of that bank.

Absence of taking appropriate action: Action follows the monitoring of loans. Monitoring is performed to identify deviations or exceptions. If there is any exception, it is necessary to take corrective action. Reduces the chance of default loans if corrective actions are taken on time. When the client misses one installment, the bank official concerned must visit the client and understand where the problem lies. If appropriate action is taken, the loan default probability will be reduced.

Imperfect lending operations: There are three cardinal bank lending principles that commercial banks have long followed. (i) Safety principles, (ii) liquidity principles and (iii) profitability principles. By security it means that both the principal and the interest are in a position to repay the loan. Loan repayment depends on the borrower's a) payment capacity, b) payment willingness.

Untimely technology: Because of inappropriate information management and technology, market-driven decisions cannot be taken on a real-time basis. Proper Management Information System (MIS) and financial accounting system are not implemented in banks, resulting in poor collection of credit, leading to an increase in NPLs. It should be computerized for all branches of the bank.

Inappropriate SWOT Analysis: Another reason for the increase in NPLs is the improper analysis of strength, weakness, opportunity and threat. While making unsecured advances, the banks are more dependent on the borrower's honesty, integrity, and financial soundness and credit value.

Managerial insufficiencies: The banker should always carefully select the borrower and take tangible assets as security to protect their interests. The–1) Marketability 2) Acceptability 3) Safety 4) Transferability should be considered when accepting securities banks. Based on the popular maxim "do not keep all the eggs in one basket," the banker should follow the principle of risk diversification; it means that the banker should not

only grant advances to a few large farms or concentrate them in a few industries or cities. If a new big customer meets misfortune or is adversely affected by certain traders or industries, it will affect the bank's overall position.

Lack of regular industrial visits: Spot visit irregularities also increase the NPLs. The absence of regular visits to the customer point by bank officials decreases interest collection and loan principle. The NPLs can be collected through regular visits due to willful defaulters.

Ahmed J.U. (2010) cited the following reasons as to why commercial banks have increased their NPL. It includes:

(1) poor credit assessment system,

(2) lack of vision / foresight while sanctioning / reviewing or enhancing credit limits,

(3) lack of proper monitoring,

(4) Reckless progress towards achieving budgetary targets,

(5) lack of genuine corporate culture,

(6) inadequate legal provisions on foreclosure and bankruptcy,

(7) change in macro-level economic policy / environment,

(8) Non-transparent accounting policies and poor auditing practices,

(9) lack of coordination between banks and their customers, and

(10) management / schematic loans to certain sectors.

Reddy, CS and Kalavathi, V (2004) quoted the BB study group's comments on NPL causes. It includes:

(1) diverting funds, mostly for business expansion / diversification or to promote associated concerns,

(2) internal business factors such as product / marketing failure, inefficient management, inappropriate technology, labor unrest, etc.,

(3) changes in the macro environment such as recession, infrastructural bottlenecks, etc.,

(4) time / cost over time during project implementation,

(5) channel

(6) deficiencies like delay in release of sanctioned funds by banks.

Bloem and Gorter (2001) explained that the main cause of NPL is individuals " false economic decisions' and plain bad luck (inclement weather, unexpected price changes for some products, etc.). Rehman (2000) noted that bank managers tend to be more influenced by borrowers ' social structure on the assumption that wealthy citizens are

likely to be more creditworthy and can therefore be relied on to repay their loans. These are the main internal factors that lead to poor quality of assets and nonperforming loans.

6.4.5 External factors

External factors indicate factors beyond the borrower's control, created by the country's existing economic, political, legal, technological and social systems. In various research, the major external factors cited include;

Macroeconomic factors: It is evident that the GDP growth of the entire economy directly affects businesses dealing in consumer products. Regular customers and defaulters have expressed their opinion that this macro indicator influences a company's cash generation and hence the loan repayment.

Growing crimes: It is revealed that the effect on the business of the companies of the increasing crimes. They think that sometimes forced subscription lowers the company's profitability.

Hartals: The country's political instability smoothly hampers the production and distribution of the products and the political turmoil is one of the other causes of our country's loan default.

Numerous policy changed: According to our survey, government policy is regarded as the minor cause of the loan default as it has some impact on the local sales and distribution of the companies ' products. Other causes, such as imperfect lending practices, lack of business risk analysis, lack of proper security or mortgage property valuation, undue borrowers influence, external pressure, government loan. organization, Govt. credit disbursement policy, lack of legal action.

Ineffective recovery law court: The government has set numbers of recovery tribunals that are working to recover loans and advances. The bank suffers the consequence of non-recovery due to its negligence and ineffectiveness in its work by reducing its profitability and liquidity.

Natural disasters: This is the main factor that creates an alarming increase in the SCB's NPLs. Even now and then Bangladesh is hit by major natural disasters, making it impossible for borrowers to repay their loans. The bank must therefore make large amounts of provisions to compensate for these loans, thus ending up with a reduced profit for the tax. Our farmers are mainly dependent on rain falling for crop cultivation. Because of rain falling irregularities, farmers are not going to reach the level of production, so they are not repaying the loans.

Industrial sickness: Improper handling of projects, ineffective management, lack of adequate resources, lack of advanced technology, day-to-day changes in government policies give rise to industrial disease. Ultimately, therefore, the banks that finance these industries end up with a low recovery of their loans that reduces their profitability and liquidity.

Lack of demand: Bangladesh's entrepreneurs were unable to predict their product demand and start production, which ultimately piles up their product, making them unable to pay back the money they borrow to carry out these activities. Banks are recovering the amount by selling their assets, which includes a minimum label. The banks therefore record the unrecovered part as NPLs and must provide for it.

Case Studies of Nonperforming Loans of Banks

Cause 1: Discussion with the Borrowers

Case Study: Personal Loan Borrower

Cause of Default: Submission of fabricated documents and know your customer (KYC) was not done accurately.

Bank has sanctioned a Card facility to Mrs. Shamima with a limit of BDT 500,000. As per application she was the director of X Group & her husband name was mentioned as Mr. Simon (fake)

Mr Simon has also taken a personal loan & card facility from the bank amounting to Tk. 800,000 & 500,000, respectively. Mrs Shamima was also the supplementary card holder of Mr Simon as a wife (fake). Mr Simon made partial payment for all facilities when he was alive. After his death payment was stopped fully against credit cards & loan.

Recovery team never reaches Shamima on her mobile or mentioned resident address at Dhanmodi Dhaka. At one stage of recovery effort, we have sent legal notice to the permanent address of Shamima at Rajshahi which is mentioned in Voter ID card. After getting the letter she communicated with us & refuse that she had neither taken any loans from bank nor maintaining any accounts. She was basically involved with politics & resides at Rajshahi city.

While investigating from recovery team it is found that Mr Simon has provided false information at the time of loan application & A/C opening form. Original name of Simon would be Mr Mazharul Islam Mahtab i.e. M.I Mahtab confirmed by his actual wife, name Ms Rehena Mahtab. He also changed his father name as Mr. Imran Hossain in loan application that would be Mr Imaz Uddin. He used different address in different files. Mr

Simon has no permanent residence at Dhaka as per the statement of his wife Ms Rehena Mahtab.

Findings: Mrs Shamima was not the wife of Mr. Simon Basically she had relationship with Mr. Simon and was the illegal beneficiary of the loan taken by Siraj and Shamima from the bank through fabricating documents. Know Your Customer (KYC) was not also done accurately.

Cause 2: Information Verification and Due Diligence

Case Study: Default Corporate Borrower: Financed by Multiple Banks

ABC Fashion is a 100% export oriented Garments manufacturing company located in an EPZ. The company has been banking with Bank 'C' since 2012. The relationship started with Bank 'C' after sanctioning of a Composite Credit Limit of Tk.129.50 crore and a Sale & Leaseback Facility of Tk. 40.00 crore to facilitate Working Capital requirement against security of Tk. 114.64 crore (Land and Building: Tk. 58.69 crore and Machinery: Tk. 55.95 crore). ABC Fashion also had credit facilities with two other commercial banks.

However, after disbursement of all the facilities, it was learnt that their liabilities with other banks were actually stuck-up and part of the Sale & Leaseback Facility was used for adjustment of part of one of the Bank's liability. Eventually, they became 'Classified' with those two banks and the Bank 'C' had been compelled to continue with the existing facilities through repeated time-extension hoping that the customer will regularize classified liabilities sometimes soon.

The only solace to the Bank 'C' was that the customer's factory was running and export was continuing. But ultimately, the Bank 'C' discovered with much worry that the customer's business margin had been diminishing sharply as on one hand export figure got stuck at one point and on the other hand operating cost, especially, the wages & salary expenses, soared.

To worsen the situation, following the two devastating mishaps- the fire in Tazreen Fashion in 2012 followed with the collapse of Rana Plaza in 2013, struck and that changed the shape of RMG sector of the country altogether, ABC Fashion was inspected in 2014 by Accord (a regulatory body representing mainly the European Union buyers overseeing Fire and Building Safety) and Alliance (a regulatory body overseeing the interest of North American buyers overseeing Worker Safety), where

they fared badly and was told to take a long list of major corrective measures involving huge financial expense.

Predictably, ABC Fashion approached Bank 'C' for a 'Remediation Finance' as well as additional finance to adjust the 'Classified' liabilities with other Banks but was denied outright due to their having 'Classified' liability as well as the visible shortfall in their debt serviceability. Also there was no question of seeking finance from their other two Banks.

At the moment, the Bank 'C' (and of course the other two banks) is completely stuck, as if, in a quicksand. At this juncture, a thorough study of the account reveals the following reasons behind the account being non-performing:

- Bank 'C' had lapses in doing due-diligence at the time of financing ABC Fashion.
- Multiple bank finance without a common credit assessment and mutual agreement among the banks allows the borrower to evade control mechanism and in worst case, to siphon the money.
- Considering the entire financing from different banks, ABC Fashion, actually, turns out to be hughly leveraged.
- By managing to get the credit facilities from Bank 'C', ABC Fashion has, effectively, forced the bank to keep the factory operation alive in the its own interest.
- ABC Fashion did not keep their commitments throughout the tenure with Bank 'C'. Rather, they probably used Bank's fund for some other purpose.

ABC Fashion lost all the major buyers due to their failing to take corrective actions. Thus, they had to resort to other buyers at a lower price. However, their operating cost kept soaring for financial mismanagement as well as unusual hike in wages & salaries.

Case Study 3: Corporate / Commercial Loan Borrower

Cause of Default: Pricing of scrap vessels in the international market was not examined precisely.

ABC Bank Ltd. financed a proprietorship company named M/S. XYZ Ship Recycling. The company is an importer and trader of scrap vessels and ship scrap. A regular credit facility for Tk. 300.0 million was given on 01.10.2010 vide sanction letter No. XXX/CTG/194/06 with expiry on 30.09.2011. The facility was renewed in several times, lastly on 16.05.2015 with enhancement of Tk.1000 million.

Due to price fall of scrap ship vessels against booking price in international market the borrower incurred huge loss as they have booked to scrap vessel at a high rate. Total land[2] of 244.00 decimal with total market value of Tk. 252,226,000.00 & total forced sale value of Tk. 214,392,100.00 was taken as collateral security. Simple Hypothecation charge was created on entire inventory and book debts. Additionally, personal guarantee of the proprietor was also taken. Due to non-compliance with sanction terms, the account falls under classification as sub-standard (SS) on 30.09.2016 & as bad/loss (BL) on 31.03.2017. The bank has been consistently following up with the borrower through reminder letters, personal visit and random phone calls besides its legal action.

A suit under Artharin Adalat Ain (ARA) no. xx/12 was filed on 31.07.2016 for Tk. 391,298,043.39. Last date was 20.03.2018 for appointment of a Mediator and next date yet to be fixed. Writ petition No. YYYY of 2017 was filed by the borrower against rejection of petition under section 22 of the ARA 2003. The honorable High Court Division directed the AR Court, Chittagong to settle the suit through a mediator within the specific period. If mediator fails to settle, the suit will be continued from where it was. Present position of the account is presented below:

Particulars	**Amount in Taka**
Principal Outstanding as on 31.03.2017	383,833,731.03
Interest Suspense	65,961,574.35
Interest Suspended up to 31.03.2018	58,641,563.17
Legal cost	1,500,000.00
Total Claim as on 31.03.2018	**509,936,868.55**

Findings*:* Business outlook covering pricing of scrap vessels in the international market was not examined precisely before giving loans.

Cause 4: Understanding the Industry /Production Process

Case Study: Default Corporate Borrower

Bank 'D' sanctioned a working capital in the form of a Composite Credit Limit of Tk. 2500.00 Lac in 2010 in favor of a large proprietorship firm named M/S. XYZ

[2]Registered Mortgage of 195.00 dec. of land located at Jungle Sitakundu, Chattogram professionally valued at Tk.136,500,000.00 (Market Value) and Tk.116,025,000.00 (Forced Sale Value) done by valuation company on 01.04.2017 and Registered Mortgage of 49.00 dec. of ship breaking yard located at Shitalpur, Sitakunda, Chattogram professionally valued at Tk.115,726,000.00 (Market Value) and Tk.98,367,100.00 (Forced Sale Value) done by valuation company on 01.04.2017

Electronics World. The firm, initially, was engaged in trading of electrical and electronic items i.e. Refrigerator, Air Conditioner, Color Television, Fan, Microwave Oven etc. through local procurement. Later, the firm started importing the items from China, Korea, Taiwan, and Malaysia. It runs 07 showrooms in Dhaka and Chittagong. Later, the limit was renewed and enhanced for a couple of times and eventually it reached Tk. 3000.00 Lac against the collateral security of a 05 storied building and 65.00 decimal land valuing Tk. 1200.00 Lac in total.

As the business had been growing rapidly, the entrepreneur planned for establishing a refrigerator assembling plant. He imported the capital machinery for the plant by opening Letter of Credit in cash. But the cash came from the working capital funds. However, due to various reasons, he couldn't start commercial operation of the plant till now. On the other hand, due to lack of working capital his sales plunged, whereas, his competitors grabbed the market through expanding their sales & distribution channel.

Eventually, the account turned 'SS' by the September 2014 quarter end and became B/L by the end of March 2015 quarter. The Bank has been following up the account since its turning classified through reminder letters, personal visits and regular phone calls. Lastly, the Bank has initiated legal action through filing a suit under Artha Rin Adalat for recovery of nearly Tk. 2000.00 Lac. It may be mentioned that the rest of the composite credit limit of Tk. 3000.00 crore was non-funded in nature. Present claim to the client is about Tk. 2200.00 Lac.

A thorough study of the account reveals the following reasons for the account being non-performing:

- The entrepreneur was very ambitious and secretive to the Bank in pursuing his ambition.
- It is very challenging for a trader to succeed in manufacturing as the nature of these two businesses is different
- Relationship with the client was poor or not commanding enough to deter him from diverting the working capital fund to the long term project.
- Bank has been misled by the client by retiring the Letter of Credit for importing machinery in cash, whereas, had he approached the Bank for a separate financing for the project, the Bank would have given it a second thought. This is a common mistake by Banks when clients opt for opening LC for importing project machinery

without any assessment for the feasibility of the project. Banks think that it is a mere LC and would be retired anyway either by cash or by short term credit like LTR, Time Loan, etc. But, in effect they are financing a project without knowing much of it.

- This type of clients may also benefit from having direct relationship with Bank's high-ups.

Cause 5: Documentation and Security

Case Study: Default Developer Company

A developer company signed an agreement with a land owner for construction of eight-storied building on a piece of land measuring 15 kathas at a residential area in Dhaka. The ratio between the land owner and the developer was 50:50. After signing the agreement, the developer approached a commercial bank to finance the project. The total construction cost was Tk. 12.00 crore. Bank financed Tk. 8.00 crore against collateral security of developer's portion of the project land and building to be constructed over there. The market value of the security was Tk. 18 crore. The developer executed mortgage by the power of attorney given to him by the land owner. The developer constructed the building and sold out 16 flats for Tk. 20.00 crore and handed over all flats to the buyer without registration and all flat owners have started living in the building by taking possession. The developer did not pay any money to the bank and he left the country with sale proceeds of the projects. Now, bank as well as the flat owners is in problem.

Causes of Failure: There was lack of bank's monitoring to get the sale proceeds of apartments to adjust the bank's liability. The buyers should have taken the registration of the flats at the time of taking position through redemption from bank.

Case Study 6: Inclusion of Sister Concern /Interchangeable Credit Facilities

M/S. ABC Traders was availing of working capital limit of Tk. 40.00 crore in the form of L/C, LTR and CC with collateral security of Tk. 22.00 crore with XYZ bank. Afterwards the client applied for inclusion of ABC Enterprise and subsequently opened an L/C for Tk. 36.00 crore taking Tk. 6.00 crore FDR and 10% cash margin for the said L/C on account of M/S. ABC Enterprise. The client sold the imported goods and did not pay bank's money. When bank started legal action, the client sued against the bank

saying that he did not have any credit facility in the name of M/S. ABC Traders and the mortgage was executed against the sanctioned limit of Tk. 40.00 crore favoring M/s. ABC Traders.

Causes of Failure: Here the bank's mistake was that it did not remortgage the collateral security by tagging the liability of M/S. ABC Enterprise.

6.5 Impact of Nonperforming Loans in Bangladesh

Recovery of loans for banks and financial institutions has always been a problem. To emerge from these, the banks must first think that it is possible to avoid NPL, if not then look at the factor that is responsible for it and manage those factors.

Decreasing bank profitability: NPL means the reservation of money in terms of bad assets that occurred because of the client's wrong choice. Because the money gets blocked, the bank's prodigality decreases not only by the amount of NPL, but NPL also leads to opportunity cost as much of the profit invested in some earning project / asset returns. Therefore, NPL does not affect current profit, but also future profit stream, which may lead to the loss of some beneficial opportunity in the long term. Another impact of profitability reduction is low investment return (ROI), which adversely affects the bank's current earnings. Basically, NPLs are lowering interest income and the write-off and provisions for NPLs are instantly boosting costs.

Table 6.9 Net Profits Margin (NPM) of banks in Bangladesh, from 2011 to 2017

(In percentage)

Bank types	2011	2012	2013	2014	2015	2016	2017
SCBs	3.66	1.18	-0.32	1.96	1.62	1.75	1.98
DFIs	3.70	2.92	1.98	1.50	1.43	0.76	2.05
PCBs	3.19	3.06	2.77	4.11	3.85	3.89	3.52
FCBs	5.57	5.56	3.73	5.98	6.08	4.99	4.35
Total	**3.48**	**2.79**	**2.02**	**3.56**	**3.28**	**3.27**	**3.13**

Source: Bangladesh Bank

Liquidity: Money gets blocked, decreased profit leads to insufficient cash and this leads to short-term borrowing of money which leads to additional costs for the company. Difficulty in operating bank functions like routine payments and dues is another NPL cause due to lack of money.

Involvement management: Management time and effort is another indirect cost to the bank due to the NPL. Management time and efforts in the handling and management of NPL would have diverted to some fruitful activities that would have yielded good returns. Now banks of a day have special employees to handle and deal with NPLs, which is the bank's additional cost.

Credit loss: Bank faces NPL's problem, then it adversely affects the market credit value of the bank. It will lose its image and credit of goodwill and brand that has a negative impact on the people who put their money into the banks.

Decreasing capital adequacy: The increase in NPLs reduced bank capital effectively, making banks technically insolvent. As Li (1998) pointed out, before the financial crisis in East Asia, the average capital adequacy ratio was only 5.4%, much lower than the 8% required by Bangladesh Commercial Law (Lardy, 1998). In 1998, in line with the Basel Accord, the Bangladeshi government recapitalized the banks to raise their capital adequacy ratio to 8 %. However, only the Bank of Bangladesh had a capital adequacy ratio above 8% by 2002 among the four state-owned commercial banks in Bangladesh. In addition, Liu (2001) argued that if NPLs were taken into account, the four SCBs might have had negative capital. These issues were compounded by the fact that while SOEs ' return on assets had dropped sharply, state banks continued to provide loan-scale facilities to them.

Deteriorating bank creditworthiness: As evidenced by the downgrading of Bangladeshi financial institutions by foreign credit rating agencies, the accumulation of large NPLs had a serious and adverse effect on the creditworthiness of Bangladeshi banks. For example, in 1999, Moody's rated the average financial strength of the bank in Bangladesh as "D." This was much worse than any other country at the time, with the exception of Korea, Pakistan, Thailand, Indonesia, and Russia. Standard & Poor Credit-Wire also argued that Bangladeshi financial institutions had limited capacity to improve their credit standing due to the adverse macroeconomic environment, poor asset quality and increased write-offs.

Adverse selection of bank and firm managers: Market economy building normally requires market creation, market-oriented enterprises, and a wide range of institutions

and business practices to support them. In order for markets to function well, there must be robust market entry and disciplined exit to ensure that those operating in the markets are the most efficient and innovative procedures. Bank passivity in enforcing loan contracts and their willingness to grant new loans to loss-making companies has encouraged SOEs to rely unhealthily on state banks. This has diminished SOEs ' willingness and ability to adapt their production to changing demands and respond to market signals. However, perhaps more serious is the attitude of some SOEs that they have no legal duty to repay bank loans.

Potential bank failure and financial contagion: Historically, one of the direct causes of bank failures was the accumulation of NPLs. Loan losses in the US, for instance, dominated the major bank failures between 1934 and 1983. The huge number of NPLs in Bangladesh has already made the SCBs technically insolvent. They rely on government support and they have deteriorated the public's confidence in them. Given the significant role of the four SCBs in the banking system in Bangladesh, it would not be an exaggeration to claim that if the problem of the NPLs cannot be resolved effectively, it will eventually lead to the SCBs failure. If a bank does not have the ability to raise sufficient liquidity by selling assets, it may result in default and ultimately bank failure.

Economic slowdown: A strongly performing financial sector has a major impact on the overall economy's performance by mobilizing domestic and foreign savings and allocating these funds efficiently to real economy investment opportunities. A sound financial sector also provides a mechanism to effectively allocate risks and spread financial losses inevitably resulting from economic activity. A sound financial sector is therefore a fundamental requirement for the economic and political stability of a country. These considerations are obvious from the financial crises in emerging markets, such as the financial crisis in Asia and Argentina. These crises showed how the economy as a whole could be damaged by a weak banking system.

6.6 Non-Legal Remedies Measures of Nonperforming Loans of Banks

Growth in nonperforming loans has a multi-pronged counter-impact on the financial statement of the bank, which has a major effect of corrosion of capital that damages profitability, liquidity and solvency. Any negotiation in the sanctioning procedure with the quality of assets will be a causal factor in boosting NPLs. The causes of default loan,

which also indicate financial trouble and serve as a "red flag" for the bank officer, are analyzed before the remedies of loan default problems. Keeping the above-mentioned causes in sub-section 6.4 in mind, then proceed to find some remedies. The way out of the current crisis of bank loan default is to evolve and consolidate responsive and participate in upward grass-roots governance that can be instrumental in decartelizing the decision-making process. The governments will take on the task of eliminating imperfections due to invisibilities, externalities, imperfect access to information, knowledge and resources in this visualized governance process (Ahmad, 1997). Highlights the crucial need to build a strong financial infrastructure, an adequate legal framework to enforce borrowers ' recourse, effective central bank supervision and regulatory role by formulating broad prudential guidelines, bank management's commercial autonomy, and a readable and transparent accounting base (Bhattacharya, 1998). The agenda outlined above contains the key elements of a comprehensive plan of action, which we believe can effectively arrest the deterioration of the mounting bank loan default trend if pursued in the right earnest.

The amendments will increase Bangladesh Bank's autonomy and power to regulate and supervise (both on-site and off-site) the financial system.

- The amendments will increase the autonomy and power of Bangladesh Bank to regulate and oversee the financial system (both on-site and off-site).
- Modifications should be designed to severely restrict private commercial banks' insider lending.
- The aim of the amendments should be to provide exemplary penalties for those issuing checks and banks involved in corruption and misuse.
- They should be designed to enhance SCB governance.
- Deposit insurance schemes should be improved.
- New legislation will provide an effective mechanism for pursuing willing defaulters. The proposed tribunal should be entrusted to deal with cases of the top 500 defaulters only to speed up the disposal of the recovery cases significantly.

Bankers should adopt some non-legal measures to persuade the borrowers as well as to put pressure on them to reach at an amicable settlement. Various potential non-legal measures for recovery of bad loan are discussed below. Non-legal measures for loan

recovery include different strategies to ensure recovery of non-performing loan other than resorting to debt recovery related court. Various such measures are presented below.

Communication: The most successful approach to loan recovery is keeping the borrower in touch arranging meeting of the borrowers at a regular interval; making frequent telephone calls, issuing letters and visiting the business center and residence of the borrower. The personal visit might be done by the branch, regional office and head office personnel based on the complexity of the situation. The bank may think of both the formal and informal visit to borrower's business premises and residence. The communication should be aimed at an integrative 'win-win' interest-based negotiation.

Persuasion: The borrowers might be persuaded to repay the loan providing him/her counseling on the positive and negative aspects of non-repayment from legal and ethical point of view; offering some kind of incentives to the borrowers including rescheduling of loan, waiver of interest, etc. for timely payment of installment. Some sort of relief will be offered only when the borrower is sincere and comes forward for instant adjustment of the outstanding liabilities. Simultaneously bank can put pressure on the borrower through family members, relatives, guarantors, business associates, trade associations, employer in case of a salaried person, and local influential persons. Bank can initiate dialogue/negotiation with the borrower, guarantor for amicable settlement. If friendly meeting, notice, first reminder letter, second reminder letter, personal visit asking for payment do not work, a third and final notice asking for full adjustment as well as informing the borrower that if the loan is not adjusted within the given time, the loan file shall be transferred to the legal department/lawyer of the bank for filing suit. Besides all these, the bank will continue to upkeep constant pressure on the borrower by meeting with and issuing notice to the family members, relatives, guarantors, business associates, trade associations, employer in case of a salaried person a local influential person, etc.

Motivating credit collection staff: In most of the cases it is found that the bank employees are ignorant about the effective recovery measures and/ or hesitant in loan recovery. The bank employees can be motivated to sincerely work for loan recovery by providing appropriate training, authority, incentives in the form of cash, kind, increments, promotion, appreciation letter, etc through objective Key Performance Indicators.

Negotiation skill largely determines the success of recovery through communication and persuasion. Appropriate negotiation skill combines the ability to communicate with the borrower about the benefits of outside court settlement, choose the right time for starting

negotiation, and select the right strategy for negotiation, strong interpersonal communication skill and so on. Like any other skills, training can improve negotiation skill of the recovery staffs.

Recovery campaign: The recovery campaign is a formal meeting arranged by collecting bank branch where the borrowers, local representatives and reputed persons, local government officials, officer-in-charge of local police station are invited in advance. The senior bank staffs of head office and regional office can also be there at that time. This sort of campaign is usually done during the harvesting season in case of agricultural credit, and other forms of business having seasonality such as brick field, trading business highly affected by different festivals and the like.

Alternative dispute resolution (ADR): The traditional method of resolving legal disputes through conventional litigation procedure turns out to be very expensive, too slow, and too cumbersome for many civil lawsuits. This concern led to the growing use of ways other than litigation to resolve disputes. These other methods are commonly known collectively as Alternative Dispute Resolution (ADR). ADR is a procedure for settlement of disputes by means other than litigation; e.g., by arbitration/mediation. Such procedures, which are usually less costly and more expeditious than litigation, are increasingly being used. Considering the importance of outside court settlement, the government included the provision of ADR first in 2003 in the Money Loan Court Act, 2003. Subsequently the same Act was amended in 2010 with major revisions with regard to ADR procedure. According to the amendment, ADR had been made a mandatory step for settling the default loan. Section 22, 23, 24, 25, 38, 44(A), 45 of MLC covers the legal procedures related to ADR.

Appointment of recovery agent: The handling of nonperforming assets sometimes requires skills that distressed banks lack (Berggren, 1996). Branch employees remain busy in their day-to-day operations and hardly could manage time to be attached with the absconding non-performing borrowers. Different external recovery agencies bear the responsibility of recovery of long-overdue loan. The study found that a number of sample banks appointed Recovery Agents for recovery of stuck-up loan cases. A loan case is transferred to a recovery agent only when the loan remains unadjusted for long period of time instead of repeated persuasion and follow-up by the branch; the borrower is untraceable/ absconding/unwilling to settle the account; there is no/inadequate/defective collateral security and disposal of the security seems to be difficult. But, the recovery agents should be monitored. If the loan cannot be recovered

instead of all out efforts then the banks shall file bankruptcy suit to declare the borrower bankrupt and adjust the exposure accordingly.

Debt restructuring: To restructure an NPL, the bank negotiates with the borrowers with the aim of strengthening the ability of the later to service and eventually to repay the principal. This usually involves redefining the terms of the original contract (may be increasing the grace period, increasing the loan period thereby reducing repayment amount per installment, providing additional loan if justified, inter alia). The process may also require some concessions on part of both the lender and the borrower. Successful debt restructuring can benefit both the parties. However, the process should be initiated only if the economic return from the rehabilitation of the asset exceeds that of its liquidation (Woo, 2000).

Corporate restructuring of the borrower's business: When a borrower defaults the insolvency system generally provides both the lenders and borrowers with the option to initiate either liquidation or rehabilitation procedures. Banks often opt for rehabilitation when the Restructuring of the Operations (including company reorganization, downsizing, and lender's representation in the BOD of the borrower and so on) or Restructuring of Balance Sheet (including debt-equity swaps) of the borrower will enable the creditors to recover more than they would expect through liquidation. Rehabilitation may also serve a broader social interest, for example, by granting the borrower a second chance as well as protecting the jobs of the employees of the borrower (IMF, 1999). Workout often entails debt-equity swaps or appointing administrator/bank representative in the board. In case of debt-equity swap banks sometimes become substantial shareholders or majority shareholders in the borrowing firms. This new role requires banks to become actively involved in the management of the firms.

Corporate restructuring including bail out of banks: Bank restructuring becomes inevitable in case of unbearable loss. But, undercapitalized and weak banks (and therefore do not want to recognize the true value of their nonperforming loan), are generally reluctant to go into restructuring negotiations. To facilitate corporate restructuring, some policymakers recently emphasize on enhanced approach to bank restructuring, including greater capital infusion from the public and private sector to weak banks, merger, and acquisition.

Preparation and circulation of list of defaulters: Preparation and circulation of a list of borrowers contributes a lot in recovering NPL, especially in case of large willful defaulters. It is observed that before the national election many large defaulters apply for

rescheduling their long-overdue loan and even, some make full payment to have clean CIB report. Moreover, publishing the loan default news of listed corporate by DSE also have some positive results, as recently observed by BDBL. Moreover, it is observed that before the national election many large defaulters apply for rescheduling their long-overdue loan and even some make full payment to have clean CIB report.

Waiver of interest: In certain circumstances where full recovery of bad loan seems to be impossible, banks may think of waiving certain amount of interest to recover the remaining outstanding. The circumstances, inter alia, may include death or disability of borrower, incurrence of huge loss, inadequate collateral, and inability of borrower as well as guarantor to adjust full loan amount. However, bank can waive accrued interest partly or fully but interest credited to P/L account cannot be waived.

Asset Management Company: Asset Management Company (AMC) refers to any organizational unit created to manage and recover financial assets acquired from troubled or failed financial institutions. Relieving banks of the burden of NPL should allow them to focus better on financing the development of new business opportunities that strengthen the economy. Literature shows that the AMC was created in different countries as a conduit to recover NPL that was the result of policy and directed lending. Creation of AMC is not a regular solution; rather it is a way of removing bulk amount of bad loan from the balance sheet of state-owned banks to a separate entity during financial crisis. One of the first government-owned AMCs was the Federal Deposit Insurance Corporation (FDIC) in the United States, created nearly 70 years ago to insure deposits. Also during the 1990s, other countries such as Mexico and Sweden established major government-owned AMCs. Several countries in East Asia have similarly set up AMCs to manage distressed assets. (Peiser & Wang, 2002).

Asset securitization: Asset securitization is a process used by banks to transform their non-liquid assets to liquid assets, thereby allowing them to allocate their capital more efficiently. In addition, asset securitization also helps banks access diverse and cost-effective funding sources, and help in the better management of business risks. In this process certain assets from the balance sheet of a company get separated and are used as collateral for the issuance of securities. The securitized assets like commercial papers, notes or bonds are typically sold through special purpose vehicle (SPV) in order to provide funding.

Rescheduling with/ without interest waiving: Rescheduling is a standard practice to deal with a nonperforming loan. Re-fixing loan convents works better if the original

terms and conditions do not match with the actual business condition or if the problem faced by the borrower in repaying the loan proves to be temporary. Regulations with regard to rescheduling have been elaborated in section III of the paper.

Inspiring credit collection staff: In most of the cases it is found that the bank employees are ignorant about the effective recovery measures and/ or hesitant in loan recovery. The bank employees can be motivated to work sincerely for loan recovery by providing appropriate training, authority, incentives in the form of cash, kind, increments, promotion, appreciation letter, etc through objective Key Performance Indicators.

Write Off: The bank assumes losses equivalent to its book value when a loan is written-off and removes it from the balance sheet. Normally, the bank will do so when the prospect of recovery is very low and the cost of recovering or maintaining the asset exceeds its value (Woo, 2000). Writing off an NPL is not an effective measure of loan recovery, as a bank can simply remove it from the balance sheet by writing off a loan and cannot guarantee recovery unless banks take stringent recovery measures.

Some Cases of Non Legal Measures

CASE- 7: Borrower Lacking Creditworthiness

[The case is about a borrower lacking creditworthiness and getting credit as per the directive of bank board. The borrower is very wicked who applied every means (including managing bank board and filing a writ petition against the suit filed by the bank under MLC Act and filing a suit to be declared as bankrupt) for getting loan and subsequently avoiding repayment. The bank applied different possible measures including persuasion, negotiation, rescheduling, interest waiver, debt restructuring, corporate restructuring, ADR to recover the loan.]

'M Agro-processing Industry', a sister concern of M Group of Companies, is a 100% export oriented company located in Rupgang of Narayanganj district. The major operation of the company is producing potato flakes. The sponsors of the company are established merchants in other lines of business namely processing and dealing in ginger, garlic, honey, and manufacturing readymade garments products.

The group started banking with 'CBC Bank' in 2003. In 2008 the group planned to expand its business by establishing the aforesaid company and applied for a credit line of BDT 6118 lac consisting of project loan, working capital finance (CC), and capital machinery finance amounting to BDT 1183 lac, BDT 296 lac and BDT 4639 lac,

respectively. The company justified its credit proposal showing long-term experience of the group, well established channel of distribution and ready market in agro-processing business. The bank sanctioned funded credit facility amounting to BDT 1479 lac and non-funded credit facility of BDT 4639 lac for importing machineries (L/C) with a grace period of 18 months. The credit facility includes BDT 450 lac of Equity and Entrepreneurship Fund (EEF) of Bangladesh Bank at an interest rate of 7% per annum. The project cost was BDT 6440 lac and the debt equity ratio as shown by the bank was 1: 3.35(excluding non-funded facility of BDT 4639 lac). The collateral security taken was pledged goods, machineries, and project land. No personal or group guarantee was taken. It is noteworthy that credit department did not find the borrower as creditworthy considering unfavorable debt-equity ratio, overestimated project cost, over invoicing of capital machineries etc. However, the credit was sanctioned under the directive of the Board.

The machineries were imported through L/C and bank made the payment but the borrowers failed to adjust the L/C amount. So, the bank created a forced loan equivalent to the values of L/C. Subsequently BB inspection found that there were irregularities in sanctioning the loan. Irregularities include understatement of debt equity ratio (1: 3.35 instead of 95:1), undue influence in sanctioning process. Assessing the business condition of the borrower BB classified the loan as bad. As to non-repayment of the loan the borrower blamed input (potato) price hike, declining demand in international market. The bank found some merit in the borrower's argument. However, in addition to that, the bank found some other reasons including inexperience of the borrower, fund diversion.

Bank filed a suit in August 2013 after serving a number of legal notices. The client also filed a suit for winding up of the company under the Bankruptcy Act 1997 and filed a writ petition urging the discontinuation of the suit filed in the MLC by the bank through highly reputed as well as influential lawyers of the country. The company got verdict in its favor under the Bankruptcy Act in 2016 and in the writ petition in 2018. Then the bank made an appeal to the Appellate Division and Appellate Division gave the judgment that the MLC would prevail. The bank also got a stay order issued by the Chamber Judge against the verdict of winding up. Finally, as a way out of the situation, the company was sold to another company based on a tripartite agreement. The settled principal was BDT 6153 lac and interest BDT 640 lac. The outstanding amount of BDT 6793 lac was rescheduled to be paid in 20 years in annual installment of BDT 284 lac

without any interest. One General Manager of the bank is currently working as an ex-officio of the company to oversee the policy matters and day-to-day operations of the company to protect the interest of the bank.

CASE – 8: Borrower Facing Disruption of Business

[The case is about a sincere borrower facing disruption of business caused by political unrest and global recession. The bank recovered the loan amount successfully applying non-legal measures such as persuasion, negotiation, interest waiver, ADR, etc.]

Karim Apparels Ltd. is a private limited company located in Dhaka. It started the business of manufacturing garments products and accessories in 1988. The directors of the company come from an elite family having both business and political background. Family members of the directors were higher ups of political parties including Member of Parliament. The business relationship with 'ABC Bank' started in 2004 through sanctioning working capital loan amounting to BDT 120 lac at an interest rate of 12%. The transaction record during first seven and half years was smooth and successful and loan limit was increased to BDT 180 lac.

However, the problem started in the year 2012, when several Back to Back (BTB) L/Cs amounting to BDT 135 lac were issued as non-funded facility with a margin of 20%. Eventually the non-funded facilities were transformed to funded as the borrower failed to adjust duly. As a result, bank created a forced loan. Being asked why the loan had become classified in spite of a successful banker-customer relationship for a period of about 10 years. The borrowers opined that due to political turmoil starting in 2007 the export order against which the BTB L/Cs were issued could not delivered in time and they had to incur substantial loss. Moreover, the key persons of the company were absconding for a period of more than two years due to their political affiliation during the then Care Taker Government. The normal functioning of the company was extremely jeopardized at that time causing a successful business to almost a losing one. The opinion of the borrower is supported by the bank officials and they have sympathy to their long-tested client in their bad days. Considering the unavoidable situation, the bank rescheduled the loan in 2014. The borrower was trying to comply with the repayment schedule and the loan continued to be a good one until 2016 when the borrower lost his major buyers due to global financial crisis. As per the norms of the bank the loan was classified as substandard in the last quarter of 2011 and as doubtful in the first quarter of 2017. Adhering to the credit recovery policy, the bank issued a series of reminders

including legal notice through bank lawyer. In response, the borrower made partial settlement. In the third quarter of 2012 the loan became bad. In spite of knowing the actual state of the borrower the bank filed a suit under MLC Act at the end of 2017. The suit value was BDT 96 lac. After filing suit the bank continued negotiation with the borrower for amicable settlement. The borrower was most likely to compete in the upcoming national election and approached the bank to regularize the loan by rescheduling. The bank materialized the opportunity putting pressure from different quarters leading him to agree to settle the case through ADR. Subsequently, both the parties reached an agreement in mid- 2018 when the amount outstanding was BDT 105 lac. The borrower urged for some sort of concessions considering the miserable condition of the business. The bank accepted the offer and the board of the bank allowed interest waiver of BDT 15 lac. The borrower adjusted the full amount accordingly.

CASE 9: Lack of Willingness of the Borrower to Repay

Ms. X is a high official in a public university. She comes from a middle class family. After maintaining a deposit account with a bank branch for two years she took a retail loan of BDT 7 lac for buying a car to be paid in a number of monthly installments. The borrower started paying the installments as per terms and conditions. The problem started after the payment of fifth installment. Without any kind of communication with the bank, she stopped paying any installments. After three installments have become overdue, the bank communicated with her over the phone. The borrower responded that she would repay the due amounts in a short period of time. At one stage, the loan was classified as sub-standard in 2005. Requested to repay the loan, the borrower answered that she was unable to pay due to some personal problems and she assured that she would continue to pay the loan installments on regular basis. But in reality, she didn't keep her promise and didn't pay even a single installment. In the meantime, bank officials visited her residence quite a number of times. The bank, in fact, was dealing the matter tactfully considering her reputation and social dignity. But, the bank official eventually became a little strict regarding dealing with the loan when the loan became bad. Gradually, lack of willingness of the borrower to repay the loan became more apparent when she was not receiving the phone call. In the meantime, the loan was categorized as bad loan. Not being able to communicate with her over phone, one officer went to her home. In the presence of her family members, there she threatened to make a charge of wrongdoing against him. From that incident, it became very obvious that her

family members were well informed about the situation and she had no intention to repay the loan installments. Finding no other alternative the bank sent a legal notice to her and communicated the matter to the VC of the university. That strategy worked well and on the very next day she came to bank and paid all the instalments.

6.7 Legal Remedies of Nonperforming Loans of Banks

The Money loan court act, 2003: In the backdrop of a huge amount of accumulated non-performing loan, special law related to recovery was introduced in Bangladeshi banking sector in 1990. Before that banks had to file cases in Sub-Judge Courts, Commercial Courts, Assistant Judge Courts, and Certificate Cases to the authorized Certificate Officers in upazilla and districts under the Public Demands Recovery Act, 1913 since there were no recovery related special laws. It was found to be difficult to take proper legal actions against the delinquent borrowers because of inadequate time and judicial personnel and lack of effective enforcement. As a result, thousands of cases of different banks were pending for years and amounts of defaulted loan were increasing excessively. To solve this deadlock problem, Government undertook Financial Sector Reforms Program (FSRP) in early 1990 in the light of the recommendations provided by the National Commission on Money, Banking and Credit. As a part of reform in legal framework, Financial Loan Court Act, 1990 was enacted but expected recovery of bank loan was not possible. As a result, the banking industry in Bangladesh experienced rising trend in classified loan, shortfall in provisioning requirement, frequent liquidity crises, rise in the number of problem banks etc.

To get rid of innumerable pending suits in the Civil Court, special Court was established under the Money Loan Court Act, 2003 and some privileges were allowed to default borrowers viz. if the defendant deposits an amount equivalent to 10% of the decreed money within 15 days of submission of application, ex-parte decree may be set aside. Aside from that, under section 46 of the Act, if default borrowers of term loan deposit 10%, 15% and 25% of payable amount in the first one year, first two years and first three years respectively after the commencement of the repayment of the loan as per repayment schedule, they get time for one year more. According to the Act, the default borrowers have the privilege of settlement of cases through mediation. Section 12 of this Act empowered financial institutions to sell mortgaged property of the defendant to adjust the sale proceeds towards repayment of loan before filing of suits in the Money

Loan Court. Banks are required to publish sale notice (Section 33) in a widely circulated national Bengali daily and, in addition to that, in another local paper, if any, if the court deems that to be necessary, giving at least 15 days' time for selling the mortgaged property of the borrower. Under Section 41 and 42 of the Money Loan Court Act, 2003, appeal and revision against a judgment or decree have been discouraged. If an amount equivalent to 50% of the decreed money is deposited, in cash, with the decree holder financial institution, appeal shall be admitted for action. If 75% of decreed money is deposited, revision application will be accepted. If the judgment debtor, detained in civil prison, repays, in cash, an amount equivalent to 25% of the outstanding amount and executes a bond to the effect that he/she shall repay the rest of the amount within the next 90 days; civil imprisonment under Section 34 of the Act up to 6 months is relaxable. In the circumstances, for fear of losing property or honor in the society the default borrowers in many instances tend to communicate with banks for settlement of suits.

On March 30, 2010 major amendments were made in the Money Loan Court Act of 2003. Sections 12, 22, 28, 30, 32, 33, 50 of Money Loan Court Act (2003) were amended mainly to address the prevailing situation in banking industry towards recovery of bank loan. Section 12(3) of Money Loan Court Act, 2003 was amended deleting the words "Power of Attorney" which provides financial institutions the right to sell the mortgaged property towards adjustment of default loan without having Power of Attorney from the side of borrowers. Section 21 of Money Loan Court Act, 2003 has been abolished. Section 25 of Money Loan Court has been amended which require the approval of Chief Executive Officer or Managing Director of the financial institution for settling of any suit above Tk. 5 crores under Alternate Dispute Settlement. Due to amendment of Section 32 of Money Loan Court Act, 2003 the defendant shall submit security or bond equivalent to 10% of unrealized amount instead of 25% earlier while filing written objection against execution suit. The amendment of Section 33 of Money Loan Court Act, 2003 requires the court to invite tender while executing any decree or order, in case of sale of any property through auction. Every bidder shall submit with the tender as security through bank draft or pay order equivalent to 20% of quoted price if bid amount is upto Tk 10 lakhs, 15% of quoted price if bid amount ranges between Tk 10 lakhs and Tk 50 lakhs and 10% of quoted price if bid amount exceeds Tk. 50 lakhs. New additions have been made in 2010 under Section (33) where under subsection 6(Ka), 6(Kha), and 7(Ka) the

decree holder shall automatically get possession of property after six years on written application to the Court by the decree holder.

The Public demands recovery act, 1913: The recovery of bank dues, particularly small loan amounts through Sub-Judge Courts, Commercial Courts, and Assistant Judge Courts are so lengthy and costly affair that the banks generally feel discouraged to go to the above courts. On the other hand, dues of some Government owned banks are treated as public demand, and legal remedies are available for realization of bank dues as well. The PDR Act, 1913 was published in the Gazette on 22nd May, 1913. There are 59 sections and 84 rules in this Act, of which sections 1-33 relate to power and functions of the Certificate Officer and the rest 38-59 are procedural. Under the Public Demands Recovery Act, a Certificate obtained is deemed to be the decree of a Civil Court and the execution proceeding may be started against the debtor forthwith. Under the PDR Act, certificates are executed by the certificate officer or any officer authorized in this regard. The legal process involved in PDR Act is expeditious as well as effective, compared to a civil suit. If followed properly there is a scope of quick decision. Legal expenses are negligible and court procedures are not so cumbersome.

The Bankruptcy act, 1997: Enactment of Money Loan Court Act could not ensure the expeditious court remedies for recovering bad loan, particularly from the big willful defaulters. In the circumstances, the banks and other financial institutions of the country have, for a long time, been urging for passing of the Bankruptcy Act to deal with their claims expeditiously. On the other hand, for effecting speedy recovery of non-performing loan, it was decided to institute legal reform necessary to take effective action against loan defaulters. It, therefore, became necessary on the part of the Government to establish a new legal framework in order to create a positive impact on bank's loan portfolio management. Ultimately, the Bankruptcy Act, 1997 was enacted with a view to expediting the realization of bank's dues from defaulted borrowers through declaring them bankrupts. It was expected that this Act would be able to introduce procedures for corporate restructuring that go beyond liquidation like the bankruptcy acts of industrially developed countries.

Other legal actions: A number of other legal measures are applicable in some cases such as filing criminal cases for breach of trust under 406/420 BPC: for committing

criminal breach of trust, unauthorized sale for mortgaged property or assets created out of bank loan, migration to other places without repaying bank dues, fake loan, etc. and through summary procedure suit. A summary suit is a special procedure under the Civil Procedure Code (CPC) whereby the defendant is given a limited time, say one month (as per CPC-37(i), to explain the reasons why he/she should be allowed to defend the case. This suit can be filed for money decree on the strength of only those documents such as Demand Promissory Note (DP note), Bill of Exchange, Cheque, etc., where there is a prima-facie evidence of the defendant's liability. It can be availed of in cases where no securities are available to be enforced.

Remedies guidelines of Bangladesh Bank: In 2003, Bangladesh Bank introduced a set of core risk management guidelines covering major banking risk areas to enhance banks ' risk management capacity in a uniform manner. Credit Risk Management, one of these guidelines, provides a detailed framework within a bank to develop a strong and efficient architecture for credit risk management. A standard credit recovery procedure is outlined in that guideline. According to the regulatory requirement, the Recovery Unit (RU) is responsible for managing non- performing loan. The primary functions of the RU are defining account action plan or recovery strategy, pursuing all options for maximizing recovery, ensuring adequate and timely provisioning of loan losses. Problem loan management has to be a dynamic process and the adequacy of provisions has to be reviewed on a regular basis. To upgrade the lending guidelines, a process should be established to share the lessons learned from the credit loss experience. All NPL should be assigned to an RU account manager who is responsible for coordinating and managing the account recovery / action plan. To implement appropriate recovery strategies, it is essential to allow the RU to be autonomous. Any unsuccessful loan is required to be sent to the recovery unit within 7 days of downgrading the account as a substandard. A default borrower shall not be considered for any kind of fresh facility and CIB report is need to be updated according to BB guideline. The account manager should review all documentation, meet the customer, and prepare a Classified Loan Review Report (CLR) within 15 days of the transfer. This CLR should highlight any documentation issues, loan structuring weaknesses, proposed workout strategy, and should seek approval for any loan loss provisions that are necessary. The RU Account Manager should prepare a classified loan review on a quarterly basis to update the action / recovery plan status, review and assess provisions adequacy, and modify the bank's

strategy as appropriate. Banks may want to implement incentive programs to encourage account managers from the Recovery Unit to downgrade the NPL. The guideline also provides an indicative incentive plan for RU account manager.

Remedies recommendations of World Bank: The proposed ombudsman's office for the financial sector will be the sole responsibility of the Bangladesh Bank Board of Directors. A network of ethics in each bank will assist the ombudsman. The office of ombudsman will deal with complaints of malpractices and corruption in the banking sector independently, and will recommend appropriate punishments for the investigated cases.

De-politicization of governance of banks:

- A management selection committee should be set up to recommend the appointment of board members from various banks.
- In order to bring transparency and comparability to the accounts of different banks, international auditing and accounting standards should be consistently followed in all banks.
- There should be standardization of financial control systems.
- Trade unions should be separated from direct political affiliations and the number of trade unions for each bank should be limited to three.
- The post of Governor of the Bangladesh Bank should be made constitutional
- The Ministry of Finance's banking division should be entrusted with overseeing the NCBs and the specialized banks that remain under government ownership.
- Bangladesh Bank autonomy should be given the priority that it deserves.

Enforcement of laws: The legal system allows defaulters to indefinitely delay the process of recourse of lenders, making the enforcement process a virtual mockery. Therefore, special attention needs to be given to establishing a specialized debt collection agency to pursue the top 500 defaulters.

Objective 5: Strategic methods for the efficient and effective management of nonperforming loans of banks of Bangladesh:

6.8 Strategic Methods for Nonperforming Loans: As this can be an expansive topic rather than summarizing beyond usefulness, the address NPL strategy in this piece. Generally, NPL problems are resolved in two ways:

Centralisation: This happens when all the parties involved, including banks, regulators and government, come together to find solutions. This usually takes the form of a central agency / organization such as an asset management company.

Decentralisation: This approach involves taking steps by the banks concerned. The decentralized approach is common for bad loans from bad loans. By giving them incentives, legislative powers, or special accounting or fiscal advantages, the banks are left alone in this approach to manage their own bad loans. In buying NPLs, many businesses see a business opportunity. It can be a lucrative business to buy NPL's from financial institutions with a discount. Companies are paying from 1% to 80% of the total loan and becoming the legal owner (creditor). The discount depends on the lending age, secured / unsecured, age debtor, personal / commercial debt, residential area, etc. Worldwide, establishing Asset Management Companies (AMC) is the most common and successful approach to NPL management. To remove NPLs from bank books, these companies use public or bank funds. For example, after the Asian crises, the Korea Asset Management Corporation bought as much as 80% of bad loans at the market rate.

Now, a number of proactive measures are being implemented:

- Corporate Governance
- Better credit information to cut down on fresh NPLs
- Prudential Supervision
- Efficient, capable management
- Well developed capital markets that can offer the mechanism and liquidity required to write off bad loans.

The other way is to spin the bank in two parts, Good Bank and Bad Bank. McKinsey outlined four basic models for bad banks in 2009. These included:

- An on-balance-sheet guarantee (often a government guarantee), which the bank uses to protect part of its portfolio against losses.
- A special purpose entity where the bank transfers its bad assets to another organization (again, typically backed by the government).
- A more transparent internal restructuring, in which the bank creates a separate unit to hold the bad assets. This solution is not able to fully isolate the bank from risk.
- A bad bank spinoff, where the bank creates a new, independent bank to hold the bad assets, fully isolating the original entity from the specific risk.

Grant Street National Bank in USA was a well-known example of a bad bank. This institution was set up in 1988 to house Mellon Bank's bad assets. 2008's financial crisis

revived interest in the bad bank solution as managers at some of the world's largest institutions were planning to segregate their nonperforming assets. Bad debt recovery is business debt from a loan, credit line or receivable accounts that is recovered in whole or in part after being write off or classified as a bad debt. Because, when it is written off, it generates a loss, bad debt recovery usually produces revenue. The bad debt recovery credits the allowance for bad debts or categories of bad debt reserve in accounting and reduces the category of accounts receivable in the books.

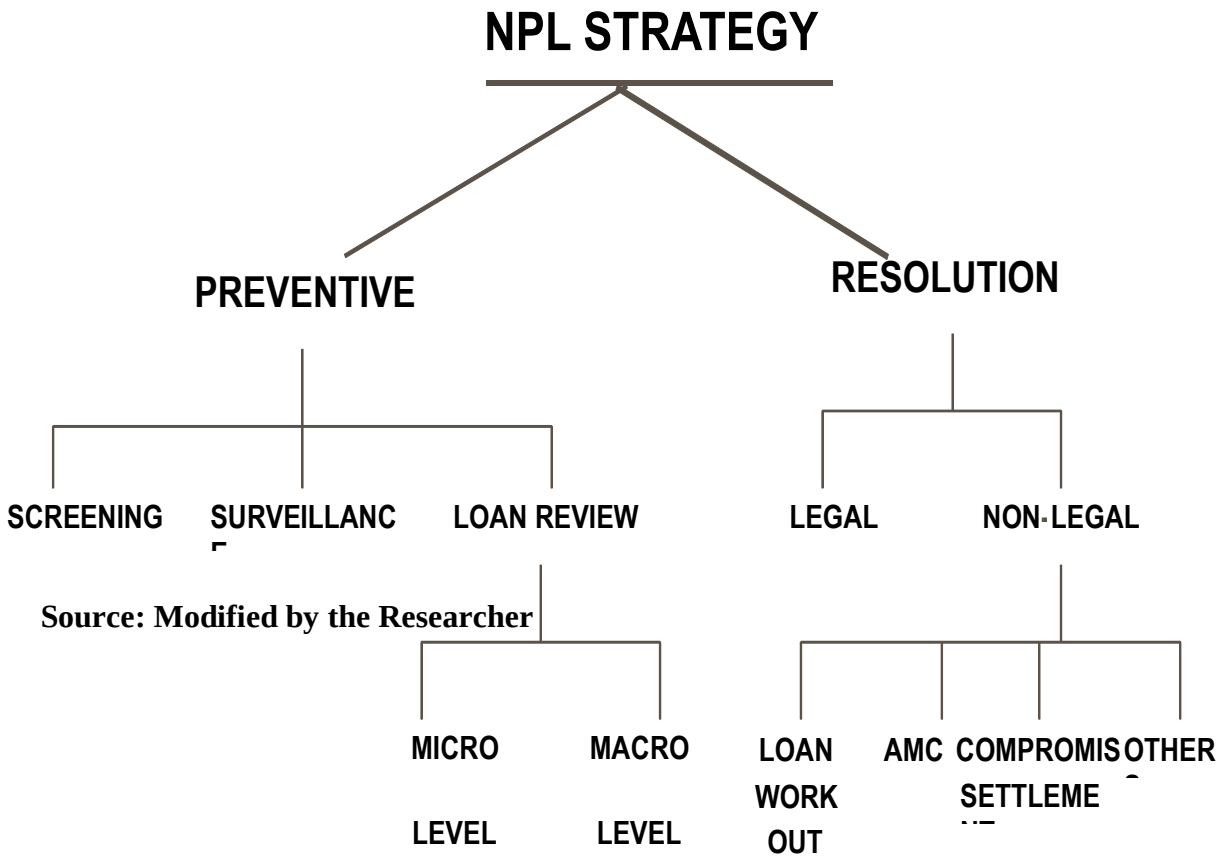
The issues which make the recovery of nonperforming loans are

• There is no standard methodology for valuation whereby financial institutions can set up resources for losses resulting from NPL resolution.

• Pressure on banks and financial institutions to underestimate the social, economic and political implications of their NPLs.

• Banks are unwilling to sell NPLs due to the costs associated with such an exercise, which could add to the losses of NPLs. This, in turn, might hurt their adequacy of capital.

• Issues relating to NPL jurisdiction



Source: Modified by the Researcher

Figure 6.3: NPL Strategy

The NPL strategy sets strategic goals for high NPL banks to reduce nonperforming loans over realistic but sufficiently ambitious time-bound horizons (NPL targets for reduction). It should set out the approach and objectives of banks with regard to efficient management (i.e. maximization of recoveries) and ultimate reduction of NPL stocks for each relevant portfolio in a clear, credible and feasible manner.

Five Cs of Nonperforming as denoted by MacDonald (2006), there are five Cs of default credits that indicate the issues used to prevent nonperforming loans. Such as:
Complacency: Refers to the tendency to shoulder that they will be good in the future because of the things that were good in the past. For instance, assuming the success of past loan repayment as things have always worked out in the past.
Carelessness: Directs poor underwriting typically demonstrated by insufficient lending documentation, lack of current financial or other relevant information in credit files, and lack of protective covenants in the loan agreement. Each of these makes the progress of a borrower difficult to monitor and identify problems before they are unmanageable.
Communication ineffectiveness: Inability to communicate clearly the goals and policies of the bank. This is when there may be a loan problem. Consequently, bank management must communicate and enforce the loan policies clearly and effectively, and loan officers should inform management of specific problems with existing loans as soon as they appear.
Contingencies: Refers to the tendency of the lenders to play down / ignor circumstances where the default loan could occur. Instead of identifying side risk, it focuses on trying to make a deal work.
Competition: Includes monitoring the actions of competitors rather than the own credit standards of the bank. However, banks still need expertise, experience, and customer focus to make them the preferred lender for many loan types. Loans are not just about making loans and waiting to be repaid. Loan must be closely monitored and monitored to avoid losses of loans.

6.9 Effective and Efficient Management of Nonperforming Loans: Since 2008, non-performing loans (NPLs) in Bangladesh have increased significantly, mainly due to poor supervision and governance, aggressive lending and acquisition strategies, loose credit underwriting policies, high exposure to sectors most affected by the financial crisis, and lax credit controls. The NPL management methodology of Alvarez & Marsal (A&M)

includes six key steps as follows:

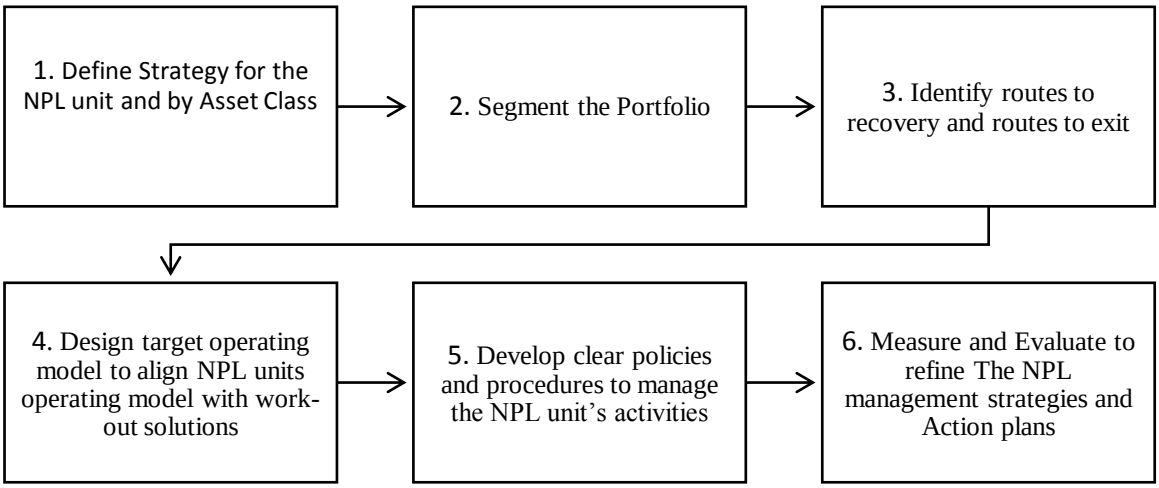


Figure 6.4: A & M Six-Step NPL Management Methodology

Based on actual performance, underwriting criteria, models, policies and procedures and NPL management procedures will need to be continuously reviewed and updated. Early warning systems–Flow can also be controlled by developing a robust early warning system to identify individual portfolio position and risk segments for immediate attention and remediation in order to prevent these loans from being converted to NPLs. Five pillars are based on effective early warning systems:

Table 6.10 Five Pillars are based on Effective Early Warning Systems

Tools	• Effective early warning signals to identify risky customers • Including automatic technical triggers (such as overdrafts), external financial triggers (such as EBITDA), and manual expert triggers (such as loss of key employees) • Additional triggers and specific thresholds for specific segments and industries • Potentially automated generation and calculation of most signals ;
Mitigating actions	• Predefined set of mandatory actions and strategies for different watch list categories and segments for early risk mitigation • Automatic business, underwriting and risk workflow management (via early warning tools)
Processes	• Different watch list categories reflecting different levels of risk of watch list customers • Early warning systems to be fully integrated into the monitoring process, with clearly defined responsibilities to identify, validate, classify

	and subsequently propose mitigating actions.
Reporting & Monitoring	• Monitoring and reporting on the effectiveness of detection • Tracking and reporting on the effectiveness of initiated actions and possible root causes of failure such as exposure reductions • Updating early warning systems based on on ongoing monitoring and validation of signals and processes
Organization	• Monitoring as an independent unit within the credit risk office, with final decision on customer classification and customer watch list actions • Enough staff to perform all tasks

Managing credit risk management for problem assets: Problem loans are the inevitable consequence of lending. Every time a loan is financed, unforeseen events may occur and make compliance with the terms of the loan agreement difficult for the borrower. Problem loans often begin with commercial loan officer errors, such as inaccurate assessment of the character of the borrower, misinterpretation of the figures on a spreadsheet, or simply not saying no to the loan request. Minimizing these causes of trouble loans is necessary and possible.

Borrower interaction: After identifying a potential problem loan, the banker must follow the following steps:

i. Before meeting with the borrower, develop a preliminary plan. ·

ii. Schedule a borrower meeting soon after learning about the problem loan. O

a. Discuss the problem, explore the alternatives available to solve the problem, and identify acceptable and unacceptable actions.
b. The lender decides what additional information the borrower should provide, such as monthly financial statements, so the bank can monitor the situation more closely.
c. Interim steps to resolve the problem are also outlined by borrowers.

Sending a letter indicating how the borrower violates the various terms of the loan documents is not sufficient. If one comes at all, the answer will probably be unsatisfactory; most borrowers deny the problem or believe it will correct itself over time if anything is wrong. Instead, call the borrower, let him know and schedule a meeting about the bank's concerns. Therefore, the lender impresses the desire of the bank to cooperate on the borrower, outplaying the determination of the bank to get to the bottom

of the issue quickly. A conference benefits to express the best course of action— whether to remain working with the borrower, enquire for repayment, or move to liquidate the collateral. For example, an evasive or highly uncooperative borrower allows the lender to restrict the bank's options quickly.

Avoiding unnecessary animosity is good customer relationships, helping both the bank and the borrower with minimal stress to solve the problem. The borrower may act precipitously if he or she feels hopeless in the situation. Therefore, it is important that the lender understands the borrower's emotional state and knows how to handle it to achieve the bank's debt repayment goal. The borrower selection process has been attached in Appendix-6.

Rescheduling appropriateness as a means of managing credit risk: In some rare situations, the borrower may find himself in a time of temporary financial distress. Loan rescheduling–extending the required principal and/or interest payments over a longer period of time–may be an appropriate way to deal with the problem loan situation, but only if the bank is pretty sure that the borrower can fulfill the rescheduled contract terms. Rescheduling shall not be used in any way if the bank has substantial doubts about the borrower's willingness or ability to repay in the long run.

Restructuring appropriateness as a means of managing credit risk: If the borrower's financial distress is more permanent than temporary, it may be appropriate to restructure to maximize the present value of future cash flows that the borrower can reasonably expect. As with rescheduling, unless the bank is pretty sure that the borrower can meet the restructured terms, banks should not restructure any loan. Restructuring must only be carried out in accordance with BB directives from time to time, including the formation of the necessary provisions, in all cases. (Additional provisions may also be laid down to capture all expected losses resulting from the restructuring activity and, at the very least, to track these embedded losses should be included in the MIS reports to the Board and senior management.

ICRRS: The central bank has introduced Internal Credit Risk Rating System (ICRRS) guidelines aimed at reducing the volume of classified loans by maintaining acceptable levels of credit risk exposure. Together with a model, the guidelines will be a valuable addition to credit risk management tools that will help banks develop and maintain a better quality credit portfolio, officials said. "It will also play an important role in reducing unsustainable loans (NPLs) in the banking sector of the country," a senior Bangladesh Bank (BB) official told the FE. Some 20 sub-sectors were included in the

model under four key sectors, taking into account financial risks and borrowing management efficiency, the central banker explained. The existing Risk Grading System (RGS) will work simultaneously with ICRRS and the model until 30 June 2019, he added. " But as of July 01, 2019, banks will have to implement the ICRRS together with the mode," the BB official noted. The ICRRS refers to the system for analyzing the repayment capacity of a borrower based on information on the financial condition of a customer, including liquidity, cash flow, profitability, debt profile, market indicators, industry and operational background, management capabilities and other indicators. It also describes the creditworthiness of a particular sector's borrower based on the evaluation criteria set for that sector, according to the guidelines issued by the BB. The ICRRS also said banks need to manage the credit risk inherent throughout the portfolio as well as the risk of individual borrower transactions. "Effective credit risk management is a critical component of a comprehensive risk management approach and essential to any banking organization's long-term success," he added. Since credit risk exposure continues to be the leading source of bank problems, they should be keenly aware of the need to identify, measure, monitor and control credit risk, as well as to determine that they hold adequate capital against these risks and are adequately compensated for the risks incurred, according to the ICRRS.

Loan Rescheduling: Loan rescheduling, re-fixing the terms and conditions of a non performing loan in order to ensure the recovery is a recognized tool to deal with classified loan. But, the problem aggravates if rescheduling is not done with proper care and judgment. Actually, the banking sector of Bangladesh in the past experienced a wide- scale abuse of rescheduling facility. The temptation to consider rescheduling as a routine work is obvious as rescheduling makes a loan unclassified from the day of the rescheduling. Recognizing this difficulty, BB in recent time came up with a detailed, comprehensive and conservative loan rescheduling policy termed as Master Circular on Loan Rescheduling. A number of major changes have been made through this circular. Each bank is required to have its own rescheduling policy to be approved by its Board of Directors. The policy defines the circumstances and conditions under which a loan may be rescheduled. BB encourages the banks to adopt more stringent conditions for rescheduling than what is suggested by BB. Fixation of maximum time limits for rescheduling of different types of loan and maximum three times rescheduling are some other new dimensions of regulatory guideline.

Write-Off: Bangladesh Bank introduced a write-off policy in 2003 to allow the banks to clean their balance sheet as well as to strengthen the recovery procedure of bad loan. According to the circular, banks will write-off a loan that remains bad for consecutive five years. Before writing off a loan suit must be filed in the appropriate court and adequate provision must be maintained. Write-off should be chronological and should be managed including recovery by a dedicated debt collection unit. Information relating to write off loan should remain updated and be regularly submitted to Credit Information Bureau. The total amount of written off loan during 2008-17 is shown in the table below.

Table 6.11: Write-off Bad Debts

(Tk. in Billion)

Bank Types	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
SCBs	48.4	64.5	70.5	82.4	72.9	107.2	154.8	210.3	222.2	226.2
SDBs	31.0	31.8	31.8	32.0	24.5	32.6	34.2	5.6	5.6	5.6
PCBs	49.4	54.7	69.6	77.1	64.9	109.7	127.7	155.5	211.5	239.9
FCBs	1.7	2.0	2.1	2.4	2.6	3.7	4.4	5.1	8.1	10.3
Total	130.5	153.0	174.0	193.9	164.9	253.3	321.	376.5	447.3	482.0

Source: Annual Reports (2008-17), Bangladesh Bank

CHAPTER SEVEN
EMPIRICAL RESULTS

7.1 Descriptive Statistics

This chapter tested balanced panel data for 20 commercial banks in Bangladesh over the period 2008-2017 to empirically investigate the determinants of bank profitability. There are 04 state owned banks out of 06 state owned commercial banks, 10 conventional private commercial banks out of 32 conventional private banks, four Islamic private banks out of 08 Islamic banks and 02 foreign commercial banks out of 09 foreign commercial banks are designated for this research. Secondary sources of bank specific data collected from the website of the selected banks and their published annual reports or financial statements. The year based data of macroeconomic variables as well as industry variables collected from Bangladesh Bank and World Bank's online database.

The descriptive statistics of selected variables in the study are shown in Table 7.1. The mean gross and net NPL of selected banks over the period 2008-17 is 7.34% and 4.42% respectively. This advocates that banks could not accumulate almost 08 percent of every loan given of total loans and advances. The highest GNPL is 35.28 while the lowest is 0.95. The mean value of loan growth (LG) ratio suggests that from the total asset value of banks, 63.42 percent consists of with loans which specify the high risk taken by bank to increase the profits. Some banks have maintained asset portfolio consisting of 91.51 percent as loans and advances which is very high, then a sound balance. The credit risk (CR) of loans over 10 years test period is 2.94 percent. Maximum credit risk is recorded as 20.40 percent which is much higher than the average. With regard to macroeconomic variables the mean GDP growth over 10 years period is 6.23 percent, with the highest growth in 2017 of 7.30 percent and the lowest growth of 5.05 percent in 2009. The high growth during the year 2017 was a result of expansion in the construction, public administration, defense and financial intermediation sectors. The highest inflation growth of 10.70 percent was recorded in 2011. The standard deviation shows that GDP rate is more stable than inflation rate the banking over the examined period. We find that ROA is lower than ROE and NPM. As it can be seen from Table7.1, the results show a low minimum ROA of -4.92 percent which is due to accumulated losses. The mean value of return on assets is 1.35 percent, whereas maximum is 6.05 percent. The mean value of ADR is 79.24 percent, which is within acceptable levels of below 83.50 percent. At present, advance to deposit ratio (ADR) has been fixed at 83.5% for conventional

commercial banks instead of the 85%, on the other hand, investment deposit ratio (IDR) has been set at 89% for Islamic banks instead of the 90%. However, the descriptive statistics for all variables that were assumed to have a relationship with the NPLs of the nominated 20 commercial banks were given below:

Table-7.1 Descriptive Statistics of all Variables

Variable	Obs	Mean	Std. Dev.	Min	Median	Max
ROA	200	1.35325	1.28901	-4.92	1.095	6.05
ROE	200	15.06755	11.17481	-49.74	13.375	48.96
NPM	200	2.39935	1.417969	-1.43	2.515	6.52
GNPL	200	7.3445	7.088881	.95	4.64	35.28
NNPL	200	4.4177	5.318575	-.13	2.285	28.73
CR	200	2.93645	3.514892	.14	2.02	20.4
CE	200	46.2715	13.77887	20.2	45.045	114.01
LG	200	63.41717	10.77308	32.03	65.405	91.51
ADR	200	79.23965	9.80346	53.81	81.2	99.65
LTA	200	259728.6	224783	31239.39	196296.5	1240332
GDP	10	6.231	.7422256	5.05	6.325	7.3
INF	10	6.988	1.523795	5.61	6.43	10.7
C5	10	35.407	3.136782	29.63	35.01	40.62
BSD	10	57.511	8.439409	43.06	62.645	67.15
SMD	10	23.055	10.44938	12.79	17.44	37.1

Calculating the descriptive statistics for the 04 state owned commercial banks out of 06 SCBs in the banking industry and the number of observations was 40. From the below table 7.2 it can be seen that the mean in GNPL ratio of the SCBs is 17.24% and NNPL is 12.40%. The descriptive statistics for the state owned banks were given below:

Table-7.2 Descriptive Statistics of State Owned Commercial Banks

Variable	Obs	Mean	Std. Dev.	Min	Median	Max
ROA	40	.31325	1.394574	-4.92	.5	2.27
ROE	40	6.599	15.08494	-49.74	6.195	41.28
NPM	40	.61075	1.417969	-1.43	.465	3.0
GNPL	40	17.24225	8.519003	1.02	15.325	35.28
NNPL	40	12.39275	7.006655	-.13	11.785	28.73

CR	40	8.08275	5.020468	1.44	6.56	20.4
CE	40	54.455	17.73181	29.95	50.67	114.01
LG	40	50.1655	8.081041	32.03	51.05	65.39
ADR	40	68.56125	9.312193	53.81	66.97	89.46

Calculating the descriptive statistics for the 10 conventional private commercial banks out of 32 PCBs in the banking industry and the number of observations was 100. From the below table 7.3 it can be seen that the mean in GNPL ratio of the PCBs is 4.36% and NNPL is 2.93%. The descriptive statistics for the private conventional owned banks were given below:

Table-7.3 Descriptive Statistics of Conventional Private Commercial Banks

Variable	Obs	Mean	Std. Dev.	Min	Median	Max
ROA	100	1.3354	.8389416	.01	1.095	6.05
ROE	100	16.4006	8.627388	.13	15.7	48.96
NPM	100	2.7105	1.077393	.67	2.635	6.52
GNPL	100	4.3578	1.862327	1.18	4.32	10.64
NNPL	100	2.9285	2.088951	-.13	2.415	8.42
CR	100	1.8447	.9810533	.16	2.005	4.59
CE	100	48.4626	9.970695	24.37	47.42	71.8
LG	100	66.23474	7.151752	48.97	67.27	91.51
ADR	100	81.0511	7.241113	58	81.64	99.65

For the 04 Islami commercial banks out of 08 IBs in the banking industry, the descriptive statistics were calculated and the number of observations was 40. From the table below 7.4 it can be seen that the IBs mean GNPL ratio is 6.80% and the NNPL is 1.80%. The Islamic banks' descriptive statistics were given below:

Table-7.4 Descriptive Statistics of Islamic Commercial Banks

Variable	Obs	Mean	Std. Dev.	Min	Median	Max
ROA	40	1.24625	.6658124	.31	1.155	3.54
ROE	40	13.847	5.400654	4.11	12	27.88
NPM	40	2.6105	.5686284	.71	2.56	3.76
GNPL	40	6.80275	6.607568	.95	3.965	22.79
NNPL	40	1.799	.7741324	.58	1.645	3.76

CR	40	1.20825	.5813772	.26	1.11	2.66
CE	40	42.0135	10.54619	23.5	40.415	70.36
LG	40	74.02625	5.227291	62.09	73.82	87.44
ADR	40	88.52775	4.163083	79.88	88.87	98.26

The descriptive statistics were calculated for the 02 foreign commercial banks out of 09 FCBs in the banking industry and the number of observations was 20. From the table below 7.5, the mean GNPL ratio of the FCBs is 3.57% and the NNPL is 1.15%. The descriptive statistics of Islamic banks were given below:

Table-7.5 Descriptive Statistics of Foreign Private Commercial Banks

Variable	Obs	Mean	Std. Dev.	Min	Median	Max
ROA	20	3.7365	.7426856	2.37	3.68	5.51
ROE	20	27.7805	7.715845	11.41	28.62	44.08
NPM	20	3.9985	1.123736	2.31	4.23	5.78
GNPL	20	3.566	.9118483	2.31	3.43	5.37
NNPL	20	1.151	.542207	.3	1.145	2.02
CR	20	1.559	1.27923	.14	1.185	4.04
CE	20	27.465	4.482656	20.2	28.52	35.18
LG	20	54.6145	5.378816	45.66	52.73	63.99
ADR	20	72.963	6.277351	56.94	73.72	81.4

After calculating the descriptive statistics of state owned commercial banks, the mean GNPL ratio is 17.24% and NNPL ration is 12.39%. The mean ratio of GNPL and NNPL of the state owned banks are higher compared to the private commercial banks, Islamic commercial banks and foreign commercial banks in Bangladesh. This clearly signpost that state owned commercial banks are more desperate to deliver loans for increasing interest income, but unfortunately for this reason they offer bad loans which are decreasing interest income as well as increasing nonperforming loans.

7.2 Correlation Evidences

The correlations for the nominated variables that were calculated with the banks' NPLs in Bangladesh and the results were shown in Table 7.6. Pearson r is calculated to determine whether a statistically significant correlation is present between

nonperforming loans, GNPL, NNPL, Credit Risk, Cost efficiency, Loan Growth, ADR, Bank Size(LTA), GDP growth rate, inflation rate, five large banks concentrations (C5), Banking Sector Development(BSD) and Stock Market Development(SMD) with Return on Assets, Equity & Net Profit Margin. The findings indicated that GNPL, NNPL, Credit Risk, Cost Efficiency, Bank Size, GDP, Banking Sector Development are negatively correlated with profitability (ROA, ROE and NPM) while Loan Growth, ADR, Inflation rate, Banks Concentrations (C5) and Stock Market Development are positively correlated with profitability (ROA, ROE & NPM). The correlation matrix of dependent and independent variables shows that GNPL, NNPL, Credit Risk, Cost Efficiency, Bank Size, GDP, are negative significantly correlated with ROA. The correlation matrix table of variables impacting ROA, ROE and NPM were presented in Table 7.6 below (partial).

Table 7.6 Correlation of Variables Impacting ROA, ROE & NPM

	ROA	ROE	NPM	GNPL	NNPL	CR	CE	LG	ADR	LTA	GDP	INF	C5
ROA	1.000												
ROE	0.806	1.000											
NPM	0.529	0.499	1.000										
GNPL	-0.434	-0.467	-0.636	1.000									
NNPL	-0.455	-0.379	-0.585	0.660	1.000								
CR	-0.402	-0.341	-0.572	0.734	0.633	1.000							
CE	-0.577	-0.523	-0.495	0.493	0.333	0.379	1.000						
LG	0.117	0.188	0.432	-0.448	-0.577	-0.555	-0.254	1.000					
ADR	0.118	0.159	0.322	-0.309	-0.454	-0.348	-0.241	0.754	1.000				
LTA	-0.404	-0.405	-0.422	0.439	0.446	0.536	0.324	-0.423	-0.228	1.000			
GDP	-0.298	-0.339	-0.122	0.131	0.172	0.02	0.299	-0.097	-0.032	0.438	1.000		
INF	0.229	0.199	0.167	-0.179	-0.182	-0.075	-0.275	0.038	0.081	-0.187	-0.287	1.000	
C5	0.260	0.363	0.155	-0.119	-0.149	-0.025	-0.327	0.163	0.071	-0.587	-0.668	0.404	1.000
BSD	-0.289	-0.387	-0.144	0.111	0.136	0.039	0.297	-0.218	-0.132	0.591	0.668	-0.271	-0.927
SMD	0.119	0.033	0.096	-0.075	-0.047	-0.071	-0.013	0.097	0.188	0.088	0.137	0.387	-0.168

Source: Researcher's own construct *Correlation is significant at the 0.05 level

7.3 Regression Analysis: Ordinary Least Squares (OLS)

The data recycled in this regression estimator are time series data for 2008-2017as the values used here are gathered from the same sources at a fixed time interval. This study emphasizes on how much negative effect NPLs have on the ROA of banks in Bangladesh.

Table 7.7 Model Summary for ROA

Source	SS	df	MS	Number of obs = 200
Model	179.321794	13	13.7939842	F(13, 186) = 16.95
Residual	151.325793	186	.813579534	Prob > F = 0.0000
				R = .728
Total	330.647587	199	1.66154567	R-squared = 0.5423

	Adj R-squared = 0.5103
	Root MSE = .90199

a. Independent Variables: GNPL, NNPL, CR, CE, LG, ADR, LTA, GDP, INF, C5, BSD, SMD

b. Dependent Variable: ROA

The coefficient of correlation of the model R is 0.728 signifies in Table-7.7 that states there is a strong relationship between dependent and independent variables. Coefficient of determination R square is 0.542 that displays the highest percentage value that the independent variables explain 54 percent change of ROA. The goodness of fit test of the model is also good as the adjusted R square is 0.51. So we can definitely state that there is no autocorrelation among the independent variables of the study.

Table: 7.8 Coefficient Results on ROA

ROA	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GNPL	-.0142124	.0151715	0.83	0.352	-.0172753	.0425853
NNPL	-.0920411	.018453	-4.99	0.000	-.1284452	-.0556369
CR	-.0421155	.0343686	-1.23	0.222	-.1099178	.0256868
CE	-.0441484	.0059108	-7.47	0.000	-.0558092	-.0324876
LG	-.0465438	.0108891	-4.27	0.000	-.0680257	-.0250619
ADR	.003955	.0104484	0.38	0.705	-.0166575	.0245676
LTA	-.345958	.1461638	-2.37	0.019	-.63431	-.0576059
GDP	-.10413	.130938	-0.80	0.427	-.3624444	.1541844
INF	.0800823	.0885323	0.90	0.367	-.0945743	.2547388
C5	-.1833347	.0960561	-1.91	0.058	-.3728341	-.0266467
BSD	-.1717438	.0735488	-2.34	0.021	-.3168408	.0262881
SMD	.0026014	.0120067	0.22	0.829	-.0210854	.0262881
_cons	20.10353	5.234308	3.84	0.000	9.777285	30.42977

a. Dependent Variable: ROA

It follows from Table-7.8 that there is a positive value of the interrupt coefficient (α) which means that if all independent variables remain constant, then ROA is 20 percent ringing a viable economic implication that the banks in Bangladesh normally have about 20 percent ROA. NNPL's slope coefficient (α) is -.092 which means that if the NNPL ratio increases by 1 percent, the ROA will decrease by -.092 percent and is significant statistically negative by 1 percent. It originates from the credit risk rate that there is an opposite relationship between ROA and CR as ROA decreases by 0.042 percent due to 1

percent CR upsurge where the meaning level is 1 percent. Again, the slope coefficient of GNPL decay is 0.014, which forms when GNPL decreased by 1 percent ROA increased by 0.014 percent, which is statistically insignificant at a significant level of 5 percent. So there exists positive relationship between INF and ROA. Here, INF's slope coefficient has a value of 0.08 showing a positive ROA relationship. ROA will increase by 0.08 percent due to an increase of 1 percent in the rate of inflation growth. The variables used in the regression may be endogenous as they are instantly strong minded and correlated with each other through the balance sheet restrictions of banks. It follows from the above table 7.7 that the hypothesis of associating calculated F value of 16.95 with table value at a level of 5 percent significant level meaning is:

(1) Net NPL is related negatively and significantly to bank profitability (ROA),
(2) Gross NPL is related negatively but insignificantly to bank profitability (ROA),
(3) Credit Risk is related negatively but insignificantly to bank profitability (ROA),
(4) Cost efficiency is related negatively and significantly to bank profitability (ROA),
(5) Loan growth is related negatively and significantly to bank profitability (ROA),
(6) Advance deposit ratio (ADR) is related positively and insignificantly to bank profitability (ROA),
(7) Total assets is related negatively and significantly to bank profitability (ROA),
(8) There is insignificant negative relationship exists between bank profitability (ROA) and GDP growth rate
(9) There is positive insignificant relationship exists between bank profitability (ROA) and rate of inflation
(10) Bank concentrations is related negatively and insignificantly to bank profitability (ROA),
(11) Banking sector development is related negatively and significantly to bank profitability (ROA),
(12) Stock market development is related positively and insignificantly to bank profitability (ROA),

Now, this study is focused on how much negative effect NPLs have on ROE of Banks in Bangladesh.

Table 7.9 Model Summary for ROE

Source	SS	df	MS
Model	10544.392	13	811.10708
Residual	14306.0163	186	76.9140659
Total	24850.4083	199	124.876424

Number of obs = 200
F(13, 186) = 10.55
Prob > F = 0.0000
R = .651
R-squared = 0.4243
Adj R-squared = 0.3841
Root MSE = 8.7701

a. Independent Variables: GNPL, NNPL, CR, CE, LG, ADR, LTA, GDP, INF, C5, BSD, SMD

b. Dependent Variable: ROE

The coefficient of correlation of the model R is 0.651 signifies in Table-7.9 that states there is a strong relationship between dependent and independent variables. Coefficient of determination R square is 0.424 that displays the highest percentage value that the independent variables explain 43 percent change of ROA. The goodness of fit test of the model is also good as the adjusted R square is 0.38. So we can definitely state that there is no autocorrelation among the independent variables of the study.

Table: 7.10 Coefficient Results on ROE

ROE	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GNPL	-.3606736	.1475132	-2.45	0.015	-.6516877	-.0696595
NNPL	-.3372191	.1794198	-1.88	0.062	-.6911786	.0167404
CR	-.0380155	.3341675	-0.11	0.910	-.6972611	.6212302
CE	-.2481482	.0574709	-4.32	0.000	-.3615267	-.1347697
LG	-.2168276	.1058749	-2.05	0.042	-.4256976	-.0079577
ADR	.0445624	.10159	0.44	0.661	-.1558544	.2449792
LTA	-.9614342	1.421159	-0.68	0.500	-3.765098	1.842229
GDP	-.6545364	1.273117	-0.51	0.608	-3.166142	1.85707
INF	-.1062655	.8608048	-0.12	0.902	-1.804461	1.59193
C5	-.7323273	.9339588	-0.78	0.434	-2.574841	1.110187
BSD	-.4363986	.7151191	-0.61	0.542	-1.847186	.9743884
SMD	.007473	.1167417	0.06	0.949	-.222835	.237781
_cons	116.7987	50.89348	2.29	0.023	16.39599	217.2013

a. Dependent Variable: ROE

It follows from Table-7.10 that there is a positive value of the interrupt coefficient (α) which means that if all independent variables remain constant, then ROE is 116 percent ringing a viable economic implication that the banks in Bangladesh normally have about 116 percent ROE. GNPL's slope coefficient (α) is -.36 which means that if the GNPL ratio increases by 1 percent, the ROE will decrease by -.36 percent and is very significant statistically negative by 1 percent. It originates from the credit risk rate that there is an opposite relationship between ROE and CE as ROE decreases by 0.248 percent due to 1 percent CE upsurge where the meaning level is 1 percent. Again, the slope coefficient of NNPL decay is 0.34, which forms when NNPL decreased by 1 percent ROE increased by 0.34 percent, which is statistically insignificant at a significant level of 5 percent. There exists strong negative relationship between cost efficiency and ROE. Here, CE's slope coefficient has a value of 0.25 showing a negative ROE relationship. ROE is decreased by 0.22 percent due to an increase of 1 percent in the rate of loan growth. The variables used in the regression may be endogenous as they are instantly strong minded and correlated with each other through the balance sheet restrictions of banks. It follows from the above table 7.9 that the hypothesis of associating calculated F value of 10.55 with table value at a level of 5 percent significant level meaning is:

(1) Net NPL is negatively but insignificantly to bank profitability (ROE),

(2) Gross NPL is related negatively and significantly to bank profitability (ROE),

(3) Cost efficiency is related negatively and significantly to bank profitability (ROE),

(4) Loan growth is related negatively and significantly to bank profitability (ROE),

(5): There is negative insignificant relationship exists between bank profitability (ROE) and rate of inflation.

Now, this study is focused on how much negative effect NPLs have on NPM of Banks in Bangladesh.

Table: 7.11 Model Summary for NPM

Source	SS	df	MS	Number of obs = 200
Model	211.504601	13	16.2695847	F(13, 186) = 16.04
Residual	188.612215	186	1.01404417	Prob > F = 0.0000
				R = .727
Total	400.116815	199	2.01063726	R-squared = 0.5286
				Adj R-squared = 0.4957
				Root MSE = 1.007

a. Independent Variables: NPL, NNPL, CR, CE, LG, ADR, LTA, GDP, INF, FD, C5, BSD, SMD

b. Dependent Variable: NPM

Table-7.11 represents that the coefficient of correlation of the model R is 0.727 that states there is strong relationship between dependent and independent variables used in this model. Coefficient of determination R square 0.53 that shows the higher percentage value that the independent variables explain 53 percent change of NPM. The goodness of fit test of the model is also good as the adjusted R square is 0.50. So we can easily state that there is no autocorrelation among the independent variables of the study.

Table: 7.12 Coefficient Results on NPM

NPM	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GNPL	-.0514752	.0169378	-3.04	0.003	-.08489	-.0180603
NNPL	-.0643625	.0206014	-3.12	0.002	-.1050048	-.0237201
CR	-.0302699	.0383698	-0.79	0.431	-.1059659	.0454261
CE	-.0234635	.0065989	-3.56	0.000	-.0364819	-.0104452
LG	.0065036	.0121568	0.53	0.593	-.0174793	.0304865
ADR	-.0029694	.0116648	-0.25	0.799	-.0259817	.0200429
LTA	-.1839606	.1631805	-1.13	0.261	-.5058831	.137962
GDP	.0560719	.146182	0.38	0.702	-.232316	.3444599
INF	-.1805517	.0988394	-1.83	0.069	-.3755422	.0144387
C5	.1631189	.1072391	1.52	0.130	-.0484424	.3746803
BSD	.1808729	.0821115	2.20	0.029	.0188833	.3428624
SMD	.0308999	.0134045	2.31	0.022	.0044555	.0573444
_cons	.2307077	5.804593	0.04	0.968	-11.22019	11.68161

a. Dependent Variable: ROE

It follows from Table-7.12 that there is a positive value of the interrupt coefficient (α) which means that if all independent variables remain constant, then NPM is 20 percent ringing a viable economic implication that the banks in Bangladesh normally have about 23 percent NPM. NNPL's slope coefficient (α) is -.064 which means that if the NNPL ratio increases by 1 percent, the NPM will decrease by -.064 percent and is significant statistically negative by 1 percent. It originates from the credit risk rate that there is an

opposite relationship between NPM and CR as NPM decreases by 0.030 percent due to 1 percent CR upsurge where the meaning level is 1 percent. Again, the slope coefficient of GNPL decay is 0.051, which forms when GNPL decreased by 1 percent NPM increased by 0.051 percent, which is statistically insignificant at a significant level of 5 percent. So there exists negative relationship between INF and NPM. Here, INF's slope coefficient has a value of 0.18 showing a negative NPM relationship. NPM will decrease by 0.18 percent due to an increase of 1 percent in the rate of inflation growth. The variables used in the regression may be endogenous as they are instantly strong minded and correlated with each other through the balance sheet restrictions of banks. It follows from the above table 7.12 that the hypothesis of associating calculated F value of 16.95 with table value at a level of 5 percent significant level meaning is:

(1) Net NPL is related negatively and significantly to bank profitability (NPM),

(2) Gross NPL is related negatively and significantly to bank profitability (NPM),

(3) Cost efficiency is related negatively and significantly to bank profitability (NPM),

(5) There is insignificant positive relationship exists between bank profitability (NPM) and GDP growth rate

(6) There is negative insignificant relationship exists between bank profitability (NPM) and rate of inflation

(7) Banking sector development is related positively and significantly to bank profitability (NPM),

(8) Stock market development is related positively and significantly to bank profitability (NPM),

Estimation of the relationships between ROA, ROE & NPM and the independent variables:

In this study a balanced panel regression model has been run to estimate the intensity of relationships among the independent variables and the dependent variable. As the study involves both the time series and cross-sectional data a balanced regression model is considered to be more effective in explaining the variation in the dependent variable because of the variations in the independent variables. Some of the results of the regression analysis that are the most important for estimating the relationships between the ratio of ROA, ROE & NPM and the independent variables have been given in the following table:

Table 7.13 Regression Analysis (OLS) on ROA, ROE & NPM

	ROA	ROE	NPM	ROA	ROE	NPM
Predicators	Coef.	Coef	Coef	Sig./Non	Sig./Non	Sig./Non
GNPL	-.0142124	-.3606736	-.0514752	Non-Sig.	Sig.	Sig.
NNPL	-.0920411	-.3372191	-.0643625	Sig.	Non-Sig.	Sig.
CR	-.0421155	-.0380155	-.0302699	Non-Sig.	Non-Sig.	Non-Sig.
CE	-.0441484	-.2481482	-.0234635	Sig.	Sig.	Sig.
LG	-.0465438	-.2168276	.0065036	Sig.	Sig.	Non-Sig.
ADR	.003955	.0445624	-.0029694	Non-Sig.	Non-Sig.	Non-Sig.
LTA	-.345958	-.9614342	-.1839606	Sig.	Non-Sig	Non-Sig.
GDP	-.10413	-.6545364	.0560719	Non-Sig.	Non-Sig	Non-Sig.
INF	.0800823	-.1062655	-.1805517	Non-Sig.	Non-Sig	Non-Sig.
C5	-.1833347	-.7323273	.1631189	Non-Sig.	Non-Sig	Non-Sig.
BSD	-.1717438	-.4363986	.1808729	Sig.	Non-Sig	Sig.
SMD	.0026014	.007473	.0308999	Non-Sig.	Non-Sig.	Sig.

7.4 Fixed Effect (FE) Estimator

For the fixed-effect model, three measurements of bank profitability, ROA, ROE and NIM are used. Observing whether separate effects are fixed or random is one of the opposing issues. Mostly there are two reasons to use ROA as one of bank profitability dimensions. First, it shows the profits per unit of assets and imitates the ability of management to use the financial resources of banks to generate profit (Hassan & Bashir, 2003). Furthermore, Rivard & Thomas (1997) argue that ROA is best worthy of bank profitability because it is not biased by the upper equity multiplier. The specific effect of time-varying structures is detached by the fixed effect model in scrutinizing the net effect of the independent variables and the uniqueness of the features in order to diminish the possibility of correlation between variables is also concentrated by using the fixed effect model. It was expected that all 20 commercial banks will have different intercepts in the case of using the fixed effect model. At first statistics option in STATA then panel data, setup & utilities and then the dataset has been declared panel data and then the panel ID variable as the bank code has been selected and there are 20 commercial banks in the dataset. Variable and year were nominated after that time and finally ticked the ok option. The statistics option then panel data, linear model and linear regression (FE, RE, PA, BE) sub-option were successively nominated for running the fixed effect. After that the change in ROA as the dependent variable and other variables as the independent variables was nominated and then the fixed effect model was selected from the given options and clicked to get the results. The model's results are shown below:

Table 7.14 Fixed Effect Model on ROA

R-Square:	Within = 0.4777 Between = 0.6065 Overall = 0.4955	F (11,169) Prob > F	= 9.18 = 0.0000
Predictors	**Coefficients**	**P-Values**	**Significant/ Insignificant**
GNNP	-.0252739	0.318	Insignificant
NNPL	-.0921484	0.000	Significant
CR	-. 1426236	0.002	Significant
CE	-.0445148	0.000	Significant
LG	-.0471152	0.000	Significant
ADR	.0034981	0.739	Insignificant
LTA	-.3440809	0.019	Significant
GDP	-.2362674	0.046	Significant
INF	.0409725	0.549	Insignificant
C5	-.0802392	0.326	Insignificant
BSD	-.0527248	0.083	Insignificant
SMD	.0061216	0.083	Insignificant

In the above result, this model's probability value is very insignificant, which is less than 5 percent, meaning that all coefficients are not equal to zero, making the model satisfactory. However, if the explanatory power of the independent variables to explain the dependent variable is worthy then it can be understood that NNPL, credit risk, cost efficiency, credit growth and the size of bank assets are the very significant variables to explain the change in ROA as the P-values of these variables are very significant, which is less than 5%.

After that, the change in ROE as the dependent variable and all other variables are nominated as the independent variables and then the fixed effect model from the given options is nominated and ok was snapped to become the results. The model's results were shown below:

Table 7.15 Fixed Effect Model on ROE

R-Square:	Within = 0.3142 Between = 0.6228 Overall = 0.3572	F (11,169) Prob > F	= 7.94 = 0.0000
Predictors	**Coefficients**	**P-Values**	**Significant/ Insignificant**

GNNP	-.3650189	0.014	Significant
NNPL	-.3372164	0.060	Insignificant
CR	-.2840401	0.000	Significant
CE	-.2527898	0.000	Significant
LG	-.223859	0.035	Significant
ADR	.0411914	0.686	Insignificant
LTA	-.9332597	0.510	Insignificant
GDP	-1.047935	0.400	Insignificant
INF	-.0141248	0.984	Insignificant
C5	-.3396045	0.693	Insignificant
BSD	-.6449254	0.045	Significant
SMD	-.0363796	0.711	Insignificant

In the above result, this model's probability value is very insignificant, which is less than 5 percent, meaning that all coefficients are not equal to zero, making the model satisfactory. However, if the explanatory power of the independent variables to explain the dependent variable is worthy then it can be understood that GNPL, credit risk and cost efficiency are the very significant variables to explain the change in ROE as the P-values of these variables are very significant, which is less than 5 %.

After that, the change in NPM as the dependent variable and all other variables are nominated as the independent variables and then the fixed effect model from the given options is nominated and ok was snapped to become the results. The model's results were shown below:

Table 7.16 Fixed Effect Model on NPM

R-Square:	Within = 0.4997 Between = 0.6366 Overall = 0.5077	F (11,169) Prob > F	= 6.86 = 0.0000
Predictors	**Coefficients**	**P-Values**	**Significant/ Insignificant**
GNNP	-.0511027	0.003	Significant
NNPL	-.0636185	0.002	Significant
CR	-.0244506	0.424	Non-Significant
CE	-.0235736	0.000	Significant
LG	.0509969	0.000	Significant

ADR	-.0017007	0.885	Insignificant
LTA	-.1802893	0.272	Insignificant
GDP	-1.047935	0.400	Insignificant
INF	-.0141248	0.984	Insignificant
C5	-.3396045	0.693	Insignificant
BSD	-.6449254	0.045	Significant
SMD	-.0363796	0.711	Insignificant

In the above result, this model's probability value is very insignificant, which is less than 5 percent, meaning that all coefficients are not equal to zero, making the model satisfactory. However, if the explanatory power of the independent variables to explain the dependent variable is worthy then it can be understood that GNPL, NNPL, cost efficiency and loan growth are the very significant variables to explain the change in NPM as the P-values of these variables are very significant, which is less than 5 %.

7.4 Random Effect (RE) Estimator

The results for ROA have been got by running the random effect model has been given below:

Table 7.17: Random Effect Model on ROA

R-Square:	Within = 0.4777 Between = 0.9324 Overall = 0.5423	Wald chi2(11) Prob > chi2	= 112.45 = 0.0000
Predictors	**Coefficients**	**P-Values**	**Significant/ Insignificant**
GNNP	-.0245811	0.204	Insignificant
NNPL	-.0920411	0.000	Significant
CR	-.0895282	0.008	Significant
CE	-.0281913	0.000	Significant
LG	-.017648	0.146	Insignificant
ADR	.003955	0.705	Insignificant
LTA	-.0410324	0.854	Insignificant
GDP	-.10413	0.426	Insignificant
INF	.0800823	0.366	Insignificant
C5	-.1833347	0.080	Insignificant

BSD	-.0524402	0.070	Insignificant
SMD	.0094139	0.309	Insignificant

From the results of Table 7.16 it can be realized that the P-values for NNPL, credit risk and cost efficiency are less than 5 percent, so it is significant to have the explanatory power to describe the variance in the dependent ROA variable. But the NNPL coefficient is negative and significant, showing that the lower the ROA, the higher the level of non-performing loans.

Similarly, customer failure to pay interest on loans as expected reduces bank income, which also decreases the level of profits to the bank. Consequently, the results contain hypothesis 1 that states; the higher the nonperforming loans, the lower the ROA. The results are constant with the results of Kithinji (2010) and Kargi (2011), Kolapo et al. (2012), Muhammad et al (2012), Samuel et al. (2012), and Madishetti, & Rwechungura (2013). These findings support the findings of Berger (1995), Vong & Chan (2006) and Ozili (2015). The coefficient of GDP is negative and insignificant, indicating an increase in GDP is connected with the decrease in ROA (a proxy for bank profitability) but GDP does not have explanatory power over bank profitability levels. A possible explanation for this is that an increase in economic activities is associated with a low rate of defaults.

The results for ROE have been got by running the random effect model has been given below:

Table 7.18: Random Effect Model on ROE

R-Square:	Within = 0.3141 Between = 0.9132 Overall = 0.4243	Wald chi2(11) Prob > chi2	= 105.81 = 0.0000
Predictors	**Coefficients**	**P-Values**	**Significant/ Insignificant**
GNNP	-.4510644	0.012	Significant
NNPL	-.4907172	0.023	Significant
CR	-.0380155	0.909	Insignificant
CE	-.2481482	0.000	Significant
LG	-.1332455	0.277	Insignificant
ADR	.0445624	0.661	Insignificant
LTA	-.9614342	0.499	Insignificant

GDP	-.6545364	0.607	Insignificant
INF	-.1062655	0.902	Insignificant
C5	-.7323273	0.433	Insignificant
BSD	-.4363986	0.542	Insignificant
SMD	.007473	0.949	Insignificant

From the results of Table 7.17 it can be realized that the p-values for GNPL, NNPL and cost efficiency are less than 5 percent, so it is significant to have the explanatory power to describe the variance in the dependent ROE variable. The GNPL and NNPL coefficient are negative and significant, showing that the lower the ROE, the higher the level of non-performing loans.

Next, the results for NPM have been got by running the random effect model has been given below

Table 7.19: Random Effect Model on NPM

R-Square:	Within = 0.4997 Between = 0.9231 Overall = 0.5286	Wald chi2(11) Prob > chi2	= 90.63 = 0.0000
Predictors	**Coefficients**	**P-Values**	**Significant/ Insignificant**
GNNP	-.0514752	0.002	Significant
NNPL	-.0691417	0.003	Significant
CR	-.0302699	0.430	Insignificant
CE	-.0234635	0.000	Significant
LG	.0488563	0.000	Significant
ADR	-.0029694	0.799	Insignificant
LTA	.7675009	0.704	Insignificant
GDP	.0560719	0.701	Insignificant
INF	-.1805517	0.068	Insignificant
C5	.1631189	0.128	Insignificant
BSD	.1808729	0.028	Significant
SMD	.0308999	0.021	Significant

From the results of Table 7.18 it can be realized that the p-values for GNPL, NNPL, cost efficiency, loan growth, BSD and SMD are less than 5 percent, so it is significant to have the explanatory power to describe the variance in the dependent NPM variable. The

GNPL and NNPL coefficient are negative and significant, showing that the lower the NPM, the higher the level of non-performing loans.

After consuming together, the fixed effect and random effect model it is now essential to check which model is right for the study.

7.5 General Method of Moments (GMM)

Table 7.19 demonstrations the results of GMM's econometric models. Opening with ROA, a high isolated profitability variable coefficient controls the dynamic appeal of the model requirement.

The NNPL coefficient arrived at the regression model with a negative and significant symbol representing a negative relationship between NNPL and bank profitability (ROA). In order to avoid and control the risks in the banking sector, banks usually set certain amounts of funds out of total loans side by side and advance to shelter potential losses in line with the Bangladesh Bank guideline. The results indicate that banks ' side-by-side loan loss provision generally converts nonperforming loans that lead to bank profitability failure. This result replicates the Bangladesh bank's proper policy on the percentage of loan loss provision set by banks to a few amounts. In Philippine banking industry, Sufian & Chong (2008) discovered the similar result. Liu and Wilson (2010) also maintain this outcome for Japanese banks. Millar & Noulas (1997) suggest that the buildup of unpaid loans would increase and decrease profitability as financial institutions ' experience of high-risk loan upsurges. But, the outcome of positive relationship is found in Bangladeshi banking industry by Sufian (2009).

Table 7.20: Empirical results (GMM estimation) on ROA

R-Square Adj R-Square	0.470545 0.439566	J-statics	2.19E-38
Predictors	**Coefficients**	**P-Values**	**Significant/ Insignificant**
GNNP	-.014212	0.1925	Insignificant
NNPL	-.0885930	0.0045	Significant
CR	-.0776683	0.1385	Insignificant
CE	-.040699	0.0003	Significant
LG	-.037614	0.0639	Insignificant
ADR	.009517	0.5153	Insignificant

LTA	-.335514	0.0216	Significant
GDP	-.116099	0.3178	Insignificant
INF	.029690	0.6589	Insignificant
C5	-.140352	0.1109	Insignificant
BSD	-.045721	0.2262	Insignificant
SMD	.012106	0.1813	Insignificant

Regarding the impact of bank asset size, it is negatively connected to profitability of banks, representing a negative relationship between bank profitability and bank asset size. Turing into the macroeconomic variable, inflation is originating to be positively related to bank profitability.

Table 7.21: Empirical results (GMM estimation) on ROE

R-Square Adj R-Square	0.413351 0.379026	J-statics	0.000000
Predictors	**Coefficients**	**P-Values**	**Significant/ Insignificant**
GNNP	-.454962	0.0735	Insignificant
NNPL	-.0484846	0.0497	Significant
CR	-.0375079	0.4683	Insignificant
CE	-.243277	0.0102	Significant
LG	-.180206	0.2507	Insignificant
ADR	.068338	0.6034	Insignificant
LTA	-1.000211	0.3554	Insignificant
GDP	-.688332	0.5603	Insignificant
INF	.094371	0.8734	Insignificant
C5	-.746784	0.3375	Insignificant
BSD	-.540500	0.0978	Insignificant
SMD	.002891	0.9711	Insignificant

From the results of Table 7.20 it can be realized that the p-values for NNPL and cost efficiency are less than 5 percent, so it is significant to have the explanatory power to describe the variance in the dependent ROE variable. The NNPL coefficient is negative and significant, showing that the lower the ROE, the higher the level of nonperforming loans.

Table 7.22: Empirical results (GMM estimation) on NPM

R-Square Adj R-Square	0.496995 0.467564	J-statics	0.000000
Predictors	**Coefficients**	**P-Values**	**Significant/ Insignificant**
GNNP	-.068668	0.0006	Significant
NNPL	-.083270	0.0056	Significant
CR	-.033622	0.4256	Insignificant
CE	-.031622	0.0164	Significant
LG	-.014250	0.3143	Insignificant
ADR	.0003280	0.8412	Insignificant
LTA	-.250417	0.2391	Insignificant
GDP	.064992	0.2391	Insignificant
INF	-.067633	0.2641	Insignificant
C5	.119276	0.0917	Insignificant
BSD	.051405	0.0869	Insignificant
SMD	.020485	0.0333	Significant

For the NPM, the results are similar to what ROA achieves; however, the result shows that Bangladesh's stock market development has a positive and significant impact on bank profitability. The non-performing loans are therefore accumulated and the NPM is declined. This result does not match Sifian (2009). Herffernan & Fu (2010) invented that the relationship between the size of the bank and profitability was insignificant. The negative effect of bank size on profitability could be when banks convert enormously large due to bureaucratic details. Pasiouras & Kosmidou (2007), Naceur & Goaid (2008) also report this. In addition, credit risk is related to NPM in an insignificant and negative manner. Third, cost efficiency is found to be related to NPM in a significant and negative way. This result indicates that through several rounds of banking reforms initiated by the government of Bangladesh, the banks have significantly improved risk monitoring and management.

Table 7.23 Summery of Regression Outcomes on Variables Impacting ROA, ROE & NPM

Independent Variables	Banks' Profit Variables	Pooled OLS	Fixed Effects (FE)	Random Effects (RE)	GMM
		Coefficients	Coefficients	Coefficients	Coefficients
GNPL	ROA	-.0142124	- .025739	-.0245811	-.014212
	ROE	-.3606736	-.3650189	-.4510644	-.454962
	NPM	-.0514752	-.0511027	-.0514752	-.0686668
NNPL	ROA	-.0920411	-.0921484	-.0920411	-.0885930
	ROE	-.3372191	-.3372164	-.4907172	-.0484846
	NPM	-.0643625	-.0636185	-.0691417	-.083270
CR	ROA	-.0421155	-.1426236	-.0895282	-.0776683
	ROE	-.0380155	-.2840401	-.0380155	-.0375079
	NPM	-.0302699	-.0244506	-.0302699	-.033622
CE	ROA	-.0441484	-.0445148	-.0281913	-.040699
	ROE	-.2481482	-.2527898	-.2481482	-.243277
	NPM	-.0234635	-.0235736	-.0234635	-.014250
LG	ROA	-.0465438	-.0471152	-.017648	-.180206
	ROE	-.2168276	-.223859	-.1332455	-.180206
	NPM	.0065036	.0065711	.0488563	-.014250
ADR	ROA	.003955	.0034981	.003955	.003955
	ROE	.0445624	.0411914	.0445624	.068338
	NPM	-.0029694	-.0017007	-.0029694	.0003280
LTA	ROA	-.345958	-.3440809	-.0410324	-.335514
	ROE	-.9614342	-.9332597	-.9614342	-1.00211
	NPM	-.1839606	-.1802893	-.7675009	-.250417
GDP	ROA	-.10413	-.2362674	-.10413	-.116099
	ROE	-.6545364	-1.047935	-.6545364	-.6888332
	NPM	.0560719	-1.047935	.0560719	.064992
INF	ROA	.0800823	.0409725	.0800823	.094371
	ROE	-.1062655	-.0141248	-.1062655	-.106266
	NPM	-.1805517	-.0141248	-.1805517	-.067633
C5	ROA	-.1833347	-0802392	-.1833347	-.140352
	ROE	-.7323273	-.3396045	-.7323273	-.746784
	NPM	.1631189	-.3396045	.1631189	.119276
BSD	ROA	-.1717438	-.0527248	-.0524402	-.045721
	ROE	-.4363986	-.6449254	-.4363986	-.540500
	NPM	.1808729	-.6449254	.1808729	.012106
SMD	ROA	.0026014	.0061216	.009413926	.051405
	ROE	.007473	-.0363796	.007473	.020485
	NPM	.0308999	-.0363796	.0308999	.030900
R-squared	ROA	0.5423	0.4777	0.4777	.470545
	ROE	0.4243	0.3142	0.3141	.413351
	NPM	0.5286	0.4997	0.4997	.496995
Adjusted R-squared	ROA	0.5103	0.4955	0.5423	.4349566
	ROE	0.3841	0.3572	0.4243	.379026
	NPM	0.4957	0.5077	0.5286	.467564

Source: Researcher's own construct employing banks data and macroeconomic data from 2008-2017.
Note: Significant levels are stated with and * corresponding to 5% significant values.

7.7 Diagnosis Tests

7.7.1 Hausman test

In order to recognize the effect of different variables of the NNPLs between bank-specific, macroeconomic and industry, both fixed effect model and random effect model would be used. It would therefore be used to justify the suitability of the model of fixed effect and the model of random effect to the Hausman test set of data. Hausman's hypotheses in this regard:

H_o: Random effect model is suitable

H_1: Fixed effect model is suitable

The value of P is considered in justifying the suitability of the Fixed Effect Model or Random Effect Model and if the p value is statistically significant then a fixed effect model should be used that means if the p-value is less than 5% then the null hypothesis will be rejected and the alternative hypothesis will be accepted. If the P-value is more than 5 percent, the null hypothesis will be accepted and the random effect model will be measured as the appropriate model. The results of Hausman's selection of any of the previously run model were given below:

Table 7.24: Hausman Test

Independent variables	Fixed	Random	Difference	sqrt
NNPL	-.0673631	-.0759934	.0086303	.0187731
CR	-.1315808	-.0895282	-.0420526	.0244204
CE	-.0207176	-.0281913	.0074737	.0035112
LG	-.009956	-.0301416	.0201856	.0081289
ADR	-.0003282	-.0011516	.0008234	.005127
LTA	.1893713	-.0418301	.2312013	.2917365
GDP	-.2362674	-.1815054	-.054762	.0243076
INF	.0409725	.025852	.0151204	.0140157
C5	-.0802392	-.111634	.0313948	.0097125
BSD	-.0527248	-.0568728	.004148	.0108792
SMD	.0061216	.0094139	-.0032923	.0008058
chi2(7) = 12.94				
Prob>chi2 = 0.2973				

From the above results, the value of chi2 and the probability value for this model's null hypothesis is that "random effect model is suitable" and alternative hypothesis is that "fixed effect model is suitable." Here the probability p–valueis.2973 or 29.73 percent, which is significantly higher than 5 percent, which means that it is not possible to reject null hypothesis rather than accepting null hypothesis. The meaning of the null hypothesis is that the appropriate model is the random effect model.

Table 7.25: Random Effect Model on ROA

R-Square:	Within = 0.4777 Between = 0.9324 Overall = 0.5423	Wald chi2(11) Prob > chi2	= 112.45 = 0.0000
Predictors	**Coefficients**	**P-Values**	**Significant/ Insignificant**
GNNP	-.0245811	0.204	Insignificant
NNPL	-.0920411	0.000	Significant
CR	-.0895282	0.008	Significant
CE	-.0281913	0.000	Significant
LG	-.017648	0.146	Insignificant
ADR	.003955	0.705	Insignificant
LTA	-.0410324	0.854	Insignificant
GDP	-.10413	0.426	Insignificant
INF	.0800823	0.366	Insignificant
C5	-.1833347	0.080	Insignificant
BSD	-.0524402	0.070	Insignificant
SMD	.0094139	0.309	Insignificant

7.7.2 Heteroscedasticity test

However, the outcomes of random effect model do not display any cause to have significant doubt about the suitability of the model still will the test for Heteroscedasticity would be actual. The hypotheses of the test are:

0: The error term is homoscedastic

1: The error term is heteroscedastic

If the P-value is less than 5 percent then it is possible to reject null hypothesis, then null hypothesis is recognized. It has been realized from the above results of the Breusch-Pagan heteroscedasticity test that the P-value is very insignificant, about zero and less

than 5 percent, so that the null hypothesis can be rejected and the error term is heteroscedastic. In order to control the "vigorous" option for heteroscedasticity, the random effect model can be added. By "vigorous" resulting from the random effect model, it can be shown that the most significant explanatory variables are NNPL, credit risk, and cost efficiency.

7.7.3 Multicollinearity test

The independent variables are connected or can not be verified through multicollinearity testing, and this test is usually performed to avoid those independent variables that are somewhat jobless, meaning they are connected to other independent variables previously included in the study. Variation Inflation Factor is calculated for this study in order to control whether or not the model is grieving from multicollinearity issue. The results of the VIF test were presented in the table below:

Table 7.26: Results of VIF

Variable	**VIF**	**1/VIF**
C5	6.80	0.526228
BSD	6.78	0.595988
CR	3.46	0.289417
LG	3.45	0.289505
GNPL	3.01	0.331687
INF	2.98	0.335591
LTA	2.83	0.352789
SMD	2.78	0.360085
ADR	2.56	0.389896
NNPL	2.48	0.403561
NPM	2.20	0.455069
GDP	2.09	0.478617
ROE	1.83	0.545939
CE	1.80	0.555174
Mean VIF	**3.22**	

The results of the VIF test show that none of the above model variables has more than 7 and the mean VIF is also less than 7 so it can be assumed that the model does not suffer from the problem of multicollinearity.

7.7.4. Unit root test

So as to organize unit root testing the following hypotheses have been measured:

Null hypothesis (Ho): Variable is not stationary

Alternative hypothesis (H1): Variable is stationary

Finally, the outcomes of the unit-root test have been publicized in a brief form in the following table:

Table 7.27: Summary of Unit Root Tests

Variables	Statistic	P-Value	Ho= Panels cover unit roots	Ha= Panels are stationary	Level of Stationary
ROA	-4.4042	0.0000	Rejected	Accepted	Stationary
ROE	-5.6916	0.0000	Rejected	Accepted	Stationary
NPM	-3.3938	0.0003	Rejected	Accepted	Stationary
GNPL	-3.1161	0.0009	Rejected	Accepted	Stationary
NNPL	-1.8944	0.0291	Rejected	Accepted	Stationary
CR	-5.9809	0.0000	Rejected	Accepted	Stationary
CE	-2.2806	0.0113	Rejected	Accepted	Stationary
LG	-5.6892	0.0000	Rejected	Accepted	Stationary
ADR	-12.3739	0.0000	Rejected	Accepted	Stationary
LTA	-12.8553	0.0000	Rejected	Accepted	Stationary
GDP	-5.3768	0.0000	Rejected	Accepted	Stationary
INF	-2.2335	0.0128	Rejected	Accepted	Stationary
C5	1.5188	0.9356	Not Rejected	Rejected	Non-Stationary
BSD	-7.2823	0.0000	Rejected	Accepted	Stationary
SMD	-10.4163	0.0000	Rejected	Accepted	Stationary

To summarize the results of the Unit root test expending the Levin-Lin-Chu unit root test of the variables it is necessary to recollect the null hypothesis and the alternative hypothesis. The null hypothesis is that on the other hand the alternate hypothesis is that the variables are stationary. It can be clearly perceived from the summary table that all variables except bank concentrations (C5) are stationary, meaning they have no unit roots. Only bank concentrations (C5) have unit roots meaning it is not stationary and the null hypothesis "Ho" has been accepted in the case of the unit roots tests of this variable. *All the results from the Unit root tests have been attached in appendix.

7.7.5 Granger causality test

It is important to launch the direction of causality between the dependent variables (ROA, ROE and NPM) and the independent variables (GNPL, NNPL, CR, CE, LG, ADR, LTA, GDP, INF, C5, BSD AND SMD). The spirit is to show whether only change in the later variables drive changes in the former or the other way round or both. Consequently, pair-wise Granger causality test was employed and decision based on the 0.05 level. The appropriate result has been abstracted. The result in Table 7.26, can be understood taking a pair at a time. P-values larger than 0.05 or otherwise means accepting the null hypothesis or otherwise rejecting it based on the 5% level of significance. First, between CE and ROA we notice there is one-way causation or unidirectional flow from CE to ROA. Acceptance of the first null hypothesis in the table means changes in CE does not necessary drive changes in Profitability, ROA whereas rejection of the second null hypothesis is indication that changes in ROA drives changes in the CE – just as the OLS result of the estimated relationship displays that a negative relation occurs between CE and ROA such that sustained fall in CE may be an indication of growing ROA.

Table 7.28 Granger Causality Test

Null Hypothesis (Ho)	Obs	F-Statistic	P-Value	Decision
CE does not Granger Cause ROA	198	1.47784	0.2307	Accept Ho
ROA does not Granger Cause CE	198	4.94771	0.0119	Reject Ho
lnLTA does not Granger Cause ROA	198	4.03743	0.0192	Reject Ho
ROA does not Granger Cause lnLTA	198	034454	0.7090	Accept Ho
INF does not Granger Cause ROA	198	14.7688	1.E-06	Accept Ho
ROA does not Granger Cause INF	198	4.43882	0.0130	Reject Ho
CR does not Granger Cause ROE	198	4.61910	0.0110	Reject Ho
ROE does not Granger Cause CR	198	0.00799	0.9920	Accept Ho
LG does not Granger Cause ROE	198	3.35275	0.0370	Reject Ho
ROE does not Granger Cause LG	198	1.04297	0.3544	Accept Ho
INF does not Granger Cause ROE	198	7.68900	0.0006	Reject Ho
ROE does not Granger Cause INF	198	6.90437	0.0013	Reject Ho
C5 does not Granger Cause ROE	198	0.25899	0.7721	Accept Ho
ROE does not Granger Cause C5	198	3.20732	0.0426	Reject Ho

NPL does not Granger Cause NPM	198	1.46820	0.2329	Accept Ho
NPM does not Granger Cause NPL	198	3.55779	0.0304	Reject Ho
CR does not Granger Cause NPM	198	5.79992	0.0036	Reject Ho
NPM does not Granger Cause CR	198	0.12638	0.8814	Accept Ho
GDP does not Granger Cause NPM	198	0.78171	0.4591	Accept Ho
NPM does not Granger Cause GDP	198	3.49478	0.0323	Reject Ho
INF does not Granger Cause NPM	198	5.41294	0.0052	Reject Ho
NPM does not Granger Cause INF	198	1.83481	0.1676	Accept Ho

Between INF and ROE, the result shows a two-way causation. Changes in INF drive changes in ROA and changes in ROE drive changes in INF; hence Null Hypotheses in Table 7.26, are rejected. This means that within the last decade changes in INF have significantly affected changes in ROE and the estimated relationship indicates that both variables move in the same direction.

7.8 Test of Hypothesis

Information Asymmetry Theory argues that asymmetric information occurs when one party in a transactional relationship is more familiar with the transaction than the other party. Asymmetric literature appearances of information on the impact of decisions based on changes in the information available to both parties for financial decision (Mishkin, 1992). Creditors contribute credit services to the ambiguity of the borrower's face as they are unable to detect the characteristics and activities of the borrower, making it difficult to judge the solvency of the borrower (Ariccia, 1998). Accordingly, opposing collection clues to high-quality borrowers being expatriated by low-quality borrowers, which in the long run causes a weakening of the overall quality of bank loan portfolios and leads to an increase in non-performing loans, a decrease in profitability and capital destruction (Bofondi and Gobbi, 2003 ; Bofondi and Ropele, 2011 ; Makri et al., 2014). In order to carry out this exercise, we follow the following processes: restatement of the hypothesis into null and alternative forms, statement of the decision rule, presentation of analytical discussion/results, and then conclusion.

7.29 Summary of Results and Hypothesis Test of Impact of NPLs on Profitability (ROA, ROE & NPM)

Independent Variable	Depended Variable	Theory	Sign	Result	P-Value	Significant	Conclusion
GNPL	ROA	Information Asymmetry	-	Adverse	.01925	Insignificant	Supported
GNPL	ROE	Information Asymmetry	-	Adverse	0.005	Significant	Supported
GNPL	NPM	Information Asymmetry	-	Adverse	0.000	Significant	Supported
NNPL	ROA	Information Asymmetry	-	Adverse	0.000	Significant	Supported
NNPL	ROE	Information Asymmetry	-	Adverse	0.005	Significant	Supported
NNPL	NPM	Information Asymmetry	-	Adverse	0.000	Significant	Supported

7.9 Inferences of Empirical Results

In this chapter, two important issues in terms of bank profitability in Bangladesh are examined: 1) the impact of macroeconomic variables (GDP growth / inflation) on bank profitability; 2) the effect of stock market development on bank profitability and the development of the banking sector. The two research pieces; one emphasizes the effect of inflation, while the other mainly refers to the impact of GDP growth rate. Furthermore, these two research pieces applied system estimators to pattern the strength of the results for OLS, FE, RE and GMM. In terms of first issue data, the author uses 20 commercial banks over the period 2008-2017. Empirical findings suggest that higher advance deposit ratio and stock market development tend to increase Bangladesh's bank profitability. In terms of ROA, ROE and NPM, the effect of risk on bank profitability is diverse; in particular, loan growth appears to have higher NPM, while higher NPM may also be clarified by higher growth in bank loans. Higher banking sector development clues to higher bank NPM. The positive relationship between inflation and profitability in the banking sector mimics the fact that Bangladesh can fully expect inflation and thus accustom interest rates. This supplement suggests a faster expansion of profits than costs. This result is in line with banks' Pasiouras & Kosmidou (2007), Sufian (2009a) and Garcia-Herrero et al. (2009). The third section of the research emphasizes the impact of stock market development on bank profitability. To be more detailed, the researcher used three indicators of profitability, return on assets, return on equity and net profit margin. The research applies OSL, FE, RE, and GMM estimators to 20 commercial banks in Bangladesh as well as panels for inclusive determinants of bank-specific, industry-specific, and macroeconomic profitability. The results suggest that stock market development has a positive impact on the Bangladesh bank's profitability.

CHAPTER EIGHT

SUMMARY OF FINDINGS AND DISCUSSIONS

8.1 Summary of Findings

The findings from the empirical results are as follows:

1. Net NPL had negative and significant impact on all dimensions of bank profitability (ROA, ROE and NPM)

2. Gross NPL had negative and significant impact on bank profitability (ROA, ROE and NPM) except GNPL had insignificant impact on ROA.

3. Credit risk had negative impact on bank profitability (ROA, ROE & NPM) but on the other hand credit risk had positive impact on nonperforming loans.

4. Cost efficiency had negative impact on bank profitability (ROA, ROE & NPM) on the other hand cost efficiency had positive impact on nonperforming loans.

5. Loan growth had positive and statistically significant impact on bank profitability (ROA, ROE & NPM) but loan growth net impact on nonperforming loans.

6. Advance deposit ratio had positive impact on bank profitability (ROA, ROE & NPM) on the other hand ADR had negative impact on nonperforming loans.

7. Total Bank Assets had negative impact on bank profitability (ROA, ROE & NPM) on the other hand total asset had positive impact on nonperforming loans.

8. GDP had negative but insignificant impact on bank profitability (ROA & ROE) but positive impact on net profit income (NPM) on the other hand GDP had positive impact on nonperforming loans. There is a negative relationship between GDP growth and bank profitability. If the GDP grows, the transaction grows, so profits grow too. But profitability is another dimension.

9. Inflation rate had positive but insignificant impact on bank profitability (ROA & ROE) but negative impact on net profit income (NPM) on the other hand inflation rate had negative impact on nonperforming loans.

10. Bank concentrations (Large 05 banks' assets) had negative but insignificant impact on bank profitability (ROA & ROE) but positive and significant impact on net profit income (NPM) on other hand bank concentrations had negative impact on nonperforming loans.

11. Banking sector development (BSD) had negative but insignificant impact on bank profitability (ROA & ROE) but positive and significant impact on net profit income (NPM) on other hand BSD had positive impact on nonperforming loans.

12. Stock market development (SMD) had positive but insignificant impact on bank profitability (ROA, ROE & NPM) on other hand SMD had negative impact on nonperforming loans.

8.2 Discussions

The government of Bangladesh introduced numerous series of banking reforms last thirty years and subsequently the banking industry has practiced significant variations. Consequently, this research pursues to investigate the nonperforming loans and bank profitability over the period 2008-2017. To be more unambiguous, the study focus on numerous features of bank profitability and nonperforming loans. Lastly, the empirically test the inter-relationships between bank profitability nonperforming loans.

Using 20 commercial banks, the researcher examines the factors of bank profitability with emphasis on the influences of inflation and GDP growth rates. There are three profitability measures return on assets (ROA), return on equity (ROE) and net profit margin (NPM) are considered, which are extensively used in bank profitability of Bangladesh and other literature also. So as to deal with the issues of profit resolve, endogeneity, unobserved heterogeneity, GMM estimator was used to scrutinize the impact of inflation and GDP growth rate on bank profitability. There are fairly a few pieces of empirical research examining the determinants of bank profitability; the study donates to the present research by adjusting for most inclusive factors.

GNPLs & NNPLs are meticulously linked to banks' cost efficiency in order to ensure smooth banking sector actions, it is necessary to recognize the factors affecting the amount of NPLs during the study period. Most of this study was shown as a summary form by analyzing earlier studies in the banking sector of some country related to the NPLs. Mostly quantitative research methods were surveyed to perform and complete the study on the Bangladeshi banking sector's nonperforming loans. Research suggests that state-owned commercial banks have higher NPLs ratios compared to Bangladesh's private commercial banks and foreign commercial banks, so it can obviously be specified that foreign commercial banks are more efficient in supervisory NPLs and have less bad loans due to their strict compliance with credit policies. The most powerful factors contributing to changes in banks' NPLs in Bangladesh include cost efficiency, loan growth as calculated p-values is less than 5 percent after control of heteroscedasticity. In addition, cost efficiency is the most influential as it has been obtained from all types of regression estimators, so it can be said that banks should try to decrease their operational

costs, in other words they should try to increase their ROA to reduce nonperforming loans and achieve profitability. Having methodically explained the result, conducted the diagnostics test and shown the outcome of the hypothesis tested, it is imperative that we make an attempt to show what policy implications are associated with the results of the study. The study analyzed the determinants of nonperforming loans using response variables reflecting conditions in monetary system in Bangladesh and the economic environment. Result showed a negative association between economic growth with real Gross Domestic Product as proxy and nonperforming loans in the banking industry. This implies that policy measures in favour of sustained economic growth are important to achieve significant reduction in the volume of nonperforming loans in the country's banking sector. The study also found that inflation exerts positive influence of nonperforming loans in the banking sector within the last decades. Rising inflation thus increases the likelihood of loan repayment default. This implies that monetary authorities in Bangladesh should pursue policies targeting lower inflation rates because the present level neither encourages nor facilitates loan repayment in the country.

Control of whether the defaulter is a willing one or a genuine one in a bank-centered financial system is very critical, if timely and adequate action is not taken and problems are left unsettled, the willing defaulters can have a psychological impact on good borrowers, acting as a catalyst for financial degradation. In developing countries such as Bangladesh, in fact, a large number of willing defaulters control the financial market, either by window-dressing their financial health or by influencing bank management through vested groups, or both, attempting to damage the credit environment. Serious concerns about the attendance of willful defaulters in Bangladesh have been exposed in numerous words, and it was optional that loan facilities should not be presented to this group. Yet, in fact, no effective strategies have yet been developed by the banking system to recognize and take action against the usual defaulters. By the way, a prominent challenge before the banking sector could be seen as advancing specific tools and techniques to determine the genuine ones' willing defaulters.

- There is a negative relationship between bank profitability and nonperforming loans. Thus, the NPL upsurge obstructs the loan performance. Most of the cases occur when an adverse selection occurs. Averse selection is an asymmetric problem of information occurring prior to the transaction. For example: big risk-takers or crooks may be the most eager to take out a loan because they know they are unlikely to pay it back. Because adverse selection increases the chances of making a loan at a bad credit

risk, lender may choose not to make any loans, although there are good credit risks on the marketplace.

- The NPL influences the situation of credit crunch. Credit crunch is a phenomenon that attempts to protect banks from rational loan disbursement and new credit commitments, but adds more risks. Banks are treating credit as an asset. They are expecting it to return. If loans become NPLs then banks lack funds to borrow on the basis of their commitment, or banks could borrow at their previous interest rate. Customers must pay more. Therefore, loans can be defaulted. Also, credit crunch increases NPL's rate.
- The interest earning is stopped when the NPL is increased. But fund costs and management costs are not halted. The existing lending price must be increased in order to run the cost of management along with the cost of the fund. Suddenly rising interest rates make it difficult for a new borrower to return bank money. So the investment rate is going to be lower.
- Banks will expect high returns if the risk is high. If the level of nonperforming loans goes beyond a certain point that banks cannot accept, it will affect the re-balancing actions of the bank. So, they start spawning negative effects on more lending when NPLs cross the boundary of the above threshold.
- The NPL can lead to a banking sector efficiency problem. A number of economists find that bank failures tend to be far from the most efficient frontiers, as banks do not optimize their portfolio decisions by lending less than they require.
- In times of crisis, in order to restore credibility among creditors and depositors, failing financial institutions not only attempt to expand their equity base, but also reduce their risk assets or change the asset portfolio composition. The corporate debtors are always targeted because of such defensive actions, so overall economic growth is stalled. Bank attempts to collect loans as quickly as possible and most banks have large numbers of corporate clients so they try to recover loans as early as possible to reduce risky assets.
- Because of the increase in the NPL, money cycling is stopped. Slow cash flow always adversely affects any business.
- The NPL exists as a natural result of lending behaviour. When banks re-balance their portfolio, they decide the degree of risk they will tolerate depending on their risk preference for a given level of expected return because banks have to keep 10 percent of their capital risk weight asset or 400 cores. Banks treat credit as a risky asset. If the

risk is high, high returns are expected from banks. If the level of nonperforming loans goes beyond a certain point that banks cannot accept, it will affect the re-balancing actions of the bank. So, they start spawning negative effects on more lending when NPLs cross the boundary of the above threshold.

- The NPL may prompt the issue of skills to save money. Various financial analysts find that falling flat banks tend to be located a long way from the most reliable outskirts, as banks do not advance their portfolio choices through loans that are not exactly demanded.

It is observed that SCBs continue to have an alarming amount of NPLs among the various clusters of banks in Bangladesh since the adoption of prudential norms in 1990. Although it is not clear which sectors contain major NPLs, it is observed that in the category of SCBs micro and agricultural loans, the highest ratio of NPLs is followed by terms loans with a maturity of more than 5 years. It is observed that the NPL ratio of term loans from SCBs is very high. Another important observation is the gradual capital reduction in SCBs due to poor loan loss provisions being maintained against default loans. These aspects clearly require the operation of SCBs to be terminated. It should be noted, however, that Bangladesh's stock markets are not sufficiently efficient to channel funds for industrial growth, and therefore SCBs play a vital role in meeting the country's overall industrial credit needs. Therefore, before the banking system, the challenge is to stop the SCBs ' operations, privatize them, or reorient them in full phase through financial engineering.

The study observes that courts' dissatisfactory performance (Money Loan Court, Bankruptcy Court, and PDR Court) in terms of the NPL dispute settlement rate and loan recovery rate over the past couple of years. The very leisurely effect of the decrees is the core difficult related to very short recovery. The Financial Sector Reform Project (FSRP) argues that the huge loan-breaking law of the Bangladesh banking system reflects, inter alia, the weakness of the legal infrastructure that cannot guarantee the use of borrowers by lenders. The legal system's ineffectiveness also occasionally inspires borrowers to abstain from paying the banks legitimate dues. The Task Force Report (2001) of the Center for Policy Dialog (CPD) also specifies that the current legal framework and lengthy actions in Bangladesh are the main interference at this time. However, if the stay in the settlement process increases due to the lack of judges, then dispersed posts such as "Bank Magistrates" can be shaped to address NPL concerns. It should be kept in mind,

without the proper collaboration and honesty and responsibility of the parties involved, such as the plaintiff, respondents, lawyers and judges, in order to make the settlement process lively and swift.

Commercial banks cannot do without granting loans, but rising nonperforming loans (NPLs) is not for the good of the monetary or financial sector in particular and the macro economy in general due largely to its spill over effects. To achieve the ultimate objective of wiping out incidence of NPLs in the banking industry requires that factors driving NPLs should be identified and tackled through appropriate policies. The study therefore is a fresh attempted to ascertain the determinants of nonperforming loans in emerging economies with reference to the banking industry in Bangladesh. Consequently, the study model included banks' total loans and advances, total assets, real gross domestic product, inflation rates, ADR, cost efficiency and credit risks. Data on the bank-specific variables were aggregate values representing the aggregate banking industry in Bangladesh. While reviewing of empirical studied appears to suggest a specific relationship between certain variables and nonperforming loans, consensus cannot be reached regarding the impact of others. Overall the study found that total loans and advances has the most pronounced impact of nonperforming loans in the banking industry. The greater the number of loans and advances the higher the probability of loan repayment default. This explains why there is a positive relationship between the two variables. Besides total loans and advances is total asset. The later has significant impact on the nonperforming loans in the banking sector. The relationship is negative, which implies that growth in the industry's total asset base goes a long way to cut down the value of nonperforming loan. The study also found that increase in the country's real national income significantly reduces nonperforming loan, although not as strong a relation as the aforementioned. It has been shown how the results relate to or differ from previous studies. Throughout the discussion the study shown what each of these factors mean for nonperforming loans in the banking industry. The result of the study passed relevant diagnostic tests which show that the bank-specific factors are significant at the 5% level whereas the macroeconomic factors are not. The study, therefore concluded that the bank-specific factors drive changes in or determine nonperforming loans more than macroeconomic factors in Bangladesh. This should affect the direction of economic policies in the country.

CHAPTER NINE

CONCLUSIONS AND RECOMMENDATIONS

9.1 Contextualizing the Research

Lending operation of a bank is very significant since it governs the bank's imminent profitability and performance. Due to the negative impact of nonperforming loans, new banks are becoming increasingly sensitive in customer selection. In the last few decades, nonperforming loans have gained increased special treatment. NPL volumes are growing alarmingly in developing and developed countries as well as in developed countries. Banks' lending policy might have vital inspiration for nonperforming loans. A default is not a ridiculous decision altogether. Slightly a defaulting person takes into account the probabilistic evaluation of his decision's numerous costs and benefits. Obviously, lending is the vital component of any commercial bank's asset. These loan and advance schemes serve as the banks' main source of profit generation and as such need to be monitored with considerable precaution. A bank cannot remain unconcerned about loan portfolio bad debts. Commercial bank failure occurs primarily due to nonperforming loans, which occurs due to inefficient loan management and portfolio advances. High ratio or rising trend of bank based nonperforming loans leads to a decline in banks' profitability. Increased in nonperforming loans, considered from the economic point of view, adversely disturbs economic growth due to reduction loanable funds. To ensure a clean banking system, embracing sound accounting and proper reporting practices is a must. Bangladesh Bank may consider setting up a separate watchdog to carry out credit supervision activities through separate agencies. A separate debt recovery tribunal can be set up alongside the money loan courts to ensure prompt debt recovery. The litigation claims are moderately large and changes in the money loan court act should be made as a matter of urgency. Such a state of affairs will doldrums the banking industry seriously. The Chinese government has announced a set of reform measures to reduce financial risks and build a strong banking system, including adopting a new accounting system, improving financial supervision and setting up four asset management companies (AMCs) to deal with nonperforming loans. Bangladesh Government may also consider for developing AMC policy and permitting them to work to resolve existing NPLs or avoid new growing NPLs. Relationships can be defined between the parent banks and the AMCs in order to deal with their NPLs with the problem companies. Establishing AMCs in China offers the potential to build a strong reformed banking system to deal

with the problem business with their NPLs. In recent times, India has set of contacts an asset management company as a conviction to reorganize their default loans. India has also founded “factoring devices” and “asset securitization techniques” to eliminate NPLs from a bank. Bangladesh Bank should consider establishing a uniform bank accounting framework. To solve the banks' NPL problem, the government must make a credible commitment to a unique policy of bank recapitalization as well as avoid the moral hazard issue of promising new bad loans. Banks must be given independence from the government and its default clients in decision-making. Self-governing bank governance can contract effectively with nonperforming loans. Besides, AMCs should also be shaped and permitted to develop financial institutions that provide competition business for the SCBs and SDBs. In Bangladesh, no initiative has been occupied so far towards the development of an asset management company which could assume actions connecting to asset reconstruction and grow markets for concerned assets. Factoring devices and securitization methods are scarcely ever working for the elimination of NPLs in Bangladesh. Consequently, the afterward challenge before the banking industry is how to set up an asset management company or factoring services and asset securitization methods that would address NPLs successfully without creating moral threats. The undercapitalized commercial banks have not fostered effective competition; rather, they have led to systemic volatility. Consequently, greater penetration of foreign banks can play an effective role in promising such rivalry. The government should expand the SCBs' privatization potentials. The country's narrow capital markets need to be extended and prolonged to simplify the AMCs' possible assets disposal.

Even though a subordinate source of loan repayment, collateral shows a vital role in lending, it can be recycled to resolve numerous economic harms, but even in good times it provides little benefit to banks due to the trouble in valuing and recognizing collateral. Concerning collateral recognition, one important issue is collateral carrying out. It was a very long and problematic process. Even residential collateral mortgages can also pose significant risks, the legal and judicial system's effectiveness. Banks must be appropriately regulated to force them to properly do ‘know your customer' (KYC) due diligence, they must not accept the customer who are unable to find the ultimate beneficial owner of the funds. Each bank should maintain collateral data and publish the same an online collateral portal. Such transparency should become a mandatory criterion for banks to publish collateral information. At CIB, Bangladesh Bank may also set up a "Collateral Data Warehouse" and stake the information with the all banks.

Banks may be obligatory to preserve the database of politically exposed persons (PEPs) that banks rely on to perform due diligence on their customers. By regulation, banks should be mandatory to reply to requests from other banks for information on collateral from clients seeking new banks/ NBFIs loans. Bangladesh Bank may require banks to follow detailed credit policies and procedures, periodic financial statements duly endorsed by the board and top management to ensure that these are true mirror image of banks' financial status. An offense should be the failure to properly disclose financial information and the bank concerned may be penalized. Separate agency may be created to review the collateral on a regular basis for an effective method of identifying and monitoring collateral. The role of the banks' Loans Review Committees in overseeing credit performance should be more central. They should report to the Board directly and promptly. Bank MIS should be robust, supporting the CRM process effectively. It is predictable that external auditors will certify acquiescence with together IFRS and regulatory supervision. They should confirm that the loan classification and provisioning structure is fitting, and that collateral and valuation applies reliable with IFRS are preserved properly and regularly. By regulation, outside auditors may also be mandatory to report all cases of factual misstatement to BB sharp. Banks may be initiated with proper inspection to expand their loan portfolio to reduce the burden of nonperforming loans. Proper collateral valuation is essential so as to avoid the risk of willing defaulters. Bangladesh Bank can formulate a uniform bank valuation policy. It is also possible to take evaluators under Bangladesh Bank's direct supervision. Banks may be advised on the basis of personal undertakings to reduce loan disbursement. Banks can familiarize incentive programs to inspire employees to downgrade nonperforming loans in the recovery section. Credit manager must be sufficiently skilled to understand the borrowers' psychological activities. Bangladesh Bank's inspection units should monitor whether banks and other financial institutions strictly adhere to the proper processes and principles of good lending.

9.2 Policy Implications

Therefore, the following recommendations curtail straight from the findings of the study and are predominantly designed at easing the NPLs in banks industry of Bangladesh. The empirical findings in this study provided guidelines for future reforms in the banking sector; also suggest policy implications for government and banking regulatory authority as to how to improve bank profitability in Bangladesh. The implications of the policy can be summed up as follows:

Though the Bangladeshi banking sector has suffered numerous rounds of reforms over the last 30 years, the banking configuration has experienced important alterations; however, the banking industry is still weak. The banking sector still emphases on outmoded loan-deposit services, while the non-interest income derivative from non-traditional actions accounts for a minor role in banking operation. The banks are expected to gradually grow non-traditional actions such as commission, exchange brokerage and income from share and securities investment due to the fact that interest income is severely prejudiced by the macroeconomic environment, while the growth of non-traditional activities will decrease the degree of bank reliance on interest-earning activities. In addition, developing non-traditional actions will boost banks' global competitive power. Finally, powerful interest-earning actions and non-traditional acts will provide prospects for banks to gain profits from scope economies.

The government of Bangladesh ought to improve the stock market. Bangladesh's banking reform emphasizes banks ' public listings on the stock exchange, while the government of Bangladesh should inspire other industries and businesses to be listed on stock exchanges. Since the development of the stock market is dignified by the market capitalization ratio of listed firms to GDP, the increasing number of listed firms will subsidize market capitalization, and upper market capitalization will stimulate stock market development. The stock exchange provides additional valued information about credit information to banks, which will decrease credit monitoring costs; and banks will decrease the default loans. In addition, lowering bank costs and lowering credit risk will increase borrowing capacity, announcing an increase in commercial bank profitability. Public bank listing will inspire prudent lending by announcing shareholder accountability, i.e. market discipline, to shareholders.

There are a few dimensions that bank managers and government can occupy in order to advance bank profitability in Bangladesh. First, the government of Bangladesh should steadily shrink the banking sector competition. Increased competition in the banking sector makes bank managers assume strategies to invite more clients, increasing the lack of nursing borrowers. Banks should be encouraged to engage in more productive lending business. Bangladeshi banks have upgraded their credit risk management skills during numerous disks of banking reforms in Bangladesh. To be more precise, the improvement of risk management capacity by Bangladeshi banks is partly accredited to the establishment of a Banking Regulatory Commission that oversees the banking operation and makes credit policies and launches effective credit risk monitoring mechanisms.

More prominently, a number of foreign investors in operation have been concerned by Bangladeshi banks, from which they gain more experience in credit risk control, monitoring and supervision. Huge size of bank loans under good risk management will increase the productivity of the banking system, leading to an improvement in bank profitability. The banking regulatory authority can make credit guidelines to increase the capital levels of commercial banks. Although, as mentioned above, banks have amplified credit risk management capacity through numerous banking reforms in Bangladesh, the risk still persists in the banking industry. Greater capital altitudes work as a cushion for gripping the risk, and banks with higher capitalization altitudes can make larger amounts of loans, leading to increased banking output as profitability. Also, higher-capital banks have higher reputation and higher customer confidence, indicating a growing volume of customers; resulting growth in bank profitability. Finally, banks with higher capital levels have higher capacity to cut borrowing funds, resulting in a condensation of borrowing costs, leading to an increase in bank profitability.

Nonetheless, at present there is too much confidence on moderately high risk credit policy lending and government interfering is quite extensive. Hence, this interference needs to be progressively reduced so as to familiarize more efficient lending operation in banks. Bangladesh Bank should be reinvigorated to focus more on the supervision and guideline of bank. The government should also afford more guidance on prudent lending and the development of banker-customer relations should be stimulated as a method of managing credit risks. Banks should have extra decision-making sovereignty in picking loan projects and making lending operations so that both the managers and the banks more motivation to choice lucrative business and instantaneously reduce the credit risk of growing further NPLs. The prevalent soft credit ethos in Bangladesh should be lectured and lending managers should be professionally certified and skilled. Correspondingly, there is a need to train the business community about the jeopardies of unnecessary borrowing and the significance of repaying loans.

In spite of the speculative intention behind foreign investors in commercial banks, such investments would seem to have a positive impact on bank management. Consequently, foreign investors should be dynamically stimulated to invest in banks. In 1993, the banking system in Bangladesh implemented a lending risk analysis (LRA) instrument that prescribed by FSRP for scrutinizing loans of Tk. 10 million and above – with the neutral of evaluating the concentration of risk related with large loans and to select loan proposals with low risk contacts. LRA superseded by the “credit risk grading system” for

superior identification and management of borrower's credit risk in 2005. Nevertheless, the application of CRG as a credit screening and monitoring instrument largely be determined by on adequate business information. Bangladesh Bank pay proper heed to rectifying problems to ensure alternative application of the ICRR (Internal Credit Rating Risks) tools in the lending operations in Bangladesh.

9.3 Strategic Recommendations

The last objective related to policy recommendations. Inappropriately, the banking industry is still troubled with an alarming volume of NPLs and lags far behind the adjacent countries of Nepal and Sri Lanka. Though Bangladesh has adopted international standards of loan classification and provisioning, as the system has failed to capture additional NPLs significantly. It must be stated that there must be multi-pronged management of NPLs, with altered strategies being followed at the various stages through which a credit capacity passes. Measures for joint prevention and resolution must be in place. As far as defensive measures are concerned, emphasis must be placed on credit screening, loan investigation, and loan assessment functionaries at both the commercial bank and the Bangladesh bank. Legal measures, i.e. enhancing the efficiency of the legal and judicial system and developing other out-of-court settlement measures such as compromise settlement schemes, incentive packaging, establishment of asset management companies, factoring, and asset securitisation, etc., must be included in the resolution measures. Inappropriately, from the above point of view, Bangladesh is found to be very puny and has focused primarily on a few legal measures which have also been found to be unsuccessful. Consequently, this study has emphasized some experiments, for enlightening the debt recovery environment and solving the NPL problems of the banks. No negotiation with due diligence in the sanctioning procedure. It is obviously true, "prevention is better than cure". Banks should accept proper collateral so that the lender can sell the collateral if a borrower defaults on a loan and use the earnings to make up for the loss. The collateral delivered must be valued by skilled agency or put up on a regular 'mark to market' valuation process. Strategic action plan for probable NPLs. Banks should have some step to accumulate the NPLs loan. At the last stage, banks should go to Artha Rin Adalat. A healthy risk management culture, with a 'well-articulated' risk management policy can support the banks to avoid default loans. Based on the findings the study makes the following recommendations:

(1) Since the result in Table 7.6 shows that changes in GDP in Bangladesh has significant negative impact on bank profitability and positive nonperforming loans,

macroeconomic policies should be directed at sustaining economic growth as it curbs nonperforming loan in the banking industry.

(2) The result equally shows that high inflation rates in the country decreases the incidence of nonperforming loans as in Table 7.6. Monetary authorities should therefore ensure stable inflation rates and target lower rates so as to reduce nonperforming loans.

(3) Since the study find also that rise in total loans and advances would mean higher bank profitability, it is therefore necessary that regulatory institutions employ special directives aimed at controlling indiscriminate granting of loans in the banking industry.

(4) Because the study finds that higher bank cost efficiency translates to higher risk of defaulting and then higher nonperforming loan, it is recommended that monetary policy be relaxed so as to reduce nonperforming loans and advances.

(5) The current national identity card (NID) system project with a robust general identity data base should be sustained by the Government of Bangladesh. The CIB of the Central Bank aims at linking the identity of borrowers is a great landmark in the Banking Industry recent reform. A borrower's multiple accounts can be linked by the CIB and the Banks can legally exercise its right of set-off on all the qualifying accounts. Total loans and advances would thus be reduced and so would nonperforming loans.

Key determinations should comprise:

- Long-term banking profitability depends on the ability of a bank to collect and analyze information and provide its loan supply with optimum conditions. Financial institutions must be in a condition of sound market competition and adequate prudential regulation to develop this capacity.
- Considering credit as a scarce resource and a source of economic and political power, the distribution and use of credit by all societies around the world is careful. An attempt should be made to avoid concentration of loans into few hands in order to best use credit.
- Strengthening the security market by increasing competitiveness in the financial sector will have a positive impact on the overall development of the banking sector. The portfolio selection range is wider in a developed capital market and people can compare their investment security between the banks and the security market. As a consequence, banks remain under some pressure to improve their financial soundness.
- In the small and medium-sized business sectors, Bangladesh has a bright prospect.

Poor sections of society have an innate entrepreneurial capacity to undertake some small, profitable projects. Successful operation of some NGOs (some of them are Grameen Bank and BRAC) provides evidence that even without collateral, poor people can be bankable.

- Bangladesh may search for and use a number of cases of merger and acquisition, particularly among larger banks, if any, to better share information, manage and diversify activities.
- The bank should examine properly the mortgage assets and their valuation. If a third party valuator mistakenly evaluates the mortgage value of the property, the bank should include a compensation clause in the contract with the third party valuator.
- In the case of loan disbursement, the bank should properly emphasize a qualitative judgment rather than a quantity-based judgment.
- Banks should reinforce their system of loan monitoring.
- In order to keep bank officials (including board members) free from nepotism and morally upright, the bank should implement an internal control and compliance system with due diligence.
- All banks should exchange overall customer information with each other for better borrowers selection. Borrower selection analysis has been attached in Appendix-6.
- BB may introduce market-based lending policies for banks and NBFIs to take over.
- BB may set up a collateral data warehouse such as CIB at its headquarters to assist banks in checking the credibility and valuation of the bank's collateral.
- Banks should evaluate the business concern's management efficiency correctly. They should justify the ability of the management to handle the business.
- Government policies on the price of imported goods must be issued and implemented taking into account the interest of importers in importing goods in accordance with the government policy. And sometimes according to government instruction.
- Single-digit interest rate should be reduced.
- Banks may collect information from the Chamber on the business history of large borrowers, thereby selecting good borrowers.
- Defaulted members of industry chambers should not be allowed to take part in the elections to the chamber.

- Banks should monitor the loan regularly and closely after disbursement so that they can receive early warning if businesses get worse and can give borrowers suggestions.
- Banks should support / facilitate real borrowers by extending the amount of the loan or granting new loans when in trouble so that they can get rid of difficulties and do business and repay the loans.
- Any terms and conditions should be clearly explained to the customer by the bankers and the customer should know them before taking the loans.
- Banks should advise borrowers and find the easiest way for them to revive businesses so that good borrowers can repay the loan and return to businesses.
- Banks can act as consultants to guide clients for proper market and business studies. Banks can also look at, observe, and analyze govt. Policy on different issues and notify borrowers of the changes.
- The second line of management of the family should be maintained in businesses, particularly in the proprietorship businesses. As a result, banks will find it easier to recover the money from the successors as they are trained in business and loans. Otherwise, banks may find it difficult to recover the amount of loans as businesses are closed and nobody knows the businesses and loans.
- Bank management should make every decision to increase the management of the loan portfolio of the bank. Therefore, it is recommended that this effort be reinforced more and more to avoid NPL. Higher positions in the bank can be made conditional for outstanding branch managers.
- To adequate measures to discourse the flow problem of default loans efficiently.
- To resolve whether to break operations of the SCBs and SDBs for privatizing them, or to reorient them over financial engineering.
- To organization closely a concrete NPL management strategy well-appointed with mutually preventive and resolution measures.
- To grow definite tools and techniques to discriminate the willful defaulters from the genuine ones.
- To pay devotion to addressing problems relating to meaningful application of the ICRRS tools in the lending operation of Bangladesh. Details of ICRRS have been attached in Appendix-8.

- To found Asset Management Company, institute factoring services, asset securitisation technique in order to address NPLs effectively.
- To implementation syndicated financing technique for large loans and to diminish harmful competition among banks in Bangladesh.
- To support the supervisory and monitoring functions of Bangladesh Bank so that discipline banks that engage in malpractice.
- Development of capital markets. It not only to serve as substitute financing bases, but also to improve the competitive environment in the banking industry as a whole.
- Improvement of corporate governance -strengthening formal aspects of banking operations to reach greater efficiency, transparency, and accountability.
- Implementation of appropriate legal frameworks, the cost of the NPL problem will be augmented as resolution is delayed.
- Finally, to place highlighting on ethics in banking from all places to make the credit operations trustworthy and vibrant.

9.4 Recommendations for Future Research

The thesis delivers numerous chances for accompanying future research on NPLs in banks of Bangladesh. This chapter, consequently, scrutinizes some of the researcher's philosophies for future research area as follows:

- Further studies may focus on the impact of social and political factors on nonperforming loans in Bangladesh.
- The impact of nonperforming loans on Banks liquidly in Bangladesh.
- The impact of Credit Information Bureau (CIB) in collaboration with National Identity Card (NID) on reducing nonperforming Loans.
- In a transition economy, the factors of banks' lending decisions. What are the key factors influencing a transition economy's lending decision, and is there any unfairness in a transition economy?
- Finally, factors affecting the perception of nonperforming loan markets by foreign investors in Bangladesh. What factors will influence the choices made by foreign investors as to whether or not to invest in banking industry of Bangladesh?

9.5 Implication of this Knowledge to the Theory and Practice

Nonperforming loans are not only a contributor to failure of banking operations in Bangladesh but a major cause of banking failure globally. By the empirical analysis

conducted, this study contributes to knowledge by using a model which captures determinants of nonperforming loans peculiar to an emerging economy like Bangladesh. To comprise macroeconomic, industry and bank-specific variables, the study shows that ADR, Loan growth, Cost efficiency, inflation rate are strong determinants of NPLs in the Bangladeshi banking industry more than GDP rates and Bank size. Again this study stands out significantly in terms of credit risk. Most works in this area of finance and banking are found in developed economies. To the best of the researcher's knowledge, not much research has been shown in this area in developing economies. The present study therefore enriches the scanty literature by including a thorough analysis of the factors which influence the existence of nonperforming loans in an emerging economy such as Bangladesh. This study has delivered the scopes of credit risk and its effect on asset quality that banks and regulatory bodies might apply in their decision making. NPL is meticulously connected to the loans and advances and this relationship is arbitrated and moderated by many bank specific and economy specific pointers. NPL can be reduced to a great extent if banks plan and instrument strategies looking into the mediating and moderating nature of bank performance variables and macroeconomic variables. The research has recognized the variables, both micro and macro, that impact NPL of banks. Banks may advantage from the results of this study to reconsider their approach to managing NPL of banks. The evaluation of the results recognized a better need for information gathering, information dissemination and better client relationship management as a key for appraising the loan portfolio and evaluating the status of projects from time to time. To a great extent, the willful default and misappropriation of funds can be minimized if banks disseminate credit related information of clients among themselves. With Basel III regulations, higher NPL will require banks to keep more funds (CRAR) hence affect the income earning ability. Banks must realize the effect of recessionary pressures and should develop ad-hoc plans to mitigate its risk on quality of assets. A period of economic progress should not lead to the relaxation of credit assessment and follow-up standards and standards. Banks and regulatory bodies will recycle the results of the study to evaluate the prevailing tools for assessing asset quality. Globally, this research may help banks develop indicators that better evaluate the quality of the credit portfolio and monitor the effect of change in numerous indicators specific to banks, industry and economy.

BIBLIOGRAPHY

CHAPTER ONE

[1] Abreu, M., & Mendes, V. (2001). Commercial bank interest margins and profitability: evidence for some EU countries. In *Pan-European Conference Jointly Organised by the IEFS-UK & University of Macedonia Economic & Social Sciences, Thessaloniki, Greece, May* (pp. 17-20).

[2] Adebisi, J. F., & Matthew, O. B. (2015). The Impact of Non-Performing Loans on Firm Profitability: A Focus on the Nigerian Banking Industry. American Research Journal of Business and Management, 1(4), 1-7.. (2017). *American Research Journal of Business Management*. https://doi.org/10.21694/2379-1047.15001

[3] Adebola, S. S., Wan Yusoff, W. S., & Dahalan, J. (2011). An ARDL approach to the determinants of nonperforming loans in Islamic banking System in Malaysia. *Kuwait Chapter of Arabian Journal of Business and Management Review*, *1*(1), 20–30.

[4] Adela, S., & Iulia, I. (2006). Study of correlation between average interest rate and non-performing loans in the Romanian Banking system during 2006-February 2010. *system*, *2010*.

[5] Adhikary, B. K. (2006). Nonperforming Loans in the Banking Sector of Bangladesh: Realities and Challenges. *Ritsumeikan Journal of Asia Pacific Studies*, *21*, 75–91.

[6] Ahmad, N. H. (2007). Multi-country study of bank credit risk determinants. *The International Journal of Banking and Finance*, *5*(1), 135–152. Retrieved from http://ijbf.uum.edu.my/images/pdf/5no1ijbf/6ijbf51.pdf

[7] Ahsan, M. (2014). *Lending risk analysis of the nationalised commercial banks of Bangladesh* (Doctoral dissertation).

[8] Akhavein, J. D., Berger, A. N., & Humphrey, D. B. (1997). The effects of megamergers on efficiency and prices: Evidence from a bank profit function. *Review of industrial Organization*, *12*(1), 95-139.

[9] Al-Smadi, M. O., & Ahmad, N. H. (2009). Factors affecting banks' credit risk: Evidence from Jordan. *Collage of Business, University Utara Malaysia*,

Malaysia.

[10] Altunbas, Y., Liu, M. H., Molyneux, P., & Seth, R. (2000). Efficiency and risk in Japanese banking. *Journal of Banking & Finance*, *24*(10), 1605-1628.

[11] Amin, A. S., Imam, M. O., & Malik, M. (2019). Regulations, Governance, and Resolution of Non-Performing Loan: Evidence from an Emerging Economy. *Emerging Markets Finance and Trade*, *55*(10), 2275–2297. https://doi.org/10.1080/1540496X.2018.1523788

[12] Anandarajan, A., Hasan, I., & Lozano-Vivas, A. (2005). Loan loss provision decisions: An empirical analysis of the Spanish depository institutions. *Journal of International Accounting, Auditing and Taxation, 14*(1), 55-77.

[13] Aremu, O. S., Suberu, O. J., & Oke, J. A. (2010). Effective credit processing and administration as a panacea for non-performing assets in the Nigerian Banking System. *Journal of Economics*, *1*(1), 53-56.

[14] Ariful Islam, Md., & Hasan Rana, R. (2017). Determinants of bank profitability for the selected private commercial banks in Bangladesh: a panel data analysis. *Banks and Bank Systems*, *12*(3), 179–192. https://doi.org/10.21511/bbs.12(3-1).2017.03

[15] Aspal, P. K., & Malhotra, N. (2013). Performance Appraisal of Indian Public Sector Banks. *World Jounral of Social Sciences*, *3*(3), 71–88.

[16] Athanasoglou, P., Delis, M., & Staikouras, C. (2006). Determinants of bank profitability in the South Eastern European region.

[17] Auronen, L. (2003, May). Asymmetric information: theory and applications. In *Seminar of Strategy and International Business as Helsinki University of Technology*.

[18] Avery, R. B., & Berger, A. N. (1991). Risk-based capital and deposit insurance reform. *Journal of Banking & Finance*, *15*(4-5), 847-874.

[19] Avery, R. B., & Hanweck, G. A. (1984). A dynamic analysis of bank failures (No. 74). B*oard of Governors of the Federal Reserve System (US).*

[20] Badar, M., & Javid, A. Y. (2013). Impact of macroeconomic forces on nonperforming loans: An empirical study of commercial banks in Pakistan. *wseas Transactions on Business and Economics*, *10*(1), 40-48.

[21] Bala, S. K., & Yusuf, M. A. (2003). Corporate environmental reporting in

Bangladesh: a study of listed public limited companies. *Dhaka University Journal of business studies*, *24*(1), 31-45.

[22] Banik, B. P., & Das, P. C. (2013). Comparison of Financial Performance of State Owned Commercial Banks: A Case Study of Bangladesh. *International Journal of Science and Research, India*, *2*(2).

[23] Barr, R. L. (1994). Seiford & T. Siems,"Forcasing Banking Failure: A Non-Parametric Frontier stimation Approach". *Researches Economiques de Lovain (60)*, 417-429.

[24] Barth, M. E., Beaver, W. H., & Landsman, W. R. (1996). Value-relevance of banks' fair value disclosures under SFAS No. 107. *Accounting Review*, 513-537.

[25] Berger, A. N., & DeYoung, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking and Finance*, *21*(6), 849–870. https://doi.org/10.1016/S0378-4266(97)00003-4

[26] Berger, A. N., & Humphrey, D. B. (1997). Efficiency of financial institutions: International survey and directions for future research. *European Journal of Operational Research*, *98*(2), 175–212. https://doi.org/10.1016/S0377-2217(96)00342-6

[27] Berrospide, J. M., & Edge, R. M. (2010). The effects of bank capital on lending: What do we know, and what does it mean? *International Journal of Central Banking*, *6*(4), 5–54.

[28] Bikker, J. A., & Metzemakers, P. A. J. (2005). Bank provisioning behaviour and procyclicality. *Journal of International Financial Markets, Institutions and Money*, *15*(2), 141–157. https://doi.org/10.1016/j.intfin.2004.03.004

[29] Bonin, J. P., & Huang, Y. (2001). Dealing with the bad loans of the Chinese banks. *Journal of Asian Economics*, *12*(2), 197–214. https://doi.org/10.1016/S1049-0078(01)00082-3

[30] Borio, C. E. V., & Lowe, P. W. (2005). Asset Prices, Financial and Monetary Stability: Exploring the Nexus. *SSRN*. https://doi.org/10.2139/ssrn.846305

[31] Borio, C., & Drehmann, M. (2009). Assessing the risk of banking crises– revisited. *BIS Quarterly Review*, (March), 29–46. Retrieved from http://millenniumindicators.un.org/unsd/nationalaccount/workshops/2010/moscow/AC223-S38Bk1.PDF

[32] Boudriga, A., Boulila Taktak, N., & Jellouli, S. (2010). Banking supervision and nonperforming loans: a cross- country analysis. *Journal of Financial Economic Policy*, *1*(4), 286–318. https://doi.org/10.1108/17576380911050043

[33] Bourke, P. (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia. *Journal of Banking & Finance*, *13*(1), 65-79.

[34] Bouvatier, V., & Lepetit, L. (2008). Banks' procyclical behavior: Does provisioning matter?. *Journal of international financial markets, institutions and money*, *18*(5), 513-526.

[35] Bouvatier, V., & Lepetit, L. (2012). Provisioning rules and bank lending: A theoretical model. *Journal of Financial Stability*, *8*(1), 25-31.

[36] Boyd, J. H., & Runkle, D. E. (1993). Size and performance of banking firms: Testing the predictions of theory. *Journal of monetary economics*, *31*(1), 47-67.

[37] Brownbridge, M., & Gockel, A. F. (1998). *Banking in Africa: the impact of financial sector reform since independence*. Africa World Press.

[38] Bushman, R. M., & Williams, C. D. (2012). Accounting discretion, loan loss provisioning, and discipline of Banks' risk-taking. *Journal of Accounting and Economics*, *54*(1), 1–18. https://doi.org/10.1016/j.jacceco.2012.04.002

[39] Caprio, G., & Klingebiel, D. (1996, April). Bank insolvency: bad luck, bad policy, or bad banking?. In *Annual World Bank conference on development economics* (Vol. 79).

[40] Caprio, G., & Klingebiel, D. (1999). *Bank insolvencies: cross-country experience*. The World Bank.

[41] Casu, B., & Girardone, C. (2004). Financial conglomeration: efficiency, productivity and strategic drive. *Applied Financial Economics*, *14*(10), 687-696.

[42] Casu, B., Girardone, C., & Molyneux, P. (2004). Productivity change in European banking: A comparison of parametric and non-parametric approaches. *Journal of Banking & Finance*, *28*(10), 2521-2540.

[43] Chimkono, E. E., Muturi, W., & Njeru, A. (2016). Effect On Non-Performing Loans And Other Factors On Performance Of Commercial Banks In Malawi. *International Journal of Economics, Commerce and*

Management, *IV*(2), 549–563. https://doi.org/ISSN : 2348-0386

[44] Chowdhury, T. A., & Ahmed, K. (2014). Performance Evaluation of Selected Private Commercial Banks in Bangladesh. *International Journal of Business and Management*, *4*(4). https://doi.org/10.5539/ijbm.v4n4p86

[45] Clark, X., Dollar, D., & Micco, A. (2004). Port efficiency, maritime transport costs, and bilateral trade. *Journal of development economics*, *75*(2), 417-450.

[46] Craigwell, R. C., & Elliott, W. A. (2011). Loan loss provisioning in the commercial banking system of Barbados: practices and determinants.

[47] Cucinelli, D. (2015). The impact of non-performing loans on bank lending behavior: evidence from the italian banking sector. *Eurasian Journal of Business and Economics*, *8*(16), 59-71.

[48] Cull, R., Sorge, M., & Senbet, L. W. (2004). Deposit insurance and bank intermediation in the long run.

[49] Dang, T. V., Gorton, G., & Holmstrom, B. (2009). Opacity and the optimality of debt for liquidity provision. *Manuscript Yale University*.

[50] Das, A., & Ghosh, S. (2007). Determinants of Credit Risk in Indian State-owned Banks: An Empirical Investigation. *Munich Personal RePEc Archive*, *17301*(17301), 1–22. Retrieved from http://mpra.ub.uni-muenchen.de/17301/

[51] Dash, M. K., & Kabra, G. (2010). The Determinants of Non-Performing Assets in Indian Commercial Bank : An Econometric Study. *Middle Eastern Finance and Economics*, *7*, 94–106.

[52] David, W., Nemwel, B., & George, G. (2014). Impact of non-performing loans on financial performance of microfinance banks in Kenya. *Int Researchernational Journal of Science And*, *3*(10), 2073–2078.

[53] Davydenko, A. (2010). Determinants of bank profitability in Ukraine. *Undergraduate Economic Review*, *7*(1), 2.

[54] Demirguc-Kunt, A., & Detragiache, E. (2007). The Determinants of Banking Crises in Developing and Developed Countries. *Staff Papers - International Monetary Fund*, *45*(1), 81. https://doi.org/10.2307/3867330

[55] Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: Some international evidence. *World Bank Economic Review*, *13*(2), 379–408. https://doi.org/10.1093/wber/13.2.379

[56] Demyanyk, Y., & Van Hemert, O. (2009). Understanding the subprime mortgage crisis. *The Review of Financial Studies*, *24*(6), 1848-1880.

[57] DeYoung, R., Hasan, I., & Hunter, W. C. (1999). The determinants of de novo bank survival.

[58] Dietrich, A., & Wanzenried, G. (2011). Determinants of bank profitability before and during the crisis: Evidence from Switzerland. *Journal of International Financial Markets, Institutions and Money*, *21*(3), 307-327.

[59] Drake, L., & Hall, M. J. B. (2003). Efficiency in Japanese banking: An empirical analysis. *Journal of Banking and Finance*, *27*(5), 891–917. https://doi.org/10.1016/S0378-4266(02)00240-6

[60] Edwards, W. (1977). How to use multiattribute utility measurement for social decisionmaking. *IEEE transactions on systems, man, and cybernetics*, *7*(5), 326-340.

[61] Eng, L. L., & Nabar, S. (2007). Loan loss provisions by banks in Hong Kong, Malaysia and Singapore. *Journal of International Financial Management and Accounting*, *18*(1), 18–38. https://doi.org/10.1111/j.1467-646X.2007.01006.x

[62] Espinoza, R., & Prasad, A. (2014). Nonperforming Loans in the GCC Banking System and their Macroeconomic Effects. *IMF Working Papers*, *10*(224), 1. https://doi.org/10.5089/9781455208890.001

[63] Fiordelisi, F., & Molyneux, P. (2010). The determinants of shareholder value in European banking. *Journal of Banking and Finance*, *34*(6), 1189–1200. https://doi.org/10.1016/j.jbankfin.2009.11.018

[64] Fiordelisi, F., Marques-Ibanez, D., & Molyneux, P. (2011). Efficiency and risk in European banking. *Journal of Banking & Finance*, *35*(5), 1315-1326.

[65] Flamini, V., Schumacher, L., & McDonald, C. A. (2014). The Determinants of Commercial Bank Profitability in Sub-Saharan Africa. *IMF Working Papers*, *09*(15), 1. https://doi.org/10.5089/9781451871623.001

[66] Flannery, M. J. (1989). Capital regulation and insured banks choice of individual loan default risks. *Journal of Monetary Economics*, *24*(2), 235-258.

[67] Fofack, H. L. (2005). Nonperforming Loans In Sub-Saharan Africa : Causal Analysis And Macroeconomic Implications. *The World Bank*. https://doi.org/10.1596/1813-9450-3769

[68] Foglia, A. (2008). Stress testing credit risk: a survey of authorities'

approaches. *Bank of Italy occasional paper*, (37).

[69] Fonseca, A. R., & González, F. (2008). Cross-country determinants of bank income smoothing by managing loan-loss provisions. *Journal of Banking and Finance*, *32*(2), 217–228. https://doi.org/10.1016/j.jbankfin.2007.02.012

[70] Foos, D., Norden, L., & Weber, M. (2010). Loan growth and riskiness of banks. *Journal of Banking & Finance*, *34*(12), 2929-2940.

[71] Fuentes, R., & Maquieira, C. (2003). Institutional arrangements, credit market development and loan repayment in Chile. *School of Business and Economics, Universidad de Chile*.

[72] Gennotte, G., & Pyle, D. (1991). Capital controls and bank risk. *Journal of Banking and Finance*, *15*(4–5), 805–824. https://doi.org/10.1016/0378-4266(91)90101-Q

[73] Godlewski, C. J. (2004). Capital Regulation and Credit Risk Taking: Empirical Evidence from Banks in Emerging Market Economies. *SSRN*. https://doi.org/10.2139/ssrn.588163

[74] Haneef, S., Riaz, T., Muhammad, R., Rana, M. A., Ishaq, H. M., & Karim, Y. (2012). Impact of Risk Management on Non-Performing Loans and Profitability of Banking Sector of Pakistan. *International Journal of Business and Social Science*, *3*(7), 307–315. Retrieved from www.ijbssnet.com

[75] Heffernan, S. A., & Fu, X. (2010). Determinants of financial performance in Chinese banking. *Applied Financial Economics*, *20*(20), 1585–1600. https://doi.org/10.1080/09603107.2010.505553

[76] Hoggarth, G., Sorensen, S., & Zicchino, L. (2005). Stress Tests of UK Banks Using a VAR Approach. *SSRN*. https://doi.org/10.2139/ssrn.872693

[77] Hu, J. L., Li, Y., & Chiu, Y. H. (2004). Ownership and nonperforming loans: Evidence from Taiwan's banks. *The Developing Economies*, *42*(3), 405-420.

[78] Hutapea, E. G., & Kasri, R. A. (2010). Bank margin determination: a comparison between Islamic and conventional banks in Indonesia. *International Journal of Islamic and Middle Eastern Finance and Management*, *3*(1), 65-82.

[79] Jahan, R., & Nail, H. O. (2003). Banking and industrial development: A case study of Bangladesh. *Journal of Business Studies*, *24*(1), 47-66.

[80] Jiang, G., Tang, N., Law, E., & Sze, A. (2003). The profitability of the

banking sector in Hong Kong. *Hong Kong Monetary Authority Quarterly Bulletin*, *3*(36), 5-14.

[81] Jiménez, G., & Saurina, J. (2006). Credit cycles, credit risk, and prudential regulation. *International Journal of Central Banking*, (June 2006), 65–98. Retrieved from https://www.bis.org/bcbs/events/rtf05JimenezSaurina.pdf

[82] Kalhoro, M. A., Liu, Q., Memon, K. H., Waryani, B., & Soomro, S. H. (2015). Maximum sustainable yield of Greater lizardfish Saurida tumbil fishery in Pakistan using the CEDA and ASPIC packages. *Acta Oceanologica Sinica*, *34*(2), 68-73.

[83] Kalirai, H., & Scheicher, M. (2002). Macroeconomic stress testing: preliminary evidence for Austria. *Financial Stability Report*, (3), 58-74.

[84] Kamal, M. M. (2006). IT innovation adoption in the government sector: identifying the critical success factors. *Journal of Enterprise Information Management*, *19*(2), 192-222.

[85] Kamal, Y., & Bhuiyan, N. U. (2003). Standardization of Accounting and Financial Reporting Practices in the Banking Sector in Bangladesh: An Evaluation of the Implementation of IAS 30 by the Banks in the Private Sector. *Dhaka University Journal of Business Studies*, *24*(2), 25-37.

[86] Kanagaretnam, K., Lobo, G. J., & Yang, D. H. (2005). Determinants of signaling by banks through loan loss provisions. *Journal of Business Research*, *58*(3), 312-320.

[87] Karim, J., Somers, T. M., & Bhattacherjee, A. (2007). The impact of ERP implementation on business process outcomes: A factor-based study. *Journal of management information systems*, *24*(1), 101-134.

[88] Keeton, W. R. (1999). Does faster loan growth lead to higher loan losses? *Federal Reserve Bank of Kansas, Economic Review*, *84*(2), 57–75. Retrieved from https://www.kansascityfed.org/publicat/econrev/PDF/2q99keet.pdf http://search.proquest.com/openview/71ac5a538ac57394755a0ee54c60a2b2/1?pq-origsite=gscholar&cbl=47211%5Cnhttp://ideas.repec.org/a/fip/fedker/y1999iqiip57-75nv.84no.2.html

[89] Khemraj, T., & Sukrishnalall, P. (2014). The determinants of non-performing loans: an econometric case study of Guyana. *Asian Economic and Financial*

Review, (6), 868–882. https://doi.org/10.18488/journal.aefr/2015.5.6/102.6.868.882

[90] Kim, M. S., & Kross, W. (1998). The impact of the 1989 change in bank capital standards on loan loss provisions and loan write-offs. *Journal of Accounting and Economics*, *25*(1), 69–99. https://doi.org/10.1016/S0165-4101(98)00015-9

[91] Kiran, K. P., & Jones, T. M. (2016). Effect of Non Performing Assets On The Profitability of Banks–A Selective study. *International Journal of Business and General Management*, *5*(2), 53-60.

[92] Krooss, H. E., & Cameron, R. (2006). Banking and Economic Development: Some Lessons of History. *The Journal of Finance*, *27*(5), 1202. https://doi.org/10.2307/2978883

[93] Kwan, S., & Eisenbeis, R. A. (1997). Bank risk, capitalization, and operating efficiency. *Journal of financial services research*, *12*(2-3), 117-131.https://doi.org/10.2139/ssrn.1188

[94] Laeven, L., & Majnoni, G. (2003). Loan loss provisioning and economic slowdowns: Too much, too late? *Journal of Financial Intermediation*, *12*(2), 178–197. https://doi.org/10.1016/S1042-9573(03)00016-0

[95] Laeven, L., & Majnoni, G. (2003). *Does judicial efficiency lower the cost of credit?*. The World Bank.

[96] Lis, S. F. de, Pagés, J. M., & Saurina, J. (2000). Credit Growth, Problem Loans and Credit Risk Provisioning in Spain. *Banco de Espana Working Papers*, (1). Retrieved from http://ideas.repec.org/p/bde/wpaper/0018.html

[97] Louzis, D. P., Vouldis, A. T., & Metaxas, V. L. (2012). Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. *Journal of Banking & Finance*, *36*(4), 1012-1027.

[98] Majumdar, H. S., Baral, J. K., Österbacka, R., Ikkala, O., & Stubb, H. (2005). Fullerene-based bistable devices and associated negative differential resistance effect. *Organic electronics*, *6*(4), 188-192.

[99] Mark, J. E., Erman, B., & Roland, M. (Eds.). (2013). *The science and technology of rubber*. Academic press.

[100] Masood, O., Bellalah, M., Mansour, W., & Teulon, F. (2010). Non-

Performing Loans and Credit Managers' Role: A Comparative Approach from Pakistan and Turkey. *International Journal of Business*, *15*(3), 347–362. Retrieved from http://search.proquest.com/docview/746441885?accountid=10297%255Cnhttp://sfx.cranfield.ac.uk/cranfield?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&genre=article&sid=ProQ:ProQ:abiglobal&atitle=Non-Performing+Loans+and+Credit+Managers'+Role%252

[101] Merton, R. C. (1977). An analytic derivation of the cost of deposit insurance and loan guarantees an application of modern option pricing theory. *Journal of Banking & Finance*, *1*(1), 3-11.

[102] Messai, A. S. (2013). Micro and Macro Determinants of Non-performing Loans. *International Journal of Economics and Financial Issues*, *3*(4), 852–860.

[103] Mester, L. J. (1997). Measuring efficiency at US banks: Accounting for heterogeneity is important. *European Journal of Operational Research*, *98*(2), 230-242.

[104] Miller, S. M., & Noulas, A. G. (1997). Portfolio mix and large-bank profitability in the USA. *Applied Economics*, *29*(4), 505–512. https://doi.org/10.1080/000368497326994

[105] Mohiuddin, M. (2017). The Determinants of Profitability of Private Banks in Bangladesh: An Empirical Analysis. *Igdir University Journal of Social Sciences*, (11).

[106] Molyneux, P., & Seth, R. (1998). Foreign banks, profits and commercial credit extension in the United States. *Applied Financial Economics*, *8*(5), 533–539. https://doi.org/10.1080/096031098332835

[107] Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A note. *Journal of Banking and Finance*, *16*(6), 1173–1178. https://doi.org/10.1016/0378-4266(92)90065-8

[108] Naceur, S. (2003). The Determinants of the Tunisian Banking Industry Profitability: Panel Evidence. *Universite Libre de Tunis Working Papers*, 1–17. Retrieved from http://www.mafhoum.com/press6/174E11.pdf

[109] Naceur, S. B., & Goaied, M. (2001). The determinants of the Tunisian deposit banks' performance. *Applied Financial Economics*, *11*(3), 317–319. https://doi.org/10.1080/096031001300138717

[110] Ochi, A., & Saidi, Y. (2012). Ownership Structure and Efficiency of Tunisian Banking Sector. *Journal of Finance and Investment Analysis*, *1*(3), 239–254.

[111] Olweny, T., & Shipho, T. M. (2011). Effect of Banking Sectoral Factors on The Profitability Of Commercial Banks in Kenya. *Economics and Finance Review*, *1*(5), 1–30. https://doi.org/10.1016/j.jeurceramsoc.2006.04.065

[112] Padmantyo, S. (2011). Analisis Manajemen Laba Pada Laporan Keuangan Perbankan Syariah (Studi Pada Bank Syariah Mandiri Dan Bank Muamalat Indonesia). *Benefit: Jurnal Manajemen dan Bisnis*, *14*(2), 46-70.

[113] Pasiouras, F., & Kosmidou, K. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance*, *21*(2), 222-237.

[114] Peristiani, S. (1996). Evaluating the postmerger X-efficiency and scale efficiency of US banks. *Federal Reserve Bank of New York, working paper*.

[115] Pilloff, S. J., & Rhoades, S. A. (2002). Structure and profitability in banking markets. *Review of Industrial Organization*, *20*(1), 81–98. https://doi.org/10.1023/A:1013362913973

[116] Podpiera, J., & Weill, L. (2008). Bad luck or bad management? Emerging banking market experience. *Journal of financial stability*, *4*(2), 135-148.

[117] Pratiwi, D. D., & Mahfud, M. K. (2012). *pengaruh CAR, BOPO, NPF dan FDR terhadap return on asset (roa) bank umum syariah (Studi Kasus pada Bank Umum Syariah di Indonesia Tahun 2005–2010)* (Doctoral dissertation, Fakultas Ekonomika dan Bisnis).

[118] Pruteanu-Podpiera, A., Weill, L., & Schobert, F. (2008). Banking competition and efficiency: A micro-data analysis on the Czech banking industry. *Comparative Economic Studies*, *50*(2), 253-273.

[119] Qin, X., & Dickson, P. (2012). Commercial Banks Profitability Position: The Case of Tanzania. *International Journal of Business and Management*, *7*(13). https://doi.org/10.5539/ijbm.v7n13p136

[120] Ramlall, I. (2009). Bank-specific, industry-specific and macroeconomic determinants of profitability in Taiwanese banking system: under panel data estimation. *International Research Journal of Finance and Economics*, *34*(34), 160-167.

[121] Ranjan, R., & Dhal, S. C. (2003). Non-performing loans and terms of credit of

public sector banks in India: an empirical assessment. *Reserve Bank of India Occasional Papers*, *24*(3), 81–122. https://doi.org/10.1080/08039410.1994.9665960

[122] Salas, V., & Saurina, J. (2002). Credit risk in two institutional regimes: Spanish commercial and savings banks. *Journal of Financial Services Research*. https://doi.org/10.1023/A:1019781109676

[123] Shamsuddoha, M. (2008). Globalization to glocalization: A conceptual analysis. *Available at SSRN 1321662*.

[124] Shingjergji, A., & Shingjergji, I. (2013). An Analysis of the Nonperforming Loans in the Albanian Banking System. *International Journal of Business and Commerce*, *2*(6), 1–11.

[125] Siddiqui, S., Malik, K. S., & Shah, S. Z. A. (2012). Impact of interest rate volatility on non-performing loans in Pakistan. *International Research Journal of Finance and Economics, 84*.

[126] Sinkey, J. F., & Greenawalt, M. B. (1991). Loan-loss experience and risk-taking behavior at large commercial banks. *Journal of Financial Services Research*, *5*(1), 43–59. https://doi.org/10.1007/BF00127083

[127] Siraj, K. K., & Pillai, P. S. (2012). Comparative study on performance of Islamic banks and conventional banks in GCC region. *Journal of Applied Finance and Banking*, *2*(3), 123.

[128] Siraj, K. K., & Sudarsanan Pillai, P. (2013). Efficiency of NPA Management in Indian SCBs – A Bank-Group Wise Exploratory Study. *Journal of Applied Finance & Banking*, *3*(2), 123–137.

[129] Smirlock, M. (1985). Evidence on the (non) relationship between concentration and profitability in banking. *Journal of money, credit and Banking*, *17*(1), 69-83.

[130] Sobhan, R. (Ed.). (1991). *Debt default to the development finance institutions: the crisis of state sponsored entrepreneurship in Bangladesh*. University Press.

[131] Sok-Gee, C., Karim, M. A., & Karim, M. A. (2010). Volatility spillovers of the major stock markets in ASEAN-5 with the US and Japanese stock markets. *International Research Journal of Finance and Economics*, *44*, 161-72.

[132] Somoye, R. O. C. (2010). The variation of risks on non-performing loans on bank performances in Nigeria. *Indian Journal of economics and business*, *9*(1), 87.

[133] Spathis, C., Kosmidou, K., & Doumpos, M. (2002). Assessing Profitability Factors in the Greek Banking System: A Multicriteria Methodology. *International Transactions in Operational Research*, *9*(5), 517–530. https://doi.org/10.1111/1475-3995.00371

[134] Stephen Kingu, P., Macha, D. S., & Gwahula, D. R. (2018). Impact of Non-Performing Loans on Bank's Profitability: Empirical Evidence from Commercial Banks in Tanzania. *International Journal of Scientific Research and Management*, *6*(01). https://doi.org/10.18535/ijsrm/v6i1.em11

[135] Stiglitz, J., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *The American Economic Review*, *71*(3), 393. Retrieved from http://www.jstor.org/stable/1802787

[136] Sufian, F., & Chong, R. R. (2008). Determinants of bank profitability in a developing economy: Empirical evidence from Bangladesh. *Asian Academy of Management Journal of Accounting and Finance*, *4*(2), 91–112. https://doi.org/10.3846/1611-1699.2009.10.207-217

[137] Sufian, F., & Habibullah, M. S. (2009). Bank specific and macroeconomic determinants of bank profitability: Empirical evidence from the China banking sector. *Frontiers of Economics in China*, *4*(2), 274–291. https://doi.org/10.1007/s11459-009-0016-1

[138] Sufian, F., Kamarudin, F., & Noor, N. H. H. M. (2012). Determinants of revenue efficiency in the Malaysian Islamic banking sector. *Journal Of King Abdulaziz University: Islamic Economics*, *25*(2).

[139] Teker, S., Teker, D., & Kent, O. (2011). Measuring Commercial Banks' Performances in Turkey: A Proposed Model. *Journal of Applied Finance & Banking*, *1*(3), 97–112.

[140] Uddin, S. S., & Suzuki, Y. (2011). Financial reform, ownership and performance in banking industry: the case of Bangladesh. *International Journal of Business and Management*, *6*(7), 28.

[141] Vaithilingam, S., Guru, B. K., & Shanmugam, B. (2003). Bank lending and economic growth in Malaysia. *Journal of Asia-Pacific Business*, *5*(1), 51-69.

[142] Vogiazas, S. D., & Nikolaidou, E. (2011). Investigating the determinants of nonperforming loans in the Romanian banking system: An empirical study with reference to the Greek crisis. *Economics Research International*, *2011*.

[143] Vong, P. I., & Chan, H. S. (2009). Determinants of Bank Profitability in Macao. *Macau Monetary Research Bulletin*, *12*(6), 93–113. Retrieved from https://www.researchgate.net/profile/Anna_Vong2/publication/252081427_Determinants_of_Bank_Profitability_in_Macao/links/53cf51ba0cf2fd75bc59b6e8.pdf http://www.amcm.gov.mo/publication/e_Jul_12.htm

[144] Wall, L., & Koch, T. (2000). Bank loan-loss accounting: A review of theoretical and empirical evidence. *Review-Federal Reserve Bank of Atlanta*, *85*(2), 1. Retrieved from http://search.proquest.com/openview/955b104b3be6f57455f23f78ab0158eb/1?pq-origsite=gscholar&cbl=34496

[145] Warue, B. N. (2013). The effects of bank specific and macroeconomic factors on nonperforming loans in commercial banks in Kenya: A comparative panel data analysis. *Advances in Management and Applied Economics*, *3*(2), 135.

[146] Waweru, N. M., & Kalani, V. M. (2009). Commercial Banking Crises in Kenya : Causes and Remedies. *Global Journal of Finance and Banking*, *3*(3), 23–43. https://doi.org/2009

[147] Wheelock, D. C., & Wilson, P. W. (2006). Explaining Bank Failures: Deposit Insurance, Regulation, and Efficiency. *The Review of Economics and Statistics*, *77*(4), 689. https://doi.org/10.2307/2109816

[148] Widiarti, A. W., Siregar, H., & Andati, T. (2017). THE DETERMINANTS OF BANK'S EFFICIENCY IN INDONESIA. *Buletin Ekonomi Moneter Dan Perbankan*, *18*(2), 129–156. https://doi.org/10.21098/bemp.v18i2.520

[149] Woelfel, J. (1993). Artificial Neurol Networks in Policy Research: A Current Assessment. *Journal of Communication*, *43*(1), 63–80. https://doi.org/10.1111/j.1460-2466.1993.tb01249.x

[150] Zaini Abd Karim, M., Chan, S.-G., & Hassan, S. (2015). Bank Efficiency and Non-Performing Loans: Evidence from Malaysia and Singapore. *Prague Economic Papers*, *19*(2), 118–132. https://doi.org/10.18267/j.pep.367

CHAPTER THREE

[151] Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The review of economic studies*, *58*(2), 277-297.

[152] Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of econometrics*, *68*(1), 29-51.

[153] Ben Selma Mokni, R., & Rachdi, H. (2014). Assessing the bank profitability in the MENA region: A comparative analysis between conventional and Islamic bank. *International Journal of Islamic and Middle Eastern Finance and Management*, *7*(3), 305-332.

[154] Bhatia, A., & Mahendru, M. (2015). Assessment of technical efficiency of public sector banks in India using data envelopment analysis. *Eurasian Journal of Business and Economics*, *8*(15), 115-140.

[155] Blumberg, B., Cooper, D. R., & Schindler, P. S. (2008). *Business research methods* (Vol. 2). London: McGraw-Hill Higher Education.

[156] Blundell, R., & Bond, S. (2000). GMM Estimation with persistent panel data: an application to production functions. *Econometric Reviews*, *19*(3), 321–340. https://doi.org/10.1080/07474930008800475

[157] Bordeleau, É., & Graham, C. (2010). The Impact of Liquidity on Bank Profitability. *Bank of Canada Working Paper, No. 2010, 38*. Canada. Retrieved from http://www.bankofcanada.ca/wp-content/.../12/wp10-38.pdf

[158] Boshoff, C., & Terblanche, N. H. (1997). Measuring retail service quality: a replication study. *South African Journal of Business Management*, *28*(4), 123-128.

[159] Caprio, G., & Klingebiel, D. (1996, April). Bank insolvency: bad luck, bad policy, or bad banking?. In *Annual World Bank conference on development economics* (Vol. 79).

[160] Claeys, S., & Vander Vennet, R. (2008). Determinants of bank interest margins in Central and Eastern Europe: A comparison with the West. *Economic Systems*, *32*(2), 197–216. https://doi.org/10.1016/j.ecosys.2007.04.001

[161] Cohen, L., Manion, L., & Morrison, K. (2000). Action research. *Research methods in education*, *5*, 226-244.

[162] Cohen, L., Manion, L., & Morrison, K. (2000). Research methods in education 5th edition. *London, RoutledgeFalmer*.

[163] Dietrich, A., & Wanzenried, G. (2011). Determinants of bank profitability before and during the crisis: Evidence from Switzerland. *Journal of International Financial Markets, Institutions and Money*, *21*(3), 307–327. https://doi.org/10.1016/j.intfin.2010.11.002

[164] Dillman, D. A. (1978). *Mail and telephone surveys: The total design method* (Vol. 19). New York: Wiley.

[165] Duca, J. V., & McLaughlin, M. M. (1990). Developments affecting the profitability of commercial banks. *Fed. Res. Bull.*, *76*, 477.

[166] Farrar, D. E., & Glauber, R. R. (1967). Multicollinearity in regression analysis: the problem revisited. *The Review of Economic and Statistics*, 92-107.

[167] Garefalakis, A., & Dimitras, A. (2016). The Contribution of Management Commentary Index (Ma.Co.I) in Annual Banking Reports (ABR) and the Chronicle of the Great Greek Crisis. *Theoretical Economics Letters*, *06*(05), 1060–1087. https://doi.org/10.4236/tel.2016.65103

[168] Gujarati, D. N. (2009). *Basic econometrics*. Tata McGraw-Hill Education.

[169] Gujarati, D. N., & Porter, D. C. (1999). *Essentials of econometrics* (Vol. 2). Singapore: Irwin/McGraw-Hill.

[170] Jiménez, G., Salas, V., & Saurina, J. (2009). Organizational distance and use of collateral for business loans. *Journal of Banking & Finance*, *33*(2), 234-243.

[171] Kerlinger, F. N., & Lee, H. B. (1986). Foundations of behavioral research, Fort Worth. *TX: Holt, Rinehart, Winston*.

[172] Khan, A. R. (2008). Bank Management: A Fund Emphasis. *Ruby*,.

[173] Koop, G., & Quinlivan, R. (2000). *Analysis of economic data*(Vol. 2). Chichester: Wiley.

[174] Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.

[175] Koutsoyiannis, A. (1977). *Theory of econometrics; an introductory exposition of econometric methods* (No. 04; HB141, K6 1977.).

[176] Liu, H., & Wilson, J. O. S. (2013). Competition and risk in JapaneseJapanese

banking. *European Journal of Finance*, *19*(1), 1–18. https://doi.org/10.1080/1351847X.2011.633614

[177] Maudos, J., & de Guevara, J. F. (2007). The cost of market power in banking: Social welfare loss vs. cost inefficiency. *Journal of Banking & Finance*, *31*(7), 2103-2125.

[178] Maudos, J., & Fernández de Guevara, J. (2004). Factors explaining the interest margin in the banking sectors of the European Union. *Journal of Banking and Finance*, *28*(9), 2259–2281. https://doi.org/10.1016/j.jbankfin.2003.09.004

[179] Ngugi, R. W. (2001). An empirical analysis of interest rate spread in Kenya.

[180] Nie, H. H., Hull, C. H., Jenkins, J. G., Steinbrenner, K., & Bent, D. H. (1975). Statisticalpackageforthesocialssences.

[181] Onwumere, J. U. J. (2009). Business and Economics Research Methods. Enugu. *Vangasen Ltd*.

[182] Oppenheim, A. N. (1966). Questionnaire design and attitude measurement.

[183] Rhyne, E. (2002, September). The experience of microfinance institutions with regulation and supervision. In *5th International Forum on Microenterprise, Inter-American Development Bank*(Vol. 10).

[184] Saunders, M. N. (2011). *Research methods for business students, 5/e*. Pearson Education India.

[185] Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.

[186] Simon, M. K., & Goes, J. (2013). Ex post facto research. *Retrieved September*, *25*, 2013.

[187] Staikouras, C. K., & Wood, G. E. (2011). The Determinants Of European Bank Profitability. *International Business & Economics Research Journal (IBER)*, *3*(6). https://doi.org/10.19030/iber.v3i6.3699

[188] Ueno, S., & Sekaran, U. (1992). The influence of culture on budget control practices in the USA and Japan: An empirical study. *Journal of International Business Studies*, *23*(4), 659-674.

[189] Woodridge, J. M. (2010). Econometric Analysis of Cross Section and Panel Data, 2nd Edtion.

[190] Wooldridge, J. M. (2009). Introductory Econometrics: A Modern Approach,

4th. *CENGAGE Learning, Canada*.

CHAPTER FIVE - SEVEN

[191] Chan, Y.-S., & Kanatas, G. (2006). Asymmetric Valuations and the Role of Collateral in Loan Agreements. *Journal of Money, Credit and Banking*, *17*(1), 84. https://doi.org/10.2307/1992508

[192] Dewatripont, M., & Maskin, E. (1995). Credit and efficiency in centralized and decentralized economies. *The Review of Economic Studies*, *62*(4), 541-555.

[193] Diamond, D. W., & Dybvig, P. H. (1983). Bank runs, deposit insurance, and liquidity. *Journal of political economy*, *91*(3), 401-419.

[194] García-Herrero, A., Gavilá, S., & Santabárbara, D. (2009). What explains the low profitability of Chinese banks?. *Journal of Banking & Finance*, *33*(11), 2080-2092.

[195] Lardy, P., & Vauchel, G. B. (1998). *U.S. Patent No. 5,727,380*. Washington, DC: U.S. Patent and Trademark Office.

[196] Leeth, J. D., & Scott, J. A. (2006). The Incidence of Secured Debt: Evidence from the Small Business Community. *The Journal of Financial and Quantitative Analysis*, *24*(3), 379. https://doi.org/10.2307/2330818

[197] Niresh, J. A. (2012). Trade-off between liquidity & profitability: A study of selected manufacturing firms in Sri Lanka. *Researchers World*, *3*(4), 34.

[198] Pasiouras, F., & Kosmidou, K. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance*, *21*(2), 222-237.

[199] Peiser, R., & Wang, B. (2002). Non-performing loan resolution in China. *Journal of Real Estate Portfolio Management*, *8*(4), 115.

[200] Rosser, J. S. J. B. (2008). A Nobel prize for asymmetric information: the economic contributions of George Akerlof, Michael Spence and Joseph Stiglitz. In *Leading Contemporary Economists* (pp. 162-181). Routledge.

Appendix-1

List of Banks in Bangladesh

The following table contents the list of banks in Bangladesh as on December 2018

Scheduled Banks	
A. Central Bank	
Bangladesh Bank	Commenced on 1972
B. State Owned Commercial Banks (SCBs)	
Banks	Established
1. Sonali Bank Limited	16 December 1971
2. Janata Bank Limited	26 March 1972
3. Agrani Bank Limited	26 March 1972
4. Rupali Bank Limited	26 March 1972
5. Bangladesh Development Bank Limited	31 October 1972; On 03 January 2010 by amalgamation of Bangladesh Shilpa Bank (BSB) and Bangladesh Shilpa Rin Sangstha (BSRS)
6. BASIC Bank Limited	21 January, 1989
C. State Owned Specialized Banks (SDBs)	
1. Bangladesh Krishi Bank	31 March 1973; Before 01/04/1973 was Agricultural Development Bank of BD.
2. Rajshahi Krishi Unnayan Bank (RAKUB)	15 March 1987 (President's Ordinance No. 58 of 1986)
3. Palli Sanchay Bank	2010 (Declared as Specialized scheduled bank 30 July 2018)
D. Private Commercial Banks (PCBs):	
I. Conventional PCBs	
1. AB Bank Limited	12 April 1982
2. National Bank Limited	23 March 1983
3. The City Bank Limited	27 March 1983
4. IFIC Bank Limited	24 June 1976
5. United Commercial Bank Ltd,	29 June 1983
6. Uttara Bank Limited	15 September 1983; From 28/01/1965 was

	Eastern Banking Corporation, then from 1971 to 1983 was Uttara Bank
7. Pubali Bank Limited	24 January; From 19/05/1959 was The Eastern Mercantile Bank Ltd., then from 26/03/1972 to 1985 was Pubali Bank.
8. Eastern Bank Limited	16 August 1992
9. National Credit & Commerce Bank Limited	17 May 1993 as commercial bank
10. Prime Bank Limited	17 April 1995
11. Southeast Bank Limited	25 May 1995
12. Dhaka Bank Limited	5 July 1995
13. Dutch-Bangla Bank Limited	3 March 1996
14. Bangladesh Commerce Bank Ltd.	16 September 1998
15. Mercantile Bank Limited	2 June 1999
16. Standard Bank Limited	3 June 1999
17. One Bank Limited	14 July 1999
18. Mutual Trust Bank Limited	24 October 1999
19. The Premier Bank Limited	26 October, 1999
20. Bank Asia Limited	27 November 1999
21. Trust Bank Limited	29 November 1999
22. Jamuna Bank Limited	25 April 2001
23. BRAC Bank Limited	01 July 2001
24. Midland Bank	9 April 2013
25. NRB Commercial Bank Limited	18 April 2013
26. South Bangla Agriculture & Commerce Bank Limited	28 April 2013
27. Meghna Bank Limited	09 May 2013
28. The Farmers Bank Limited	03 June 2013 Now Rename Padma Bank
29. NRB Bank Limited	04 August 2013
30. NRB Global Bank Limited	09 September 2013
31. Modhumoti Bank Limited	19 September 2013
32. Shimanto Bank Ltd	21 July 2016

II. Islami Shariah based PCBs (IBs)	
1. Islami Bank Bangladesh Limited	30 March 1983
2. ICB Islamic Bank Limited	20 May 1987; Till 1988 was Al-Baraka Bangladesh Bank Ltd., then till 28/04/2008 was Oriental Bank Ltd
3. Al-Arafah Islami Bank Limited	27 September 1995
4. Social Islami Bank Limited	22 November 1995
5. EXIM Bank Limited	3 August, 1999 Converted to Islami Bank July 2004
6. First Security Islami Bank Limited	25 Octover, 1999 Converted to Islami Bank 01 January 2009
7. Shahjalal Islami Bank Limited	10 May 2001
8. Union Bank Limited	01 Mach 2013
E. Foreign Commercial Banks (FCBs)	
Banks	Started Operations in Bangladesh
1. Bank Al-Falah Limited	24 April 2005
2. Citibank N.A	24 June 1995
3. Commercial Bank of Ceylon PLC	06 November 2003
4. Habib Bank Limited	03 June 1976
5. National Bank of Pakistan	18 April 1994
6. Standard Chartered Bank	13 May 1972 (including ANZ Grindlays experience; SCB originally established its first branch in Chittagong in 1948),
7. State Bank of India	05 May 1975
8. Woori Bank	21 September 1996
9. HSBC Bank	17 December 1996
Non-Scheduled Banks	Started Operations
1. Ansar VDP Unnayan Bank	10 January 1996
2. Karmashangosthan Bank	1998
3. Grameen Bank	1983
4. Jubilee Bank	1988
5. Probashi Kollyan Bank	2010

Nonperforming Loans and Net Profit as on 2017

(Tk. In crore)

Bank Types	Bank Name	Total Outstanding	Total Classified Loan	% of Classified Loan	Net Profit
SCBs	AGRANI BANK LIMITED	31,912	5,116	7.38	616
	BDDL	1,780	771	46.79	66
	BASIC BANK LTD.	14,557	7,599	54.63	(684)
	JANATA BANK LIMITED	45,958	5,819	16.54	269
	RUPALI BANK LIMITED	20,667	4,251	23.40	33
	SONALI BANK LIMITED	42,595	13,771	35.28	716
Sub-Total		**157,469**	**37,327**	**26.50**	
PCBs	AB BANK LTD.	22,965	967	7.15	30
	AL-ARAFAH ISLAMI BANK LTD.	2,538	992	4.10	317
	BANGLADESH COMMERCE BANK	1,928	434	29.03	5
	BANK ASIA LTD.	19,750	723	4.38	205
	BRAC BANK LTD.	20,434	721	3.56	525
	DHAKA BANK LTD.	15,402	761	5.98	150
	DUTCH-BANGLA BANK LTD.	19,771	962	4.70	229
	EASTERN BANK LTD.	18,403	325	2.41	240
	EXIM BANK LTD.	25,503	1,340	5.32	319
	FIRST SECURITY ISLAMI BANK	27,335	839	14.92	139
	ICB ISLAMIC BANK	883	707	80.40	(41)
	IFIC BANK LTD	17,926	1,048	6.40	207
	ISLAMI BANK BANGLADESH	74,867	2,529	3.59	469
	JAMUNA BANK LTD.	14,252	525	4.02	202
	MEGHNA BANK LTD.	2,746	93	3.39	42
	MERCANTILE BANK LTD.	19,966	693	3.79	302
	MIDLAND BANK LTD.	2,730	43	1.68	69
	MODHUMOTI BANK LTD.	3,018	8	0.29	75
	MUTUAL TRUST BANK LTD.	14,282	495	4.39	192
	NATIONAL BANK LTD.	24,847	1,611	10.64	470
	NCC BANK LTD.	14,633	662	3.16	176
	NRB BANK LTD.	2,292	55	2.46	53
	NRB COMMERCIAL BANK LTD.	4,300	77	2.46	93
	NRB GLOBAL BANK LTD.	5,933	61	1.31	39
	ONE BANK LTD.	17,039	829	5.31	263
	PREMIER BANK LTD.	13,589	561	4.69	191
	PRIME BANK LTD.	19,832	926	5.45	106
	PUBALI BANK LTD	23,954	1,898	8.68	146
	SHAHJALAL ISLAMI BANK LTD.	15,869	630	3.97	120

	SHIMANTO BANK LTD	274	0	0.00	3
	SOCIAL ISLAMI BANK LTD.	21,004	909	8.20	146
	SBAC BANK LTD.	4,328	30	0.87	98
	SOUTHEAST BANK LTD.	23,432	1,131	5.99	117
	STANDARD BANK LTD.	12,823	935	7.42	129
	THE CITY BANK LTD.	19,660	1,001	5.40	363
	THE FARMERS BANK LTD.	1,038	723	69.65	26
	TRUST BANK LTD.	18,491	578	3.35	173
	UNION BANK LTD.	10,075	57	0.57	89
	UNITED COMMERCIAL BANK	26,100	1,807	7.38	243
	UTTARA BANK LTD.	10,526	695	4.61	156
Sub-Total		**608,805**	**29,381**	**4.90**	
FCBs	BANK AL-FALAH	1,007	42	2.53	29
	CITI BANK NA	1,634	22	0.58	51
	COMMERCIAL BANK OF CYLON	3,257	32	0.98	91
	HABIB BANK LTD.	498	42	8.00	3
	HSBC	6,824	157	2.31	334
	NATIONAL BANK OF PAKISTAN	1,455	1,377	95.00	(35)
	STANDARD CHARTERED BANK	16,077	474	2.95	747
	STATE BANK OF INDIA	1,800	15	0.85	100
	WOORI BANK	1,092	7	0.64	56
Sub-Total		**32,552**	**2,168**	**7.00**	
SDBs	BANGLADESH KRISHI BANK	19,367	4,263	22.28	(646)
	RAJSHAHI KRISHI UNNAYAN BANK	5,214	1,162	23.07	10
	PROBASHI KOLLYAN BANK LTD	113	7	5.11	4
Sub-Total		**24,694**	**5,432**	**23.40**	
	Grand Total	**823,520**	**74,308**		

Appendix-3

Sector-wise Loans Concentration for the year of 2017

Sl.	Sector	Amount (In Billion BDT)	% of total	HHI*
1	Large Industries	1907.04	24.05	578.41
2	Wholesale and Retail Trade (CC, OD etc.)	1547.68	19.52	380.96
3	Miscellaneous	832.39	10.50	110.20
4	Import Financing (LIM, LTR, TR etc.)	820.08	10.34	106.96
5	Small and Medium Industries	796.97	10.05	101.02
6	Service Industries	471.74	5.95	35.39
7	Agriculture	368.46	4.65	21.59
8	Export Financing (PC, ECC etc.)	335.33	4.23	17.88
9	Housing (Commercial): for Developer/Contractor	228.8	2.89	8.33
10	Housing (Residential) in Urban Area for Individual Person	213.62	2.69	7.26
11	Other Construction	121.36	1.53	2.34
12	Infrastructure Development (Road, Culvert, Bridge, Tower etc.)	80.49	1.02	1.03
13	House Renovation/Repairing/Extension	49.23	0.62	0.39
14	Lease Financing/Leasing	29.12	0.37	0.13
15	Fishing	28.67	0.36	0.13
16	Water Transport (Excluding Fishing Boats)	25.56	0.32	0.10
17	Road Transport (Excluding Personal Vehicle & Lease Finance)	23.88	0.30	0.09
18	Cottage Industries/Micro Industries	16.85	0.21	0.05
19	Air Transport	12.97	0.16	0.03
20	Housing (Residential) in Rural Area for Individual Person	11.22	0.14	0.02
21	Procurement by Government	6.75	0.09	0.01
22	Water-works	1.14	0.01	0.00
23	Forestry and Logging	0.05	0.00	0.00
24	Sanitary Services	0.00	-	-
Total Loans and Advances		**7929.44**	**100.00**	**1,372.31**

Source: Bangladesh Bank

Appendix-4

Sector-wise Nonperforming Loans in the year of 2017

(Amount in billion BDT)

Sl. No.	Name of Sector	Total loans outstanding	Gross NPL	Gross NPL Ratio	% share of loans extended to a particular sector	% share of NPLs of a particular sector
1	**Agriculture**	379.4	62.8	16.6%	4.8%	8.5%
2	**Industrial (Manufacturing):**					
2.1	RMG	930.3	107.9	11.6%	11.7%	14.5%
2.2	Textile	619.9	74.9	12.1%	7.8%	10.1%
2.3	Ship building and Ship breaking	117.7	19.1	16.2%	1.5%	2.6%
2.4	Agro-based Industry	483.2	56.4	11.7%	6.1%	7.6%
2.5	Other Industries (Large Scale)	1174.8	60.8	5.2%	14.7%	8.2%
2.6	Other Industries (Small, Medium and Cottage)	329.8	43.4	13.2%	4.1%	5.8%
3	**Industrial (Services):**					
3.1	Construction Loans	542.2	42.6	7.9%	6.8%	5.7%
3.2	Transport and Communication	139.9	15.2	10.8%	1.8%	2.0%
3.3	Other Service Industries	313.9	17.8	5.7%	3.9%	2.4%
4	**Consumer Credit:**					
4.1	Credit Card	36.7	2.1	5.7%	0.5%	0.3%
4.2	Auto (Car) Loan	19.3	0.6	2.9%	0.2%	0.1%
4.3	Housing Finance	139.9	9.6	6.9%	1.8%	1.3%
4.4	Personal	233.9	7.4	3.1%	2.9%	1.0%
5	**Trade and Commerce (Commercial Loans)**	1844.8	177.4	9.6%	23.1%	23.9%
6	**Credit to NBFI**	81.5	1.3	1.5%	1.0%	0.1%
7	**Loans to Capital Market:**					
7.1	Merchant Banks	19.7	0.0	0.0.%	0.1%	0.0%
7.2	Other than Merchant Banks	28.3	0.1	0.4%	0.4%	0.0%
8	**Other Loans**	546.6	43.6	8.0%	6.8%	5.9%
	Total	**7981.9**	**743.02**	**9.3%**	**100.0%**	**100.0%**

Sources: Bangladesh Bank

Appendix-5

Banking Sector Aggregate Balance Sheet

Particulars	(Amount in Billion BDT)					Change (%)	
	2013	**2014**	**2015**	**2016**	**2017**	**2015 to 2016**	**2016 to 2017**
Property & Assets							
Cash in Hand (including FC)	102.7	91.1	92.3	106.5	117.6	15.4	10.4
Balance with BB & SB (including FC)	479.3	572.8	666.3	760.2	833.1	14.1	9.6
Balance with other Banks & FIs	347.9	409.7	428.9	506.1	684.7	18.0	35.3
Money at Call & Short Notice	46.5	54.2	49.6	47.8	71.5	(3.6)	49.6
Investments Government Others **Total Investment**	841.2 730.0 **1,571.2**	977.6 855.5 **1,833.1**	1,136.4 938.0 **2,074.4**	1,174.6 964.9 **2,139.5**	1,104.7 814.2 **1,918.9**	3.4 2.9 **3.1**	(6.0) (15.6) **(10.3)**
Loans & Advances Loans, CC, OD etc. Bills purchased & Discounted **Total Loans & Advances**	4,443.5 276.6 **4,720.1**	5,147.2 245.7 **5,392.9**	5,904.1 287.0 **6,191.1**	6,787.5 348.5 **7,136.0**	8,050.8 436.4 **8,487.2**	15.0 21.4 **15.3**	18.6 25.2 **18.9**
Fixed Assets	198.2	216.7	224.4	225.2	226.7	0.4	0.7
Other Assets	532.5	570.7	584.4	696.8	715.8	19.2	2.7
Non-banking Assets	1.7	1.9	3.3	3.7	3.7	12.1	-
Total Assets	**8,000.2**	**9,143.0**	**10,314.7**	**11,621.7**	**13,059.3**	**12.7**	**12.4**
Liabilities							
Borrowings from other Banks/FIs/Agents	221.6	313.0	398.7	488.7	711.1	22.6	45.5
Deposits & Other Accounts: Current Deposit Savings Deposit Fixed/Term Deposit Inter-bank Deposit Other Deposits **Total Deposit**	1,091.0 1,047.7 3,622.3 140.4 392.9 **6,294.3**	1,295.3 1,225.6 3,931.1 175.6 513.0 **7,140.6**	1,495.8 1,442.4 4,524.2 138.6 431.0 **8,032.0**	1791.0 1773.6 4765.0 169.9 562.4 **9,061.9**	2,048.1 2,015.1 5,174.2 285.1 596.8 **10,119.3**	19.7 23.0 5.3 22.6 30.5 **12.8**	14.4 13.6 8.6 67.8 6.1 **11.7**
Bills Payable	68.9	87.8	87.6	150.4	138.0	71.7	(8.2)
Other Liabilities	737.2	860.2	951.7	1065.5	1,180.6	12.0	10.8
Total Liabilities	**7,321.9**	**8,401.7**	**9,470.0**	**10,766.6**	**12,149.0**	**13.7**	**12.8**
Capital/Shareholder's Equity	678.3	741.3	844.7	855.1	910.3	1.2	6.5
Total Liabilities & Shareholder's Equity	**8,000.2**	**9,143.0**	**10,314.7**	**11,621.7**	**13,059.3**	**12.7**	**12.4**
Off bal. Sheet Items	2,153.08	2,360.9	2,685.3	2,966.7	4,535.5	10.5	52.9

Sources: Complied from Financial Stability report from 2013-2017

Appendix-6

Borrower Selection Analysis in Bangladesh

1. Lending Policy of Banks		
Aspect	Yes (%)	No (%)
Do you have lending policy in written form?		
Review/update of lending policy from 20008 to 2017		
2. Analysis of the Borrowers		
Do you assess the entrepreneurship ability of the borrower separately?		
Do you have the minimum educational requirement of a borrower for lending decision?		
Do you have the minimum years of business experience required for a borrower?		
Do you consider business track record of the borrower for lending decision?		
Do you consider the profile of borrower's family members?		
Do you rate (other than ICRRS) your existing borrower on the basis of their past performance?		
Is there any minimum period required after opening a bank account for getting loan?		
Do you assess the capacity of the borrower to overcome the hard-times in the business?		
Do you consider the financial strength of the proprietor/directors of private limited company?		
Is there any other borrower related aspect considered by the bank?		
3. ICRRS of the Borrower		
Do you find all required information relating to financial analysis including ICRRS for sole proprietorship business?		
Is there any minimum acceptable score in ICRRS as one of the conditions for approving a loan?		
Do you consider industry average data to compare with the applicant borrower?		
Do you get all required industry average data?		
Do you find all required information relating to financial analysis including ICRRS for corporate borrower?		
Do you rely on the auditors of financial statements (FSs) of the borrower?		
Do you cross check the information/data submitted by the borrower in case of sole proprietorship?		
4. Consideration of Environmental Aspect for Lending Decision		
Do you consider the environmental aspect for lending decision?		
Has there been any situation in the past where a loan proposal has been rejected only because of environmental consideration?		
5. Identification and Selection of Borrower		
As per your opinion, whether sufficient number of right borrowers are available in Bangladesh considering the lending capacity of all banks?		
Do you search a good borrower on your own?		
Do you think that lending target of an individual executive is a barrier for selecting right borrower?		
Do you have any prescribed form of loan proposal for approval?		
Do you have any mandatory time limit for taking loan decision after receiving the borrower's application?		
Do you assist a borrower in fulfilling the bank's requirement who is		

otherwise competent?		
Does media reports/news have any impact on your lending decision?		
Do you communicate the reasons to a loan applicant who is not successful in getting loan?		
Do you maintain any blacklist of the borrower?		
6. Project Visit		
Is it obligatory to visit project site of the borrower both before and after disbursement of loan?		
Is there any set procedure for project visit?		
Is there any prescribed format for reporting on project visit?		
7. Availability of Lending Policy to Relationship Manager (RM)		
Option	Response (%)	
One copy for each RM		
One common copy for a segment		
Regulations are preserved in common place of a branch/unit		
Total		
8. Loan Processing System of Banks		
Centralized System		
Decentralized System		
Mixed System		
Total		
9. Nature of Target for Total Disbursement of Credit		
Only yearly target		
Yearly and half yearly target		
Yearly and Quarterly target		
Total		
10. Revision of Credit Target		
Banks revise the target		
Banks do not revise the target		
Total		
11. Nature of credit Target of Banks		
Sector-wise target		
Product-wise target		
Division-wise target		
Size-wise target		
Others		
Branch-wise target		
12. Who Complete ICRRS of the Borrower?		
RM at branch level.		
Other: Joint effort		
Total		
13. Loan Pricing (Interest Rate) Strategy of Banks		
Flat rate within the same category		
Risk-based pricing		
Depend on bargaining		
Total		
14. Accountability in case of Default Loan		
Recommending authority (RM)		
Approving authority		
Both recommending and approving authority		
Others (depending on reason)		
No one		

Total		
15. Financial Projection		
Aspect	Option	Response (%)
Do you conduct financial analysis for term loan based on projected data?	Yes, for all loans	
	Yes, in some cases	
What is the priority aspect for lending decision?	Historical financial data	
	Projected financial data	
16. Interview of the Borrower		
As a part of borrower selection process, does the bank conduct planned interview of the borrower other than discussion by RM with the borrower?	Arrange formal interview of all exposure before lending decision	
	Arrange formal interview in some exceptional cases	
	Arrange meeting between client and the bank for finalizing loan structuring, pricing and security aspect	
Does interview matter for taking lending decision?	Yes	
	No	
Whether proceedings of interview are documented?	Interview is conducted but not documented	
	Interview is conducted and documented	
17. External Credit Rating		
Do you give weightage on the report of credit rating agency?	Yes	
	No	
Which one gets priority if external credit rating and bank's own rating are conflicting to each other?	External rating	
	Bank's own rating	

Non-Responded Questions by Most of the Banks

Number of new and total borrowers of your bank

Year	No. of total Borrower	No. of first-time borrower for your bank having credit facility in other bank	No. of first-time borrower for bank having no credit facility in other bank
2008-2009			
2010-2011			
2012-2013			
2014-2015			
2016-2017			
Share of large borrowers in total loan			
Year	Total Loan	Loan to top 50 Borrowers	Loan to top 10 Borrowers
2008-2009			
2010-2011			
2012-2013			
2014-2015			
2016-2017			
Status of loan Application			
Year	No. of application received	No. of application approved	
2008-2009			
2010-2011			
2012-2013			
2014-2015			
2016-2017			

Length of Banker-Borrower Relationship				
Duration of Relationship with the borrower			Number of borrower	
More than 10 years				
5 to 10 years				
2 to less than 5 years				
Less than 2 years				
Quarterly Disbursement of Loan				
Year	Quarterly Loan Amount in Taka			
	Jan-Mar	Apr-Jun	Jul-Aug	Sep-Dec
2008-2009				
2010-2011				
2012-2013				
2014-2015				
2016-2017				

Appendix-7

Credit Flow-Chart of Commercial Bank

By Whom to be Done	What to be Done
Origination of Credit	
Relationship Manager/Marketing (RM)	1. Discussion with Client about Credit Facilities
	2. Ensuring Expected Business Segment/Sector and Expected Types of Loan Facilities
	3. Reviewing Lending Target-Disbursement in the Industry and Single Borrower/ Group Limit
	4. Receiving Request for Credit from the Client along with Related Papers, Documents, etc.
	5. Scrutinizing/Verification of Submitted Documents and Information
	6. Collection of all Other Required Information
	7. Appraisal of Managerial, Organizational, Marketing, Technical, Socio-Economic &Environmental Aspects
Relationship Manager/Marketing (RM) through Credit Administration (CAD)	8. Collection of Client's CIB
Relationship Manager/Marketing (RM)	9. Analysis of Loan Structure, Purpose of Loans, etc.
	10. Financial Analysis (Historical &Projected Data)
	11. Analyzing Security Offered by Client
	12. Completing Credit Risk Grading (CRG) Score Sheet
	13. Collection of Credit Rating Done by ECAI of Client, if Possible
	14. Finalization of Loan Structure and Security Arrangement
	15. Recommendation of the Credit Proposal and Placing for Approval to HOCB or Head of CRM
Approval of Loan Proposal	
The Head of Credit Risk Management (CRM)	16. Forward to Risk Management Unit (RMU) for their Observation
Risk Management Unit (RMU)	17. Send back to CRM after Putting Observations

The Head of CRM	18. Forward to Processing Unit (PU) under CRM
Processing Unit (PU) under CRM	19. Forward to Approval Unit (AU) under CRM
The Head of CRM (if beyond his power)	20. Forward to Managing Director (MD)/CEO for Approval
Managing Director (MD)/CEO (if beyond his power)	21. Forward to Executive Committee (EC)/Board for Approval
Executive Committee (EC)/Board	22. Returned Proposal on Approval/Rejection to CRM
The Head of CRM	23. Forward Approved/ Rejected Proposal to RM
Documentation and Disbursement	
Relationship Manager/Marketing (RM)	24. Making 2 Copies of Approved Proposal and Send one to RMU and the other to CAD
Credit Administration (CAD)	25. Issue Sanction /Offer Letter along with Loan Documentation Check List (LDCL) to RM
Relationship Manager/Marketing (RM)	26. Advise Sanction/Offer Letter to Client
	27. Collection of Client's Acceptance with all Documents
	28. Completing LDCL and Forward to CAD
Credit Administration (CAD)	29. Documentation and Stepping towards Disbursement
	30. Disbursement of Credit ensuring Compliance with all Terms and Conditions of Sanction Letter
Monitoring and Follow-up	
Relationship Manager/Marketing (RM)	31. After Disbursement, Regular Follow-up of the Credit
CAD/Zone	32. Monitoring Credit based on Due-Date-Diary
Relationship Manager/Marketing (RM)	33. Identification of Early Alert Account & Reporting to CRM
The Head of CRM (for positive change)	34. Conversion of Early Alert Account to Regular A/c Status
Relationship Manager/Marketing (RM)	35. Classification and Making Provision as per Policy
Recovery of Credit	
Relationship Manager/Marketing (RM)	36. Transfer of all accounts of Sub Standard (SS) or Worse to A/c Manager within RU
Account Manager within RU	37. Determination of Recovery Strategy

	38. Pursue All Options of Non-Legal Measures to Maximize Recovery	
	39. Making Loan Loss Provisioning based on Actual and Expected Losses	
	40. Regular Review of Grade 6 (SS) or Worse A/c	
	41. Preparation of Classified Loan Review (CLR) on a Quarterly Bases	
	42. Recovery of Credit Through Legal Action against Defaulted Clients	

Appendix-8

Internal Credit Risk Rating System (ICRRS)

Definition of Internal Credit Risk Rating System and Internal Credit Risk Rating

Internal Credit Risk Rating System refers to the system to analyze a borrower's repayment ability based on information about a customer's financial condition including their liquidity, cash flow, profitability, debt profile, market indicators, industry and operational background, management capabilities, and other indicators.

The summary indicator derived from the system will be called Internal Credit Risk Rating (ICRR)- a key reference for credit risk assessment and decision making.

Use of Internal Credit Risk Rating (ICRR)

Internal Credit Risk Rating System will be an integral part of credit risk management for the banks. The key uses of these guidelines are as follows:

a) To provide a granular, objective, transparent, consistent framework for the measurement and assessment of borrowers' credit risk.

b) To facilitate the portfolio management activities

c) To assess the quality of individual borrower to help the banks to determine the quality of the credit portfolio, line of business, the branch or the Bank as a whole.

d) To be used for individual credit selection, credit pricing, and setting credit limit and terms and conditions

Selected Sectors: To ensure the current system useful, the following sectors are selected considering the size of exposures of banks in these industries.

A. Industry

1. Ready Made Garments (RMG)
2. Textile (including spinning, knitting, weaving)
3. Food and Allied Industries
4. Pharmaceutical
5. Chemical
6. Fertilizer
7. Cement
8. Ceramic
9. Ship building
10. Ship breaking
11. Jute Mills
12. Steel Engineering
13. Power and Gas

14. Other industry (only to be selected if the borrower falls under industry but does not fit with other 13 specific sub-categories)

B. Trade and Commerce C. Agro Base and Agro Processing D. Service

1. Housing and Construction
2. Hospitals and Clinics
3. Telecommunication
4. Other service

Credit Risk Ratings Scores: The ICRR consists of 4-notched rating system covering the Quantitative and Qualitative parameters. The ratings and scores are mentioned below:

Rating	Scores Aggregate
Excellent	≥80%
Good	≥70% to <80%
Marginal	≥60% to <70%
Unacceptable	<60%

Definitions of Credit Risk Rating

The features of the different categories of Credit Risk Ratings are given below:

a) **Excellent**

- Aggregate score of 80 or greater in ICRR.
- Strong repayment capacity of the borrower evident by the high liquidity, low leverage, strong earnings, and cash flow
- Borrower has well established strong market share.
- Very good management skill & expertise.

b) **Good**

- Aggregate score of 70 or greater but less than 80 and the quantitative score of at least 30.
- These borrowers are not as strong as "Excellent "borrowers, but still demonstrate consistent earnings, cash flow and have a good track record.
- Borrower is well established and has strong market share.
- Very good management skill & expertise.

c) **Marginal**

- Aggregate score of 60 or greater but less than 70 and the quantitative score of at least 30.

- This grade has potential weaknesses that deserve management's close attention. If left uncorrected, these weaknesses may result in a deterioration of the repayment prospects of the borrower.

d) **Unacceptable**

- Aggregate score of less than 60
- Financial condition is weak and no capacity or inclination to repay.
- Severe management problems exist.
- Facilities should be downgraded to this grade if sustained deterioration in financial condition is noted (consecutive losses, negative net worth, excessive leverage).

Management Action Triggers:

a) Banks are allowed lending to a borrower if the borrower's ICRR is "Excellent" or "Good". However, for the "Marginal "cases, the bank shall take cautionary measures in renewing the facilities or lending new money to the customers. While assessing credit proposals, banks must satisfy themselves on the future prospect of the business, additional collateral coverage etc. Banks shall take heightened measures for monitoring these accounts including but not limited to regular client visits, monitoring of the improvement plans, close monitoring of the repayment performances, timely review of the facilities, oversight on the improvement areas etc.

b) No loan shall be sanctioned to borrowers whose ICRR is "Unacceptable" unless the loan is 100% cash covered or fully guaranteed by the Government or Multilateral Development Banks (MDBs) or the loan is for any state-owned organization or state-owned project.

c) For the quantitative and qualitative risk analysis, if the ICRR falls under "Marginal" or "Unacceptable" for any risk criteria (among 16 quantitative and 18 qualitative); whatever the aggregate score is, the relationship manager shall evaluate what would be the impacts of such on loan repayment and justify how those risks are mitigated; and in loan proposal the approval authority should review that justifications thoroughly and make necessary evaluations on it and should be documented in the loan file.

d) In deriving ICRR, whatever score a borrower gets in the qualitative analysis if the score in the quantitative part is less than 50%, the borrower's ICRR shall be "Unacceptable".

e) Bank can make renewal and enhancement of existing loans for maximum 2 (two) times if the borrower's ICRR is "Unacceptable".

f) In conducting qualitative analysis, justifications for all criteria are required to be documented.

g) Bank must maintain portfolio level data base for the asset base with "Excellent", "Good" "Marginal" and "Unacceptable" category and maintains risk appetite/tolerance level for portfolio.

Credit Risk Rating Components: In the previous version of Credit Risk Grading Manual, 50 percent weights were assigned for quantitative indicators while 50 percent weights were for subjective judgment. In the ICRR, these weights have been revised; 60 percent weights are assigned for quantitative indicators while 40 percent are assigned for qualitative indicators.

Quantitative indicators and associated weights

Quantitative indicators in ICRR fall into six broad categories; leverage, liquidity, profitability, coverage, operational efficiency, and earning quality. Details indicators under these categories and associated weights are furnished below:

Quantitative Indicators		Weigh t	Definition
1. Leverage (10%)	a) Debt to Tangible Net Worth (DTN)	7	Total Interest-bearing liabilities or Financial Debt/ Total Tangible Net Worth[1]
	b) Debt to Total Assets (DTA)	3	Total Interest-Bearing Liabilities or Financial Debt/ Average Total Assets
2. Liquidity (10%)	a) Current Ratio (CR)	7	Current Assets/ Current Liabilities
	b) Cash Ratio (Cash)	3	Cash and easily marketable securities/ Current Liabilities
3.Profitability (10%)	a) Net Profit Margin (NPM)	5	Net profit after tax/ Net Sales
	b) Return on Assets (ROA)	3	Net profit after tax/ Average Total Assets
	c) Operating Profit to Operating Assets (OPOA)	2	Operating Profit/ Average Operating Assets
4. Coverage (15%)	a) Interest Coverage (IC)	3	Earnings Before Interest and Tax/Interest Expense
	b) Debt Service Coverage Ratio (DSCR)	5	Earnings Before Interest Tax Depreciation Amortization/ Debts to be Serviced
	c) Financial Debt to Operating Cash Flow (FDOCF)	4	Financial Debt / Operating Cash Flow
	d) Cash flow Coverage Ratio (CCR)	3	Cash flow from operation / Debts to be Serviced
5.Operational Efficiency	a) Stock Turnover Days (STD)	4	(Total Inventory/Cost of Goods Sold)*360

[1] Total Tangible Net Worth= Total Equity-Intangible Assets.

(10%)	b) Trade Debtor Collection Days (TDCD)	3	(Total Accounts Receivable/
			Sales)*360
	c) Asset Turnover (AT)	3	Sales /Average Total Assets
6.Earning Quality (5%)	a) Operating Cash Flow to Sales (OCFS)	3	Operating Cash flow / Sales
	b) Cash flow based accrual ratio (CAR)	2	=NI-(CFO+CFI) /Average Net Operating Assets
	Total	**60**	

Qualitative indicators and associated weights: Qualitative indicators covers six broad aspects of the firms/institutions to be rated, namely business/industry risk, credit quality enhancement, performance behavior, management risk, relationship risk, and compliance risk. Noteworthy that aggregate weights against the qualitative indicators stand at 40 percent. Detail indicators and associated weights are appended below in details:

Indicators	**Weights**
1. Performance Behavior	**10**
Performance Behavior With Banks Borrowings	9
Performance Behavior With Suppliers/ Creditors	1
2. Business and Industry Risk	7
Sales Growth	2
Age Of Business	2
Industry Prospects	1
Long-Term External Credit Rating Of The Borrower	2
3. Management Risk	**7**
Experience Of The Management	2
Existence Of Succession Plan	2
Auditing Firms	2
Change In Auditors In Last 4 Years	1
4. Security Risk	**11**
Primary Security	2
Collateral	2
Collateral/ Security Coverage	5
Type Of Guarantee	2
5. Relationship Risk	**3**
Account Conduct	3
6. Compliance Risk	**2**
Compliance With Environmental Rules, Regulations And Covenants	1
Corporate Governance	1
Total	40

Appendix-9

Statistical Workings: Correlation Analysis

	ROA	ROE	NPM	GNPL	NNPL	CR	CE	LG	ADR	LTA	GDP	INF	C5	BSD	SMD
ROA	1.000														
ROE	0.806	1.000													
NPM	0.529	0.499	1.000												
GNPL	-0.434	-0.467	-0.636	1.000											
NNPL	-0.455	-0.379	-0.585	0.660	1.000										
CR	-0.402	-0.341	-0.572	0.734	0.633	1.000									
CE	-0.577	-0.523	-0.495	0.493	0.333	0.379	1.000								
LG	0.117	0.188	0.432	-0.448	-0.577	-0.555	-0.254	1.000							
ADR	0.118	0.159	0.322	-0.309	-0.454	-0.348	-0.241	0.754	1.000						
LTA	-0.404	-0.405	-0.422	0.439	0.446	0.536	0.324	-0.423	-0.228	1.000					
GDP	-0.298	-0.339	-0.122	0.131	0.172	0.02	0.299	-0.097	-0.032	0.438	1.000				
INF	0.229	0.199	0.167	-0.179	-0.182	-0.075	-0.275	0.038	0.081	-0.187	-0.287	1.000			
C5	0.260	0.363	0.155	-0.119	-0.149	-0.025	-0.327	0.163	0.071	-0.587	-0.668	0.404	1.000		
BSD	-0.289	-0.387	-0.144	0.111	0.136	0.039	0.297	-0.218	-0.132	0.591	0.668	-0.271	-0.927	1.000	
SMD	0.119	0.033	0.096	-0.075	-0.047	-0.071	-0.013	0.097	0.188	0.088	0.137	0.387	-0.168	0.006	1.000

GMM Results:

Dependent Variable: ROA
Method: Generalized Method of Moments
Date: 05/25/19 Time: 19:19
Sample: 1 200
Included observations: 200
Linear estimation with 1 weight update
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)
Standard errors & covariance computed using estimation weighting matrix
Instrument specification: GNPL CR CE LG ADR LOGLTA GDP INF C5 BSD SMD
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.24565	5.383837	3.203227	0.0016
GNPL	-0.014212	0.010867	-1.307888	0.1925
CR	-0.077683	0.052210	-1.487901	0.1385
CE	-0.040024	0.012999	-3.078961	0.0024
LG	-0.037614	0.020177	-1.864212	0.0639
ADR	0.009517	0.014599	0.651901	0.5153
LOGLTA	-0.335514	0.144793	-2.317199	0.0216
GDP	-0.197108	0.101776	-1.936684	0.0543
INF	0.029690	0.067148	0.442161	0.6589
C5	-0.129389	0.095081	-1.360832	0.1752
BSD	-0.045721	0.037652	-1.214295	0.2262
SMD	0.010420	0.009607	1.084597	0.2795

R-squared	0.470545	Mean dependent var	1.353250
Adjusted R-squared	0.439566	S.D. dependent var	1.289010
S.E. of regression	0.964980	Sum squared resid	175.0630
Durbin-Watson stat	1.310918	J-statistic	2.19E-38
Instrument rank	12		

Dependent Variable: ROA
Method: Generalized Method of Moments
Date: 05/25/19 Time: 19:24
Sample: 1 200
Included observations: 200
Linear estimation with 1 weight update
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)
Standard errors & covariance computed using estimation weighting matrix
Instrument specification: NNPL CR CE LG ADR LOGLTA GDP INF C5 BSD SMD
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.60506	5.193389	3.582450	0.0004
NNPL	-0.088930	0.030923	-2.875863	0.0045
CR	-0.041044	0.045368	-0.904676	0.3668
CE	-0.040699	0.010977	-3.707670	0.0003
LG	-0.047350	0.023444	-2.019696	0.0448
ADR	0.003431	0.016892	0.203085	0.8393
LOGLTA	-0.286284	0.149795	-1.911175	0.0575
GDP	-0.116099	0.115908	-1.001646	0.3178
INF	-0.000814	0.058713	-0.013862	0.9890
C5	-0.140352	0.087626	-1.601722	0.1109
BSD	-0.055967	0.035876	-1.560004	0.1204
SMD	0.012106	0.009022	1.341720	0.1813

R-squared	0.533131	Mean dependent var	1.353250
Adjusted R-squared	0.505814	S.D. dependent var	1.289010
S.E. of regression	0.906153	Sum squared resid	154.3692
Durbin-Watson stat	1.425494	J-statistic	1.78E-39
Instrument rank	12		

Dependent Variable: ROE
Method: Generalized Method of Moments
Date: 05/25/19 Time: 20:02
Sample: 1 200
Included observations: 200
Linear estimation with 1 weight update
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)
Standard errors & covariance computed using estimation weighting matrix
Instrument specification: GNPL CR CE LG ADR LOGLTA GDP INF C5 BSD SMD
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	113.6483	44.31028	2.564830	0.0111
GNPL	-0.454962	0.252754	-1.800023	0.0735
CR	-0.112368	0.563363	-0.199460	0.8421
CE	-0.243277	0.093793	-2.593751	0.0102
LG	-0.180206	0.156390	-1.152282	0.2507
ADR	0.068338	0.131303	0.520458	0.6034
LOGLTA	-1.214019	1.086501	-1.117366	0.2653
GDP	-0.920137	1.121243	-0.820640	0.4129
INF	0.094371	0.591388	0.159576	0.8734
C5	-0.746784	0.776586	-0.961623	0.3375
BSD	-0.540500	0.324879	-1.663696	0.0978
SMD	-0.011127	0.083301	-0.133578	0.8939

R-squared	0.413351	Mean dependent var	15.06755
Adjusted R-squared	0.379026	S.D. dependent var	11.17481
S.E. of regression	8.805964	Sum squared resid	14578.46
Durbin-Watson stat	1.511271	J-statistic	0.000000
Instrument rank	12		

Dependent Variable: ROE
Method: Generalized Method of Moments
Date: 05/25/19 Time: 20:04
Sample: 1 200
Included observations: 200
Linear estimation with 1 weight update
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)
Standard errors & covariance computed using estimation weighting matrix
Instrument specification: NNPL CR CE LG ADR LOGLTA GDP INF C5 BSD SMD
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	119.2838	46.01215	2.592442	0.0103
NNPL	-0.484846	0.255964	-1.894194	0.0497
CR	-0.375079	0.516072	-0.726796	0.4683
CE	-0.291092	0.093183	-3.123877	0.0021
LG	-0.221770	0.163678	-1.354920	0.1771
ADR	0.036465	0.123013	0.296429	0.7672
LOGLTA	-1.000211	1.079719	-0.926362	0.3554
GDP	-0.688332	1.179648	-0.583506	0.5603
INF	0.021655	0.574474	0.037695	0.9700
C5	-0.773767	0.780747	-0.991060	0.3229
BSD	-0.568272	0.314675	-1.805902	0.0725
SMD	0.002891	0.079763	0.036248	0.9711

R-squared	0.405698	Mean dependent var	15.06755
Adjusted R-squared	0.370925	S.D. dependent var	11.17481
S.E. of regression	8.863219	Sum squared resid	14768.65
Durbin-Watson stat	1.525977	J-statistic	2.42E-39
Instrument rank	12		

Dependent Variable: NPM
Method: Generalized Method of Moments
Date: 05/25/19 Time: 20:27
Sample: 1 200
Included observations: 200
Linear estimation with 1 weight update
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)
Standard errors & covariance computed using estimation weighting matrix
Instrument specification: GNPL CR CE LG ADR LOGLTA GDP INF C5 BSD SMD
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.680672	3.523049	-0.193205	0.8470
GNPL	-0.068668	0.019699	-3.485927	0.0006
CR	-0.033622	0.042106	-0.798509	0.4256
CE	-0.024517	0.014128	-1.735334	0.0843
LG	0.014250	0.014122	1.009024	0.3143
ADR	0.002227	0.015019	0.148245	0.8823
LOGLTA	-0.288507	0.197129	-1.463548	0.1450
GDP	0.019916	0.121491	0.163932	0.8700
INF	-0.067633	0.060385	-1.120021	0.2641
C5	0.119276	0.070355	1.695345	0.0917
BSD	0.051405	0.029865	1.721228	0.0869
SMD	0.018198	0.009201	1.977761	0.0494

R-squared	0.496995	Mean dependent var	2.399350
Adjusted R-squared	0.467564	S.D. dependent var	1.417969
S.E. of regression	1.034667	Sum squared resid	201.2606
Durbin-Watson stat	0.797827	J-statistic	0.000000
Instrument rank	12		

Dependent Variable: NPM
Method: Generalized Method of Moments
Date: 05/25/19 Time: 20:28
Sample: 1 200
Included observations: 200
Linear estimation with 1 weight update
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)
Standard errors & covariance computed using estimation weighting matrix
Instrument specification: NNPL CR CE LG ADR LOGLTA GDP INF C5 BSD SMD
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.331754	3.787367	0.087595	0.9303
NNPL	-0.083270	0.029707	-2.803085	0.0056
CR	-0.067140	0.042411	-1.583060	0.1151
CE	-0.031622	0.013060	-2.421231	0.0164
LG	0.006822	0.014875	0.458610	0.6470
ADR	-0.003280	0.016353	-0.200591	0.8412
LOGLTA	-0.250417	0.212055	-1.180907	0.2391
GDP	0.064992	0.122631	0.529981	0.5968
INF	-0.082469	0.063185	-1.305203	0.1934
C5	0.113819	0.071668	1.588132	0.1139
BSD	0.045930	0.029032	1.582028	0.1153
SMD	0.020485	0.009553	2.144297	0.0333

R-squared	0.496896	Mean dependent var	2.399350
Adjusted R-squared	0.467459	S.D. dependent var	1.417969
S.E. of regression	1.034769	Sum squared resid	201.3004
Durbin-Watson stat	0.841349	J-statistic	0.000000
Instrument rank	12		

hausman fixed random

```
                ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed        random       Difference          S.E.
-------------+----------------------------------------------------------------
        NNPL |   -.0673631    -.0759934        .0086303        .0187731
          CR |   -.1315808    -.0895282       -.0420526        .0244204
          CE |   -.0207176    -.0281913        .0074737        .0035112
          LG |    -.009956    -.0301416        .0201856        .0081289
         ADR |   -.0003282    -.0011516        .0008234         .005127
      logLTA |    .1893713    -.0418301        .2312013        .2917365
         GDP |   -.2362674    -.1815054        -.054762        .0243076
         INF |    .0409725     .025852        .0151204        .0140157
          C5 |   -.0802392    -.111634        .0313948        .0097125
         BSD |   -.0527248    -.0568728         .004148        .0108792
         SMD |    .0061216     .0094139       -.0032923        .0008058
------------------------------------------------------------------------------
                    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(11) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                         =       12.94
              Prob>chi2 =      0.2973
              (V_b-V_B is not positive definite)
```

vif (Variation Inflation Factor)

Variable	VIF	1/VIF
C5	6.80	0.526228
BSD	6.78	0.595988
CR	3.46	0.289417
LG	3.45	0.289505
GNPL	3.01	0.331687
INF	2.98	0.335591
logLTA	2.83	0.352789
SMD	2.78	0.360085
ADR	2.56	0.389896
NNPL	2.48	0.403561
NPM	2.20	0.455069
GDP	2.09	0.478617
ROE	1.83	0.545939
CE	1.80	0.555174
Mean VIF	3.22	

Unit-root test:

. xtunitroot llc ROE

Levin-Lin-Chu unit-root test for ROE

Ho: Panels contain unit roots Number of panels = 20
Ha: Panels are stationary Number of periods = 10

AR parameter: Common Asymptotics: N/T -> 0
Panel means: Included
Time trend: Not included
ADF regressions: 1 lag
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-8.9152	
Adjusted t*	-5.6916	0.0000

```
------------------------------------------------------------------------------
. xtunitroot llc ROA
Levin-Lin-Chu unit-root test for ROA
----------------------------------
Ho: Panels contain unit roots              Number of panels  =     20
Ha: Panels are stationary                  Number of periods =     10
AR parameter: Common                       Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included
ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                 Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t       -7.4528
 Adjusted t*        -4.4042       0.0000
------------------------------------------------------------------------------
. xtunitroot llc NPM
Levin-Lin-Chu unit-root test for NPM
----------------------------------
Ho: Panels contain unit roots              Number of panels  =     20
Ha: Panels are stationary                  Number of periods =     10
AR parameter: Common                       Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included
ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                 Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t       -8.1694
 Adjusted t*        -3.3938       0.0003
------------------------------------------------------------------------------
. xtunitroot llc GNPL
Levin-Lin-Chu unit-root test for GNPL
----------------------------------
Ho: Panels contain unit roots              Number of panels  =     20
Ha: Panels are stationary                  Number of periods =     10
AR parameter: Common                       Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included
ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                 Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t       -7.2075
 Adjusted t*        -3.1161       0.0009
------------------------------------------------------------------------------
. xtunitroot llc NNPL
```

```
Levin-Lin-Chu unit-root test for NNPL
-------------------------------------
Ho: Panels contain unit roots              Number of panels =     20
Ha: Panels are stationary                  Number of periods =     10
AR parameter: Common                       Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included
ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                 Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t       -6.4269
 Adjusted t*        -1.8944       0.0291
------------------------------------------------------------------------------
. xtunitroot llc CR
Levin-Lin-Chu unit-root test for CR
----------------------------------
Ho: Panels contain unit roots              Number of panels =     20
Ha: Panels are stationary                  Number of periods =     10
AR parameter: Common                       Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included
ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                 Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t       -9.1938
 Adjusted t*        -5.9809       0.0000
------------------------------------------------------------------------------
. xtunitroot llc CE
Levin-Lin-Chu unit-root test for CE
----------------------------------
Ho: Panels contain unit roots              Number of panels =     20
Ha: Panels are stationary                  Number of periods =     10
AR parameter: Common                       Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included
ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                 Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t       -5.5678
 Adjusted t*        -2.2806       0.0113
------------------------------------------------------------------------------
. xtunitroot llc LG

Levin-Lin-Chu unit-root test for LG
```

```
----------------------------------
Ho: Panels contain unit roots          Number of panels  =     20
Ha: Panels are stationary              Number of periods =     10
AR parameter: Common                     Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included
ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t       -9.6975
 Adjusted t*        -5.6892       0.0000
------------------------------------------------------------------------------
. xtunitroot llc ADR
Levin-Lin-Chu unit-root test for ADR
----------------------------------
Ho: Panels contain unit roots          Number of panels  =     20
Ha: Panels are stationary              Number of periods =     10
AR parameter: Common                     Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included
ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t      -14.7454
 Adjusted t*       -12.3739       0.0000
------------------------------------------------------------------------------
. xtunitroot llc LTA
Levin-Lin-Chu unit-root test for LTA
----------------------------------
Ho: Panels contain unit roots          Number of panels  =     20
Ha: Panels are stationary              Number of periods =     10
AR parameter: Common                     Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included
ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t        3.1156
 Adjusted t*         4.3293       1.0000
------------------------------------------------------------------------------
. xtunitroot llc logLTA
Levin-Lin-Chu unit-root test for logLTA
-------------------------------------
Ho: Panels contain unit roots          Number of panels  =     20
```

```
Ha: Panels are stationary                Number of periods =     10
AR parameter: Common                     Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included
ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t      -13.3674
 Adjusted t*       -12.8553       0.0000
------------------------------------------------------------------------------
. xtunitroot llc GDP
Levin-Lin-Chu unit-root test for GDP
----------------------------------
Ho: Panels contain unit roots            Number of panels  =     20
Ha: Panels are stationary                Number of periods =     10
AR parameter: Common                     Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included
ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t      -10.4514
 Adjusted t*        -5.3768       0.0000
------------------------------------------------------------------------------
. xtunitroot llc INF
Levin-Lin-Chu unit-root test for INF
----------------------------------
Ho: Panels contain unit roots            Number of panels  =     20
Ha: Panels are stationary                Number of periods =     10
AR parameter: Common                     Asymptotics: N/T -> 0
Panel means:  Included
Time trend:   Not included

ADF regressions: 1 lag
LR variance:     Bartlett kernel, 6.00 lags average (chosen by LLC)
------------------------------------------------------------------------------
                Statistic      p-value
------------------------------------------------------------------------------
 Unadjusted t       -8.1267
 Adjusted t*        -2.2335       0.0128
------------------------------------------------------------------------------
. xtunitroot llc C5
Levin-Lin-Chu unit-root test for C5
----------------------------------
Ho: Panels contain unit roots            Number of panels  =     20
Ha: Panels are stationary                Number of periods =     10
```

AR parameter: Common Asymptotics: N/T -> 0
Panel means: Included
Time trend: Not included
ADF regressions: 1 lag
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-1.3159	
Adjusted t*	1.5188	0.9356

. xtunitroot llc BSD
Levin-Lin-Chu unit-root test for BSD

Ho: Panels contain unit roots Number of panels = 20
Ha: Panels are stationary Number of periods = 10
AR parameter: Common Asymptotics: N/T -> 0
Panel means: Included
Time trend: Not included

ADF regressions: 1 lag
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-9.2522	
Adjusted t*	-7.2823	0.0000

. xtunitroot llc SMD
Levin-Lin-Chu unit-root test for SMD

Ho: Panels contain unit roots Number of panels = 20
Ha: Panels are stationary Number of periods = 10
AR parameter: Common Asymptotics: N/T -> 0
Panel means: Included
Time trend: Not included
ADF regressions: 1 lag
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-15.3028	
Adjusted t*	-10.4163	0.0000

Pairwise Granger Causality Tests
Date: 04/05/19 Time: 08:32
Sample: 1 200

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
ROE does not Granger Cause ROA	198	0.80869	0.4469
ROA does not Granger Cause ROE		0.36300	0.6961
NPM does not Granger Cause ROA	198	0.14584	0.8644
ROA does not Granger Cause NPM		0.32291	0.7244
NPL does not Granger Cause ROA	198	7.28361	0.0009
ROA does not Granger Cause NPL		0.92964	0.3965
CR does not Granger Cause ROA	198	11.8965	1.E-05
ROA does not Granger Cause CR		1.94683	0.1455
LQ does not Granger Cause ROA	198	0.16616	0.8470
ROA does not Granger Cause LQ		0.48053	0.6192
ADR does not Granger Cause ROA	198	0.67619	0.5097
ROA does not Granger Cause ADR		0.19785	0.8207
CAP does not Granger Cause ROA	198	2.10136	0.1251
ROA does not Granger Cause CAP		5.06718	0.0072
ME does not Granger Cause ROA	198	0.84772	0.4300
ROA does not Granger Cause ME		0.05588	0.9457
SIZE does not Granger Cause ROA	198	1.69641	0.1861
ROA does not Granger Cause SIZE		0.56160	0.5712
GDP does not Granger Cause ROA	198	11.0205	3.E-05
ROA does not Granger Cause GDP		1.77699	0.1719
INF does not Granger Cause ROA	198	6.86555	0.0013
ROA does not Granger Cause INF		4.09040	0.0182
UNE does not Granger Cause ROA	198	5.70027	0.0039
ROA does not Granger Cause UNE		5.29748	0.0058
BSD does not Granger Cause ROA	198	1.47720	0.2308
ROA does not Granger Cause BSD		5.02606	0.0074
SMD does not Granger Cause ROA	198	0.11487	0.8915
ROA does not Granger Cause SMD		1.30836	0.2726
NPM does not Granger Cause ROE	198	0.02445	0.9759
ROE does not Granger Cause NPM		0.34118	0.7114
NPL does not Granger Cause ROE	198	7.76434	0.0006
ROE does not Granger Cause NPL		2.18230	0.1156
CR does not Granger Cause ROE	198	14.7226	1.E-06
ROE does not Granger Cause CR		0.16424	0.8487
LQ does not Granger Cause ROE	198	0.64330	0.5267
ROE does not Granger Cause LQ		0.35187	0.7038