

# CHAPTER I

## INTRODUCTION

### **1.1 Background of the Study**

Financial institutions are the companies that engage in the business dealing with financial and monetary transactions such as deposits, loans, investments, and exchange of currencies. Financial institutions encompass a broad range of business operations within the financial services sector including the depository and non-depository institutions. They include commercial banks, saving institution, credit unions, finance companies, mutual funds, securities firms, insurance companies and pension funds. A market where the financial institutions operate and play the role of intermediaries and transact financial securities is called a financial market. Financial institutions are considered as the players of the financial market. Financial institutions are one of the most important participants of any country's financial system that play a vital role in determining the effectiveness and efficiency of the financial system.

Financial institutions hence represent the vital infrastructure through which money flows from saving units to investors in various economic sectors. They are the key role players of effective and specific companies, commercial banks, micro financing institutions, provident fund, insurance companies, security markets, citizen investment trust, and credit security operations. Financial sector is fundamental to the effective functioning of the market economy primarily because this sector is responsible for the supply of money to the market through the transfer of funds from investors to the companies as saving mobilization in the form of loans, deposits, investments, credit allocation, payments, and fund transfer services. Hakkio & Keeton (2009) stated that the tension in the financial sector could slow down real economic activities through various channels such as delay in investment, decline of consumption and tightening access to credit. According to Allen & Charletti (2008) the efficiency of the process through which savings are channeled into productive activities is crucial for growth and general welfare. Banks and financial institutions are one crucial part of this process. According to Richard (2011), financial institutions play a crucial role in the growth and prosperity of the economy since they provide easy credit flow and boost economic activity by raising investment in productive and profitable sectors.

Rajaraman & Vashistha (2002) argued that a sound financial sector is more important for the economic growth of any country. Better performance of these financial institutions plays a significant role for the economic prosperity of any country and poor performance of these institutions results in the slowdown of economic growth and prosperity around the financial world.

### **Banks**

Banks are generally referred to as financial institutions that are engaged in accepting deposits from customers, and investment them in loans simultaneously. In simple terms, they are termed as the establishments for the custody of money, which it pays out on a customer's order. Simply as the intermediaries, banks are one of the important players of the financial market. Banks play a key role in financial stability and the economy of a country. In the words of Mithani (1985), a bank is an institution whose loans are taken in order to settle down other people's loans to each other. The work of a banker, hence, consists of taking debts of others, and offering them in a way to generate monetary value.

The evolution of banking business goes back to fourteen century. It first started from Renaissance Italy. The initial banks performed the work continuing of concept and idea of credit providing that were well rooted in the ancient world. Medicis, the Fuggers, the Welsers, the Berenbergs, and the Rothschilds were notably the dynasties of banking. They continued to play the key role for many centuries. Banca Monte dei Paschi di Siena (founded in 1472) is recorded to be the oldest bank, which still exists till now. Berenberg Bank (founded in 1590) is considered to be the oldest merchant bank that still exists.

### **Commercial Banks**

A specific type of bank that performs the role of depository institution and hence plays the role of an intermediary between saving unit and borrowing units are called commercial banks. They are categorized as A-class institutions by the central bank of Nepal. Commercial banks basically channel funds from saving units to the investors who need it. They collect finances from the individuals, corporate bodies and governments and use them to lend to the units who need it.

The function of commercial banks consists of creating short term loans to businesses. They create money in this process. The Economic Discussion website clearly defines them as those financial institutions established to carry out the functions of receiving

money as deposit from the customers and making an investment in such a way that generates profit to the bank. The commercial banks are the institutions that earn profit by doing what they are formed to do-the banking businesses of deposits and loans. Financing of trade and commerce with loans of shorter term is something they generally do. They charge high rates of interest from the borrowers but pay much less rate of interest to their depositors with the result that the difference between the two rates generates interest. This ultimately is the earning for the bank as a primary source of profit of the commercial banks. In Nepal, commercial banks are governed by Nepal Rastra Bank under the Banks and Financial Institution Act, 2073 (2017).

**Table 1.1 List of Commercial Banks of Nepal licensed by NRB until Jan 2021**

S.N.	Name of the Bank	Date of Establishment
1	Nepal Bank Ltd.	1937/11/15
2	Agriculture Development Bank Ltd.	1968/01/21
3	Nabil Bank Ltd.	1984/07/12
4	Nepal Investment Bank Ltd.	1986/03/09
5	Standard Chartered Bank Nepal Ltd.	1987/02/28
6	Himalayan Bank Ltd.	1993/01/18
7	Nepal SBI Bank Ltd.	1993/07/07
8	Nepal Bangladesh Bank Ltd.	1994/06/06
9	Everest Bank Ltd.	1994/10/18
10	Kumari Bank Ltd.	2001/04/03
11	Laxmi Bank Ltd.	2002/04/03
12	Citizens Bank International Ltd.	2007/04/20
13	Prime Commercial Bank Ltd.	2007/09/24
14	Sunrise Bank Ltd.	2007/10/12
15	Century Commercial Bank Ltd.	2011/03/10
16	Sanima Bank Ltd.	2012/02/15
17	Machhapuchhre Bank Ltd.	2012/07/09
18	NIC Asia Bank Ltd.	2013/06/30
19	Global IME Bank Ltd.	2019/09/04
20	NMB Bank Ltd.	2019/09/28
21	Prabhu Bank Ltd.	2016/02/12
22	Siddhartha Bank Ltd.	2016/07/21
23	Bank of Kathmandu Ltd.	2016/07/14
24	Civil Bank Ltd.	2016/10/17
25	Nepal Credit and Commerce Bank Ltd.	2017/01/01
26	Rastriya Banijya Bank Ltd.	2018/05/02
27	Mega Bank Nepal Ltd.	2018/05/13

*Source: Nepal Rastra Bank's website, Mid Apr. 2022*

### **Non-performing Assets**

Non-performing assets (NPAs) are referred to as the loans made available by the commercial banks but are not returned by the clients even though it is already due. When those loans are not repaid by customers on time and that falls behind, the banks refer to it as a non-performing asset. The 2022 directive of Nepal Rastra Bank loans that performing loans are grouped into pass categories and non-performing loans are the loans that fall under sub-standard and loss category. This implies that the loans that are overdue for over 90 days are categorized as non-performing loans by the Nepal Rastra Bank. Non-performing assets are grouped under the classified loans by the directives of Nepal Rastra Bank. It categorizes the non-performing asset into two groups as substandard loan and loss loan. The bank directive further states that a loan is non-performing if the interest of principal amount has not been paid for ninety days or more.

**Table 1.2 Latest loan classification and provision as per NRB directives 2022**

<b>Loan Classification</b>	<b>Duration of non-payment</b>	<b>Loan Loss Provision</b>
Pass/standard	Less than 3 months	1%
Sub standard	3 months to a year	25%
Loss	More than a year	100%

*Source: Directives for Commercial Banks as published by Nepal Rastra Bank 2022.*

It is often cited that the performance of the bank is assessed very well by the amount of non-performing assets (NPAs). It is an essential means to assess how fit the bank is in terms of its performances. The fraction of amount that a bank fails to receive against the loan that they provided to their clients is termed as NPA. The bank and financial institutions need to be very careful when issuing new loans. This in one hand affects the profitability and the economic growth in the other. (Prabhavathy, 2022)

It is possible to receive profit when a bank is able to receive back their loans with interest from their clients. Otherwise, banks can not generate profits. The entire economy is affected by the bank's profitability. Policies of the banks are also responsible for increasing the amount of NPAs in the context of Nepal. They formulate the policies thinking that more income is possible when investment is extensive. It is also notable to mention here that the borrowers pay back loans not when they are due but when the repayment policies are tight. (Pokharel & Pokharel, 2020)

Gnawali (2018) refers to a non-performing asset (NPA) as the loan provided by an individual commercial bank but that their customer fails to pay back until it falls behind in terms of due date. When the provided loan is not paid back by customers it goes past due, the bank classifies it into non-performing assets. He stresses the importance of financial institutions in the growth of the economy, as it can be the backbone for the smooth movement of credit from saving units to investing units. It creates chances for investment for creating job opportunities in the profitable industries. Consequently, good financial institutions are considered crucial for the stability of financial systems. Financial stability of any country is backed up by the banking industry's long-term efficient and effective performance. The amount of credit a bank provides to people for profitable endeavors increases the rate of the country's economic growth and ensures its success in the long run.

The increase in non-performing loans can lead to an adverse impact on the profitability and growth. This is because it accelerates the possibility of reducing its earnings. As the client fails to repay the loan, it turns out to be non-performing, be it the principle amount or the interest. When the loan turns bad, the bank has a high chance to lose its principal loan amount. When the interest is not received, profit of the bank suffers/declines. The capital of the bank also gets decreased when they fail to receive the principal loan amount. This will raise a question mark on the bank's stability and existence. (Das & Uppal, 2021)

Singh (2012) states that significant exercises are being made by the commercial banks in order to limit the level of non-performing assets and reduce the profitability restraints. His findings claim that it is tried by every commercial bank to sort out this issue. A constant source of worry is the extent to which performing assets have slipped into the category of non-performing assets. Even if the commercial banks' recoveries of non-performing assets accounts during the past few years were large, the amount of new accretion at that time was also notably substantial. Due to an increase in the number of new non-performing assets and periodic tightening of NRB regulations, the level of NPA has increased, undoing whatever reduction that had been made. Due to the externalities, it is impossible to completely eliminate non-performing assets from the banking industry, but their occurrence can be reduced. To minimize non-performing assets, it is always advisable to adhere to adequate policies for credit appraisal, supervision, and follow-up of

advances. Armed with the recently passed Securitization Act, the banking sector is aiming to lower its non-performing assets with full might. Although the act has provided banks a lot of leverage to recover their non-performing assets, its effectiveness depends on how properly and firmly it is enforced. As a significant portion of non-performing assets are in the hands of powerful industrialists, only a strong political commitment on the part of the government to take action against these individuals will have any feasible outcomes. The issue of NPAs has been drawing the attention of the regulators, bankers, policy makers and academicians alike. A loan when turned non-performing affects the recycling of credit and creation of new credits.

Non-performing assets are the key factors to decide the financial health of most of the Nepalese commercial banks. Efficiency of performances is affected by the liquidity of the banks. Hence, the efficiency and overall performance indicated by profitability of the banks is affected. Similarly, according to Ahmed (2010) non-performing assets have become vital for evaluating the bank's financial soundness, detecting the possible issues, and sound supervision is essential in order to enhance the performances of banking and financial institutions.

Profitability of the banks is also affected. It is because; higher amount of NPA requires a higher amount of provision to be kept in reserve. A reserve needs to be separated against the non-performing loans that take a substantial amount of profit. This not only affects the lenders but also the agents involved in accelerating economic growth including the policy makers. Fast tracking this paper, we examine the trends in bank NPAs in Nepal from various dimensions and explain how mere recognition of the problem and self-monitoring has been able to reduce it to a great extent in the last decade. It also shows that commercial banks in Nepal, which function to some record in reducing NPAs as their counterparts in the public sector.

Michael (2006) asserted that the efficiency of operation is highly related to the non-performing assets that hindered upon the profit generating capacity and liquidity of the banking institutions. In addition to having an impact on profitability, liquidity, and competitive functioning, non-performing assets also had an impact on bankers' psychology with regard to how they allocated money for credit delivery and credit expansion, according to Batra, S. (2003). Non-performing assets created such an effect

that threatened banking existence and expansion and, if not adequately managed, resulted in financial collapses/bankruptcies.

The above discussion shows that the studies dealing with non-performing assets and banks profitability in Nepalese commercial banks is so important. Though there are such findings in the context of different countries, no such findings using recent data exist in the context of Nepal. Thus, to deal with the different views of NPA, this study has been conducted to test the impact of NPA on bank profitability in the commercial banks of Nepal.

## **1.2 Statement of Problem**

The topic non-performing assets (NPAs) and profitability is one of those empirical questions that continuously draw the attention of many researchers in finance. Extensive amounts of research have been conducted in order to examine the relationship between NPAs and profitability in several countries. According to Singh, et al. (2021) the reason behind the consideration of non-performing loans as bad debt is because there is a less chance to receive it when the customer fails to pay back on the due date. Not only the cash flows but also the stock price of the bank is negatively affected by the larger amount of NPA. Banks need to take many strict measures to recover their loans. The sound accounts of profit and stock price attracts the investors. But, the non-performing loans compared against total assets of the bank are seen to attract a significant amount of uncertainty.

Ongore & Kusa (2013) suggest that the economic growth of the countries is significantly connected with the profitability and performances of the banks. An investor receives a satisfactory return on their money put into the share of the firm when it performs well in terms of profitability. Investors will be further attracted to invest their money in shares which further contributes to the growth of the economy. The economy turns upside down when the banks do not perform well in terms of profitability and returns. A sound banking system not only benefits the shareholders but also boosts the country's economy when it performs well. The study suggests that a monitoring body needs to closely observe the banking and financial institutions. Profit means the income of the firm after deducting taxation to be paid to the government. Profitability is measured by ratios of return on assets and return on equity. Gross domestic product, inflation, import and export of the

country, interest rate are a few factors that affect the ratio of profitability. The profitability is determined by both internal and external factors. The internal factors of bank profitability influence the decision of bank management and policy objectives. The profitability of a bank reflects how the objectives, policies and practices are set by the bank management.

Demirguc-Kunt & Huizinga (1999) and Barr, Killgo, Siems, & Zimmel (2002) study finds that large amounts of non-performing assets have been observed in all the banking and financial institutions before they turn bankrupt. Chijoriga (2000) including many other researchers suggest less profitability has a significant negative connection with having excessive NPAs that resulted in bank failures. It is averred that all over the world, financial institutions face enormous risks of non-performing assets (NPA). Nonperforming assets are not only argued to adversely affect the financial performance of financial institutions, but they also have other far reaching implications. This is due to the fact that, other potential borrowers may fail to access credit facilities since part of the funds that could be extended as loans by financial institutions are still tied to NPAs. The NPAs also affect the economy of a country, which is why it has become necessary to set guidelines for enabling financial institutions to mitigate NPAs (Wangai, Bosire, & Gathogo, 2006).

The majority of the assets that occupy the space for collecting revenue are discovered to be bank loans. The primary asset from which commercial banks derive their revenue is the loan. The profitability of banks is based on how qualitative their loan portfolio is. Bank profitability is directly related to the quality of the loan portfolio. Losses resulting from past-due loans significantly pose the risk to the banking institutions. Taking that into account, the best indicators of asset quality are hence the ratio of non-performing loans. Different financial ratios are used by different researchers to analyze the performance of banks. The goal of all commercial banks is to maintain a low level of non-performing loans. This is true since a bank's performance in terms of profitability is impacted by high nonperforming loans. Therefore, a low ratio of non-performing to total loans indicates that a bank's portfolio is in good shape. The performance of the bank is improved by a lower ratio. (Sangmi & Nazir, 2010).



In the same way, the study conducted by Javaid, Zaman, & Gaffor (2011) in the Pakistani banking sector provided similar results. This study was carried out to analyze what would determine the profitability of banks in Pakistan. They took a sample of ten commercial banks from 2004 to 2008. Their focus was only on the internal factors. They carried out the study by using the pooled ordinary least square method. Total assets, loans, equity, and deposits were considered to be the primary determinants of profitability. This research found out a valid connection between these internal factors to conclude that they are the major determinants. Managing the credit risk of the bank was possible by focusing on non-performing assets (Batra, 2003). The banks hence would concentrate their main effort in recovering their loans rather than issuing new loans. Hence, Profitability of the bank is primarily affected by NPAs. The increase in NPAs also implies other things. Banker's mindset on expanding new loans in the productive sector will affect the whole system. They might shift their focus on investing in government securities such as t-bills or bonds in order to minimize the uncertainties, which will not be conducive for banks.

Michael (2006) emphasized that NPA in loan portfolios affect operational efficiency. This in turn affects profitability, liquidity and solvency of banks. The Indian commercial banks show the same results. For example, the study conducted by Singh (2012) revealed the negative relationship between the NPA and profitability. The study was conducted to analyze the impact of NPA on banking performance of nationalized banks of India. It was observed that the banks had not been able to get high profit during those years. This indicates that there are other factors also responsible to minimize the profitability of the banks. This gives light to the need of research on looking at other reasons.

### **1.3 Research Questions**

Though there is above mentioned empirical evidence in the context of developed economies, most of that evidence is almost non-existence in the context of Nepal. Following questions will be addressed by this research work.

- 1) What is the relationship between non-performing assets and profitability of Nepalese commercial banks;
- 2) Is the deposit related to the profitability of these commercial banks?
- 3) Does the total asset affect the profitability of commercial banks?
- 4) Does the total loan affect the profitability of commercial banks?

#### **1.4 Objectives of the Study**

This study is aimed at examining the impact of Non-performing assets on the profitability of commercial banks. The primary objectives for the research are:

- 1) To examine the relationship between non-performing assets and profitability of Nepalese commercial banks.
- 2) To analyze the relationship between total deposit and profitability of the commercial banks of Nepal.
- 3) To evaluate the effect of total assets on profitability of commercial banks of Nepal.
- 4) To investigate the effect of total loan on profitability of these commercial banks.

#### **1.5 Rationale of the Study**

This study will help to understand the functional relationship between various explanatory variables and Non-performing assets in the context of Nepal. This research will spotlight the problems stated and offer suggestions, which in turn would be very useful in formulating NPA policies and procedures for Nepalese firms. Thus, this study will be significant in examining NPA guidelines followed and consequences on the firm's performance. Many researchers are now carrying out their studies on non-performing Assets practices in terms of Nepal. Many important aspects about NPA have not been revealed yet but are in process to be spotlighted.

Banks focus on the loan and advances for increasing profitability. It is because they are the primary source of income and the reason why they exist and do business. It means interest earned from such loans and advances occupy major space in the income statement of the bank. As a business institute, a bank aims at making huge profit since loans and advances are more profitable. However, the bankers need to understand that the major risks are associated with the loans and advances. Most of the bank's failures in the world are connected to the decrease in loans and advances. Loan is kept in a high risk zone and is kept a close eye on them. While the good loans are the primary source of earning, bad loans can ruin the banking business. Not only the amount of investment that a bank can make in productive loans, but also the amount that it can get back against those loans will determine the success of any bank. The loan is only performing loan when it is able to generate money when it is due.

Researchers often claim that the problem of NPAs has been rising in Nepalese banking and financial institutions. High level of NPA has been troubling the banks nowadays, which has been the subject of headache to the banking sector and Nepalese banking industry. The research will study the relationship of profitability with its inherent factors such as loans, deposits, total assets together with the non-performing assets. In addition to pinpointing the weaknesses prevalent in them, suggestions will be provided in order to improve the risks and enhance the profitability.

### **1.6 Limitations of the Study**

This study used financial statements published by annual reports of sample Nepalese commercial banks. Some of the limitations of the study are listed below.

- 1) This study is based on secondary data that are basically extracted from the audited financial reports of the commercial banks chosen from quota sampling method, so finding of the study may not be suitable to be generalized.
- 2) Lack of relevant literature on non-performing asset and bank profitability of Nepal by previous researchers applying the quota sampling method hinders the study.
- 3) Though the objective of the study is to test the relationship between the exploratory variables and bank profitability and performances (i.e. by using ROA, ROE, and NIM), this study has not used variables like Earning per share, non-performing loans to total assets etc. that could have high explanatory power.
- 4) This study does not consider all the factors that affect the bank performance. There can be other factors such as GDP, capital adequacy ratio, inflation that might also affect the overall performance of the bank.
- 5) This study is based on the data collected from the sample commercial banks, so it may not represent the actual figure of all commercial banks of Nepal.

## **1.7 Organization of the Study**

The study has been organized into five chapters. The title of each of these chapters is as follows:

### **CHAPTER I Introduction**

Introduction chapter comprises background, focus of the study, statement of problem, objectives, significance, limitation, and organization of the study.

### **CHAPTER II Review of Literature**

This chapter comprises conceptual review related to the topic and relevant literature reviews.

### **CHAPTER III Research Methodology**

This chapter deals with the method of investigation and includes research design, nature of the data, data collection procedure and tools used.

### **CHAPTER IV Results and Discussions**

Results are presented in the meaningful format based upon the analysis of data and the result is compared against the literature studies.

### **CHAPTER V Summary and Conclusions**

Last chapter includes the summary of the whole research, conclusions drawn from the study and implication and scope for future studies.

References and appendices are included at the end of this research.

## **CHAPTER II**

### **LITERATURE REVIEW**

This chapter consists of the review of relevant literature available in different books, journals, articles, research reports, newspapers, magazines, policy documents that are consistent with the variables that have been taken for the study. Both the published or unpublished literature works have been reviewed. Every study is very much based on past knowledge, study and experiences. The past knowledge or the previous studies provide foundation to the study. Various thesis works that have been done in different aspects of non-performing assets of different organizations are also reviewed for the purpose of justifying the study.

#### **2.1 Review of Literature**

This section presents a thorough review of literature on bank specific factors and its influence on the performance of the banks. It is an integral and mandatory process in research works that consist of reviewing previous works and other conclusions drawn in the relevant subject matter. The research aims at drawing a valid conclusion by comparing all kinds of information previously discovered.

A literature review is a concise overview of what has been studied, argued, and established about a topic. It is a summative presentation of the research made by the previous scholars. What has been found in the related subject matter, and what they have contributed in the field of study will be summarized in this section in a chronological order. The previous findings and differences will also be critically compared to find similarity and differences. It also entails about the major findings as well as reviewing the tools and techniques used by the previous studies. Literature review helps to understand where we stand in terms of research in order not to reinvent the wheel. The review of major literature on non-performing loan effect on profitability has been organized as follows:

- I. Review of books, and
- II. Review of previous research works

### **2.1.1 Review of Books**

There are various studies conducted on the effect of non-performing loan effects on profitability. Sinkey & Greenawaalt (1991) for instance, investigated the loan loss-experience of large commercial banks in the US. They argued that both internal and external factors explain the NPA of these banks. These authors find a significant positive relationship between the NPA and internal factors such as high interest rates, excessive lending, and volatile funds. Boyd & Runkle (1993) found that a negative relationship exists between size and bank performance. This suggests that larger banks obtain proportionately lower levels of profits than the smaller ones.

### **2.1.2 Review of Previous Research Works**

#### **2.1.2.1 Review of Articles**

Kavitha (2012) published a report on assessment of non-performing assets on profitability, its magnitude and impact in Indian public sector banks. In her study, the outstanding previous loan and advances had a serious negative impact on profitability of all Public Sector Banks. Similarly, Jhamb & Jhamb (2013) revealed the negative relationship between the NPA and profitability. The study was conducted to analyze the impact of NPA on banking performance of nationalized banks of India. The study also found that banks had not been able to generate a higher amount of profit over the past years. It was assimilated that there exists other factors that hinders the profitability of the banks.

Singh (2012) performed the study on performance of Non-performing assets on Indian commercial banks. The study summarized the serious issue of non-performing assets that the Indian banking sector is going through. His study demonstrated that the government owned banks were seen to have a larger amount of non-performing assets compared to the banks having private ownership. The study also suggested that, to improve the efficiency and profitability of banks the NPA need to be reduced and controlled. NPAs were seen to be among the serious issues to take care of in Indian banks. Soundness of the banking and financial institution was indicated by non-performing assets. Performance of the banks was reflected by it. The major indicators of credit risk were claimed to be the non-performing assets. The successful performance of the banks was detrimental to how well the non-performing assets were managed as they were seen to be the unavoidable overloads.

Empirical evidence shows that there is a negative relationship between the NPAs and profitability. Eljelly (2014) published her research in order to examine the determinants of profitability. She took Sudanese bank as the sample of her studies. According to her results, the internal factors were discovered to be responsible for the profitability of the banks. The profitability was measured in terms of return on assets (ROA), return on equity (ROE), and net interest margin (NIM). Profitability was also affected significantly by the size of the bank, cost, and liquidity position. Non-performing loans (NPAs) have been very critically taken into account seriously and are discussed all over the world for many years. The bank failure is found to be the immediate consequence of the high amount of NPAs. The quality of assets was found to be a critical determinant to predict the success or failure. Narayanan & Surya (2014) studies the non-performing assets of Indian commercial banks. Their study stressed that a major threat to the banking sector is the level of non-performing assets (NPAs).

The negative association is explained by the size itself; large banks may have management issues. Also, large banks may have obtained that level by an aggressive growth strategy, which is obtained at the expense of margins and profitability. Naryula & Singla (2014) carried out an empirical study on NPAs of Banks in order to find out the impact of NPA, assess the performance and study the relationship between net profit and NPA of Punjab National Bank. Her findings indicate a positive relation between total advances, net profits and NPA of a bank. It also indicates a positive relation between NPA & profits are due to wrong choice of clients by Banks.

Singh (2016) researched on a study of non-performing assets of commercial banks and its recovery in India in order to study the impact of NPA on commercial banks. His study included the data of NPA for Public sector Banks, Private Sector Banks and Foreign Banks. It found out that NPAs would reduce the earning capacity of banks and badly affect the ROI.

Bhattarai (2017) studied the effect of non-performing loans on the profitability of commercial banks in Nepal. It examined the effect of non-performing loans on the profitability of Nepalese commercial banks using pooled data of fourteen commercial banks with 77 observations during the period of 2010 to 2015. The estimated regression results revealed that the profitability indicated by ROA of the bank was negatively

affected by the NPAs. Non-performing loan ratio had a positive effect on shareholders' return (ROE). Moreover, the results showed that bank size had a significant positive effect on bank profitability measured by ROA and ROE. This study concluded that profitability of Nepalese commercial banks was influenced by non-performing loan ratio and other covariates like bank sizes.

Kadioglu, et al. (2017) studied the effect of asset quality on the bank profitability in order to investigate the effect of NPAs in the profitability in Turkey. They applied a panel regression method by using the data of 2005 to 2016 taking into account the 55 banks using 1809 observations. The research concluded a significant negative association between the profitability (ROA and ROE) against NPL. NPL was positively associated with the quality of assets resulting in the lower profitability in terms of ROE and ROA. Higher the quality of assets, lower was the NPL and higher ROE and ROA were observed.

Gnawali (2018) found a serious level of NPA in the banking institutions of Nepal. The issue of rising non-performing assets has been affecting Nepal's BFIs. The author examined the relation of NPA on the commercial banks of Nepal. He took ROA and ROE as dependent variables whereas loan, loan loss provision, CAR, ratio of LLP to total loan, ratio of TL to TD and size of the banks as independent variables. Three public banks, 10 private and joint venture banks with 24 and 80 observations were taken. His research had taken the data of 2010 to 2017. For the statistical measurement, regression models were estimated to test how the NPL affects the profitability of the banks at different significance levels. His findings indicated a negative relationship of NPA on profitability of the banks.

According to Bhattarai (2020) NPL has been observed to be the primary issue in the banking industry. The level of NPL determined the stability of the banks. His research collected the panel data of 12 commercial banks in order to examine the effect of NPL on profitability. The data was collected from 2014-2018 in sixty observations. He used the multiple regression models to analyze the data. The result of three different models revealed that the NPL had significant and negative association with the return on equity. Similarly, the size had a significant and positive association with ROE. The study concluded that among the study variables, NPL and size had a major role to determine



profitability. However, the effect of non-performing loans on profitability was found to be very strong.

Pokharel & Pokharel (2020) applied the data of 2013 to 2018 in order to study the impact of non-performing assets on profitability in Nepalese commercial banks. It concluded that NPA has a significant positive relationship with ROA and firms profitability.

Das & Uppal (2021) carried out an empirical study on NPAs and profitability in Indian banks. The data of 39 commercial banks from 2005 to 2019 were covered in their research. The outcome suggested that the increase in non-performing assets were found to minimize the profit and performances of the banks. Furthermore, the outcome suggested a negative association between profitability (ROA) and NPA. The total deposit (TD) and profitability (ROA) were found to have a positive association.

Prabhavathy (2022) studied the impact of non-performing assets on a bank's profitability. This study revealed that a high amount of non-performing assets proposed higher chances of failures in loan payment that harmed the liquidity of the banks. In order to check on the performance and increase the effectiveness, he strongly recommended checking NPAs.

### **2.1.2.2 Review of Theses**

Various studies have been conducted offering many theories about how non-performing assets (NPAs) and other variables i.e. total loan, total deposits and size of the firm affect profitability measured by ROA, ROE and NI.

Chaudhari (2012) conducted a research on "Non-performing Assets of Commercial Banks" with the objectives of evaluating the impact of NPA on the profitability of the commercial banks, study the internal and the external factors that affect the non-performing assets to increase from the loan and advances, check the internal factors that influence the effective management of the NPA and its increment and to examine the relationship between the non-banking assets and the non-performing assets. He found out the internal factors to be responsible for turning good loans into bad loans. Bad intention, weak monitoring and mismanagement were pointed as the most responsible factors. Similarly, weak legal provision and credit concentration were also found as the least preferred factors in turning good loans into bad loans. Some factors such as lack of

portfolio analysis, not having effective credit policy and shortfall on security were identified as having average effect on NPA growth. In connection to the external factors, it had been found that recession, political and legal issues were also relevant factors in turning good loans into bad one. In his study, the legal provision for recovery as a reason for increment in NPA in Nepalese Banks had found the factors having less impact. Supervision and monitoring systems had been identified as average factors. He generalized that economic and industrial recession and not having strong legal provision for loan recovery were the major external factors that would have major contribution for the increment of NPA. He recommended the Nepalese commercial banks to prioritize the trade sector for lending its resources. He pointed out that service sectors were not being given that much emphasis. Nepal SBI Bank Ltd and Nepal Investment Bank Ltd. as on different headings, subject matter such as financial strength, personal integrity and security, monitoring and control system, avoidance of credit concentration, strong legal system, assets management company, avoidance of undue pressure, etc.

Poudel (2013) conducted a research topic on “Comparative Financial Performance Appraisal of Joint Venture Banks with References to Everest Bank Ltd. and Nabil Bank Ltd.” with the objectives of analyzing relations between different ratios and examining the proportion of comparative financial performance appraisal of joint venture banks. His study especially concentrated on the deposit collection of the bank and disbursement of the fund as loan and advances. He further focused on utilization and mobilization of funds and resources of Nepal Bank Ltd. He recommended the banks to try to mobilize their resources efficiently by creating new business. Service ideas were expected to help for the better utilization of ideal resources and for the economic development of the country.

Lama (2014) conducted a study on "Non-performing Loan Management of Commercial Banks (with Reference to NIBL)". The study was aimed at analyzing the level of NPLs and establishing relation between volume of loan and non-performing loan, study the impact of the non-performing assets in the profit of commercial banks, and analyze the trend line of the non-performing loan, loan and advances, loan loss provision of NIBL. His study found that the loan and advances to total deposit ratio was in fluctuating trends. The bank had a higher ratio in each year and mean too. It indicated the better mobilization of deposits. The deposits were quickly converted into loans and advances to earn income. The greater ratio meant that the bank lent higher amounts in the form of

loans and advances to earn better returns. The loans and advances to total assets ratio was in a fluctuating trend during the study period. It had utilized its total assets more efficiently in the form of loans & advances. The ratio of provision held to total non-performing loans was found to be sufficiently high. The higher the ratio of NPL provisioned against loans, the better the cushion against the risk of actual loan loss. The ratio of net profit to total loans and advances showed how efficiently the bank had through its lending activities. The correlation coefficient between, loan loss provision and loans and advances showed that there is positive correlation between these two variables. The relationship between loan loss provision and loans and advances was insignificant.

## **2.2 Research Gap**

Many research works related to non-performing assets and profitability of commercial banks have been carried out by different students, experts and researchers. Numerous research works were found in the commercial banking sector. Some studies were related to the case study of two leading banks. But the case study on non-performing assets of quota sampling method covering three different types of banks based upon their ownership is comparatively few. From the review related to the studies, no study has been found as a case study on non-performing asset and profitability analysis of commercial banks. Thus, in order to fill the gap of the existing research works, this study has been conducted to give a light on the status of non-performing assets of different banks and to suggest the possible measures for the improvement of profitability and avoidance of chances of banking failure in commercial banks.

Based on a study, banks with higher government ownership recorded lower non-performing loans. The study also showed that bank size is negatively related to NPAs while diversification may not be a determinant. (Hu, Li, & Chiu, 2004). This study analyzed the relationship between NPAs and ownership structure of commercial banks in Taiwan with a panel dataset covering the period 2010-2013. This research work not only goes almost a decade back, the author also missed to cover the private or joint venture banks and also the significant factors such as deposits, loan, and interest seem to have been overlooked.

Credit growth rate is negatively related to non performing loans. Also, ROA has a negative and statistically significant effect on NPLs. This result supports as greater performance measured in terms of ROA reduces non-performing loans since reduced risk taking in banks exhibiting high levels of performance. (Boudriga, Taktak, & Jellouli, 2009). This study draws back the evidence of Middle East and North African countries by comparing Institutional Environment Determinants of Banks Nonperforming Loans. They employed a random-effects panel regression model for 46 countries. The Variables included were credit growth rate, Capital adequacy ratio, real GDP growth rate, ROA, the loan loss reserve to total loan ratio, diversification, private monitoring and independence of supervision authority on non-performing loans. The empirical results found in the other country cannot be generalized in the context of Nepal. The need for new research in Nepalese context is realized.

This present research work is based on the latest data. It is trying to examine the relationship between non-performing assets and profitability of Nepalese commercial banks, assess the relationship between total deposit and profitability, evaluate the effect of total assets on profitability, and investigate the effect of total loan on profitability of the commercial banks owned by three different types of entities. It not only assesses the descriptive and inferential statistical tools but also applies some financial measures to suggest the outcomes derived from calculations.

## CHAPTER III

### RESEARCH METHODOLOGY

#### 3.1 Research Design

Descriptive and causal comparative research designs have been used for the purpose of research. It has applied descriptive research design to deal with the fact-finding and searching adequate information associated with explanatory variables and firm's performance of Nepalese commercial banks. In addition, causal comparative research design has been used to analyze the cause and effect relationship between the explanatory variables and firm performances. Under causal comparative research design, regression analysis has been conducted. Multiple regression models have been used to understand the directions, magnitudes and forms of observed relationship. The effect of variables like firm size indicated by total asset, total deposit, total loan and NPA on a firm's performance has been analyzed.

#### 3.2 Population and Sample and Sampling Design

From the population of 27 commercial banks only 10 commercial banks were taken namely one government bank, seven joint venture banks and two other private banks. Non-probability quota sampling technique was used to group government owned commercial banks, joint venture banks and hybrid ownership commercial banks (Table 3.1). In selecting the most reliable and representative samples, first the population of the banks are grouped on the basis of their ownership structure. The data consists of 100 observations. The data is collected for each bank from the fiscal year 2012-2021.

**Table 3.1 Selection of Banks, Period of Study, and Number of Observations**

S.N.	Ownership	Banks	Study Period	Observations
1	Government	Nepal Bank Ltd.	2012-2021	10
2	Joint Venture	Nabil Bank	2012-2021	10
3		Nepal Investment Bank Ltd.	2012-2021	10
4		Standard Chartered Bank	2012-2021	10
5		Himalayan Bank Ltd.	2012-2021	10
6		Nepal Bangladesh Bank	2012-2021	10
7		Nepal SBI Bank	2012-2021	10
8		Everest Bank Ltd.	2012-2021	10
9	Other Private Banks	Kumari Bank Ltd.	2012-2021	10
10		Laxmi Bank Ltd.	2012-2021	10
<b>Total Number of Observations</b>				<b>100</b>

### **3.3 Nature and Sources of Data**

The data were collected from the secondary source. Data were collected from the audited annual reports of selected banks and related websites, booklets, journals, thesis, website of NRB and many other websites. The data regarding the bank performance and its specific factors collected and coded with the unique code. Those data are analyzed using the Statistical Package for the Social Sciences (SPSS) software and Microsoft Excel. Correlation and Regression is done through SPSS in order to derive the meaningful relationship between bank performance indicators (ROA, ROE, and NIM) and explanatory variables.

This section also elaborates on how data were analyzed for this study. The main purpose of data analysis in this study is to analyze the magnitude and direction of the analysis of the performance of Nepalese commercial banks. For any statistical investigation, the collection of data is more important. The study is based on secondary data in nature. They have been collected through the annual reports of selected banks and related websites, booklets, journals, periodicals and organizational visits.

### **3.4 Methods of Data Analysis**

The purpose of data analysis of this study is to explore profitability analysis through Non-performing assets of selected commercial banks in Nepal. Besides, the study also attempts to identify and analyze relationships between banks performance indicators and its other variables such as Total loan, Deposit, Total assets. Collected data will be categorized, tabulated and processed, after which the process of analysis will be conducted. Tests of normality and descriptive statistics will be assessed to know whether the data are representatively useful or not. Finally, examine the performance of the bank in Nepal by using various tools such as financial ratio analysis, correlation analysis, regression analysis, mean and standard deviation.

#### **3.4.1 Correlation analysis**

This study is also based on correlation research design. This design was basically applied to measure which direction they are related and the magnitude of association between the variables. It showed how two variables are associated and move in direction with specific degree of relationship inherent in them. The relationship has been explained by using bivariate Pearson's correlation coefficient. As this study has also used qualitative data, it

has also used Kendall's Tau-b correlation coefficient to measure the association between variables.

### 3.4.2 Test of Overall Significance of the Model

Besides the statistical test of significance of individual regression coefficients, it is necessary to test the joint hypothesis that all regression coefficients are simultaneously significant. This is called the test of overall significance of the model. This can be done by using adjusted coefficient of determination ( $ADJ.R^2$ ) and  $F$ - statistics. The adjusted coefficient of determination has been used to identify the percentage of total variation in dependent variable that has been explained jointly by all explanatory variables. The statistical significance test of this joint explanatory power has been conducted by using  $F$ -statistic. The  $p$ - value of  $F$ -test has been examined to confirm whether the regression models are significant at 1, 5 percent significance level.

### 3.4.3 Tools

In this study, descriptive statistical tools such as the mean, standard deviation have been used. Similarly, inferential statistical tools such as  $F$ -test, ANOVA,  $t$ -test, regression analysis, and bivariate Pearson's correlation have been used. Analysis of deviation between the mean and the actual values standard deviation is done. To find out the relationship between the bank profitability indicators and bank specific factors Pearson's correlation is done.

### 3.4.4 Regression Models

The empirical model employed in this study intends to analyze the relationship between bank profitability and NPA. In this study, the dependent variables are ROA and ROE. The independent variables are NPA, deposit, total assets (firm size), total loan.

#### **Model 1**

$$ROA_{it} = \alpha_0 + \alpha_1 \ln NPA_{it} + \alpha_2 \ln TA_{it} + \alpha_3 \ln D_{it} + \alpha_4 TL_{it} + \varepsilon_{it}$$

$\alpha_0$  = constant

$ROA_{it}$  = Return on asset of bank  $i$  at time  $t$

$NPA_{it}$  = Non-performing asset of Bank  $i$  at time  $t$

$TA_{it}$  = Total asset of bank  $i$  at time  $t$

$TL_{it}$  = Total loan of bank  $i$  at time  $t$

$D_{it}$  = Deposit of bank  $i$  at time  $t$

$\alpha_1$ -  $\alpha_4$  = Coefficient of Parameters of return on assets

$\varepsilon_{it}$  = Error term where  $i$  is cross-sectional and  $t$  time identifier

### **Model 2**

$$ROE_{it} = \alpha_0 + \alpha_1 \ln NPA_{it} + \alpha_2 \ln TA_{it} + \alpha_3 \ln D_{it} + \alpha_4 TL_{it} + \varepsilon_{it}$$

$\alpha_0$  = constant

$ROE_{it}$  = Return on equity of bank  $i$  at time  $t$

$NPA_{it}$  = Non-performing asset of bank  $i$  at time  $t$

$TA_{it}$  = Total asset of bank  $i$  at time  $t$

$TL_{it}$  = Total loan of bank  $i$  at time  $t$

$D_{it}$  = Deposit of bank  $i$  at time  $t$

$\alpha_1$ -  $\alpha_4$  = Coefficient of parameters of return on equity

$\varepsilon_{it}$  = Error term where  $i$  is cross-sectional and  $t$  time identifier

### **Model 3**

$$NIM_{it} = \alpha_0 + \alpha_1 \ln NPA_{it} + \alpha_2 \ln TA_{it} + \alpha_3 \ln D_{it} + \alpha_4 TL_{it} + \varepsilon_{it}$$

$\alpha_0$  = constant

$NIM_{it}$  = Net interest margin of bank  $i$  at time  $t$

$NPA_{it}$  = Non-performing asset of bank  $i$  at time  $t$

$TA_{it}$  = Total asset of bank  $i$  at time  $t$

$TL_{it}$  = Total loan of bank  $i$  at time  $t$

$D_{it}$  = Deposit of bank  $i$  at time  $t$

$\alpha_1$ -  $\alpha_4$  = Coefficient of parameters of return on assets

$\varepsilon_{it}$  = Error term where  $i$  is cross-sectional and  $t$  time identifier

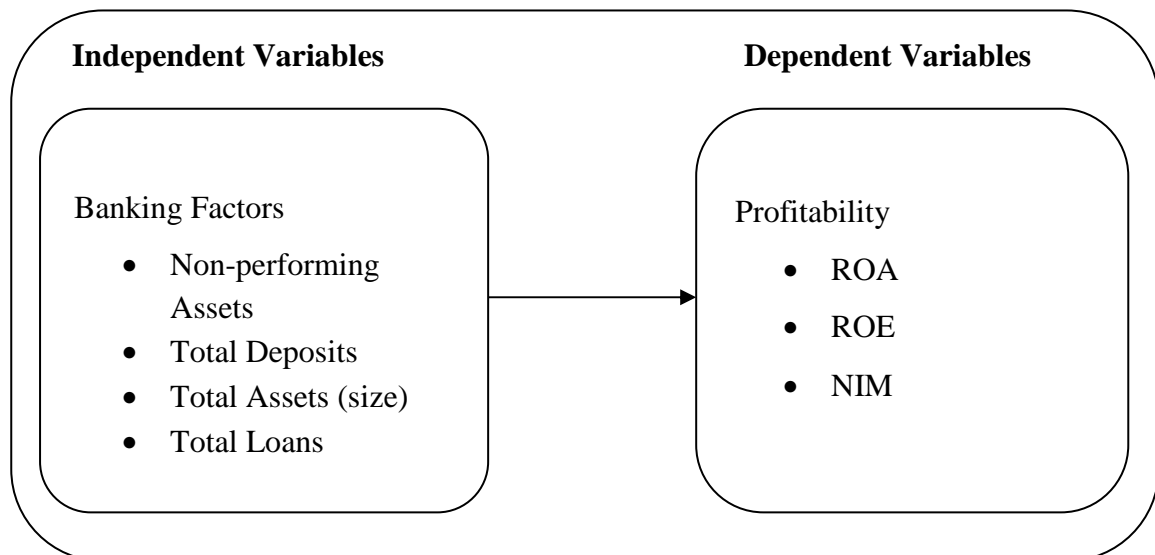
**Table 3.2 Variables and their measurements**

<b>Variable</b>	<b>Measurement</b>
ROA	Total income to its total asset
ROE	Net income after taxes divided by total equity capital
NIM	Net interest income to total assets



### 3.5 Conceptual Framework and Definition of Variables

This study is a tactical yet operational conceptual framework model that seeks to validate the solutions to known issues and evaluate as well as optimize the chosen solutions. The focus scope is on optimization where existing solutions and interactions are considered. The conceptual framework is developed and presented in the following figure 3.5. It was created by assimilating the result of the literature review covered in the previous chapter. It displays the link between the explanatory variables and the dependent variables (ROA, ROE, and NIM). The indicators of the sample commercial banks' financial performance are the dependent variables. The financial performance is measured by using three indicators named as, (i) return on equity (%), (ii) return on assets (%) and (iii) net interest margin (%). Similarly, independent variables used in this study are (i) NPA, (ii) total assets, (iii) total deposit, and (iv) total loan.



*Note: Figure based on the studies of Gnawali (2018), Murthy & Shree (2003) and Jhamb & Jhamb (2013)*

#### **Figure 3.5: Conceptual Framework Showing Factors Influencing Profitability**

*This figure shows the conceptual framework of the study. Different variables are taken as independent variables for example Non-performing Assets, Total Deposits, Total Assets and Total Loans. All these variables are expected to determine the profitability of the banks.*

### **3.5.1 Dependent Variables: Profitability**

The final objective of the commercial banks is to generate profit. The research objective, calculations and tasks performed are directed towards the achievement of this ultimate goal. However, there are other goals also. Despite the fact that an institution might have many social, financial or other objectives, this study does not consider those objectives. Out of many different methods to measure profitability, the most important measures are the return on asset (ROA), return on equity (ROE), and net interest margin (NIM). (Murthy & Sree, 2003).

#### **i. Return on Assets (ROA)**

ROA is seen to be the major indicator of the profitability of the bank. (Louzis, Vouldis, & Metaxas, 2010). Companies try to use their assets efficiently in order to generate higher incomes. So, ROA shows how efficiently the assets are utilized in order to meet this objective. The efficiency of the management is also reflected by the amount of net income that the firm has been able to generate. Wen, (2010) a company that has a good amount of net incomes have utilized their assets well in order to get higher ROA. It is calculated as Net Income divided by Total Asset.

#### **ii. Return on Equity (ROE)**

A ratio of net profit after tax derived by dividing the total shareholder's equity gives us the return on equity. It is the amount of money generated by the company against the shareholder's equity capital. This is reflected in the balance sheet of a firm. Shareholders of any firm expect the higher return on equity against the amount of investment that they make to the company. Firms with relatively higher ROE are seen to generate higher amounts of cash internally. Larger ROE indicates better performance in terms of profitability. Khrawish (2011) states that, the ratio obtained by dividing the net income after tax by its equity capital is reflected by ROE. It shows the rate of return on the money that bank stockholders invested in the firm. ROE measures a bank's management's efficiency in allocating shareholders' capital. We can conclude from the aforementioned statement that management is more effective at using shareholders' capital when their ROE is higher.

### **iii. Net Interest Margin (NIM)**

Net interest income is the difference between total interest income and total interest expenses of the bank. The net interest income when divided by the earning asset of the company gives us net interest margin. This can be presented in percentage or in a decimal fraction. Net interest margin is also one of the primary indicators of profitability in the sense that higher net interest margin indicates the higher profitability, earning and growth of the firm.

### **3.5.2 Independent Variables**

There are several factors affecting the profitability of the commercial banks. This section presents the introduction of the selected variables for the study.

#### **i. Non-performing Assets**

Non-performing assets (NPAs) means the amount of loan that the individual commercial bank had provided and the consumer has not paid it until the time is already matured. Once the distributed loan is not returned timely by clients and becomes overdue then, it is known as Non-performing Assets for the bank. Reduction of NPA has always been a significant problem for every commercial bank. Michael (2006) emphasized that NPA in loan portfolios affected operational efficiency that in turn affects profitability, liquidity and solvency of banks.

#### **ii. Total Assets**

Total Assets as measured by size of the bank is used to capture the fact that larger banks are better placed than smaller banks in harnessing economies of scale in transactions to the plain effect that they will tend to enjoy a higher level of profits. Consequently, a positive relationship is expected between size and profits. Molyneux & Thornton (1992) and Bikker & H (2002) find that firm size is positively related to profitability.

#### **iii. Total Deposits**

Total Deposits is another liquidity indicator but is considered as a liability. Deposits are the main source of bank funding and hence it has an impact on the profitability of the banks. Deposits are included as an independent variable in this study. Deposit Ratios are the ratio of total deposits to total assets, which is another liquidity indicator but is considered as a liability. Deposits are the main source of bank funding and hence it has an

impact on the profitability of the banks. Deposits to total assets ratio is included as an independent variable in this study.

#### **iv. Total Loan**

Total loan is the main source of income and is expected to have a positive impact on bank performance. Other things constant, the more deposits are transformed into loans, the higher the interest margin and profits. However, if a bank needs to increase risk to have a higher loan-to-asset ratio, then profits may decrease. Bank loans are the principal source of income; we expect that noninterest bearing assets impact negatively on profits. We also expect that the higher the equity-to asset ratio, the lower the need for external funding and therefore higher profitability. It is also a sign that well capitalized banks face lower costs of going bankrupt and then cost of funding is reduced.

## **CHAPTER IV**

### **RESULTS AND DISCUSSION**

This chapter basically includes the results derived from the statistical calculation of variables. The appropriate tools are applied taking into account that the result derived from the calculation gives us an answer. This is the basis for interpretation that is checked against the research questions. The chapter provides systematic presentation and analysis of data to deal with various issues associated with NPA and bank profitability of Nepalese commercial banks.

This chapter deals with the results of study, which include descriptive statistics of variables, correlation results for dependent variables and explanatory variables, diagnosis test for the regression models and regression analysis for two profitability measures: return on assets, return on equity. Secondary data analysis was done by using SPSS software. This chapter presents analysis and findings of the study as set out in the research methodology. The study findings are presented on NPA and bank profitability of Nepalese commercial banks. The results for all these equations are divided into three types: Descriptive results, correlation results and those obtained from the regression analysis.

The statistical package for the social sciences (SPSS) is used for examining relationships among the variables of bank specific factors and the profitability indicators of Nepalese commercial banks. All variables are defined in the table; the data used for this research was pooled from the bank's annual report that was obtained from the respective websites. After compiling the data and presenting a descriptive statistics, correlation and linear regression analysis was carried out on return on equity (ROE), return on assets (ROA) and net interest margin (NIM).

#### **4.1 Descriptive statistics**

Descriptive statistics help to explain the characteristics of a firm's performance and related variables during the study period. The descriptive statistics used in this study consists of mean, median, standard deviation, and minimum and maximum values associated with variables under consideration. Table summarizes the descriptive statistics of variables used in this study.

**Table 4.1 Descriptive statistics**

Variables	N	Minimum	Maximum	Mean	Standard Deviation
ROA (percent)	100	-18.90	18.03	1.3251	3.2513
ROE (percent)	100	-175.60	194.06	18.0693	33.100
NIM (percent)	100	-2.90	77.21	49.8139	12.783
Size Rs. Rs. (in Billion)	100	.86000	101.52	26.6772	20.622
Deposit Rs. (in Billion)	100	.00000	.09100	.0238239	.01865
Total loan Rs. (in Billion)	100	.00064	.04905	.0157658	.011263
NPA Rs. (in Billion)	100	.00000	.01602	.0010772	.002444

*Source: Outcome derived from SPSS with reference to Annexes*

The above table presents the values of mean, minimum, maximum and their standard deviation of the corresponding variables associated with 10 commercial banks from 2012 to 2021. ROA, ROE and NIM are the indicators used to measure the bank profitability, growth, and shareholder's return. The deposit, total loan, NPA, and TA indicated by firm size are the variables of bank performances.

Return on assets ranges from -18.90 percent to 18.03 percent, leading to the average return on assets to 1.33 percent while the return on equity ranges from -175.60 percent to 194.06 percent, leading to an average of 18.07 percent. Similarly, the NIM floats in-between -2.90 percent to 77.21 percent, resulting in an average of 49.81 percent. The size of the bank varies from the minimum of 0.86 billion rupees up to the maximum of 101.52 billion rupees having the average of 26.6772 billion rupees. On the other hand, we have an average deposit of a commercial bank of 0.0238239 billion rupees, which varies from 0.00 billion rupees minimum to 0.091 billion rupees maximum. Total loan by the commercial banks is the average of 0.0157658 billion rupees with the minimum of 0.00064 to 0.04905 billion rupees maximum. NPA by the commercial bank is fluctuated from zero that means not distributed and it has a maximum of 0.01602 billion rupees having average 0.0010772 billion rupees.

## 4.2 Correlation analysis

Correlation analysis is the tool used to compare the relationship between the dependent and independent variables. This also indicates the direction of the variables. The coefficient of correlation also indicates the direction of movement be it positive or

negative. It can range from -1 to +1. The correlation calculation provides us with a coefficient that helps to predict the effect of one variable against the other. A strong, or high, correlation means two or more variables have a strong relationship with each other while a weak, or low, correlation means that the variables are hardly related. The Pearson correlation has been computed and the results are present in table 4.2.

**Table 4.2 Correlation matrix for the dependent and independent variables**

	ROA	ROE	NIM	TA	NPA	TD	TL
ROA	1						
ROE	0.003	1					
NIM	0.338**	0.072	1				
TA	0.144	0.222**	0	1			
NPA	-0.325**	-0.033	-0.144	-0.715**	1		
TD	0.059	0.016	0.330**	0.011	-0.039	1	
TL	0.103	0.106	-0.203**	0.306**	-0.389**	-0.421**	1

*Source: Outcome derived from SPSS with reference to Annexes*

*\*\*Correlation is significant at 1% level of significance in a two-tailed test*

*\* Correlation is significant at 5% level of significance in a two-tailed test.*

This table presents the Pearson correlation coefficients between variables used in this study of 10 sample banks during the period 2012 to 2021 study periods. In this table \* sign indicates that correlation is significant at 5 percent and \*\* sign indicates that correlation is significant at 1 percent level.

As revealed in the table, NPA has 0.325 of negative relationship with return on assets at 1% level of significance, 0.033 of negative relationship with return on equity and 0.144 of negative relationship with net interest margin. Total asset has 0.144 of positive relationship with ROA, 0.222 of positive relationship with ROE at 1% level of significance. Total deposit has 0.059 of relationship with ROA, 0.016 of positive relationship with ROE, and 0.330 of positive relationship at 1% level of significance. Total loan has 0.103 of positive relationship with ROA, 0.106 of positive relationship with ROE and 0.203 of negative relationship with NIM.

### 4.3 Regression analysis

In order to test the statistical significance and robustness of the results, this study also relies on secondary data analysis based on the multiple regression model specified in

chapter three. It basically deals with regression results from various specifications of the model to examine the estimated relationship of banks specific variables and macroeconomic variables with banks performance. The regression results have been presented in table 4.3, 4.4 and 4.5.

#### 4.3.1. Regression results of return on assets and its determinants

The result derived from the regression analysis of variables on return on assets is presented in the table 4.3.

**Table 4.3 Estimated regression results of return on assets (ROA) and its determinants**

Models	Intercept	Size	NPA	Deposit	TL	R <sup>2</sup>	SEE	F-value
1	1.107 (4.123)**	0.031 (1.917)				0.021	3.2267	3.676
2	1.965 (7.225)**		-0.095 (-4.532)**			0.106	3.0837	20.538
3	1.032 (2.291)*			0.014 (0.775)		0.003	3.255	0.601
4	0.448 (1.367)				0.014 (1.367)	0.011	3.2432	1.869
5	0.823 (1.788)	0.030 (1.906)		0.014 (0.76)		0.024	3.23	2.122
6	1.732 (0.455)**		-0.094 (-4.496)**	0.011 (0.640)		0.108	3.089	10.44
7	-1.518 (-0.877)		-0.088 (-3.752)**	0.017 (0.884)	0.002 (0.15)	0.139	3.0526	6.88

*Source: Outcome derived from SPSS with reference to Annexes*

*Notes: 1. T-values are indicated by the figures in parentheses*

*2. \* represents that the results are significant at 5% level of significance and \*\* indicates that the results are significant at 1% level of significance respectively.*

The results are based on pooled cross-sectional data of 10 sample commercial banks with 100 observations for the period of 2012 to 2021 by using a linear regression model. The model is,  $1) ROA_{it} = \alpha_0 + \alpha_1 \ln NPA_{it} + \alpha_2 \ln TA_{it} + \alpha_3 \ln D_{it} + \alpha_4 TL_{it} + \epsilon_{it}$  where the outcomes of different subsets of independent variables are shown for ROA, NPA, size, deposit, and total loan, respectively. The outcome of the regression shows the negative beta coefficient of NPA. It indicates that an increase in ROA is possible when NPA is reduced. Additionally, the NPA's beta coefficient is significant at the 1% level of significance. As seen in the table, the beta coefficient for size, deposit, and total loans is positive.



Therefore, the return on assets would be higher the larger the assets, deposits, and total loans. Beta coefficient, however, is not significant.

Analyzing through regression model 1 to 7 of table 4.3, it is found that non-performing assets is negatively related to return on assets which is similar to Sangmi & Nazir (2010) and Athanasoglou, Brissimis, & Delis (2005).

#### 4.3.2. Regression results of return on equity and its determinants

The table 4.4 below shows the results of multiple regression analysis of explanatory variables on return on equity.

**Table 4.4 Estimated Regression Results of Return on Equity (ROE) and its determinants**

Models	Intercept	Size	NPA	Deposit	TL	R <sup>2</sup>	SEE	F-value
1	14.639 (5.435)**	0.481 (3.007)**				0.049	32.3654	9.044
2	18.726 (6.399)**		-0.097 (-0.432)			0.001	33.1780	0.187
3	17.256 (3.756)**			0.039 (0.211)		0.000	33.1916	0.045
4	8.889 (1.272)				0.152 (1.406)	0.011	33.0089	1.977
5	13.955 (3.017)**	0.481 (2.997)**		0.033 (0.182)		0.050	32.4557	4.513
6	7.724 (0.763)	0.440 (2.575)**		0.094 (0.471)	0.086 (0.692)	0.052	32.5000	3.159
7	17.965 (3.666)**		-0.095 (-0.423)	0.036 (0.194)		0.001	33.2700	0.112

*Source: Outcome derived from SPSS with reference to Annexes*

*Notes: 1. T-values are indicated by the figures in parentheses*

*2. \* represents that the results are significant at 5% level of significance and \*\* indicates that the results are significant at 1% level of significance respectively.*

The results are based on pooled cross-sectional data of 10 sample commercial banks with 100 observations for the period of 2012 to 2021 by using a linear regression model. The model is,  $1) ROE_{it} = \alpha_0 + \alpha_1 \ln NPA_{it} + \alpha_2 \ln TA_{it} + \alpha_3 \ln D_{it} + \alpha_4 TL_{it} + \epsilon_{it}$ . This also reflects the outcomes of several subsets of independent variables, such as NPA, size, deposit, and total loan. The regression result clearly shows that the non-performing assets' beta coefficient is negative, which means that a decline in NPAs will increase return on equity. The table shows that the beta coefficient for size, deposit, and total loans is positive.

Because of this, the return on equity would be higher when the assets, deposits, and total loans are higher. Beta coefficient, however, is significant for size at a 1% level of significance.

Analyzing through regression model 1 to 7 of table 4.4, it is found that non-performing assets are negatively related to return on equity, which is similar to Sangmi & Nazir (2010) On the other hand, size is significant and positively related with firm performance (ROE). Deposit and total loans are positively related with firm performance (ROE) which coincides with findings of Athanasoglou, Brissimis, & Delis (2005).

#### 4.3.3. Regression results of net interest margin and its determinants

The table presents the multiple regression analysis of explanatory variables on net interest margin.

**Table 4.5 Estimated regression results of net interest margin (NIM) and its determinants**

Models	Intercept	Size	NPA	Deposit	TL	R <sup>2</sup>	SEE	F-value
1	49.814 (46.696)**	0.000 (0.001)				0.000	12.820	0.000
2	50.927 (45.508)**		-0.165 (-1.916)			0.021	12.687	3.670
3	43.329 (25.872)**			0.307 (4.617)**		0.109	12.100	21.316
4	56.595 (21.297)**				-0.112 (-2.731)**	0.041	12.554	7.457
5	44.445 (25.107)**		-0.150 (-1.842)	0.303 (4.573)**		0.126	12.018	12.501
6	52.458 (12.214)**		-0.233 (-2.576)	0.231 (3.096)**	-0.098 (-2.044)**	0.147	11.910	9.879
7	56.886 (21.226)**	0.057 (0.875)			-0.124 (-2.866)**	0.045	12.562	4.106

*Source: Outcome derived from SPSS with reference to Annexes*

*Notes: 1. T-values are indicated by the figures in parentheses*

*2. \* represents that the results are significant at 5% level of significance and \*\* indicates that the results are significant at 1% level of significance respectively.*

Using linear regression model 1)  $NIM_{it} = \alpha_0 + \alpha_1 \ln NPA_{it} + \alpha_2 \ln TA_{it} + \alpha_3 \ln D_{it} + \alpha_4 TL_{it} + \epsilon_{it}$  where the outcomes of several subsets of independent variables, such as NPA, size, deposit, and total loan, are shown. According to the regression results, the beta coefficient

of NPA is negative. This means that increasing NIM is connected with the decline in NPAs. However, the beta coefficient of NPA is not significant. The table shows that the deposit's beta coefficient is positive. Therefore, a higher deposit would result in a higher NIM. Beta coefficient, however, is significant at a 1% level of significance. Total loan is negatively related to NIM. It implies that an increase in loan amount would lower the NIM. The beta coefficient is significant at 1 percent level of significance. Similarly, the beta coefficient for size is positive however, the beta coefficient is not significant.

Analyzing through regression model 1 to 7 of table 4.5, it is found that NPA is negatively related to NIM, which is similar to Sangmi & Nazir (2010). Similarly, deposit is positively related to NIM. Size of the firm is positively related to net interest margin. However, the loan is negatively related to firm performance (NIM) according to the result.

#### **4.4 Concluding remarks**

The result documented in this study is based on the 10 selected commercial banks financial highlights with respect to return on assets, return on equity and net interest margin. The result from multiple regression analysis of ROA discovered among variables determining NPA has negative and significant correlations with respect to ROA. This means when there is a lower non-performing asset of banks, the return on assets increases. Similarly, the regression analysis of size, deposit and total loans shows the positive and correlations with respect to ROA. It means if the total assets increase, higher would be the return on assets. However, those variables have positive but insignificant relationships with the ROA.

The result from multiple regression analysis of ROE discovered among variables determining total asset has positive and significant relationship with respect to ROE. This means when there is a higher assets size of banks, the return on equity increases. Similarly, the regression analysis of deposit and total loan shows the positive and insignificant relationship with respect to ROE. It means that if the deposit and total loan increases, higher would be the return on assets. NPA has negative and insignificant relation with respect to ROE.

The result from multiple regression analysis of NIM discovered among variables determining deposit has positive and significant relationship with respect to NIM. This means that when there is a higher deposit amount, higher would be the NIM. Similarly, the regression analysis of total loan shows the negative and significant relationship with respect to ROE. It means that higher the total loans, lower would be the net interest margin. NPA has negative and insignificant relations with respect to NIM.

#### **4.5 Major Findings**

The major findings of the study are summarized as follows:

1. From the correlation analysis, the total asset has a positive relationship with all three indicators of profitability. The correlation coefficient of TA is 0.144 with ROA. Its relationship with ROE is significantly positive with a coefficient of 0.222. This indicates that an increase in total assets will lead to the increase in profitability of the banks.
2. Non-performing assets have a negative relationship with all three indicators of bank profitability. The correlation coefficient of NPA is -0.033 with ROE, and -0.144 with NIM. NPA has a significant negative relationship with respect to ROA with a coefficient of -0.325. It means that decrease in NPA will lead to the increase in profitability.
3. Total deposit has a positive relationship with all three indicators of bank profitability with correlation coefficients of 0.059 with ROA, 0.016 with ROE. TD has significant positive relation with NIM with a coefficient of 0.330. It means that the increase in total deposit leads to increase in the profitability of the banks.
4. Total loan has positive relationship with ROA and ROE whereas negative relationship with NIM. Coefficient of correlation of TL is 0.103 with ROA, 0.106 with ROE. TL has a significant negative relationship with respect to NIM with coefficient of -0.203. Increase in total loan will increase the return on asset and return on equity but will decrease the net interest margin.
5. Net interest margin is observed to have 0.338 positive correlations with respect to return on assets in 1% level of significance.
6. From the regression analysis, ROA is found to have a positive relationship with firm size, total deposit and total loan. However, it has a significant negative relationship with NPA at 1% level of significance. This means that increase in higher firm size, increase in deposits and higher amount of loan will have positive impact on return on assets.
7. Similarly, TD and TL have positive associations with ROE. Its relationship with NPA is negative. Size of the firm is significantly positive with ROE.

8. There is a positive association of net interest margin with size of the firm and total deposit whereas negative relationship with NPA. NIM has significantly negative association with TL whereas significantly positive association with respect to total deposit at 1% level of significance.
9. It can be averred that the indicators for bank performance are return on assets, return on equity and net interest margin. Out of these three indicators return on assets and return on equity shows the similar result rather than net interest margin. So, we can conclude that the ROA and ROE are the better bank performance indicators.

To sum up, most of the findings in this study are not consistent with many of the studies conducted in the context of developed countries. Therefore, it is worthwhile to note that the nature of data and the specification of the models may themselves be responsible for the differences in results. Hence, conclusions drawn should be interpreted within these limitations.

#### **4.6 Discussions**

Analyzing through the regression models in the three tables, it is found out that non-performing assets of the commercial banks is negatively related with return on asset, which is in line with the conclusion drawn by Gnawali (2018). Results of Das & Uppal (2021) also suggested the negative association between profitability (ROA) and NPA. However, this finding is against the conclusion drawn by Singh et al. (2021), Pokharel and Pokharel (2020) who concluded that NPA has a significant positive relationship with ROA.

Similarly, NPA has a negative relationship with return on equity, which is similar to the finding of Kadioglu, et al. (2017) and Bhattarai (2020). However, this is against the findings of Bhattarai (2017) and Narula & Singla (2014) whose study showed a positive relationship of NPA with profit. His study conflicted due to wrong choice of clients by the banks.

NPA has a negative relationship with net interest margin. Similarly, size of the firm as indicated by the total asset is significant and positively related with all the three leading indicators of banks performance. This is similar to the findings of Bhattarai (2020). He had concluded that size has a significant and positive association with ROE. However,

this is against the finding of Gnawali (2018) who argued that size has a negative relationship with ROA. This might be because of the difference in data existing in the study period and the variability in the profitability of the sample banks taken for the study. Deposit and total loans are positively related with firm performance (ROE) which coincides with findings of Athanasoglou, Brissimis, & Delis (2005). Results of Das & Uppal (2021) also show that the volume of deposit (TD) is positively associated with the profitability (ROA). In contrast, total loan is negatively related to net interest margin according to the result.

This evidence supports and is in line with the efficiency structure theory, which states that enhanced managerial efficiency leads to higher performance. The efficient-structure theory also implies that higher profits come first in a timing sense followed by increasing concentration. That is, better management and practices lead to higher profits and that better performance then leads to rising market share and concentration over time.

## **CHAPTER V**

### **SUMMARY AND CONCLUSION**

This is the final chapter of the report. This chapter presents the summary of the whole report and also explains the outcomes of the study. This chapter will further conclude how this research discovers and compares with the previous research studies. Furthermore, it indicates the implication of the relationship between variables and offers suggestions for improvement if any. Finally, researchers will be suggested on what aspects they can cover to examine in their future studies.

#### **5.1 Summary**

Increasing the level of non-performing assets has been becoming one of the major problems in the banking sector worldwide. In this context, Nepal is not an exception to run off from this situation. Reporters share an alarming level of NPA in Nepalese banking business. It is expressed that the BFIs in Nepal have been facing the problem of escalating non-performing assets and the issue is becoming out of control over time, which is a problem to the profitability of the banking businesses. The sound result of the commercial banks depends upon how well their performance has become and the performance is measured in several aspects. Profitability is one of the major aspects to reflect the firm's performance. Profitability of the banks depends upon various banking and non-banking variables. This study takes the banking variables that affect profitability. One of the banking variables is non-performing assets (NPAs).

This study is aimed at assessing the relationship of non-performing assets and other banking variables like total deposits, total loan and size of the firm on the overall profitability of the banks as measured by ROA, ROE and NIM. Various international literatures suggest that NPA and profitability are negatively related. Study of Jhamb & Jhamb, (2013) for instance, revealed the negative relationship between the NPA and profitability. In light of these studies, profitability of the banks was compared against the banking variables in the Nepalese context. In order to examine the relationship of profitability against NPA, total deposit, total assets, and total loan, the secondary data regarding NPA, total assets, total deposits, size of the firm, ROA, ROE and NIM are taken from 10 commercial banks from the period between 2012-2021 i.e. 10 years and the total observation are 100.

The study follows the non-probability quota sampling in selecting the samples. They are grouped on the basis of their ownership structures. Descriptive and causal comparative research design has been applied for searching adequate information associated with explanatory variables and firm's performances. The correlation and regression analysis is performed to find the relationship between the dependent and explanatory variables. Furthermore, the study applies different statistical tools such as SPSS, ANOVA, and f-test to derive meaningful results.

The study offers some key findings from the study. The result of both correlation and regression of the data of sample banks presented in the study clearly show that there exists a significant negative relationship of non-performing assets with profitability of the banks. In contrast, total assets and total deposit are positively correlated with the profitability indicators. Finally, the banks are considered well functioning if they hire young and dynamic personnel who will try to adopt appropriate recovery policies and investment policies.



## 5.2 Conclusion

It was learnt from the results that there was higher deviation in the non-performing assets from bank to bank. The general trend shows that the non performing asset was higher during 2012/13. This went on decreasing during 2014-18 and finally started to increase from 2019-22 slightly in most of the private joint venture banks.

The profitability status as indicated by ROA showed higher profitability in 2012/13 and then started to decline. This started to grow from 2015 and hover from 2017-21. ROE was fluctuating as it grew until 2014 and declined for two consecutive years and then tried to increase during 2017. This again observed a sharp fall in 2021.

The correlation result indicates that there exists a significant negative relationship of non-performing assets (NPA) with profitability of the banks (ROA, ROE, and NIM). In contrast, total assets and total deposits are positively correlated with the profitability indicators. It was found that size of the firm had a positive correlation with ROA, ROE and NIM. However, the variable non-performing assets have negative relationships with ROA, ROE and NIM. Likewise, total loans have positive relationships with ROA and ROE but negative relationships with NIM.

During the research, it is learnt that NPA is the major determinant of profitability in terms of return on asset. The bank is profitable in relation to the total asset when the non-performing asset has been small. Similarly, size of the firm indicated by total assets is the key factor for generating profit. It shows that larger firm size supports on effectively generating profit from the money that the investors have put into the business. The outcome also reveals that TL and TD are the key factors in influencing profitability explained by NIM. This indicates that poor deposits are related to poor bank performance in terms of profitability and growth.

Hence, it is concluded that NPA, size of the firm, and total deposits, in general, are the primary and key factors determining the financial performance of commercial banks in Nepal. The Efficiency Structure Theory, which claims that increased managerial efficiency results in improved performance, is supported by this research and is consistent with it.

### 5.3 Implications

The high level of non-performing assets not only hinders the profitability of the banks, but also affects the financial as well as operational health of the country. If the NPAs are not well taken care of immediately, it will be proved as a curse for the banks especially at this time when the Nepalese economy has become highly turbulent and was largely affected as an aftermath of COVID 19. Consequently, there has been an acute shortage of cash resulting in the unprecedented hike in interest rates posing a larger default risk. A high level of NPAs suggests high chances of credit defaults that affect the profitability and net-worth of banks.

On the other hand, the deposits, total loan and firm size have a positive relation with the profitability. Based on this fact, following are some recommendations to improve the profitability of the banks.

1. There is a negative relationship between bank performance and NPA and hence the firm willing to increase performance, profitability and growth should decrease the NPA.
2. Banks should reconsider their portion of the loans and advances and on the assets and the soundness of the management. Banks should try to develop an appropriate recovery policy trying to get back the fund from borrowers. It should also check on its investment policy to avoid possible defaults in the future.
3. Positive relationship between bank performance and total assets implies that the firm willing to increase performance should increase the assets size.
4. The positive relationship between bank performance and total deposit implies that the firm willing to increase performance should increase the total deposit.
5. The positive relationship between bank performance and total loan implies that the firm willing to increase performance should increase the total loans and reduce overstaffing and try to reduce personnel cost which is the major cost in banks.
6. The bankers and policy makers need to consider the non-performing assets, total assets and deposits seriously while formulating annual and other goals. The banks need to adopt new aspects, qualitative as well as creative young personnel to create better health and wealth for the banks.

#### **5.4 Scope for Future Research**

This study can be regarded as the preliminary steps in investigating the determinants of bank performance in the context of Nepal. The study remains enough ground for future researchers, which are listed below:

1. Other financial institutions such as development banks and finance companies can be included in order to investigate the determinants of a bank's performance.
2. Researchers can use discriminant function analysis in order to determine comparative financial performance of selected commercial banks of Nepal.
3. This study has been conducted by using bank specific variables such as ROA, ROE and NIM as the dependent variables and NPA, TA, TL and TD as the independent variables. The future studies can add other macroeconomic variables such as GDP, growth rate & inflation, etc.) in order to conduct the study.
4. The future studies can select larger samples and more observations for the study that could lead to results that are more valid.
5. On the other hand, future studies can use advanced statistical tools. For example, the non-linear statistical tools and bidirectional causality tools are also found suitable to take into consideration for studies.
6. Some of the liquidated firms can be included in the study if the data are available.

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## AAPENDICES

### Appendix-1

#### Structure and pattern of return on assets of Nepalese commercial banks (In Percent)

<b>Banks/ FY</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Mean</b>	<b>St. Dev</b>
NBL	1.61	3.68	3.36	0.58	0.57	1.88	1	0.74	0.3	1.07	1.48	1.18
Nabil Bank	2.72	3.06	6.23	2.72	2.32	2.55	2.37	2.43	2.8	3.25	3.05	1.16
NIBL	1.15	1.42	1.61	1.79	1.77	1.68	2.19	2.02	1.6	2.6	1.78	0.41
SCBL	2.27	2.46	2.56	2.42	2.46	2.53	2.7	2.55	2.8	2.67	2.54	0.15
HBL	1.06	1.11	1.55	1.47	1.76	1.91	1.19	1.91	1.76	1.54	1.53	0.32
NBBL	0.02	-5.65	-15.35	-14.63	6.35	18.04	8.15	-0.99	4.01	3.57	0.35	10.23
NSBI	0.72	0.55	0.9	1.83	1.44	1.02	1.03	1.01	0.83	1.19	1.05	0.37
EBL	1.49	1.41	1.49	1.4	0.02	1.73	2.09	2.1	2.11	2.39	1.62	0.67
KBL	0.89	1.18	1.15	1.43	1.16	1.41	1.59	1.23	1.1	1.03	1.22	0.21
Laxmi Bank	0.4	0.83	0.79	0.95	1.13	1.22	1.66	1.7	1.5	1.5	1.17	0.43
Mean	1.23	1.01	0.43	(0.004)	1.90	3.40	2.40	1.47	1.88	2.08		
St. Dev.	0.82	2.55	5.78	5.18	1.73	5.17	2.10	1.05	1.09	0.93		



## Appendix-2

### Structure and pattern of return on equity of Nepalese commercial banks (In Percent)

<b>Banks/ FY</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Mean</b>	<b>St.Dev</b>
NBL	-7.89	-23.31	-19.15	-3.64	-3.99	-18.42	-8.88	-9.21	-6.05	-175.6	-24.87	50.57
Nabil Bank	30.74	31.73	74.2	36.04	35.35	35.74	32.19	30.94	32.46	35.59	36.96	12.52
NIBL	20.91	19.58	24.26	26.3	25.61	22.79	27.37	22.85	17.39	27.09	22.95	3.53
SCBL	35.88	34.47	37.62	32.7	32.9	33.64	32.22	30.38	28.31	26.39	32.86	3.48
HBL	19.91	19.84	25.85	22.96	25.34	24.07	14.78	22.34	20.66	17.77	21.23	3.31
NBBL	0.43	-19.89	115.03	40.44	-27.21	194.06	47.87	-6.14	27.38	21.78	36.91	65.1
NSBI	9.7	8.26	11.94	21.87	17.5	18.41	15.99	16.17	15.07	20.3	14.88	4.7
EBL	21.04	21.6	24.7	24.97	0.28	28.98	31.35	31.19	28.19	32.54	23.66	9.34
KBL	9.17	13.6	11.99	16.62	12.77	16.09	18.27	11.39	11.63	10.94	12.36	4.02
Laxmi	1.86	4.91	6.06	9.43	12.41	16.7	18.19	17.34	16.97	16.39	10.96	6.73
Mean	14.18	11.08	31.25	22.77	13.10	37.21	22.94	16.73	19.20	3.32		
St. Dev.	13.92	19.51	37.92	12.99	19.13	57.14	15.11	14.50	11.20	63.31		

### Appendix-3

#### Structure and pattern of net interest margin of Nepalese commercial banks (In Percent)

<b>Banks/ FY</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Mean</b>	<b>St. Dev</b>
NBL	43.81	62.31	62.21	58.2	63.12	70.57	73.32	60.99	45.77	53.47	59.38	9.53
Nabil Bank	71.75	77.21	72.74	65	61.67	58.79	51.58	43.96	48.56	61.66	61.29	10.91
NIBL	55.4	60.02	58.14	56.75	54.78	48.38	45.12	37.62	36.24	52.8	50.53	8.42
SCBL	73.54	76	74.51	70.75	70.35	71.19	71.81	63.1	64.92	75.89	71.21	4.32
HBL	60.55	61.15	60.11	56.78	58.05	60.09	50.66	44.18	40.39	54.21	54.62	7.32
NBBL	42.92	37.49	31.66	55.99	51.95	69.35	59.17	48.13	32.13	42.27	47.11	12.20
NSBI	48.15	55.32	52.76	50.4	53.13	43.53	36.39	32.48	26.49	39.5	43.82	9.80
EBL	51.87	58.35	55.57	54.81	59.15	53.68	49.3	41.45	42.07	55.86	52.21	6.21
KBL	47.16	51.97	44.34	49.82	47.9	40.63	36.46	30.43	33.55	39.69	42.20	7.23
Laxmi	49.07	44.69	40.3	40.43	40.67	35.18	36.48	32.66	28.11	39.31	38.69	5.96
Mean	54.42	58.451	55.234	55.893	56.077	55.14	51.029	43.5	39.82	51.466	52.10	
St. Dev.	10.94	12.32	13.59	8.29	8.36	13.03	13.63	11.36	11.42	11.77		

**Appendix-4**

**Structure and pattern of deposit of Nepalese commercial banks**

(Nrs. in billions)

<b>Banks/ FY</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Mean</b>	<b>St. Dev</b>
NBL	35.74	35.934	35.83	39.014	41.829	45.194	42.13	46.804	56.052	62.989	44.15	9.12
Nabil Bank	14.12	14.587	19.347	23.342	31.915	37.348	46.341	49.696	55.024	63.61	35.53	17.67
NIBL	11.53	14.255	18.927	24.489	34.452	46.698	50.095	50.138	57.011	62.429	37.00	18.68
SCBL	21.16	19.335	23.061	24.647	29.744	35.872	35.183	37.999	35.966	39.466	30.24	7.59
HBL	22.01	24.814	26.491	30.048	31.843	34.681	37.611	40.921	47.731	53.072	34.92	10.06
NBBL	12.81	12.126	13.015	9.462	10.884	9.998	10.052	11.512	16.953	17.845	12.47	2.87
NSBI	7.198	8.655	11.002	11.445	13.715	27.957	34.896	42.415	53.337	58.92	26.95	19.48
EBL	8.064	10.098	13.802	18.186	23.976	33.323	36.932	41.128	50.006	57.72	29.32	17.20
KBL	4.808	6.269	7.769	10.557	12.774	15.711	17.432	16.986	21.985	25.319	13.96	6.77
Laxmi	1.684	3.052	4.444	7.612	10.917	16.051	18.083	18.3	22.832	25.944	12.89	8.57
Mean	13.91	14.91	17.37	19.88	24.20	30.28	32.88	35.59	41.69	46.73		
St.Dev	10.07	9.69	9.39	10.25	11.35	12.62	13.29	14.42	15.81	17.90		

### Appendix-5

#### Structure and pattern of loan of Nepalese commercial banks (in Nrs. Billions)

<b>Banks / FY</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Mean</b>	<b>St.Dev</b>
NBL	0.018	0.017	0.012	0.014	0.016	0.019	0.025	0.027	0.03	0.038	0.022	0.008
Nabil	0.009	0.011	0.013	0.016	0.022	0.028	0.033	0.039	0.043	0.048	0.026	0.014
NIBL	0.007	0.01	0.013	0.018	0.028	0.037	0.041	0.042	0.043	0.048	0.029	0.015
SCBL	0.007	0.008	0.009	0.011	0.014	0.014	0.016	0.019	0.02	0.023	0.014	0.005
HBL	0.013	0.013	0.016	0.018	0.02	0.026	0.029	0.033	0.036	0.041	0.025	0.010
NBBL	0.01	0.01	0.01	0.009	0.009	0.007	0.009	0.01	0.011	0.013	0.010	0.002
NSBL	0.006	0.007	0.008	0.01	0.013	0.015	0.018	0.022	0.026	0.029	0.015	0.008
EBL.	0.006	0.008	0.01	0.014	0.019	0.024	0.028	0.032	0.037	0.044	0.022	0.013
KBL	0.004	0.006	0.007	0.009	0.012	0.015	0.015	0.015	0.018	0.02	0.012	0.005
Laxmi	0.002	0.003	0.004	0.007	0.01	0.013	0.015	0.015	0.017	0.02	0.011	0.006
Mean	0.008	0.009	0.010	0.013	0.016	0.020	0.023	0.025	0.028	0.032	0.019	
St.dev.	0.005	0.004	0.003	0.004	0.006	0.009	0.010	0.011	0.011	0.013		

### Appendix-6

#### Structure and pattern of NPA of Nepalese commercial banks (In NRs. Billions)

<b>Banks/ FY</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Mean</b>	<b>St.Dev</b>
NBL	0.0096	0.0084	0.0023	0.0019	0.0014	0.0012	0.0006	0.0014	0.0017	0.0017	0.0030	0.0032
Nabil	0.0003	0.0001	0.0002	0.0002	0.0002	0.0002	0	0.0007	0.001	0.001	0.0004	0.0004
NIBL	0.0002	0.0003	0.0003	0.0004	0.0003	0.0003	0.0002	0.0002	0.0009	0.0009	0.0004	0.0003
SCBL	0.0003	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0001
HBL	0.0011	0.001	0.001	0.0006	0.0005	0.0006	0.0009	0.0013	0.0007	0.0009	0.0009	0.0003
NBBL	0.001	0.0018	0.0029	0.0036	0.0029	0.0014	0.0002	0.002	0.0005	0.0004	0.0017	0.0012
NSBI	0.0003	0.0004	0.0005	0	0.0005	0.0003	0.0003	0.0002	0.0001	0.0001	0.0003	0.0002
EBL.	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0	0.0001	0.0003	0.0003	0.0001	0.0001
KBL	0	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0002	0.0004	0.0008	0.0002	0.0002
Laxmi	0	0	0	0	0	0	0	0.0001	0.0001	0.0003	0.0001	0.0001
Mean	0.0013	0.0012	0.0008	0.0007	0.0006	0.0004	0.0002	0.0006	0.0006	0.0007		
St.dev.	0.0029	0.0026	0.0010	0.0012	0.0009	0.0005	0.0003	0.0007	0.0005	0.0005		

### Appendix-7

#### Structure and pattern of firm size of Nepalese commercial banks (In Nrs. Billions)

<b>Banks / FY</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Mean</b>	<b>St.Dev</b>
NBL	16.75	17.19	22.33	27.25	37.13	43.87	52.08	58.14	63.2	73.24	41.12	20.18
NIBL	13.26	16.27	21.33	27.59	38.87	53.01	57.31	58.36	65.76	73.15	42.49	21.83
SCBL	23.64	22.17	25.78	28.6	33.34	40.59	40.21	43.81	41.68	45.63	34.55	8.91
HBL	24.76	27.86	29.46	33.52	36.18	39.32	42.72	46.74	54.36	61.15	39.61	11.80
NBBL	14.26	13.28	11.71	7.25	9.39	11.96	12.53	14	20.17	21.8	13.64	4.43
NSBI	8.44	10.35	13.04	13.9	17.19	30.92	38.05	46.09	58.06	64.8	30.08	20.78
EBL.	9.61	11.79	15.96	21.43	27.15	36.92	41.38	46.24	55.81	65.74	33.20	19.17
MBL	3.45	6.46	9.07	10.81	12.5	17.49	20.68	20.23	24.36	30.3	15.54	8.50
KBL	5.49	7.44	9.01	11.92	15.03	18.54	20.52	20.49	25.13	28.22	16.18	7.67
Laxmi	2.59	3.81	5.21	8.58	12.7	18.39	20.95	21.56	26.03	29.81	14.96	9.73
Mean	12.23	13.66	16.29	19.09	23.95	31.10	34.64	37.57	43.46	49.38		
St.dev.	7.81	7.42	8.06	9.66	11.73	13.77	15.06	16.77	18.02	20.41		