CHAPTER I

INTRODUCTION

1.1 Background of the Study

Financial infrastructure of our economy consists of financial intermediation, financial institutions, and financial markets. Financial institutions lay an important foundation and play a role of catalysts in the progress of economic growth of the country. The present structure of financial institutions is based on the foundation laid by the commercial bank.

The role of commercial banks in every nation of the world is in pursuit of attaining the goal of rapid economic development. The ability of commercial bank to create credit and provide numerous banking services like deposit acceptance, overdraft facilities, market making, agency services, investment and general utility services is well appreciated by different sectors, that is why commercial bank prosper in all conditions. While addition of increasing horizon of work area and entrance of new market, innovative product and services put this bank a step ahead than any other types of banks and financial institutions.

Liquidity plays a role in determining the profit level of the company, and maintaining liquidity is the key factor whether it is involved in the customer convenience and satisfaction. It should be keep adequate level if the management is likely to confront an uncertain environment but how low or how high is the basic question. The assets of the company can be financed by owner or the loaner and depositors. Maintains both liquidity and profitability decision is significant managerial decision, as it influences the shareholder return, risk, and customer satisfaction. Market share is also affected by these items. The bank has to plan its liquidity initially at the time of its promotion. Subsequently, whether the funds have to be raised, a profitability decision is involved (Singam, 2014). Liquidity and profitability are very closely related. When one increases, the other one will decrease. Apparently liquidity and profitability goals conflict in most of the decisions which the finance manager makes. Liquidity management is a concept that is receiving serious attention all over the world especially with the current financial situations and the state of the world economy. The concern of business owners and

managers all over the world is to devise a strategy of managing their day to day operations in order to meet their obligations as they fall due and increase profitability and shareholder's wealth. Profitability is a major factor in the going concern of a business. Managers should strive to achieve a reasonable level of profitability in order to maximize their shareholders wealth. Liquidity requirement of a firm depends on the peculiar nature of the firm and there is no specific rule on determining the optimal level of liquidity that a firm can maintain as to ensure positive impact on its profitability (Thuraisingam, 2015).

Profitability and liquidity are effective indicators of the corporate health and performance of the commercial banks. These performance indicators are very important to the shareholders and depositors who are major publics of a bank. As the shareholders are interested in the profitability level, the depositors are concerned with liquidity position which determines a bank's ability to respond to the withdrawal needs which are normally on demand or on a short notice as the case may be. In the financial intermediation process, a bank collects money on deposit from one group (the surplus unit) and grants it out to another group (the deficit unit). These roles involve bringing together people who have money and those who need money. Liquidity management is an important aspect of monetary policy implementation, while the other integral component of monetary policy, economic management, involves promoting sustainable economic growth over the long term by keeping monetary and credit expansion in step with an economy's noninflationary output potential, liquidity or reserve management as a shorter time horizon.

However, keeping excess liquidity inversely affects the profitability of the bank. Thus, neither too liquidity nor too high liquidity is viable for the business. Hence, the concern of the management should be in synchronizing the liquidity with the profitability of the business, as a result maximum profit can be achieved by keeping appropriate liquid assets.

The study also concerns on the effect of liquidity on profitability of the commercial banks in Nepal. For the study only three different commercial banks have been analyzed.

1.2 Statement of the Problem

Commercial banks are financially working based on liquidity. The liquidity component requires monitoring toachieve protection for depositors and profitability to the bank therefore; we can say that profitability andliquidity two powers are walking in opposite directions. Too much attention on profitability may lead the firminto a pitfall by reducing the liquidity position of the organization. On the other hand, too much attention onliquidity would tend to affect the profitability if they are keeping much of cash reserves greater than that amountrequired by the conditions. Accordingly, bank will miss opportunities of lending and investment which isgenerating revenue (Hindi Ibrahim 2010).

The study problem is appearing in the complexity of the relationships between liquidity andprofitability, as they in fact are incompatible goals and once a bank attempts to achieve one of them, he shouldnot forget other one. Therefore, banks should always strike to maintain a balance between conflicting objectivesof liquidity and profitability. The bank's liquidity should not be too high or too low.

Therefore, each commercial bank has to work to maximize its profits, and at the same time be able to meet the financial requirements of its depositors by holding a sufficient amount of liquidity, in order to achieve a balance between the profitability and liquidity. Banks should determine the optimal amount of cash that enable them in achieving balance between profitability and liquidity together, because each level of liquidity has a different effect on the levels of profitability, and the problem arises when the commercial banks try to maximize their profit at the expense of neglecting the liquidity effect, which may cause a technical and financial hardship with the consequent withdraw of deposits. Therefore, this research seeks to answer the following questions:

1. How do the liquidity indicators affect the banks' profitability?
2. What is the relationship between ROA and ROE with CR, CBTDR, CDTDR, and CRR?

1.3 Objectives of the Study

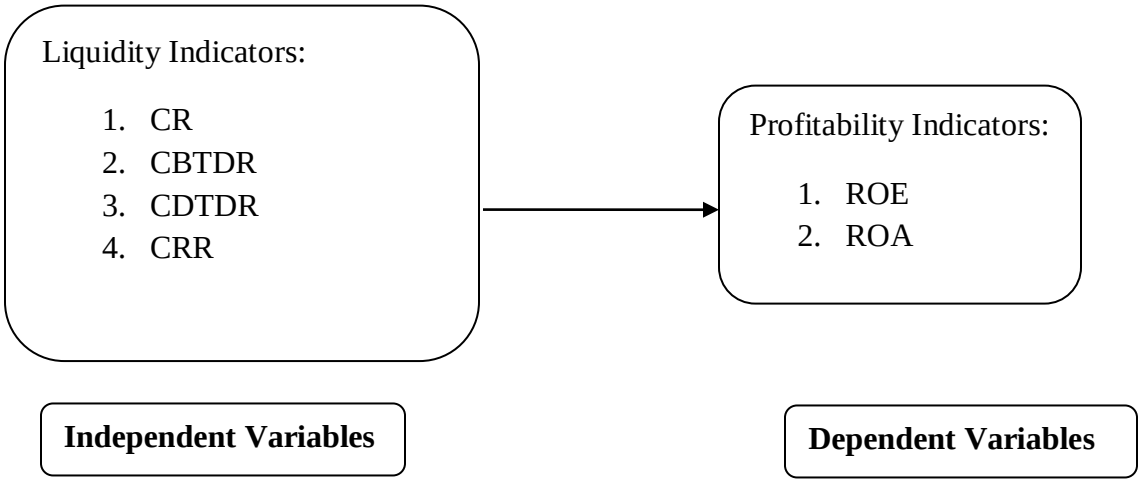
The main objective of the study is to find out the impact of liquidity on profitability of commercial banks in Nepal. The following specific objectives are taken for the study.

1. To assess the profitability of selected commercial banks.
2. To find out the impact of liquidity ratios on banks profitability.
3. To find out the relationship between ROA and ROE with CR, CBTDR, CDTDR, and CRR.

1.4 Conceptual Framework

Depending upon the existing theoretical and empirical evidences, the conceptual framework of this study is portrayed in Figure 1.8

Figure 1.1: Conceptual Framework



1.5 Significance of the Study

Measuring the relationship between liquidity position and profitability of commercial bank, is essential to the shareholders, depositors and other creditors to identify the productivity of their funds and to measure the risk associated with liquidity. Likewise other financial agencies, e.g. stock exchange and stock brokers are also interested in the liquidity and profitability management of the bank, as it has been listed in the stock exchange market. Besides them, the study has also help the management of the banks to synchronize the liquidity with the profitability and to make policy that can tussle with the

competitors. The study will also be equally significant to the central bank to formulate the new liquidity policy to control the position of liquidity of commercial bank.

1.6 Limitation of the Study

This research will try its utmost care to cover most of the important sector; but is still subject to limitations. Being a student, lack of the sufficient time and resources are the major limitations. The study has been conducted as partial fulfillment of the requirement for the master of business studies of the management faculty. The study is based on secondary data; therefore the reliability of the study depends upon the accuracy of the published audited general report documents such as balance sheet, profit and loss account statement which are circulated of the close of the financial year.

1. The analysis period of research covers only five years (i.e. from F/Y 2013/14 to F/Y 2017/18)
2. It focuses on liquidity and profitability of selected commercial bank in Nepal and does not cover other aspects.
3. In this study, only selected financial and statistical tools and techniques shall be used to analyze.

1.7 Chapter Plan

The study has been organized into five chapters, each devoted to specific aspects of the study of liquidity and profitability in commercial banks. Each of these chapters is as follows:

Chapter 1 Introduction

Chapter one deals with the subject matters of the study. It consists of background of the study, statement of the problem, objectives of the study, significance of the study and limitation of the study

Chapter 2 Literature Review

It deals with review of literature. It includes a discussion on the conceptual framework on liquidity and profitability. It also reviews the major studies relating

with liquidity and profitability of several authors/researchers and from the several books and journals.

Chapter 3 Research Methodology

This chapter explains the research methodology used to evaluate liquidity and profitability position of commercial banks in Nepal. It consists of research design, population and sample, source of data collection, method of analysis financial tools and statistical tools used in the analysis.

Chapter 4 Results

Chapter four fulfills the objective of the study by presenting data and analyzing them with the help of various statistical tools as per methodology. It is concluded with the findings of the study.

Chapter 5 Conclusion

This chapter summarized the overall study and discusses the conclusion drawn from the findings of the study. Finally, some recommendations provide to all stakeholders about the relationship between liquidity and profitability. Also find out the impact of liquidity on profitability of commercial banks.

Besides these chapters Reference and Appendix are also included at the end of the study.

CHAPTER II

LITERATURE REVIEW

The review of literature for the concerned subject matter for the present study has been presented in this chapter. Here, in this chapter review of concept of financial performance tools and techniques of concept of liquidity and profitability performance related research studies, regulating relating to commercial banks is strived to present briefly. The main purpose of doing research is reviewing and gaining new knowledge and the reviewing. The literature of the related documents helps the researcher to reach near his purpose. This chapter highlights upon the existing literature.

2.1 Conceptual Review

2.1.1 Concept of Liquidity

Bank liquidity means the ability to meet financial obligations as they come due. Liquidity in Commercial Bank means the bank's ability to finance all its contractual obligations when due, and these obligations can include lending, investment and withdrawal of deposits and maturity of liabilities, which happen in the normal course of the Bank actions.

The term liquidity is basically a technique which is used by an organization to convert its assets (current) into cash. Whenever a firm/organization needed to meet its financial obligations, it converts its current assets into cash form to pay the due liabilities at maturity date. As and when the bank needed to pay its short term obligations to its debtors and creditors/suppliers, it must have an ability to satisfy its creditors for this purpose, and this ability is named as “Liquidity” of a bank. This can be defined in simple words as under: A technique or procedure which is adopted by a firm or an organization or any financial institution to convert its assets into to cash for payment of near term obligation livid upon. Organizations having current assets in less quantity will face problems in continuing its operations on the other hand if the number of currents assets is too high; this shows that the return on investment for the organization is not in unspoiled state.

Anyanwu, (1993) defined that the liquidity as the ability of a firm to convert its asset into cash within the short time period and without the loss of value. Liquidity ratio plays a very important role in every business because banks usually operate with large funds borrowed from depositors in form of demand deposits and time deposits. (Olagunju et al., 2012) explained that liquidity means the ability of a bank to meet financial commitments at a reasonable price at all times. Banks having money when they need to satisfy the withdrawal needs of their customers.

Nimer, Warrad, & Omari, (2013) considers that liquid assets should be marketable securities. Liquidity of assets means that they are expected to be converted to cash easily and pay out the liability. Another quality of liquid assets is price stability. Based on the characteristic, bank deposits and short term securities are more liquid than equity investments due to the fact that the prices of the former are fixed than the prices of short term securities.

2.1.2 Liquidity Management

Jeevarajasingam, (2014) Managing liquidity involves estimating liquidity needs and providing for them in the most cost-effective way possible. Banks can obtain liquidity from both sides of the balance sheet as well as from off-balance-sheet activities. A manager who attempts to control liquidity solely by adjustments on the asset side is sometimes ignoring less costly sources of liquidity. Conversely, focusing solely on the liability side or depending too heavily on purchased wholesale funds can leave the bank vulnerable to market conditions and influences beyond its control. Effective liquidity managers consider the array of available sources when establishing and implementing their liquidity plan.

Poudel, (2002) Bank management should understand the characteristics of their funds providers, the funding instruments they use, and any market or regulatory constraints on funding. In order to accomplish this, management must understand the volume, mix, pricing, cash flows, and risks of their bank's assets and liabilities, as well as other available sources of funds and potential uses for excess cash flow. They must also be alert to the risks arising from funding concentrations.

2.1.3 Types of Liquidity

Mainly the liquidity of the firm are categorized under two headings. They are;

2.1.2.1 Asset Liquidity

Victor, Samuel, & Eric, (2013) Banks typically hold some liquid assets to supplement liquidity from deposits and other liabilities. These assets can be quickly and easily converted to cash at a reasonable cost, or are timed to mature when the managers anticipate a need for additional liquidity. Liquid assets include those that can be pledged or used in a repurchase agreement. Although management expects to earn some interest income on their liquid assets, their main purpose is to provide liquidity.

A) Money Market Assets

Victor, Samuel, & Eric, (2013) Money market assets (MMAs) are usually the most liquid of a bank's assets. MMAs include:Fed funds sold with an overnight maturity or term maturity within 30 days.Short-term Eurodollar deposits placed.CDs purchased, provided they are negotiable in the secondary market.Negotiable bankers' acceptances purchased from banks with good credit standing. A banker's acceptance is a time draft drawn on and accepted by a bank. It is often used to facilitate trade transactions, is usually collateralized by merchandise, and is guaranteed by a bank.

Jeevarajasingam, (2014) Large banks generally hold a range of MMA instruments and may diversify their shorter term assets to improve yield or maintain market presence. Because large banks have access to wholesale funding sources, they often do not rely on MMAs for liquidity to the same extent as community banks. Large banks try to invest their excess liquidity in assets with longer terms or more credit risk to enhance earnings. For most community banks, MMAs are primarily Fed funds sold to their correspondents."

B) The Investment Portfolio

Victor, Samuel, & Eric, (2013) A bank's investment portfolio can provide liquidity in three ways: (1) the maturity of a security, (2) the sale of securities for cash, or (3) the use of free securities as collateral in a repurchase agreement or other borrowing. For an investment security to be saleable, it must not be encumbered, i.e., the security cannot be

sold under repurchase agreement or pledged or used as collateral, and it must be marketable. A free security is an instrument that can be used as collateral in a transaction. A security that is severely depreciated, a small face amount, already pledged or encumbered, or of poor credit quality is not a good candidate for collateral and should not be considered free.

Because of these judgmental factors, the amount of free securities owned by a bank cannot easily be determined from the general ledger, and levels are generally estimated. Periodically, management should analyze in detail the investment portfolio to validate the bank's estimates of free securities.

For accounting purposes, investment portfolios are separated into two categories, available-for-sale (AFS) and held-to-maturity (HTM). These designations may affect how a bank uses its securities for liquidity purposes.

C) Cash Operating Accounts

Victor, Samuel, & Eric, (2013) Operating accounts such as vault cash, cash items in process of collection, correspondent accounts, and the Federal Reserve account usually are not liquid assets in an ongoing institution. These accounts are needed to accommodate daily business transactions; if these funds are used, they must be replenished before further business activities are conducted. Most well- managed banks maintain the minimum balance needed to accommodate transactions in these accounts, since the balances do not generally earn interest.

D) Reverse Repurchase Transactions

Jeevarajasingam, (2014) In a securities purchased under resale agreement, also known as a reverse repurchase agreement, a bank lends money to a counterparty by purchasing a security and agreeing to resell the security to the counterparty at a future date. This is an exchange of the most liquid asset (surplus cash) for a less liquid asset (a security). A reverse repo provides earnings to the lending bank with limited credit risk because the loan is collateralized.

2.1.2.2 Liability Liquidity

Williams and Thornton, (1994) Large regional and money center banks, and increasingly more community banks, rely heavily on liability liquidity. Larger banks generally have ready access to money markets and usually find that borrowing is the most economical way for them to meet short-term or unanticipated loan demand or deposit withdrawals. While community banks generally do not have the same broad access to money markets, their reliance on liability liquidity is increasing as the availability of core deposits continues to decline.By managing liabilities instead of assets, banks can tailor liabilities to fit their cash flow needs instead of apportioning asset types and amounts to a given liability base.

A) Retail Funding

Williams and Thornton, (1994) Retail funding is supplied by the deposits a bank receives from the general public, primarily consumers and small businesses. These deposits are most banks' primary funding source and for many banks continue to be a relatively stable source of funds. Retail funds providers usually maintain balances of $100,000 or less, to be fully insured by the FDIC. Retail accounts include:Transaction accounts such as demand deposit accounts (DDAs), negotiable order of withdrawal accounts (NOWs), or money market demand accounts (MMDAs); andSavings accounts and time certificates of deposit (CDs).

B) Wholesale Funding

Alshatti, (2015) Many banks are increasing their use of wholesale funding, replacing lost retail deposits with funds provided by professional money managers. Wholesale funds providers are typically large commercial and industrial corporations, other financial institutions, governmental units, or wealthy individuals. Wholesale funds transactions are typically not insured or are in amounts that exceed the FDIC insurance limit. As a result, these funds are generally very sensitive to credit risk and interest rates, and pose greater liquidity risk to a bank.

C) Other Debt Securities

Alshatti, (2015) Many large banks also use other debt securities to provide longer-term

sources of funds. Under the provisions of the Gramm-Leach-Bliley Act (GLBA), if a bank is one of the 100 largest insured banks and owns a financial subsidiary, it must have outstanding "eligible debt" that is rated in one of the three highest investment grade rating categories by a nationally recognized statistical rating organization.

2.1.4 Strategy for Liquidity Management

Liquidity Management is a tough task to be discharged by the management of every business entity. Inadequate liquidity tarnishes the image of the organization while excess liquidity is detrimental to the profitability.

Objective of liquidity management: to meet maturing liabilities, to minimize the cost of fund, to improve liquidity, to improve the return on investment etc.

In order to achieve the said objectives, banks adopt following strategies: asset Management, liability Management and asset Liability (Funds) Management.

The liquidity management strategies should be supported by the following: prediction of Liquidity Needs, most Productive Use of Liquid Assets, maintenance of Protective Liquidity, effective Liquidity Mobilization, secured Loans and Advances and Investment Portfolio and rapport with Corporate and Financial Institutions.

2.1.5 Importance of Liquidity Management

Chukwunweike, (2014) Liquidity risk is a greater concern and management challenge for banks today than in the past. Increased competition for consumer deposits, a wider array of wholesale and capital market funding products, and technological advancements have resulted in structural changes in how banks are funded and how they manage their risk.
Mishra, (2003) In particular, two recent trends in funding make it more important for banks to actively manage their liquidity risk: 1) the increased use of credit-sensitive wholesale funds providers and 2) the growth of off-balance-sheet activity.

Thuraingam, (2015) Traditionally, banks have relied upon retail transaction and savings accounts as a primary funding source. These deposits generally represent a stable and low-cost source of funds. However, for the past several years, core deposits as a percentage of assets have steadily declined. More recently, the absolute growth of core

deposits has been flat and may well decline in the future as retail consumers continue to evaluate the variety of competing savings vehicles and their relative returns. The growth in, and consumers' acceptance of, Internet banking and other electronic technologies may accelerate this trend by making it easier for consumers to compare rates and to transfer funds between competing institutions easily and rapidly.

Chukwunweike, (2014) Banks are successfully adjusting to this secular shift by using market sources, to meet loan demand and investment needs. By using market sources, banks are able to diversify their funding bases among funds providers and across maturities. Unlike core deposits, whose maturities are generally determined by the preferences of depositors, funds in the professional markets can be accessed at a variety of tenors. The many choices among market funding alternatives have provided banks with greater flexibility in managing their cash flows and liquidity needs.

Increased reliance on market funding sources, however, has left banks more exposed to the price and credit sensitivities of major funds providers. As a general rule, institutional funds providers are more credit sensitive and will be less willing than retail customers to provide funds to a bank facing real or perceived financial difficulties. A bank's ability to access the capital markets may also be adversely affected by events not directly related to them.

Ibe, (2013) Along with the shift from relatively credit-neutral to credit- sensitive funds providers, banks have turned increasingly to asset securitization and other off- balance-sheet strategies to meet their funding requirements. As these off- balance-sheet activities have grown, they have become increasingly important in the management and analysis of liquidity. These activities can either supply liquidity or increase liquidity risk, depending on the specific transaction and the level of interest rates at the time.

2.1.6 Liquidity Risk

Khan and Jain, (1997) Liquidity risk is the risk to a bank's earnings and capital arising from its inability to timely meet obligations when they come due without incurring unacceptable losses. Bank management must ensure that sufficient funds are available at a reasonable cost to meet potential demands from both funds providers and borrowers.

Although liquidity risk dynamics vary according to a bank's funding market, balance sheet, and inter corporate structure, the most common signs of possible liquidity problems include rising funding costs, requests for collateral, a rating downgrade, decreases in credit lines, or reductions in the availability of long-term funding.

The sophistication of a bank's liquidity management process will depend on its business activities and overall level of risk. However, the principles of liquidity management are straightforward: a well-managed bank, regardless of size and complexity, must be able to identify, measure, monitor, and control liquidity risk in a timely and comprehensive manner.

2.1.7 Early Warning Indicators of Liquidity Risk

Samiloglu & Dermirgunes, (2008) Management should monitor various internal as well as market indicators of potential liquidity problems at the bank. These indicators, while not necessarily requiring drastic corrective action, may prompt management and the board to do additional monitoring or analysis.

Samiloglu & Dermirgunes, (2008) An incipient liquidity problem may first show up in the bank's financial monitoring system as a downward trend with potential long-term consequences for earnings or capital. Examples of such internal indicators are:A negative trend or significantly increased risk in any area or product line.Concentrations in either assets or liabilities.A decline in indicators of asset quality.A decline in earnings performance or projections.Rapid asset growth funded by volatile wholesale liabilities or brokered deposits.

Chopra, (1989) Professional analysts and other market participants may express concerns about the bank's credit capacity. Examples of these third-party evaluations include: Bank is named in market rumors as a “troubled” bank.Downgrades of credit rating by rating agencies.Customers are contacting relationship managers, fixed income sales representatives, and branch employees requesting information.

Bearish secondary market activity in the bank's securities may signal declining value. Examples of these market events include: Drop in stock price. Wider secondary spreads on the bank's senior and subordinated debt and increasing trading of the bank's

debt.Brokers/dealers are reluctant to show the bank's name in the market, forcing bank management to arrange "friendly" broker/dealer support.

Chopra, (1989) Finally, the bank's funding market may begin to contract or demand credit support, better credit terms, or shorter duration lending, any of which may increase liquidity costs. Examples of funding deterioration are:Overall funding costs increase.Counterparties begin to request collateral for accepting credit exposure to the bank.Correspondent banks eliminate or decrease credit line availability, causing the bank to make larger purchases in the brokered funds market.Volume of turndowns in the brokered markets is unusually large, forcing bank to deal directly with fewer willing counterparties.Rating-sensitive providers, such as trust managers, money managers, and public entities, abandon the bank.Counterparties and brokers are unwilling to deal in unsecured or longer dated transactions.Transaction sizes are decreasing, and some counterparties are unwilling to enter into even short-dated transactions.Bank receives requests from depositors for early withdrawal of their funds, or the bank has to repurchase its paper in the market.

Samiloglu & Dermirgunes, (2008) When evaluating a bank’s potential liquidity risk, the examiners will consider not only the factors considered by bank management but also a bank’s current position and trends in the following ratios:Loans to deposits, Short-term liabilities to total assets, On-hand liquidity, Dependence or reliance on wholesale funding.

2.1.8 Relationship of Liquidity Risk to Other Banking Risks

Johnson, (1940) Bankers and examiners must understand and assess how a bank's exposure to other risks may affect its liquidity. The nine categories of risk are credit, interest rate, liquidity, price, foreign currency translation, transaction, compliance, strategic, and reputation. These categories are not mutually exclusive any product or service may expose the bank to multiple risks and a real or perceived problem in any area can prevent a bank from raising funds at reasonable prices and thereby increase liquidity risk.

Johnson, (1940) The primary risks that may affect liquidity are reputation, strategic, credit, interest rate, price, and transaction. If these risks are not properly managed and controlled, they will eventually undermine a bank's liquidity position." A brief description of how these risks may affect liquidity is provided below.

A) Reputation Risk

Johnson, (1940) Reputation risk is the current and prospective impact on earnings and capital arising from negative public opinion. A bank's reputation for meeting its obligations and operating in a safe and sound manner is essential to attracting funds at a reasonable cost and retaining funds during troubled times.

Negative public opinion, whatever the cause, may prompt depositors, other funds providers, and investors to seek greater compensation, such as higher rates or additional credit support, for maintaining deposit balances with a bank or conducting any other business with it. If negative public opinion continues, withdrawals of funding could become debilitating.

To minimize reputation risk and its potential impact on liquidity, bank management should assess the bank's reliance on credit-sensitive funding. A bank that is exposed to significant reputation risk should seek to mitigate liquidity risk by diversifying the sources and tenors of market funding and increasing asset liquidity, as appropriate.

B) Strategic Risk

Johnson, (1940) Strategic risk is the current and prospective impact on earnings or capital arising from adverse business decisions, improper implementation of decisions, or lack of responsiveness to industry changes. No strategic goal or objective should be planned without considering its impact on a bank's funding abilities. The bank must be able to raise money required to meet its obligations at an affordable cost. The ability to attract and maintain sufficient liquidity is often an issue at banks experiencing rapid asset growth. If management misjudges the impact on liquidity of entering a new business activity, the bank's strategic risk increases. Management should carefully consider whether the funding planned to support a strategic risk initiative will increase liquidity risk to an unacceptable level.

C) Credit Risk

Johnson, (1940) Credit risk is the current and prospective risk to earnings or capital arising from an obligor's failure to meet the terms of any contract with the bank or otherwise to perform as agreed. A bank that assumes more credit risk, through asset concentrations or adoption of new underwriting standards in conjunction with untested business lines, may be increasing its liquidity risk. Credit-sensitive funds providers may worry that the bank's increased credit exposure could lead to credit problems and insufficient profits. The bank's ability to meet its obligations may eventually be compromised. Wholesale funds providers and rating agencies consider the level of past-due loans, nonperforming loans, provisions to the allowance for loan and lease losses, and loan charge-offs as indications of trends in credit quality and potential liquidity problems. If credit risk is elevated, the bank may have to pay a premium to access funds or attract depositors. If credit risk has undermined the bank's financial viability, funding may not be available at any price. Most large bank failures have involved the combined effects of severe credit and liquidity deterioration.

D) Interest Rate Risk

Crosse, (1963) Interest rate risk is the current and prospective risk to earnings or capital arising from movements in interest rates. Changes in interest rates affect income earned from assets and the cost of funding those assets. If a bank experiences a reduction in earnings from a change in market interest rates, funds providers may question the financial stability of the bank and demand a premium. They may even refuse to provide funding.

Off-balance-sheet instruments that a bank uses to manage its interest rate risk may also pose liquidity risk. The cash flows of those instruments often are very sensitive to changes in rates, and, if not properly managed, can result in unexpected funding requirements or other cash outflows during periods of volatile interest rates.

E) Price Risk

Crosse, (1963) Price risk (or market risk) is the risk to earnings or capital arising from changes in the value of traded portfolios of financial instruments. Price risk may result in

volatile earnings. This risk is most prevalent in large banks that actively trade financial instruments. Price risk is closely monitored by funds providers when assessing a bank's financial position and creditworthiness. If price risk and its perceived impact on earnings or capital are too great, funds providers may require the bank to pay increased rates for funds, may not be willing to invest in longer term maturities, or may not be willing to provide funding on any terms.

F) Transaction Risk

Crosse, (1963) Transaction risk is the current and prospective risk to earnings and capital arising from fraud, error, and the inability to deliver products or services, maintain a competitive position and manage information. Systems that directly affect liquidity include wire transfer systems for check and securities clearing, electronic banking, and operations governing credit, debit, and smart card usage. If product lines change, management must adjust the systems to ensure that all transactions can be handled. Significant problems can develop very quickly if the systems that process transactions fail or delay execution. If customers have difficulty accessing their accounts, they may close them, which will diminish liquidity. Transaction risk should be considered in the bank's contingency planning process.

2.2 Theoretical Review

This part presents some theoretical aspects related to bank liquidity concept, the need for liquidity, theories of liquidity management, banks profitability and its measures, as follows.

2.2.1 Theories of Liquidity Management

There are a number of liquidity management theories, as follows:

1. Anticipated Income Theory

According to this theory bankers again began to look at their loan portfolio as a source of liquidity. The anticipated income theory encouraged bankers to treat long-term loans as potential sources of liquidity. How can a banker consider a mortgage loan as a source of liquidity when, typically, it has such a long maturity? Using the anticipated income theory, these loans are typically paid off by the borrower in a series of installments.

Viewed in this way, the bank's loan portfolio provides the bank with continuous flow of funds that adds to the bank's liquidity. Moreover, even though the loans are long term, in a liquidity crisis the bank can sell the loans to obtain needed cash in secondary markets. (The future of money)

2). Shiftability Theory

Shiftability is an approach to keep banks liquid by supporting the shifting of assets. When a bank is short of ready money, it is able to sell its assets to a more liquid bank. The approach lets the system of banks run more efficiently: with fewer reserves or investing in long-term assets. Under shiftability, the banking system tries to avoid liquidity crises by enabling banks to always sell or repo at good prices (en.wikipedia.org.)

3). Liability Management Theory

This theory states that there is no need to follow old liquidity norms like maintaining liquid assets, liquid investments etc., banks have focused on liabilities side of the balance sheet (scribd.com).

According to this theory, banks can satisfy liquidity needs by borrowing in the money and capital markets. The fundamental contribution of this theory was to consider both sides of a bank's balance sheet as sources of liquidity.

4). Commercial Loan Theory

Anyanwu, (1993) this theory states that the liquidity of the commercial bank achieved automatically through self-liquidation of the loan, which being granted for short periods and to finance the working capital, where borrowers refund the borrowed funds after completion of their trade cycles successfully. According to this theory, the banks do not lend money for the purposes of purchasing real estate or consumer goods or for investing in stocks and bonds, due to the length of the expected payback period of these investments, where this theory is proper for traders who need to finance their specific trading transactions and for short periods.

2.2.2 Concept of Profit

Almazari, (2014) In business, profits are the excess of revenue over cost. In other words, business profits are the residual income, which is equal to sale proceeds minus costs. In a simple term, profits mean the residual balance of earning expected to be available with the firm that is obtained after deducting entire expenses, costs, charges and provision from total revenue of a period of time. Profit is there sources left to the firm for future growth and expansion or reward to be distributed to the entrepreneurship pin the form of dividends.

2.2.3 Concept of Profitability

Nimer, Warrad, & Omari, (2013) Bank profitability is the ability of a bank to generate revenue in excess of cost, in relation to the bank's capital base. A sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system.

The issue of profitability is a contentious subject that a bank has to consistently face. Heibati, SeidNoorani, & Dadkhah, (2009) explained that the profit as the difference among expenditures and returns during a fixed period of time, normally comprised of one year. They argued that a business behaves like living i.e. it stay alive and grows. Therefore, it is significant that a bank produces income for its continuous survival and growth. It is also essential that sufficient income must be produced to sustain the operations of the organization that will lead towards further expansion and growth.

Agbada & Osuji, (2013) consider planning for corporate profit as one of the most challenging and extensive aspect performed by bank management just because of the involvement of numerous variables in the decision making process, which are generally not in the control of the bank. They also argued that profit planning can be even more complex if it is done in highly challenging economic environment.

Nimer, Warrad, & Omari, (2013) described that profitability is measured by two substitute measures. First is the return on asset (ROA) as measured by the ratio of profits to total assets, and the second is return on equity (ROE). It is generally believed that return on assets ROA reveals the capacity of the assets of the banks to produce profit,

though this estimate can be biased due to off-balance-sheet activities. According to Saleem & Rehman, (2011) profitability can also be measured using return on investment (ROI).

Profitability in general is a relationship between the profits generated by the enterprise and investments that contributed to the achievement of these profits, and profitability ratios measure the efficiency with which a company turns business activity into profits. Profit margins assess the ability to turn revenue into profits. Return on assets measures the ability to use assets to produce net income. Return on equity compares the net income to shareholder equity (.chron.com.).

2.2.4 Need for Profit

Profit is a must for the following reasons:

A) Measurement of Performance

Saleem & Rehman, (2011) Profit is only one factor to measure the management efficiency, productivity and performance. Profit is the most widely used yard stick to see what really is to be achieved and where the firm is to go in the future.

B) Premium to Cover Costs of Staying in Business

Saleem & Rehman, (2011) Business environment is full of risks and uncertainties. To grasp the globally changing technologies to stay in the market uncertainties, to replace and acquire assets and enhancing business scope etc. Require a profit margin.

C) Ensuring Supply of Future Capital

Ibe, (2013) Profit is necessary to plough back in the investments like innovations, business expansion and self-financing. It also attracts investors for further investment.

D) Return to the Investors

Ibe, (2013) Shareholders provide equity capital to the business because they expect the entity will provide return to their funds at least equal or above market rate of return. To maintain the shareholders expectation, it is most important that a firm should earn sufficient profit so that it can distribute dividends.

2.2.5 The Trade-Off between Liquidity and Profitability

The importance of the liquidity and profitability in a bank is paramount. They are recognized as two wheels of a cart because in the absence of any of them, the bank cannot forge ahead. However, there is a practice of treating them as antagonistic to each other because liquidity is maintained at the cost of profitability and vice versa.

Liquidity risk is the risk that the bank will not have the funds it needs, at reasonable cost, to meet excess withdrawals or to make loans. The banker, on the other hand, generally determines loan able funds from the available funds after adjusting statutory and legal reserves. Since majority of funds collected by banks are almost cost sensitive funds, it cannot hold such funds for the long period without any earnings. Therefore, the bank has to take immediate action against such funds. However, the bank cannot overlook the transaction that can occur in its liability, i.e., withdrawals more than exception or assumption.

The management of such asset and liability in a efficient way is a challenging part for the bank managers. The bank manager cannot equalize the demands for funds and supply of funds during the market movement. Hence, the management of funds with maximum earnings with adequate cash for managing cash demands is the question to be answered by the banker in a present competitive environment.

In spite of innovation of several strategies to mathematical modalities, there is no specific techniques derived yet that can handle the liquidity easily along with optimum profitability. Therefore, the trade off point is that point when the bank will be earning at optimum point and the supply of funds is exactly to the demands for funds which is impossible in the present industrial trend.

Basically, the bank should be aware of the excess supply of funds and excess demands of funds in order to move nearest towards the accuracy of trade off between the liquidity and profitability. The banks should not maintain idle funds to meet cash obligations while cannot extend investment without considering the demand for cash. The synchronization of these two variables maximizing the profitability and default the cash obligation should be the main strategy of bank. In order to cope up with this problems, small banks

generally rely on asset management while large banks rely liability management, Both the strategies must be aware of cost of funds- the cost of disposing in the previous strategy whereas the cost of funds in the latter strategy.

Similarly, the bank cannot neglect other risks as well such as market risk and credit risk in relation with the tradeoff between the liquidity and profitability. The tackling of both risks is always influenced by the size of the banks. Market risk can be managed through hedging if available such as position in financial futures, options, or swaps. Bank regulations also impose some degree of diversification by limiting maximum loan to any one borrower or under a particular head that also assist in co-coordinating the tradeoff between the profitability and liquidity of a bank.

2.2.6 Profitability of Commercial Banks

William, (1990) Unlike in any other organizations, there are various forms of stakeholders in the Bank. So, the bank also has to make the best efforts to meet the interests of the stakeholders. The majority of the needs of the stakeholders are related with the profitability of the banks. For example, in case the bank earns profits, the investors get dividends, employees get bonus, government gets benefits in forms of taxes etc. Thus, the fore most objective of the banks is the profit maximization.

The major source of funds of the bank is the public deposit. The bank in most of the cases has to pay certain rate of interest to the public in their deposit. Thus, the banks have to mobilize these funds in the profitable sectors, which derive maximum return on the assets. Hence, the investment or granting of loan and advances by the mare highly influenced by profit margin. The profit of the bank is dependent on the interest rate, volume of loan and time period of loan. However, the bank at the same time has to ensure that their investment is safe from default.

Although the banks have to invest in order to earn profits. But, at the same time have to set aside some of its fund in order to maintain their liquidity. As the major source of bank’s fund is public deposits, the bank has to be able to allow the depositors to withdraw their deposit in terms of need. Thus, the bank cannot invest all its funds in the profitable sectors. Thus, a successful bank is one who invests most of its funds in

different earning assets and in safely from the problem of liquidity i.e. keeping cash reserves to meet the daily requirements of the depositors. Lower the liquidity, higher the profitability and higher the liquidity, lower the profitability. So, profitability and liquidity maintain a highly negative co-relation. Since both are equally important, banks cannot afford to ignore any of them. So, the management has to make a crucial decision regarding a mixture of liquidity and profitability.

2.2.7 Theories of Profit

Economists have propounded several theories of profits to explain profits of entrepreneurs. Most of the theories are centered on the controversy about the role of the entrepreneur. In the following section some of the fundamental theories of profit have reviewed in brief.

A) Theory of Risk and Uncertainty Bearing

It was F.B. Hawley who first developed the theory of risk bearing and concluded that profit is a reward of the entrepreneurs for bearing risks. But, the theory was picked up by Professor F. H. Knight who divided risks in to insurable and non-insurable risks and concluded that profit is a reward for bearing non-insurable risks and uncertainties. Thus according to Knight, profit is a reward to the entrepreneur for his non-transferable function of bearing non- insurable risk and uncertainties.

B) Dynamic Theory of Profit

According to this theory, 'dynamic changes' in the economy are the basic causes of emergence of profits. There is no profit in a static economy as no changes take place. In a dynamic economy there are constant changes in population, capital, methods of production and industrial setup. These changes multiply wants of consumers, which earn profits to the entrepreneur.

C) Innovation Theory of Profits

Joseph Schumpeter singled out 'innovation' form the dynamic theory of profits and developed the innovation theory of profits. According to Schumpeter changes take place in a dynamic economy and innovation in the changing world gives rise to profits. In his vies, the entrepreneur plays an important role of introducing innovation in an economy

and profits are the rewards for his role as an innovator. The innovation could be changes or techniques that reduces cost of production or increases demand for the product.

2.3 Empirical Review

Many studies have been conducted explaining the relationship between liquidity and banks' profitability. It consist the review of international and national books, journals, articles and pervious thesis.

2.3.1 Review of Articles in the Journal

Saleem & Rehman, (2011) made a research on Impacts of liquidity ratios on profitability ofselected enterprises in Pakistan with the sample of 26 oil and gas companies listed under the Karachi StockExchange (KSE). Findings reveal that there is a significant impact of only liquid ratio on ROA whileinsignificant on ROE and ROI; the results also show that ROE is no significant effected by three ratios currentratio, quick ratio and liquid ratio while ROI is greatly affected by current ratios, quick ratios and liquid ratio.

Ben-Caleb, Egbide, Olubukunola, Uwuigbe, Uwalomwa, (2013) examined the Liquidity Managementand Profitability of Manufacturing Companies in Nigeria. The analysis was based on a sample of 30Manufacturing Companies. The result suggests that current ratio and liquid ratio are positively associated withprofitability while cash conversion period is negatively related with profitability of manufacturing companies inNigeria. The association in all the cases was however, statistically insignificant, indicating low degree ofinfluence of liquidity on the profitability of manufacturing companies.

Manyo & Ogakwu, (2013) investigated the Impact of Liquidity on Return on Assets of 46 quoted firms listed on the Nigerian Stock Exchange from 2000-2009. The result of the study show that liquidity has a significant positive impact on Return on Assets (ROA), implying that a unit change in liquidity will result into a corresponding increase in ROA. Lartey, Antwi & Boadi, (2013) in their study found a very weak positive relationship between the liquidity and the profitability of the listed banks in Ghana.

Ajanthan, (2013) investigated the relationship between liquidity and profitability of trading companies in Sri Lanka over a period of past 5 years from 2008 to 2012. The study reveals that there is a significant relationship exists between liquidity and profitability among the listed trading companies in Sri Lanka. Furthermore, Velnampy, T. and Nimalathasan, B. (2010) using sample of Bank of Ceylon and Commercial Bank of Ceylon ltd in Sri Lanka, find there is a positive relationship between firm size and profitability in Commercial Bank of Ceylon ltd, but there is no relationship between firm size and profitability in Bank of Ceylon.

More recent studies have also confirmed the existence of the trade-off between liquidity and profitability trade-off. Bhunia,et. al. (2011) investigated the liquidity management efficiency and liquidity profitability relationship. The data utilized was extracted from the income statements, balance sheets, and cash flow statements of sampled firms from the India Stock Exchange and CMEI data base. The purposive sample design method was applied in their analysis. Preferred sample of private sector steel companies from 1997-2006 were utilized in the analysis. Results showed that correlation and regression results are positively significant and associated to the firm profitability.

Bhunia, (2010) Liquidity plays vital role in determining the effectiveness of firms. Thus it is necessary for firms to maintain a balanced liquidity ratio in order to meet their short term liabilities. Due to its relationship with the day to day operations it is imperative for both internal and external analysts to study liquidity. The purpose of liquidity management is maintaining tradeoff between liquidity and profitability.

Velnampy, (2013) in his investigation on corporate governance and firms performance taking twenty eight companies sample for four years from 2007–2011 stated that the determinants corporate governance have no relation with the firm's performance. After applying regression the result showed that ROE and ROA were not affected by corporate governance. Thus the findings revealed that corporate governance measures have no relation with performance measures.

Willam, (1990) through his research reveals due to convertibility into liquidity profitability is more important, he also adds that importance of profitability does not

mean that company the company that more liquidity is profitable. Don (2009), while comparing relative importance of both states that liquidity is more important than profitability, because it determines the survival of the company.

Eljelly, (2004) found that there is significant negative relationship between the firm's profitability and liquidity when it is measured by current ratio. The study also found that at industry level, however, cash gap is important to measure the liquidity than current ratio that affects profitability.

A research study conducted by Bardia, (2004) and Sur and Ganguly, (2001) on steel giants SAIL and aluminum producing industry reveal that liquidity and profitability are positively related with each other.

Saleem & Rehman, (2011) by taking five years data of twenty six enterprises examined the relationship between liquidity of firm and profitability, found that there is positive relationship between firm's liquidity and profitability.

A research conducted by Wang, (2002) reveals that there is a positive relationship between liquidity and operating performance. Seventeen years data of sample firms was taken. They examined the association between profitability and the information system taking the sample. Mean while the research also reveals that there is positive relationship between liquidity and profitability. A research undertaken by Zhang, (2011) suggests that there is significant positive relationship between firm's liquidity and profitability.

Rehman, and et al, (2015) the current study makes an earnest endeavor to investigate the relationshipbetween liquidity and profitability of companies listed in Saudi Stock Exchange (Tadawul). The studyencompasses 99 listed companies in Tadawul. The liquidity of the companies is gauged by current ratio, quickratio and the absolute liquid ratio. The overall results revealed that there is only one positive significantrelationship between Return on Assets (ROA) and Current Ratio (CR) of the companies in Saudi Arabia. Further,it is revealed that there is negative but insignificant relationship between the Return on Assets (ROA) and QuickRatio (QR) & Cash Ratio (CHR) of the companies in Saudi Arabia.

2.3.2 Review of Previous Theses

In this section, different types of related research studies have been reviewed because change of duplication will be avoided from present study and some new change can be created for achieving the objective.

Yadav, (2011) on his unpublished thesis "A Comparative Study on Working Capital Management of NABIL and KBL," he found that the current ratio of NABIL is greater than KBL, so NABIL is better than KBL. Similarly, cash and bank balance to total deposit ratio of KBL is better. He found that net profit to total assets ratio of NABIL is better, it means NABIL utilizes its assets effectively than KBL, but KBL's ROA is more consistent on the view of interest earned to total assets, KBL is better than NABIL and return on deposit of NABIL is better but KBL is more consistent. Cash and bank balance of NABIL is getting better position.

Poudel, (2002) on his unpublished thesis "Liquidity and Investment Position of Joint Venture Commercial Bank in Nepal" had made an attempt to evaluate liquidity and investment of JVBs' special reference to EBL and NABIL. He has concluded that liquidity position of EBL is comparatively better than NABIL. Growth rate of investment is higher in EBL than NABIL. A commercial bank at its own judgement may decide to maintain an appropriate level of liquid assets. There is no standard and uniform rate or ratio for maintaining liquid assets by the commercial banks. He further found the banks do not have constant and consistent liquidity and investment policy. So he has recommended exploring such investment and to increase its investment so share and debenture and the bank should have laid policy for timely review of portfolio and to maintain risk and return.

Joshi, (2011) on his Master's thesis, "A Comparative Study of Financial Performance of NIBL and EBL," found that the liquidity position of NIBL is comparatively better than EBL. NIBL has highest current ratio, cash and bank balance to total deposit ratio and cash and bank balance to total deposit ratio and cash and bank balance to current assets ratio than EBL.NIBL has been more successful in mobilization of its investment to total

deposit saving deposit to total deposit ratio. On the other hand, EBL appears to be stronger in mobilization of total investment to total deposits.

Thakur, (2010) on his thesis "Financial Performance Analysis of Commercial Banks of Nepal (HBL and NABIL) found the liquidity position of the banks is in fluctuating trend. The HBL cash and bank balance to current assets, cash reserve ratio is more than NABIL, but current ratio of NABIL is more than HBL. Return on equity, return on assets, return on total deposits and interest earned to total assets of NABIL is better than HBL. So NABIL's profitability position is better than HBL. Investment trend, total deposit trend, net profit, operating income, interest earned, etc. of NABIL is increasing trend than HBL throughout the study period. All of correlation is almost positive relation.

Adhikari, (2001) on his thesis, "A Comparative Study of Financial Performance of Nepal SBI Bank Ltd. and Everest Bank Ltd.," found out the liquidity position of both banks. Overall liquidity position of EBL has found slightly stronger than the NSBI. It showed that EBL can to meet its current liabilities more efficiently than NSBI and concluded that both banks have used higher proportion of debt in their capital structure and also found that overall capital structure of NSBI appears more levered than the EBL. He suggested that both of banks have maintained NRB balance sheet to deposit ratio remarkable higher than the standard by NRB.

Limbu, (2006), on his thesis, "A Comparative Study of Financial Performance of NSBI, EBL & NABIL," found that profitability position of NABIL is best; EBL has better position than NSBI. In terms of income structure, interest paid to interest income, ROA, ROE, etc reflects that NABIL is most capable to utilize the fund to productive sector and EBL pays highest amount of interest.Liquidity position of three sample banks is good because cash and bank balance to deposit ratio of NSBI, EBL & NABIL shows that the three banks have constantly maintained liquidity ratio (i.e. cash reserve ratio) as defined by NRB. But on the view of current ratio, NABIL can maintain highest liquidity.

After the detailed study, it can be concluded that financial market is the place that facilitate financing and investment of financial assets. Commercial banks are the main financial institution. In our country, failure of local banks as compare to joint venture

commercial banks lies in their gross incompetence in the management of assets and liabilities. Mismanagement in financial institutions is involved inadequate and over optimistic loan appraisal, high risk divaricating of loan portfolio and investment etc are major cause's investment and loan that has gone bad. NRB is focusing on monetary policy to insure prise, external and financial sector stability so as to create the environment supportive for high and sustainable economic growth.

3.4 Research Gap

All of the above research made were mainly concentrated on the liquidity management of the bank, and thus has totally ignored the impact of liquidity in profitability, which is the ultimate goal of each organization. Thus, to fulfil such gap, this study has been carried out. The study shows the interrelationship between liquid assets on net profit and the impact of maintaining cash and bank balance on net profit of the selected bank. Further, the study focuses on the various liquidity and profitability ratios that truly delineate the liquidity and profitability position of the banks.

The review of above relevant literature contributed to enhance the fundamental understanding and knowledge, which is required to make this study meaningful and purposeful. There are various research conducted on liquidity and its impact on banks profitability. The related literature on this topic is properly found in context of different countries. But in the context of Nepal a few researches were found. It is assumed that this study is probably the new one to do research.

The studies have only added to the already existing confusion as to the nature of the relationship between liquidity and its impact on profitability of commercial banks of Nepal. Majority of the theories assume that capital markets are perfect which rarely the case is. It can also be observed that most of the studies were done in the developed markets and more studies needed to done in the emerging market like Nepal. This research study attempts to bridge these gaps.

This study will also help the business student to gain knowledge on the subject matter. Financial institutions also know about their position relating to Liquidity and Profitability. They will also know what general people or share holders want them to do,

whether to retain earning or distribute to them regardless of legal provision. The importance of this study may be viewed from to fill an important gap in literature and also finding of this study can added value to the existing body of literature, and can serve as starting point on which future studies can be carried out.

CHAPTER III

RESEARCH METHODOLOGY

This chapter refers to overall research method from the theoretical aspects to the collection and analysis of data. This study covers quantitative methodology in a greater extent and also uses the descriptive part based on both technical aspects and logical aspect. This research tries to perform a well-designed quantitative and qualitative research in very clear and direct way using both financial and statistical tools. Detail research methods are described in the following headings;

3.1 Research Design

This research work tries to analyze the liquidity and profitability position of the commercial banks in Nepal during the five year time period (from 2013/14 to 2017/18). The present study consists of descriptive and analytical research design. The study was based on secondary data only. Financial as well as statistical tools were used to analyze and interpret.

3.2 Population and Sample

The researcher's interest is to carry out a study on the relationship between liquidity and profitability; as measured by the various liquidity ratios and return on assets (ROA) and return on equity (ROE) respectively, the population of this study shall consist of all commercial banks operating in Nepal.This selected samples banks are playing major role in the Nepalese economy and also a banking sector of Nepal. RBB is fully government banks to make biggest profit in Nepal. NICA is most growing bank of our nation. It has so many branches over all of the country. NABIL isfirst joint venture private bank establish in Nepal. NIBL is the most trusted and popular bank in the country. The four commercial banks were selected among the listed 27 commercial banks for the study. which are; Rastrya Banijya Bank Ltd. (RBB), Nabil Bank Limited (NABIL), NIC Asia Bank Ltd. (NICA), and Nepal Investment Bank Limited (NIBL), within from these total population has been taken as sample and tried to achieve the objectives set out by analyzing the data.

Table 3.1: Number of commercial banks selected for the study

S. No.	Name Commercial Bank	Study Period
1.	Rastrya Banijya Bank Ltd. (RBB)	2013/14 to 2017/18
2.	NIC Asia Bank Ltd.(NICA)	2013/14 to 2017/18
3.	Nabil Bank Ltd. (NBL)	2013/14 to 2017/18
4.	Nepal Investment Bank Ltd. (NIBL)	2013/14 to 2017/18

3.3 Sources of Data

This research study is mainly based on the secondary data. Financial statement is the major components of the annual report which is normally included in statement of income, statement of financial position, statement of cash flow, statement of changes in equity and other relevant notes. Statement of income and statement of financial position of the listed commercial banks in NEPSE up to January 2019 has used in this study from 2013/14 to 2017/18. The researcher hopes that the data of the analysis is true and fair because all listed bank's financial statements included the independent audit report.The secondary data have been acquired from various sources as like follows.Annual report published by those Banks, News paper, journals & magazines.

3.4 Data Collection and Data Processing Procedure

The study is based on secondary data. For this, the published materials, books of different authors, unpublished thesis reports, journals, magazines, Internet web sites, AGM reports of commercial banks, bulletins published by NRB etc. are the major sources of the secondary data. To collect these secondary data, the researcher visits different campus library including online library, TU central library, SEBON library and NRB library. Different web sites are also search to collect necessary information for the study.

3.5 Data Analysis Tools

The data collected from different sources are recorded systematically as necessary. Only useful and related data are grouped as per need of the research work. Data are presented in appropriate forms of tables, graphs and charts. For analysis appropriate mathematical, financial as well as statistical tools are used. Some of them are:

3.5.1 Financial Tools

For the proper financial analysis of data ratio analysis is the best tool. It is very simple analyzing tools under which ratios are taken to express the relation between two or more data. Through ratio analysis we can establish the relationship among the data and research into conclusion. Under ratio analysis following ratio related to bank are analyzed.

A) Liquidity Ratio

Liquidity ratio is a rigorous measure of a firm's ability to serve its short-term obligation. It reflects the short-term financial solvency of a firm as a whole or it is employed as a measurement of a company's liquidity position. The firm should remain an appropriate liquidity neither excess nor less to meet its short-term obligation when they become due. Inadequate liquidity can lead to unexpected cash short falls. A very high degree of liquidity is also not good as ideal assets earn nothing, leading to fewer assets yield and contributing to poor earnings performance. Important liquidity ratios that have been used in the study are listed below:

Liquid Assets Trend

Each bank makes the provision of keeping liquid assets to meet the short term liability. Hence the trend of liquid assets in the bank will be measured under this heading. The liquid assets include only those assets that can be easily turned into cash.

A) Current Ratio

The current ratio is the ratio of total current assets to total current liabilities. Current ratio measure the short-term solvency, i.e. its ability to meet short-term obligation or as a measure of creditors versus current assets. The current ratio is calculated by dividing current assets by current liabilities.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

a. Cash and Bank Balance to Total Deposits Ratio

Cash and bank balance to total deposits ratio measures the capacity of bank to meet unexpected demand made by depositors, i.e. current account holders, saving depositors, call and other depositor. This ratio is computed by using the following formula:

$$\text{Cash and Bank Balance to Total Deposit Ratio} = \frac{\text{Total Cash \&} BankBalance}{\text{Total Deposit}}$$

b. Cash Reserve Ratio (CRR)

Each bank has to keep the cash reserve ratio as directed by the NRB. The CRR ratio as per the NRB should be 6% in the fiscal year 2003/04 and 5% from then. The cash reserve ratio is calculated by using the following formula.

$$\text{CRR} = \frac{\text{Cash and Bank Balance}}{\text{Total Local Deposit}}$$

c. Fixed Deposit Total Deposit Ratio

Fixed deposit is a long-term and high interest bearing deposit. More fixed deposit may be an advantage if it can be invested in long-term credit. This ratio is calculated in order to find out the proportion of fixed deposit in total deposit. Fixed deposits are long-term deposit and banks can mobilize them on investment, loans and advances.

$$\text{Fixed Deposit to Total Deposit Ratio} = \frac{\text{Total Fixed Deposit}}{\text{Total Deposit}}$$

d. Current Deposit to Total Deposit Ratio

Current deposit is short-term noninterest bearing deposit. Current deposit is generally regarded as short-term obligation as it can be withdrawn without prior notice or with short notice.

$$\text{Current Deposit to Total Deposit Ratio} = \frac{\text{Total Current Deposit}}{\text{Total Deposit}}$$

B) Profitability Ratio

Profit is the ultimate output of a company and its existence is not justified if it fails to make efficient profit. Therefore the company should continuously evaluate the efficiency of the company in terms of profit. The profitability ratios are calculated to measure the

operating efficiency of the company. Generally, two major types of profitability ratios are calculated:

a) Profitability in relation to sales
b) Profitability in relation to investment.

Net Profit Trend

The goal of each bank is to maximize profit. Thus, this analysis depicts the comparative efficiency of the banks in gaining highest profit. Obviously, the high profit is favourable.

Net Profit Margin

Net profit margin indicates margin of compensation left to the owners for providing their capital, after all expenses have met. It helps in determining the efficiency with which the affairs of the business are being managed. A net profit margin would enable the firm to withstand adverse economic conditions and low margin will have opposite implications.

$$\text{Net Profit Margin} = \frac{\text{NPAT}}{\text{Interest Income}}$$

a. Interest Income to Loan and Advances

The bank grants loan and advances for the sole reason to gain interest income. Thus, to examine how far the bank has been able to manage the loan and advances in earning interest income, the ratio of interest income to loan and advances has been determined.

$$\text{Interest Income to Loan and Advances} = \frac{\text{Interest Income}}{\text{Total Loan and Advances}}$$

b. Return on Total Assets Ratio (ROA)

Return on total assets explains the contribution of assets to generating net profit. This ratio indicates efficiency towards of assets mobilization. In other words return on total assets ratio is an overall profitability rate, which measures earning power and overall operation efficiency of a firm. This ratio helps the management in identifying the factors that have a bearing on overall performance of the firm.

$$\text{Return on Total Assets} = \frac{\text{NPAT}}{\text{Total Assets}}$$

c. Return on Total Deposit Ratio

Return on total deposit ratio measures how efficiently the deposits have been mobilized. It reveals the relationship between net profit after tax and total deposits. An explanation of the ability of management in efficient utilization of deposits, the ratio is calculated as;

$$\text{Return on Total Deposits Ratio} = \frac{\text{NPAT}}{\text{Total Deposits}}$$

d. Interest Earned to Total Assets Raito

Interest earned to total assets ratio shows how much interest has been generated by mobilizing the assets in the bank. Higher ratio indicates higher efficiency in the mobilization of resources and ability of interest earning and vice-versa. The following formula is used to calculate this ratio.

$$\text{Interest Earned to Total Assets Ratio} = \frac{\text{Interest Income}}{\text{Total Assets}}$$

e. Interest Paid to Interest Income Ratio

Interest paid to interest income ratio reveals the proportionate relationship between interest paid on different liabilities and interest income from different source. Higher ratio indicates that the bank has paid higher amount of interest on liabilities in relation to interest income and vice versa.

$$\text{Interest Paid to Interest Income Ratio} = \frac{\text{Total Interest Expenses}}{\text{Total Interest Income}}$$

3.5.2 Statistical Tools

A) Arithmetic Mean

Arithmetic Mean of a given set of observations is the sum of the observation divided by the number of observations. In such as case all the items are equally important. Simple Arithmetic Mean is used in this study as per necessary for analysis

We have,

$$\text{Mean } (\overline{X}) = \frac{\Sigma x}{n}$$

Where

$\sum x$ = sum of all values of the observations

n = Number of observation

x = Value of variables

B) Standard Deviation

Gupta, (2002) The standard deviation usually denoted by the letters (σ), Karl Pearson suggested it as a widely used measure of dispersion and defined as the given observations from their arithmetic mean of a set of value. It is also known as root mean square deviation. Standard deviation, in this study has been used to measure the degree of fluctuation of interest rate and that of other variables as per the necessity of the analysis.

We have,

Standard Deviation = $\sqrt{\frac{\Sigma(x-\bar{x})}{n}}$

C) Coefficient of Variation (C.V.)

The relative measure of dispersion based on standard deviation is called coefficient of standard deviation and 100 time coefficient of standard deviation is called coefficient of variation. It is denote by C.V. Thus,

C.V. = $\frac{\sigma}{\bar{x}} x100\%$

Where σ = Standard Deviation

$\bar{X}$ = Mean Value of Variables

The distribution having less C.V. is said to be less variable or more consistent. A distribution having greater C.V. is said to be more variable or less consistent.

D) Coefficient of Correlation

Levin and David, (1994) The coefficient of correlation is a number, which indicates to what extents two things (variables) are related to what extent variations in one go with the variations in the other.

The value of coefficient of correlation as obtained shall always lie between $\pm$1, a value of –1 indicating a perfect negative relationship between the variables, of +1 a perfect positive relationship, and of no relationship when correlation coefficient is zero. The zero correlation coefficient means the variables are uncorrected.

It is defined by Karl Pearson as:

$$r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2}\ \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

E) Regression Analysis

Regression analysis is the development of the statistical model that can be used to predict the values of the dependent variable based upon the values of at least one independent variable. Regression analysis helps us to know the relative movement in the variables.

I. **Simple regression analysis**

The simple regression equation of Y on X, which is used to describe the variation in the value of Y of given change in the value of X.

$$Y = a + bx$$

Where,

Y = dependent variable

X = independent variable

a = Regression constant

b = Regression coefficient

II. Multiple Regression Analysis

In this study, current ratio, cash & bank balance to total deposit ratio, current deposit to total deposit ratio and cash reserve ratio will be taken as the explanatory variables and return on assets and return on equity will be used as the dependent variable. The following regression models will be used in this analysis:

$$ROA = a + b_1 CR + b_2 CBTDR + b_3 CDTDR + b_4 CRR \quad \text{..... (i)}$$

$$ROE = a + b_1 CR + b_2 CBTDR + b_3 CDTDR + b_4 CRR \quad \text{..... (ii)}$$

Where,

ROA= Return on assets

ROE= Return on equity

CR= Current ratio

CBTDR= Cash & bank balance to total deposit ratio

CDTDR= Current deposit to total deposit ratio

CRR= Cash reserve ratio

And ‘a’ represents the constant value and ‘ b_1' , $'b_2$ ‘, $'b_3'$ and $'b_4'$ represent the regression coefficient.

The first model will measure the effect of the liquidity indicators on profitability in Nepalese commercial banks, where return on asset (ROA) is the proxy for profitability.

The second model will measure the effect of the liquidity indicators on profitability in Nepalese commercial banks, where return on equity (ROE) is the proxy for profitability.

CHAPTER IV

RESULTS

4.1 Introduction

In this chapter, data for the study, sourced from the annual report of commercial banks and other report were presented, tested and analyzed. From the analysis and resultsgenerated, deductions and logical conclusions were obtained.Descriptive statistics of all the variables were also presented and analyzed. The variables forthe study include return on assets (ROA) and return in equity (ROE), as the dependent variable and CR, CBTDR CDTDR and CRR as the independent variables. The sample size which was five banks for four (4) years 2013-2018.

4.2 Analysis of Financial Variables

Under this heading the financial variables have been presentation and analyzed. This analysis includes as;

1. Current Ratio (CR)
2. Cash & Bank Balance to Total Deposit Ratio (CBTDR)
3. Current Deposit to Total Deposit Ratio (CDTDR)
4. Cash Reserve Ratio (CRR)
5. Return on Assets (ROA)
6. Return on Equity (ROE)

4.2.1 Current Ratio (CR)

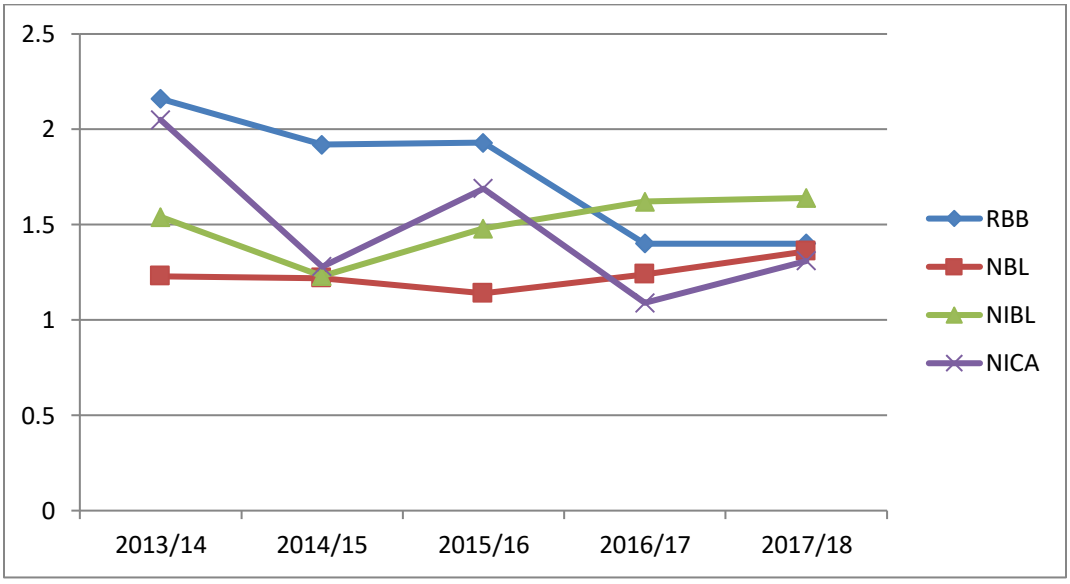
The current ratio is a measure of the firm's short-term solvency. Current ratio of 2:1 or more is generally considered satisfactory, which is not a strict rule. This conventional rule is based on the assumption that even if the current assets are decreased by half, the firm can easily meet its current obligations. The current ratio of selected commercial banks under the study is tabulated and interpretation as follows:

Table 4.1 Analysis of Current Ratio

Name	2013/14	2014/15	2015/16	2016/17	2017/18	Mean	SD	CV
RBB	2.16	1.92	1.93	1.40	1.40	**1.76**	0.34	0.20
NBL	1.23	1.22	1.14	1.24	1.36	**1.24**	0.08	0.06
NIBL	1.54	1.23	1.48	1.62	1.64	**1.50**	0.16	0.11
NICA	2.05	1.28	1.69	1.09	1.31	**1.48**	0.38	0.26

Sources: Annual Report of Commercial Banks

Figure 4.1Current Ratio



The table and figure 4.1shows the current ratio of the sampled banks. The table showed that the current ratio of NICAmore fluctuated during the five year periods. The average current ratio of NICA was 1.48 with highest 2.05 times in the fiscal year 2013/14 and lowest 1.09 times in the fiscal year 2016/17. An average, RBB maintained 1.76 times current ratio to meet the obligations with highest 2.16 times in the fiscal year 2013/14 and lowest 1.40 times in the fiscal year 2016/17 and 2017/18 with 0.34 SD and 0.20 coefficient of variance. Similarly, the average current ratio of NBL was 1.24 during the period, with 0.08 standard deviationand 0.06 coefficient of variance.

Comparing current ratio of four sampled banks, it can be concluded that the liquidity position of RBB was better than that of others', since the average current

ratio of RBB1.76 times was greatest in comparison with that of NBL 1.24 times, NIBL 1.50 times, NICA 1.48 times and JBL 1.74 times. However, the current ratio of NIBL was most stable.

4.2.2 Cash & Bank Balance to Total Deposit Ratio (CBTDR)

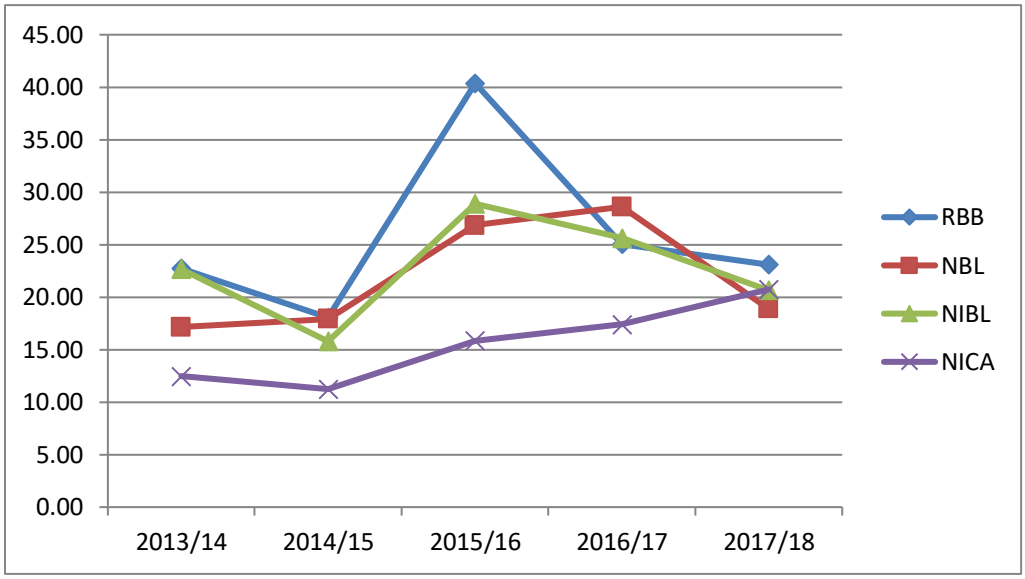
Adequate liquidity is also must in the banking sector in order to protect its solvency and to honor its short-term obligations and liabilities. Hence bank should have enough cash and bank balance in comparison to total deposit.

Table No. 4.2 Cash & Bank Balance to Total Deposit Ratio

Name	2013/14	2014/15	2015/16	2016/17	2017/18	Mean	SD	CV
RBB	22.74	18.06	40.37	25.06	23.12	**25.87**	8.50	32.87
NBL	17.16	17.93	26.86	28.61	18.9	**21.89**	5.40	24.69
NIBL	22.67	15.79	28.89	25.65	20.67	**22.73**	4.97	21.87
NICA	12.46	11.24	15.85	17.41	20.74	**15.54**	3.83	24.63

Sources: Annual Report of Commercial Banks

Figure 4.2 Cash & Bank Balance to Total Deposit Ratio



The table and figure no. 4.2 shows that the result of cash and bank balance to total deposit ratio of sampled banks. According to the table average CBTDR of RBB was in heights position i.e. 25.87%, with 8.50% standard deviation and 32.87% coefficient of

variance. Similarly the average CBDTR of NICA has lowest in position it mean 15.54% with 3.83% of standard deviation and 24.63% coefficient of variance.

Likewise the average CBTDR of NBL was 21.89%, standard deviation and coefficient of variance of CBTDR of NBL was 5.40 & 24.69% respectively. The CBDTR of NIBL was more fluctuating trends, which have the average CBTDR was 22.73% with 4.97 % of standard deviation and 21.87% coefficient of variance. The CBTDR ratio of NICA was increasing in trends every year.

4.2.3 Current Deposit to Total Deposit Ratio (CDTDR)

Current deposit is short-term noninterest bearing deposit. Current deposit is generally regarded as short-term obligation as it can be withdrawn without prior notice or with short notice.

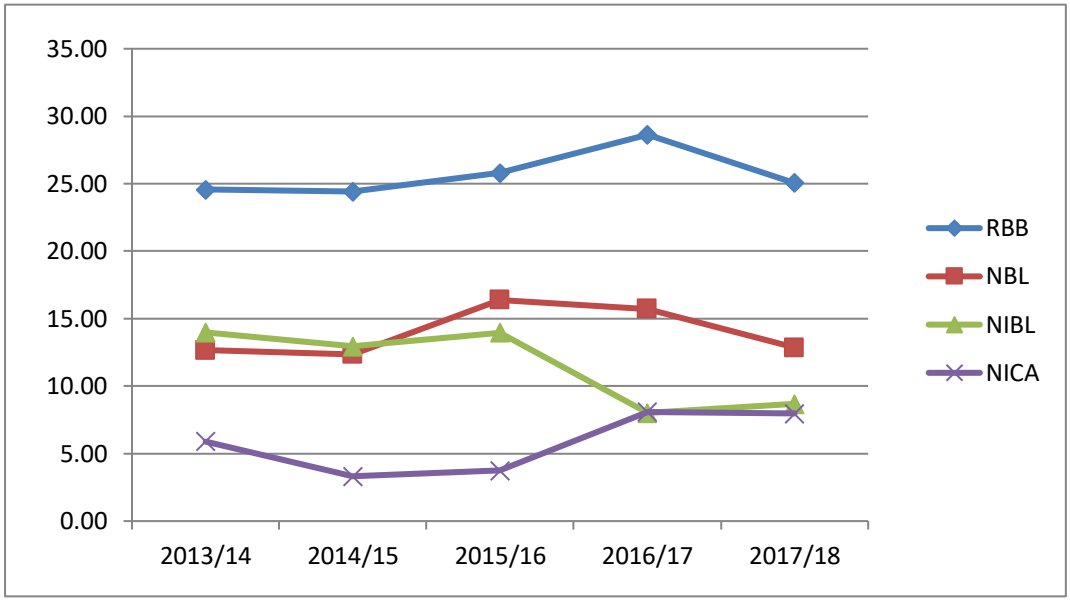
Table No. 4.3 Current Deposit to Total Deposit Ratio

Name	2013/14	2014/15	2015/16	2016/17	2017/18	Mean	SD	CV
RBB	24.56	24.42	25.79	28.63	25.05	**25.69**	1.73	6.73
NBL	12.66	12.35	16.38	15.72	12.85	**13.99**	1.90	13.59
NIBL	13.98	12.95	13.96	8.02	8.68	**11.52**	2.93	25.45
NICA	5.89	3.32	3.75	8.08	7.97	**5.80**	2.25	38.80

Sources: Annual Report of Commercial Banks

The table and figure no. 4.3 shows that the result of current deposit to total deposit ratio of sampled banks. According to the table average CDTDR of RBB was in heights position i.e. 25.69%, with 1.73% standard deviation and 6.73% coefficient of variance. The CDTDR of NIBL was more fluctuating trends, which have the average CDTDR was 11.52% with 2.93 % of standard deviation and 25.45% coefficient of variance. Similarly the average CDTDR of NICA has lowest in position it mean 5.80% with 2.25% of standard deviation and 38.80% coefficient of variance. The CDTDR ratio of NICA was increasing in trends every year.

Figure No. 4.3 Current Deposit to Total Deposit Ratio



4.2.4 Cash Reserve Ratio (CRR)

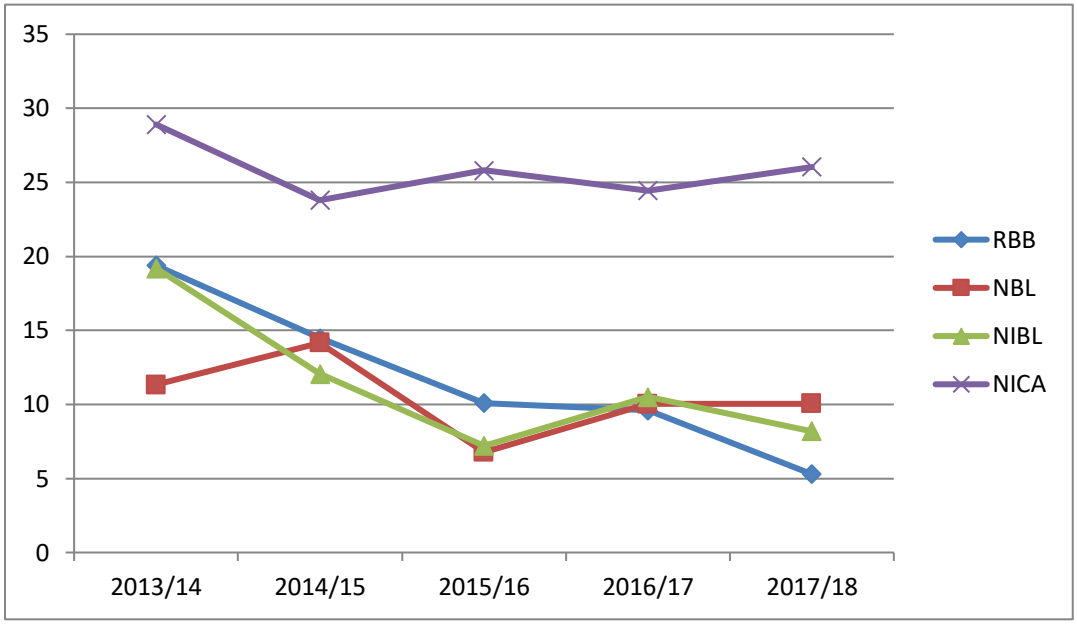
Each bank has to operate its activities as per the direction set out by Nepal Rastra Bank. According to the directives of NRB, the cash balance at NRB should be 4% of the total local deposit from the fiscal year 2018/19,. Thus, cash reserve ratio measures, whether the bank has effectively mobilized the local deposit to implement the NRB directives.

Table No. 4.4 Cash Reserve Ratio

Name	2013/14	2014/15	2015/16	2016/17	2017/18	Mean	SD	CV
RBB	19.38	14.48	10.09	9.60	5.29	**11.77**	5.36	45.52
NBL	11.32	14.15	6.77	10.02	10.05	**10.46**	2.66	25.44
NIBL	19.2	12.07	7.2	10.5	8.2	**11.43**	4.74	41.48
NICA	28.91	23.79	25.8	24.45	26.05	**25.80**	1.97	7.65

Sources: Annual Report of Commercial Banks

Figure No. 4.4Cash Reserve Ratio



The table and figure no. 4.4 shows that the result of cash reserve ratio of sampled banks. According to the table average CRR of NICA was in heights position i.e. 25.81%, with 1.97% standard deviation and 7.65% coefficient of variance. The CRR of NIBL was more fluctuating trends, which have the average CRR was 11.43% with 4.74 % of standard deviation and 41.48% coefficient of variance.

Likewise the average CRR of NBL was 10.46%, standard deviation and coefficient of variance of CRR of NBL was 2.66 & 25.44% respectively. The CRR ratio of all banks was decreasing in trends every year. The average CRR of NICA was 25.80% with 1.97% of standard deviation and 7.65% of coefficient of variance.

4.2.5 Return on Assets (ROA)

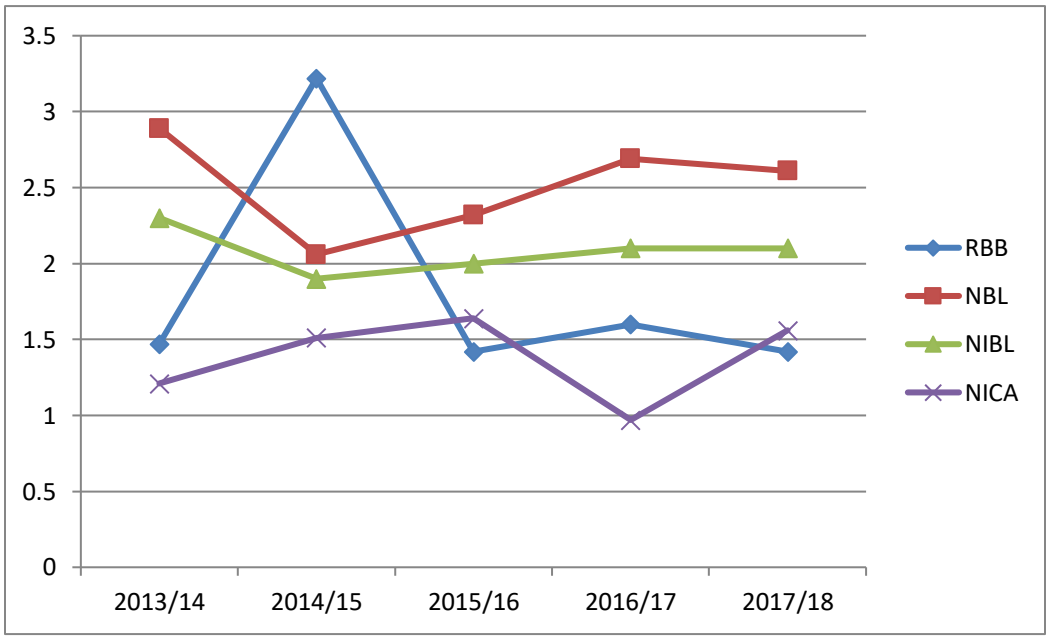
Return on Total Assets explains the contribution of assets to generating net profit. Return on total assets is calculated by dividing net profit after tax by total assets of the company. Higher return on total assets indicates the higher efficiency in the utilization of total assets and vice-versa.

Table No. 4.5 Return on Assets

Name	2013/14	2014/15	2015/16	2016/17	2017/18	Mean	SD	CV
RBB	1.47	3.22	1.42	1.6	1.42	**1.83**	0.78	42.87
NBL	2.89	2.06	2.32	2.69	2.61	**2.51**	0.33	12.97
NIBL	2.3	1.9	2	2.1	2.1	**2.08**	0.15	7.13
NICA	1.21	1.51	1.64	0.97	1.56	**1.38**	0.28	20.33

Sources: Annual Report of Commercial Banks

Figure No. 4.5 Return on Assets



The table and figure no. 4.5 shows that the result of Return on Assets of sampled banks. According to the table average ROA of NBL was in heights position i.e. 2.51%, with 0.33% standard deviation and 12.97% coefficient of variance. The ROA of NIBL was more fluctuating trends, which have the average ROA was 2.08% with 0.15 % of standard deviation and 7.13% coefficient of variance. Similarly the average ROA of NICA has lowest in position it mean 1.38% with 0.28% of standard deviation and 20.33% coefficient of variance. The average ROA of RBB was 1.83%, standard deviation and coefficient of variance of ROA of RBB was 0.78% & 42.87% respectively.

4.2.6 Return on Equity (ROE)

Return on shareholders' reflects how well the firm has used the resources of the owners. It is calculated by dividing profit after tax by net worth. The ratio of net

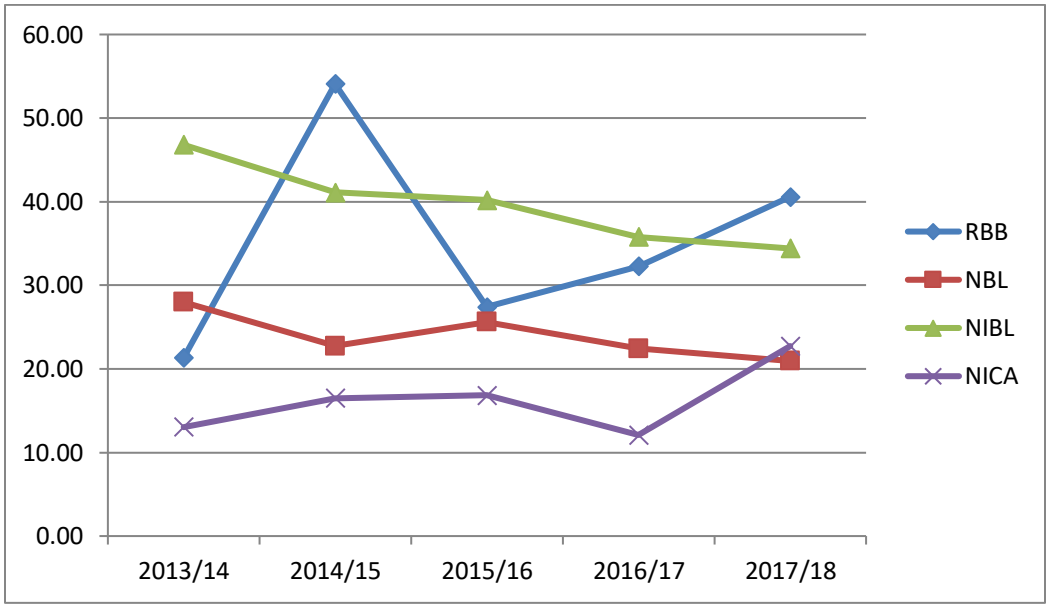
profit to owners' equity reflects the extent to which social responsibilitytoward owners has been accomplished. This ratio is thus a great interest to present as well as prospective shareholders and a great concern to management.

Table No. 4.6 Return on Equity

Name	2013/14	2014/15	2015/16	2016/17	2017/18	Mean	SD	CV
RBB	21.33	54.08	27.39	32.28	40.56	**35.13**	12.72	36.21
NBL	27.97	22.73	25.61	22.41	20.94	**23.93**	2.82	11.79
NIBL	46.8	41.1	40.2	35.8	34.4	**39.66**	4.90	12.35
NICA	13.05	16.5	16.84	12.09	22.73	**16.24**	4.18	25.75

Sources: Annual Report of Commercial Banks

Figure No. 4.6 Return on Equity



The table and figure no. 4.6 shows that the result of Return on Equity of sampled banks. According to the table average ROE of NIBL was in heights position i.e. 39.66%, with 4.90% standard deviation and 12.35% coefficient of variance. The ROE of RBB was more fluctuating trends. Similarly the average ROE of NICAhas lowest in position it mean 16.24% with 4.18% of standard deviation and 25.75% coefficient of variance.

Likewise the average ROE of RBB was 35.13%, standard deviation and coefficient of variance of ROE of RBB was 12.72% & 36.21% respectively. The average ROE of NBL was 23.93% with 2.82% of standard deviation and 11.79% of coefficient of variance.

4.3 Presentation of Statistical Variables

Statistical tools are the mathematical technique used to analysis and interpret of performance. It is used to describe the relationship between variables and interpret the result.This analysis includes Correlation co-efficient and the Regression coefficient between the following financial variable have been calculated and interpreted. Simple correlation and regression coefficient:

4.3.1 Simple Correlation between ROA & CR

The correlation coefficient measures the degree of relationship between two set of figure. Correlation between return on assets and current ratio from F.Y. 2013/14 to 2017/18 calculated value and results are tabulated below:

Table No. 4.7 Correlation between ROA and CR

Banks	Correlation(r)	P-Value	Result
RBB	0.22	0.71	Not Significant
NBL	0.34	0.57	Not Significant
NIBL	0.64	0.23	Not Significant
NICA	0.14	0.81	Not Significant

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

Table 4.7 shows the relationship between ROA and CR of sample commercial banks. This indicates that the current ratio (CR) and the return on assets (ROA) have positive correlation of every bank. There is high degree of positive correlation between the CR and ROA of NIBL having coefficient correlation value (r) 0.64. This means, when CR increases in one percent then the ROA also increase near to one percent and vice -versa. There is low degree of positive correlation between the CR and ROA of RBB, and NICA with correlation coefficient of 0.22, and 0.14 respectively.Similarly, there is moderate degree of positive correlation between the CR and ROA of NBL.

The Test of P-value aid to include that the relationship between ROA and CR of all sample banks is not significant. Since calculated P-value is 0.71, 0.57, 0.23, and0.81 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5%

level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

4.3.2 Simple Correlation between ROA & CBTDR

The correlation coefficient measures the degree of relationship between two set of figure. Correlation between return on assets and cash & bank balance to total deposit ratio from F.Y. 2013/14 to 2017/18 calculated value and results are tabulated below:

Table No. 4.8 Correlation between ROA and CBTDR

Banks	Correlation(r)	P-Value	Result
RBB	0.54	0.34	Not Significant
NBL	0.006	0.99	Not Significant
NIBL	0.25	0.67	Not Significant
NICA	0.05	0.93	Not Significant

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

Table 4.8 shows the relationship between ROA and CBTDR of sample commercial banks. This indicates that the cash and bank balance to total deposit ratio (CBTDR) and the return on assets (ROA) have positive correlation of every bank. There is high degree of positive correlation between the CBTDR and ROA of RBB having coefficient correlation value (r) 0.54. This means, when CBTDR increases in one percent then the ROA also increase near to one percent and vice -versa. There is low degree of positive correlation between the CBTDR and ROA of NBL, NIBL, and NICA with correlation coefficient of 0.006, 0.25, and0.05 respectively.

The Test of P-value aid to include that the relationship between ROA and CBTDR of all sample banks is not significant. Since calculated P-value is 0.34, 0.99, 0.67, and0.93 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

4.3.3 Simple Correlation between ROA & CDTDR

The correlation coefficient measures the degree of relationship between two set of figure. Correlation between return on assets and current deposit to total deposit ratio from F.Y. 2013/14 to 2017/18 calculated value and results are tabulated below:

Table No. 4.9 Correlation between ROA and CDTDR

Banks	Correlation (r)	P-Value	Result
RBB	0.33	0.58	Not Significant
NBL	0.009	0.98	Not Significant
NIBL	0.021	0.97	Not Significant
NICA	0.56	0.32	Not Significant

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

Table 4.9 shows the relationship between ROA and CDTDR of sample commercial banks. This indicates that the current deposit to total deposit ratio (CDTDR) and the return on assets (ROA) have positive correlation of every bank. There is high degree of positive correlation between the CDTDR and ROA of NICA having coefficient correlation value (r) 0.56. This means, when CDTDR increases in one percent then the ROA also increase near to one percent and vice -versa. There is low degree of positive correlation between the CDTDR and ROA of NBL, and NIBL, with correlation coefficient of 0.009, and 0.021 respectively.Similarly, there is moderate degree of positive correlation between the CDTDR and ROA of RBB.

The Test of P-value aid to include that the relationship between ROA and CDTDR of all sample banks is not significant. Since calculated P-value is 0.58, 0.98, 0.97, and0.32 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

4.3.4 Simple Correlation between ROA & CRR

The correlation coefficient measures the degree of relationship between two set of figure. Correlation between return on assets and cash reserve ratio from F.Y. 2013/14 to 2017/18 calculated value and results are tabulated below:

Table No. 4.10 Correlation between ROA and CRR

Banks	Correlation (r)	P-Value	Result
RBB	0.29	0.63	Not Significant
NBL	0.21	0.72	Not Significant
NIBL	0.65	0.22	Not Significant
NICA	0.08	0.88	Not Significant

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

Table 4.10 shows the relationship between ROA and CRR of sample commercial banks. This indicates that the cash reserve ratio (CRR) and the return on assets (ROA) have positive correlation of every bank. There is high degree of positive correlation between the CRR and ROA of NIBL having coefficient correlation value (r) 0.65. This means, when CRR increases in one percent then the ROA also increase near to one percent and vice -versa. There is low degree of positive correlation between the CRR and ROA of RBB, NBL, and NICA with correlation coefficient of 0.29, 0.21, and 0.08 respectively.

The Test of P-value aid to include that the relationship between ROA and CRR of all sample banks is not significant. Since calculated P-value is 0.63, 0.72, 0.22, and0.88 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

4.3.5 Simple Correlation between ROE & CR

The correlation coefficient measures the degree of relationship between two set of figure. Correlation between return on equity and current ratio from F.Y. 2013/14 to 2017/18 calculated value and results are tabulated below:

Table No. 4.11 Correlation between ROE and CR

Banks	Correlation (r)	P-Value	Result
RBB	0.26	0.66	Not Significant
NBL	0.62	0.26	Not Significant
NIBL	0.41	0.48	Not Significant
NICA	0.19	0.75	Not Significant

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

Table 4.11 shows the relationship between ROE and CR of sample commercial banks. This indicates that the current ratio (CR) and the return on equity (ROE) have positive correlation of every bank. There is high degree of positive correlation between the CR and ROE of NBL having coefficient correlation value (r) 0.62. This means, when CR increases in one percent then the ROE also increase near to one percent and vice -versa. There is low degree of positive correlation between the CR and ROE of RBB and NICA with correlation coefficient of 0.26, and 0.19 respectively.Similarly, there is moderate degree of positive correlation between the CR and ROE of NIBL.

The Test of P-value aid to include that the relationship between ROE and CR of all sample banks is not significant. Since calculated P-value is 0.66, 0.26, 0.48, and0.75 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

4.3.6 Simple Correlation between ROE & CBTDR

The correlation coefficient measures the degree of relationship between two set of figure. Correlation between return on equity and cash and bank balance to total deposit ratio from F.Y. 2013/14 to 2017/18 calculated value and results are tabulated below:

Table No. 4.12 Correlation between ROE and CBTDR

Banks	Correlation (r)	P-Value	Result
RBB	0.53	0.35	Not Significant
NBL	0.11	0.84	Not Significant
NIBL	0.07	0.90	Not Significant
NICA	0.54	0.34	Not Significant

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

Table 4.12 shows the relationship between ROE and CBTDR of sample commercial banks. This indicates that the cash and bank balance to total deposit ratio (CBTDR) and the return on equity (ROE) have positive correlation of every bank. There is high degree of positive correlation between the CBTDR and ROE of NICA having coefficient correlation value (r) 0.54. This means, when CR increases in one percent then the ROE also increase near to one percent and vice -versa. There is low degree of positive correlation between the CBTDR and ROE of NBL and NIBL with correlation coefficient of 0.11, and 0.07 respectively.

The Test of P-value aid to include that the relationship between ROE and CBTDR of all sample banks is not significant. Since calculated P-value is 0.35, 0.84, 0.90, and0.34 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

4.3.7 Simple Correlation between ROE & CDTDR

The correlation coefficient measures the degree of relationship between two set of figure. Correlation between return on equity and current deposit to total deposit ratio from F.Y. 2013/14 to 2017/18 calculated value and results are tabulated below:

Table No. 4.13 Correlation between ROE and CDTDR

Banks	Correlation(r)	P-Value	Result
RBB	0.23	0.69	Not Significant
NBL	0.064	0.91	Not Significant
NIBL	0.86	0.061	Not Significant
NICA	0.065	0.91	Not Significant

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

Table 4.13 shows the relationship between ROE and CDTDR of sample commercial banks. This indicates that the current deposit to total deposit ratio (CDTDR) and the return on equity (ROE) have positive correlation of every bank. There is high degree of positive correlation between the CDTDR and ROE of NIBL having coefficient correlation value (r) 0.86. This means, when CDTDR increases in one percent then the ROE also increase near to one percent and vice -versa. There is low degree of positive correlation between the CDTDR and ROE of RBB, NBL, and NICA with correlation coefficient of 0.23, 0.0064, and 0.065 respectively.

The Test of P-value aid to include that the relationship between ROE and CDTDR of all sample banks is not significant. Since calculated P-value is 0.69, 0.91, 0.061, and0.91 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

4.3.8 Simple Correlation between ROE & CRR

The correlation coefficient measures the degree of relationship between two set of figure. Correlation between return on equity and cash reserve ratio from F.Y. 2013/14 to 2017/18 calculated value and results are tabulated below:

Table No. 4.14 Correlation between ROE and CRR

Banks	Correlation(r)	P-Value	Result
RBB	0.25	0.67	Not Significant
NBL	0.17	0.77	Not Significant
NIBL	0.80	0.10	Not Significant
NICA	0.09	0.86	Not Significant

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

Table 4.14 shows the relationship between ROE and CRR of sample commercial banks. This indicates that the cash reserve ratio (CRR) and the return on equity (ROE) have positive correlation of every bank. There is high degree of positive correlation between the CRR and ROE of NIBL having coefficient correlation value (r) 0.80. This means, when CRR increases in one percent then the ROE also increase near to one percent and vice -versa. There is low degree of positive correlation between the CRR and ROE of RBB, NBL, and NICA with correlation coefficient of 0.25, 0.17, and 0.09 respectively.

The Test of P-value aid to include that the relationship between ROE and CRR of all sample banks is not significant. Since calculated P-value is 0.67, 0.77, 0.10, and0.86 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

4.3.9 Simple Regression between ROA and CR

The simple regression coefficient of ROAon CR can be computed and interpreted as follow of sampled commercial banks:

Table 4.15 shows the major output of simple regression analysis of average ROAon CR of commercial banks. As far as regression of ROA and CR in concerned. The regression coefficient of RBB, NBL, NIBL, and NICA are 0.51, 1.40, 0.57, and 0.10 respectively. It indicates that a one times increase in CR leads to an average of 0.51, 1.40, 0.57, and 0.10 increase in ROA of RBB, NBL, NIBL, and NICArespectively.

Table: 4.15 Simple Regressions between ROA and CR

Banks	Coefficient of Determination (r^2)	Constant (a)	Regression Coefficient (b)	P-Value	Result
RBB	0.05	0.94	0.51	0.71	Not Significant
NBL	0.11	0.77	1.40	0.57	Not Significant
NIBL	0.41	1.21	0.57	0.23	Not Significant
NICA	0.02	1.22	0.10	0.81	Not Significant

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

The Test of P-value aid to include that the relationship between ROA and CR of all sample banks is not significant. Since calculated P-value is 0.71, 0.57, 0.23, and0.81 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

The coefficient of determination measure the proportion of variation that is explained by independent variable in the regression model. The coefficient of determination of RBB, NBL, NIBL, and NICA is 0.05, 0.11, 0.41, and0.02 respectively. That means the variable CR is responsible on ROA only 5%, 11%, 41%, and 2% respectively and the rest are covered by other factors of determining the ROA of commercial banks.

4.3.10 Simple Regression between ROA and CBTDR

The simple regression coefficient of ROAon CBTDR can be computed and interpreted as follow of sampled commercial banks:

Table No. 4.16 Simple Regression between ROA and CBTDR

Banks	Coefficient of Determination (r^2)	Constant (a)	Regression Coefficient (b)	P-Value	Result
RBB	0.29	3.11	(0.05)	0.34	Not Significant
NBL	0.00004	2.53	(0.0004)	0.99	Not Significant
NIBL	0.06	1.91	0.007	0.67	Not Significant
NICA	0.002	1.32	0.003	0.93	Not Significant

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

Table 4.16 shows the major output of simple regression analysis of average ROAon CBTDR of commercial banks. As far as regression of ROA and CBTDR in concerned. The regression coefficient of RBB, NBL, NIBL, and NICA are -0.05, -0.0004, 0.007, and 0.003 respectively. It indicates that a one times increase in CBTDR leads to an average of 0.05, -0.0004, 0.007, and 0.003 increase in ROA of RBB, NBL, NIBL, and NICA respectively.According to the analysis ROA of RBB and NBL is not affected by the CBTDR because regression coefficient of banks has negative i.e. -0.05 & -0.0004 respectively.

The Test of P-value aid to include that the relationship between ROA and CBTDR of all sample banks is not significant. Since calculated P-value is 0.34, 0.99, 0.67, and0.93 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

The coefficient of determination measure the proportion of variation that is explained by independent variable in the regression model. The coefficient of determination of RBB, NBL, NIBL, and NICA is 0.29, 0.00004, 0.06, and0.002 respectively. That means the variable CBTDR is responsible on ROA only 29%, 0.004%, 6%, and 0.2% respectively and the rest are covered by other factors of determining the ROA of commercial banks.

4.3.11 Simple Regression between ROA and CDTDR

The simple regression coefficient of ROAon CDTDR can be computed and interpreted as follow of sampled commercial banks:

Table No. 4.17 Simple Regression between ROA and CDTDR

Banks	Coefficient of Determination (r^2)	Constant (a)	Regression Coefficient (b)	P-Value	Result
RBB	0.11	5.72	(0.15)	0.58	Not Significant
NBL	0.000094	2.53	(0.001)	0.98	Not Significant
NIBL	0.0004	2.09	(0.001)	0.97	Not Significant
NICA	0.31	1.78	(0.06)	0.32	Not Significant

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

Table 4.17 shows the major output of simple regression analysis of average ROAon CDTDR of commercial banks. As far as regression of ROA and CDTDR in concerned. The regression coefficient of RBB, NBL, NIBL, and NICA are -0.15, -0.001, -0.001, and -0.06 respectively. It indicates that a one times increase in CDTDR leads to an average of -0.15, -0.001, -0.001, and -0.06increase in ROA of RBB, NBL, NIBL, and NICArespectively.According to the analysis ROA of RBB, NBL, NIBL, and NICA is not affected by the CDTDR because regression coefficient of banks has negative i.e. -0.15, -0.001, -0.001, and -0.06respectively.

The Test of P-value aid to include that the relationship between ROA and CDTDR of all sample banks is not significant. Since calculated P-value is 0.58, 0.98, 0.97, and0.32 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

The coefficient of determination measure the proportion of variation that is explained by independent variable in the regression model. The coefficient of determination of RBB,

NBL, NIBL, and NICA is 0.11, 0.000094, 0.0004, and0.31 respectively. That means the variable CDTDR is responsible on ROA only 11%, 0.0094%, 0.04%, and 0.31% respectively and the rest are covered by other factors of determining the ROA of commercial banks.

4.3.12 Simple Regression between ROA and CRR

The simple regression coefficient of ROAon CRR can be computed and interpreted as follow of sampled commercial banks:

Table No. 4.18 Simple Regression between ROA and CRR

Banks	Coefficient of Determination (r^2)	Constant (a)	Regression Coefficient (b)	P-Value	Result
RBB	0.084	1.32	0.04	0.63	Not Significant
NBL	0.04	2.79	(0.026)	0.72	Not Significant
NIBL	0.43	1.84	0.02	0.22	Not Significant
NICA	0.007	1.69	(0.01)	0.88	Not Significant

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

Table 4.18 shows the major output of simple regression analysis of average ROAon CRR of commercial banks. As far as regression of ROA and CRR in concerned. The regression coefficient of RBB, NBL, NIBL, and NICA are 0.04, -0.026, 0.02, and -0.01 respectively. It indicates that a one times increase in CRR leads to an average of 0.04, -0.026, 0.02, and -0.01increases in ROA of RBB, NBL, NIBL, and NICArespectively.According to the analysis ROA of NBL, and NICA is not affected by the CRR because regression coefficient of banks has negative i.e. -0.026, and -0.01respectively.

The Test of P-value aid to include that the relationship between ROA and CRR of all sample banks is not significant. Since calculated P-value is 0.63, 0.72, 0.22, and0.88 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5%

level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

The coefficient of determination measure the proportion of variation that is explained by independent variable in the regression model. The coefficient of determination of RBB, NBL, NIBL, and NICA is 0.084, 0.04, 0.43, and0.007 respectively. That means the variable CRR is responsible on ROA only 8.4%, 4%, 43%, and 0.7% respectively and the rest are covered by other factors of determining the ROA of commercial banks.

4.3.13 Simple Regression between ROE and CR

The simple regression coefficient of ROEon CR can be computed and interpreted as follow of sampled commercial banks:

Table No. 4.19 Simple Regression between ROE and CR

Banks	Coefficient of Determination (r^2)	Constant (a)	Regression Coefficient (b)	P-Value	Result
RBB	0.06	52.23	(9.71)	0.66	Not Significant
NBL	0.38	51.42	(22.22)	0.26	Not Significant
NIBL	0.17	58.07	(12.26)	0.48	Not Significant
NICA	0.03	19.34	(2.09)	0.75	Not Significant

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

Table 4.19 shows the major output of simple regression analysis of average ROEon CR of commercial banks. As far as regression of ROE and CR in concerned. The regression coefficient of RBB, NBL, NIBL, and NICA are -9.71, -22.22, -12.26, and -2.09 respectively. It indicates that a one times increase in CR leads to an average of -9.71, -22.22, -12.26, and -2.09increase in ROE of RBB, NBL, NIBL, and NICArespectively.According to the analysis ROE of RBB, NBL, NIBL, and NICA is not affected by the CR because regression coefficient of banks has negative i.e. -9.71, -22.22, -12.26, and -2.09respectively.

The Test of P-value aid to include that the relationship between ROE and CR of all sample banks is not significant. Since calculated P-value is 0.66, 0.26, 0.48, and0.75 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

The coefficient of determination measure the proportion of variation that is explained by independent variable in the regression model. The coefficient of determination of RBB, NBL, NIBL, and NICA is 0.06, 0.38, 0.17, and0.03 respectively. That means the variable CR is responsible on ROE only 6%, 38%, 17%, and 3% respectively and the rest are covered by other factors of determining the ROE of commercial banks.

4.3.14 Simple Regression between ROE and CBTDR

The simple regression coefficient of ROEon CBTDR can be computed and interpreted as follow of sampled commercial banks:

Table No. 4.20 Simple Regression between ROE and CBTDR

Banks	Coefficient of Determination (r^2)	Constant (a)	Regression Coefficient (b)	P-Value	Result
RBB	0.28	55.66	(0.79)	0.35	Not Significant
NBL	0.014	25.29	(0.062)	0.84	Not Significant
NIBL	0.005	41.39	(0.076)	0.90	Not Significant
NICA	0.29	6.99	0.59	0.34	Not Significant

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

Table 4.20 shows the major output of simple regression analysis of average ROEon CBTDR of commercial banks. As far as regression of ROE and CBTDR in concerned. The regression coefficient of RBB, NBL, NIBL, and NICA are -0.79, -0.062, -0.076, and 0.59 respectively. It indicates that a one times increase in CR leads to an average of 0.79, -0.062, -0.076, and 0.59increase in ROE of RBB, NBL, NIBL, and

NICArespectively.According to the analysis ROE of RBB, NBL, and NIBL is not affected by the CBTDR because regression coefficient of banks has negative i.e. -0.79, -0.062, and -0.076respectively.

The Test of P-value aid to include that the relationship between ROE and CBTDR of all sample banks is not significant. Since calculated P-value is 0.35, 0.84, 0.90, and0.34 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

The coefficient of determination measure the proportion of variation that is explained by independent variable in the regression model. The coefficient of determination of RBB, NBL, NIBL, and NICA is 0.28, 0.014, 0.05, and0.29 respectively. That means the variable CBTDR is responsible on ROE only 28%, 1.4%, 5%, and 29% respectively and the rest are covered by other factors of determining the ROE of commercial banks.

4.3.15 Simple Regression between ROE and CDTDR

The simple regression coefficient of ROEon CDTDR can be computed and interpreted as follow of sampled commercial banks:

Table No. 4.21 Simple Regression between ROE and CDTDR

Banks	Coefficient of Determination (r^2)	Constant (a)	Regression Coefficient (b)	P-Value	Result
RBB	0.05	80.47	(1.76)	0.69	Not Significant
NBL	0.004	22.58	0.09	0.91	Not Significant
NIBL	0.74	23.10	1.34	0.061	Not Significant
NICA	0.004	15.53	0.12	0.91	Not Significant

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

Table 4.21 shows the major output of simple regression analysis of average ROEon CDTDR of commercial banks. As far as regression of ROE and CDTDR in concerned.

The regression coefficient of RBB, NBL, NIBL, and NICA are -1.76, 0.09, 1.34, and 0.12 respectively. It indicates that a one times increase in CDTDR leads to an average of -1.76, 0.09, 1.34, and 0.12increase in ROE of RBB, NBL, NIBL, and NICArespectively.According to the analysis ROE of RBB is not affected by the CDTDR because regression coefficient of banks has negative i.e. -1.76.

The Test of P-value aid to include that the relationship between ROE and CDTDR of all sample banks is not significant. Since calculated P-value is 0.69, 0.91, 0.061, and0.91 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

The coefficient of determination measure the proportion of variation that is explained by independent variable in the regression model. The coefficient of determination of RBB, NBL, NIBL, and NICA is 0.05, 0.004, 0.74, and0.004 respectively. That means the variable CDTDR is responsible on ROE only 5%, 0.4%, 74%, and 0.4% respectively and the rest are covered by other factors of determining the ROE of commercial banks.

4.3.16 Simple Regression between ROE and CRR

The simple regression coefficient of ROEon CRR can be computed and interpreted as follow of sampled commercial banks:

Table 4.22 shows the major output of simple regression analysis of average ROEon CRR of commercial banks. As far as regression of ROE and CRR in concerned. The regression coefficient of RBB, NBL, NIBL, and NICA are -0.60, -0.18, 0.83, and -0.20 respectively. It indicates that a one times increase in CRR leads to an average of 0.60, -0.18, 0.83, and -0.20 increase in ROE of RBB, NBL, NIBL, and NICArespectively.According to the analysis ROE of RBB, NBL, and NICA is not affected by the CRR because regression coefficient of banks has negative i.e. -0.60, -0.18, and -0.20respectively.

Table No. 4.22 Simple Regression between ROE and CRR

Banks	Coefficient of Determination (r^2)	Constant (a)	Regression Coefficient (b)	P-Value	Result
RBB	0.0065	42.27	(0.60)	0.67	Not Significant
NBL	0.03	25.87	(0.18)	0.77	Not Significant
NIBL	0.64	30.16	0.83	0.10	Not Significant
NICA	0.009	21.56	(0.20)	0.86	Not Significant

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

The Test of P-value aid to include that the relationship between ROE and CRR of all sample banks is not significant. Since calculated P-value is 0.67, 0.77, 0.10, and0.86 of RBB, NBL, NIBL, and NICA respectively, which is greater than P-value of 0.05 at 5% level of significance because calculated P-value is higher than the tabulated value at 5% level of significance (i.e. cal. P < tab. P .0.05).

The coefficient of determination measure the proportion of variation that is explained by independent variable in the regression model. The coefficient of determination of RBB, NBL, NIBL, and NICA is 0.0065, 0.03, 0.64, and0.009 respectively. That means the variable CRR is responsible on ROE only 0.65%, 3%, 64%, and 0.9% respectively and the rest are covered by other factors of determining the ROE of commercial banks.

4.3.17. The Multiple Regression Model between the ROA, CR, CBDTR, CDTDR and CRR

The multiple regression model has been used to find out where the CR, CBDTR, CDTDR and CRR of selected commercial banks are related to ROA of commercial banks or not. The equation of regression model is as follow:

ROA= a_1 + b_1CR + b_2CBTDR + b_3CDTDR+ b_4CRR..... (i)

ROE= a + b_1 CR + b_2 CBTDR+ b_3 CDTDR+b_4CRR..... (ii)

Where, ROA= Return on Assets, ROE = Return on Equity, a_1= Constant,

b_1, b_2 , b_3,b_4= Regression Coefficient.

Table 4.23 Multiple Regression of Liquidity on Profitability (ROA)

The results are based on the 5 year (2013/14-2017/18) time series data of Nepalese commercial banks with 27 observations by using linear regression model. The model is ROA= a_1 + b_1CR + b_2CBTDR + b_3CDTDR+ b_4CRR.

Model	**Regression Coefficient**	**P- Value**	**Result**
Constant(a)	2.26	0.02	Significant
CR (b_1)	-0.50	0.24	Not Significant
CBTDR (b_2)	-0.004	0.89	Not Significant
CDTDR(b_3)	0.03	0.16	Not Significant
CRR(b_4)	-0.004	0.85	Not Significant

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

R^2= 0.18 F-Test = 1.13 Multiple R = 0.43

Adjusted R^2 = 0.02 Standard Error = 0.67

In table 4.23 the multiple regression of liquidity and its impact on profitability (ROA) shows that the regression coefficients is positive for current deposit to total deposit ratio (CDTDR) i.e. 0.03. Hence, higher the CDTDR higher will be the impact on ROA. Similarly, there is negative relationship between return on assets and CR, CBTDR and CRR because regression coefficient is negative for CR i.e. -0.50, CBDTR i.e. -0.004 & CRR i.e. -0.004. It means higher the CR, CBDTR& CRR lower would be the impact on ROA and vice versa.

Also, in table 4.23, the coefficient of determination (R^2) of the equation is 0.18. That means the variables CR, CBTDR, CDTDR and CRRare responsible on ROA only 18 %

and the rest are covered by other factors on determining theprofitabilityof commercial banks.

Similarly, test of P- value shows the relationship between ROA on CR, CBTDR, CDTDR and CRR of selected commercial banks. P- Value of all variable is not significant because calculated p – value is higher than tabulated p- value 0.05 at 5% level of significance.

Table 4.24Multiple Regression of Liquidity on Profitability (ROE)

Model	**Regression Coefficient**	**P- Value**	**Result**
Constant(a)	22.39	0.15	Not Significant
CR (b_1)	-5.27	0.45	Not Significant
CBTDR (b_2)	-0.04	0.92	Not Significant
CDTDR(b_3)	1.01	0.01	Significant
CRR(b_4)	-0.06	0.86	Not Significant

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

R^2= 0.37 F-Test = 3.04 Multiple R = 0.61

Adjusted R^2 = 0.25 Standard Error = 11.19

In table 4.24 the multiple regressions of liquidity and its impact on profitability (ROE) shows that the regression coefficients is positive for current deposit to total deposit ratio (CDTDR) i.e. 1.01. Hence, higher the CDTDR higher will be the impact on ROE. Similarly, there is negative relationship between return on equity and CR, CBTDR and CRR because regression coefficient is negative for CR i.e. -5.27, CBDTR i.e. -0.04 & CRR i.e. -0.06. It means higher the CR, CBDTR& CRR lower would be the impact on ROE and vice versa.

Also, in table 4.24, the coefficient of determination (R^2) of the equation is 0.37. That means the variables CR, CBTDR, CDTDR and CRRare responsible on ROE only 37 % and the rest are covered by other factors on determining theprofitabilityof commercial banks.

Similarly, test of P- value shows the relationship between ROE on CR, CBTDR, CDTDR and CRR of selected commercial banks. P- Value of CDTDR is significant because calculated p – value is less than tabulated p- value 0.05 at 5% level of significance, and p-value of CR, CBTDR &CRR are not significant.

4.4. Major Findings:

I. According to CR analysis, the average CR of all institutions under the study is positive and consistent. The RBB has a heights average CR i.e. 1.76 times.

II. According to cash and bank balance to total deposit ratio of all banks between 15% to 26%, CBTDR of RBB and NIBL are more fluctuating.

III. According to CDTDR analysis, RBB has highest average CDTDR i.e. 25.69% and NICA has lowest average CDTDR i.e. 5.80%.

IV. In terms of CRR, the liquidity position of NICA was most satisfactory with average 25.80%. The liquidity position of NBL was worst i.e. 10.46%. CRR in all the commercial banks was more than that directed by NRB in each fiscal year which is 4% of total deposit.

V. According to return on assets (ROA) NBL has highest ROA i.e. 2.51% and NICA has lowest ROA i.e. 1.38%.

VI. In terms of ROE, the highest average return on equity is NIBL i.e. 39.66% and NICA has lowest return on equity i.e. 16.24%

VII. The return on assets (ROA) is positively correlated with the current ratio of all commercial banks. It indicates that increase in CR of commercial banks leads to increase in ROA of these banks and vice -versa.

VIII. The correlation between ROA and CBTDR of all banks is positive; it means increase in CBTDR leads to increase in ROA of commercial bank and vice versa.

IX. There is positive correlation between the ROA & CDTDR of all sampled commercial banks. That means the increase in CDTDR leads to increase in ROA of these commercial banks and vice-versa. Similarly, there is positive correlation between the ROA and CRR of all banks which implies that the increase in CRR leads to increase ROA and vice-versa.

X. According to analysis of simple correlation between ROE and CR, CBTDR, CDTDR &CRR there is positive correlation of all sampled commercial banks with all variables.

XI. According to simple regression analysis, CR of all sample banks has positive and not significant impact on its ROA. Similarly, CBTDR of NIBL & NICA has positive and not significant impact on ROA, and CBTDR of RBB & NBL has negative and not significant impact on ROA.

XII. After analysis of simple regression of ROA on CRR, there is positive and not significant impact of RBB & NIBL. Similarly, CRR of NBL and NICA has negative and not significant impact on ROA.

XIII. According to simple regression analysis, CR of all sample banks has negative and not significant impact on its ROE. Similarly, CBTDR of NICA has positive and not significant impact on ROE, and CBTDR of RBB, NIBL & NBL has negative and not significant impact on ROE.

XIV. After analysis of simple regression of ROE on CDTDR, there is negative and not significant impact of RBB. Similarly, CDTDR of NBL, NICA & NIBL has positive and not significant impact on ROE. Likewise, CRR of NIBL has positive and not significant impact on ROE. Similarly CRR of RBB, NBL, and NICA has negative and not significant impact on ROE.

XV. The multiple regressions of liquidity and its impact on profitability (ROA) shows that the regression coefficients are positive for CDTDR i.e. 0.03 and regression coefficient is negative for CR, CBTDR & CRR i.e. -0.50, -0.004 & -0.004 respectively.

XVI. The coefficient of determination of the 1st equation is 0.18. That means the variables CR CBTDR CDTDR and CRR is responsible on ROA only 18 % and the rest 82% are unexplained on determining the profitability.

XVII. The tests of P-value explain that the relationship between ROA on CR, CBTDR, CDTDR and CRR of commercial bank is not significant at 5% level of significant.

XVIII. The multiple regressions of liquidity and its impact on profitability (ROE) shows that the regression coefficients are positive for CDTDR i.e. 1.01 and regression coefficient is negative for CR, CBTDR & CRR i.e. -5.27, -0.04 & -0.06 respectively.

XIX. The coefficient of determination of the 2nd equation is 0.37. That means the variables CR, CBTDR, CDTDR and CRR is responsible on ROE only 37 % and the rest 63% are unexplained on determining the profitability.

XX. The tests of P-value explain that the relationship between ROE on CR, CBTDR and CRR of commercial bank is not significant at 5% level of significant and ROE on CDTDR is significant at 5% level of Significant.

CHAPTER V

CONCLUSIONS

This is the final chapter that involves summary, conclusions and implications of the research work. The facts and findings from secondary data analysis are presented in this chapter. Besides summary and concluding research work, implications are made to concerned persons and organizations.

5.1 Discussion

The banking in Nepal is still facing with various problems like strong unorganized sector, weak position and unhealthy competition, weakness of Nepal Rastra Bank, lack of research, training & development etc. However, current political and economic scenario of the country coupled with prudential norms of Nepal Rastra Bank and stiff competition may make the entrepreneurs give a second thought to the idea to establishing banks. Liquidity management is directly affected by the unbalance competition and the rapid development of information technology. Even though, liquidity management is not a new term in the banking sector, it is still unpredictable as it was and is most crucial for the profitability. Such stage can be reduced by proper policy decision taken by understanding the depth and breadth of liquidity. The meaningful solution itself generates a lot of benefits.

Liquidity management can overall describe the security management of the cash balance in a systematic and scientific way. Liquidity is that part of the total assets, which can be paid immediately to meet the current obligation. The liquidity management is used to describe money and assets that are readily convertible into money within very short span of time. The liquidity of assets refers to the ease and certainty with which it can be turned into cash. Bank maintain liquidity in the form of cash and bank balance, placement of money at call or short notice and investment in government securities and other securities readily convertible into cash. It is such a large proportion of deposit payable on demand. Inadequate liquidity tarnishes the image of the organization while excess liquidity is detrimental to the profitability.

The main objective of this study is to analyze the impact of liquidity and its impact on

profitability of the commercial banks of Nepal. However, the study of all the commercial banks was almost impossible and thus only five banks, namely Rastriya Banijya Bank Limited, Nabil Bank Limited, Nepal Investment Bank Limited, NIC Asia Bank Limited and Janata Bank Limited, were taken as sample. To achieve the objectives set out, different financial tools like liquid assets trend, Cash reserve ratio, cash and bank balance to total deposit, , fixed assets to total deposit, net profit margin, return on shareholders' equity, total assets, return on return on total deposit and others were analyzed. And, for the convenience, the study has been mainly divided in five main chapters; first chapter dealt with introduction, second dealt with review, third presented research methodology, fourth presented data analysis, and fifth ended with summary, conclusion and recommendations.

5.2 Conclusion

In contrast, the short-term liability paying capacity of RBB was better than that of others', since the average current ratio of RBB was greatest in comparison with that of NBL, NIBL, and NICA. Similarly, on the basis of cash and bank balance to total deposit ratio, it can be concluded that RBB has the practice of highest percentage of total deposit collected in the form of cash and bank balance than other banks to meet the immediate cash requirement. The Cash reserve ratio indicated that liquidity position of NICA was most satisfactory than that of others', since the average CRR maintained by NICA was highest, Also, the liquidity policy adopted by RBB was most stable than that of others'. On the basis of current deposit to total deposit ratio, it can be concluded that the ratio was highest in RBB and lowest in NICA.

Similarly, NBL made the highest return on assets than other banks and the return on assets of NICA was lowest. However, within the five year periods, the progression of NIBL in making return on assets cannot be ignored. However, NIBL was most effective in optimally mobilizing the shareholders' equity, since ROE of NIBL was highest in comparison with that of others'. In contrast, NBL was most successful to optimally mobilize the total assets and the deposit in productive sector in generating maximum net profit, since the ROA and of NABIL were highest.

The statistical analysis led to conclude that there is existed positive relationship between dependent variable with independent variable.The return on assets (ROA) is positively correlated with the current ratio of all commercial banks. The correlation between ROA and CBTDR of all banks is positive; it means increase in CBTDR leads to increase in ROA of commercial bank and vice versa. There is positive correlation between the ROA & CDTDR of all sampled commercial banks. There is positive correlation between the ROA and CRR of all banks which implies that the increase in CRR leads to increase ROA and vice-versa.

According to analysis of simple correlation between ROE and CR, CBTDR, CDTDR & CRR there is positive correlation of all sampled commercial banks with all variables.

The multiple regressions of liquidity and its impact on profitability (ROA) shows that the regression coefficients are positive for CDTDR and regression coefficient is negative for CR, CBTDR & CRR. The coefficient of determination of the 1stequation is 0.18. That means the variables CR CBTDR CDTDR and CRR is responsible on ROA only 18 % and the rest 82% are unexplained on determining the profitability.The tests of P-value explain that the relationship between ROAon CR CBTDR CDTDR and CRR of commercial bank is not significant at 5% level of significant.

The multiple regressions of liquidity and its impact on profitability (ROE) shows that the regression coefficients are positive for CDTDR and regression coefficient is negative for CR, CBTDR & CRR. The coefficient of determination of the 2ndequation is 0.37. That means the variables CR CBTDR CDTDR and CRR is responsible on ROE only 37 % and the rest 63% are unexplained on determining the profitability.The tests of P-value explain that the relationship between ROEon CR, CBTDR and CRR of commercial bank is not significant at 5% level of significant and ROE on CDTDR is significant at 5% level of Significant.

5.3 Implication

This study has also several implications pointing to interesting avenues for future research. Some implication and suggestion for future research are discuses here:

First, this study examined the impact of liquidity on profitability of commercial banks. The variables chosen were firm specific variables and may not be the only variables that affect profitability. It is recommended that further research could be conducted to establish whether other economic variables affect profitability for commercial banks.

On the basis of the major findings drawn on the previous chapter and the conclusion made in this chapter, the following recommendations have been given for the enhancement of the liquidity and profitability position of the sampled banks;

I. The current ratio of most of the banks was lower than the benchmark of 2:1. Although, such benchmark is not most necessary in the banking sector, it would be better if all the sampled banks keep such ratio to ensure the sound liquidity position.

II. The cash reserve ratio maintained by all sampled bank is higherthan CRR directed by NRB in most of the years. So it is recommended that bank should maintain the optimum level of CRR.

III. It would be better if all the banks focus on collecting the deposit through fixed deposit, which requires less liquidity in the bank and the bank can invest such money in productive sector.

IV. To retain the existing shareholder and fascinate the potential investor, NICA need to generate more return on shareholders' equity. Similarly, NICA needs effective mobilization of total assets to generate more income and effective control of interest expenses.

There are some of the shortcomings of this research and needs further explanation. This research need to be refined with more with more data from several commercial banks.

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APPENDIX I

Current Assets & Current Liabilities of sampled banks

(Rs.in million)

RBB	CA	CL	NBL	CA	CL
2013/14	5681	2632	2013/14	1366	1113
2014/15	5821	3025	2014/15	1076	882
2015/16	6959	3606	2015/16	1087	952
2016/17	5885	4210	2016/17	1321	1065
2017/18	8714	6238	2017/18	1531	1124
NIBL	**CA**	**CL**	**NICA**	**CA**	**CL**
2013/14	1751	1140	2013/14	666	325
2014/15	1546	1259	2014/15	781	609
2015/16	2880	1944	2015/16	1374	813
2016/17	3061	1887	2016/17	2430	2236
2017/18	2826	1724	2017/18	3665	2807

APPENDIX II

Other Ratio of Sampled Banks

RBB	2013/14	2014/15	2015/16	2016/17	2017/18
C&B	2439	2244	5622	3674	3797
TD	10726	12422	13925	14658	16421
CBTDR	22.74	18.06	40.37	25.06	23.12
CD	2634	3033	3591	4196	4114
TD	10726	12422	13925	14658	16421
CDTDR	24.56	24.42	25.79	28.63	25.05
CRR	19.38	14.48	10.09	9.60	5.29
ROA	1.47	3.22	1.42	1.6	1.42
NP	183	464	235	277	365
Equity	858	858	858	858	900
ROE	21.33	54.08	27.39	32.28	40.56

NBL	2013/14	2014/15	2015/16	2016/17	2017/18
C&B	1293	1864	2934	3360	2548
TD	7536	10395	10925	11743	13481
CBTDR	17.16	17.93	26.86	28.61	18.90
CD	954	1284	1790	1846	1732
TD	7536	10395	10925	11743	13481
CDTDR	12.66	12.35	16.38	15.72	12.85
CRR	11.32	14.15	6.77	10.02	10.05
ROA	2.89	2.06	2.32	2.69	2.61
ROE	27.97	22.73	25.61	22.41	20.94

NIBL	2013/14	2014/15	2015/16	2016/17	2017/18
C&B	1674	1431	2870	3050	2823
TD	7383	9063	9935	11892	13658
CBTDR	22.67	15.79	28.89	25.65	20.67
CD	1032	1174	1387	954	1186
TD	7383	9063	9935	11892	13658
CDTDR	13.98	12.95	13.96	8.02	8.68
CRR	19.2	12.07	7.2	10.5	8.2
ROA	2.3	1.9	2	2.1	2.1
ROE	46.8	41.1	40.2	35.8	34.4

NICA	2013/14	2014/15	2015/16	2016/17	2017/18
C&B	666	781	1374	2430	3668
TD	5347	6948	8667	13958	17682
CBTDR	12.46	11.24	15.85	17.41	20.74
CD	315	231	325	1128	1410
TD	5347	6948	8667	13958	17682
CDTDR	5.89	3.32	3.75	8.08	7.97
CRR	28.91	23.79	25.8	24.45	26.05
ROA	1.21	1.51	1.64	0.97	1.56
ROE	13.05	16.5	16.84	12.09	22.73