IMPACT OF LIQUIDITY ON BANK PROFITABILITY IN NEPALESE COMMERCIAL BANKS

(With Special reference to Nepal Bank Limited, Agriculture Development Bank Limited, Standard Chartered Bank Limited, Nepal Investment Bank Limited, Nabil Bank Limited and Sunrise Bank Limited)

A THESIS

Submitted by

Sudeep Panta
Central Department of Management

Faculty of Management

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Faculty of Management
Tribhuvan University, Kirtipur
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CERTIFICATION OF AUTHORSHIP

I certify that the study in this thesis has not previously been submitted for a degree nor has it been submitted as parts of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the reference section of the thesis.

_____

Sudeep Panta

M.B.S, Thesis Student

Central Department of Management

Tribhuvan University, Kirtipur, Kathmandu

Date: September, 2018

RECOMMENDATION LETTER

It is certified that thesis entitled **"Impact of Liquidity on Bank Profitability in Nepalese Commercial Banks"** by Sudeep Panta is an original piece of research work carried out by the candidate under my supervision. Literary presentation is satisfactory and the thesis is in a form suitable for publication. It evinces the capacity of the candidate for critical examination and independent judgment. Candidate has put in at least 60 days after registering the proposal. The thesis is forwarded for examination.

_____

Dr. Udaya Kishor Tiwari

Thesis Supervisor

Central Department of Management

Tribhuvan University, Kirtipur, Kathmandu

September, 2018

APPROVAL SHEET

We, the undersigned, have examined the thesis entitled **"Impact of Liquidity on Bank Profitability in Nepalese Commercial Banks"** presented by Sudeep Panta candidate for the degree of Master of Business Studies (MBS) and conducted the viva voce examination of the candidate. We hereby certify that the thesis is worthy of acceptance.

_____

Dr. Udaya Kishor Tiwari
Thesis Supervisor

_____

Dr. Dhurba Lal Pandey
Internal Examiner

_____

Lecturer Phul Prasad Subedi
External Examiner

_____

Prof. Bhawani Shanker Acharya
Chairperson, Research Committee
Central Department of Management, Tribhuvan University

_____

Prof. Dr. Bhoj Raj Aryal
Head of Department
Central Department of Management, Tribhuvan University
September, 2018

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Sudeep Panta

Date: September, 2018

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LIST OF ABBREVIATIONS

%	=	Percentage
&	=	And
ADBL	=	Agricultural Development Bank Limited
ATM	=	Automated Teller Machine
C.V	=	Coefficient of Variance
CR	=	Capital Ratio
CR	=	Current Ratio
CRR	=	Cash Reserve Ratio
EPS	=	Earnings per Share
FY	=	Fiscal Year
ICR	=	Interest Coverage Ratio
IR	=	Investment Ratio
JVB	=	Joint Venture Bank
LDR	=	Loan to Deposit Ratio
LR	=	Liquidity Ratio
NABIL	=	Nabil Bank Limited
NBL	=	Nepal Bank Limited
NIBL	=	Nepal Investment Bank Limited
NRB	=	Nepal Rastra Bank
QA	=	Quick Assets
QR	=	Quick Ratio
r^2	=	Coefficient of Determination
ROA	=	Return on Assets
ROE	=	Return on Shareholder's Equity
S. E	=	Standard Error
S.D	=	Standard Deviation
SBL	=	Sunrise Bank Limited
SCBL	=	Standard Chartered Bank Limited
SPSS	=	Statistical Packages for the Social Science
WWW	=	World Wide Web

ABSTRACT

This study examines the effect of liquidity on the performance of Nepalese Commercial banks. Investment ratio, liquidity ratio, quick ratio, capital ratio, and interest coverage ratio are the independent variables used in this study. The dependent variables are return on assets, return on equity, and earnings per share. The secondary data used for this study and taking from publish annual report of six Nepalese commercial banks from the period (2011/12 to 2016/17) leading to the total observations of 36. The data was analyzed by using mean, standard deviation, coefficient of variance and multiple correlations, multiple regression and coefficient of determination run on E- view through SPSS. 22 versions. These regression models are estimated to test the relationship and impact of bank liquidity on profitability of Nepalese commercial banks.

Correlation between liquidity ratio and return on assets found to be positive indicating higher the liquidity ratio higher would be the return on assets. The correlation between quick ratio, capital ratio and return on assets found to be negative indicating higher the quick ratio and capital ratio lower would be the return on assets. And also correlation between IR, ICR found to be positive and very significant relationship between return on assets and ICR. However, correlation between liquidity ratio and return on equity is found to be negative indicating higher the liquidity in the bank lower would be the return on equity. Correlation between liquidity ratio and return on equity is found to be negative indicating higher the liquidity in the bank lower would be the return on equity. Correlation quick ratio and ROE is negative relationship. IR, CR, and ICR are positively correlated with ROE. LR, IR, CR, and ICR are positively correlated with EPS and only QR is negatively correlated with EPS. Beta coefficient for IR, LR and ICR are positively significant with bank performance in term of ROA which indicate that increased IR, LR, and ICR leads to increase the performance of the banks. CR is positively significant with ROA. However, QR is negatively insignificant with bank performance. Beta coefficient for LR, CR, ICR, and IR are positively insignificant with ROE indicating higher QR, lower the profitability. Beta coefficient for LR, IR, and ICR are positive and significant with EPS. However, CR is negative and insignificant, and QR is also negative but significant with EPS indicating increased QR and CR, decreases the EPS.

CHAPTER - 1
INTRODUCTION

1.1 Background of the Study

A day-to-day management of a firm's short-term assets and liabilities plays an important role in the success of the firm. Firms with glowing long-term prospects and healthy bottom lines do not remain solvent without good liquidity management (Jose *et al*., 2012). Hence, despite maximization of shareholder wealth still remaining the ultimate objective of any firm, preserving the liquidity of a firm is equally an important objective and as such a firm should balance among the different interest objectives. Increasing profits at the cost of liquidity can bring serious problems to the firm and a tradeoff between these two objectives of the firms needs to be struck. If a firm does not care about profit, it will not survive for a longer period while on the other hand if it does not care about liquidity, it may face the problem of insolvency or bankruptcy. For these reasons, therefore, liquidity management should be given proper consideration and will ultimately affect the profitability of the firm.

Liquidity management is of crucial importance in financial management decision. The optimal of liquidity management could be achieved by companies that manage the trade-off between profitability and liquidity management (Bhunia and Khan, 2014).

The liquidity in the commercial bank represents the ability to fund its obligations by the contractor at the time of maturity, which includes lending and investment commitments, withdrawals, deposits, and accrued liabilities (Amengor, 2015). Liquidity means how quickly bank can get your hands on your cash. Liquidity refers to the conversion of assets into cash. Commercial bank has to maintain satisfactory level of liquid assets that are easy to sale at market price. If the commercial bank holds liquid assets balance in form of currency bank balance, marketable securities and other similar assets cash or cash equivalent. But these could be invested for short term period to earn interest than to keep the idle cash balance. In order to determine the optional investment in liquid assets, a commercial bank must assess the benefits and cost of holding these various balances. Since that higher the liquidity for the bank, lower will be the profitability because bank

holds more assets as idle cash would create problem in gaining the profit. Similarly, lower the liquidity can also create problem for bank to repay demanding fund. Maintaining the proper liquidity is very difficult task for every commercial bank. Bank should maintain the proper liquidity in vaults according to NRB directions and policy of proper considering the profit side (Thapa, 2017).

Profitability means to generate profits by the access of its cost or to earn profit. Profits determined by the difference of its production cost and selling cost if the selling cost is greater than production cost then its profitable otherwise we are bearing a loss (Boadi, 2013). Profit is the remaining amount after the deduction of all expenditures involved in the running of a business. Some economists have defined profit as the percentage return on the capital investment and also profit is the reward of ownership. It refers to amount and share of national income which is paid to the owners of business that is those who supply equity capital as variant is described as a profitability. In other word, profitability refers to situation where output exceeds input that is the value created by the use of resources. Profit could be taken as yardstick to measure success of any business enterprise. Profitability refers to the firm's ability to create sufficient profit on invested capital. Then companies will be more interested to invest or to use more efficiently to earn profit. Profitability is also related to solvency. The key is determined on profitability ratios are return on assets (Ndirangu, 2015).

Profitability refers to the net income of the company (Bank) where company's revenues exceed its expenses. Income is generated from the activities of the companies (Banks) and expense is the cost of resources which are used to generate profit. Profitability is the main objective of the companies. Businesses cannot survive in the market for the long run without profitability. So, evaluating past profitability, calculating current profitability and foretelling future profitability is very important for the company. Revenue and expense are shown at the income statement which refers to the profitability of the company while cash inflow and cash outflow are shown at cash flow statement which refers to the liquidity of the company (Das, Cwdhury, Rahman, and Dey, 2015).

It has negative or inverse relationship between liquidity and profitability because huge liquidity position decreases the profitability of the bank and vice-versa. But in some

cases, liquidity problem can create a panic to the depositor and banks can fall under trouble of repayment of deposited money. At the liquidity shortfall banks cannot increase the advance position to increase the profitability. So that banks try to manage the liquidity position very efficiently. To increase the profitability banks go to the risky investment because there is a positive relationship between higher risk and higher return. On the other hand, higher risk endangers the liquidity of the banks. When interest rate is lower, the liquidity position of any bank is higher and higher liquidity position indicates the availability of capital base. Liquidity surplus can be occurred if there is huge money at hand with too few investments in real sectors. As a result of economic depression fund usually is invested in bad ventures and bad ventures cannot repay the money of the banks because they do not do well in the business and banks suffer from liquidity position at hand for further investment or repayment of the depositor's money (Das et al, 2015).

Liquidity risk is said to be assassin of banks. This risk can adversely affect both bank's earnings and the capital. Therefore, it becomes the top priority of a bank's management to ensure the availability of sufficient funds to meet future demands of providers and borrowers, at reasonable costs. Episodes of failure of many conventional banks from the past and the present provide the testimony to this claim. For instance, as United States/U.S. subprime mortgage crisis reached its peak in the years 2008/9 unprecedented levels of liquidity support were required from central banks in order to sustain the financial system. Even with such extensive support, a number of banks failed, were forced into mergers or required resolution. A reduction in funding liquidity then caused significant distress. In response to the freezing up of the interbank market, the European Central Bank and U.S. Federal Reserve injected billions in overnight credit into the interbank market. Some banks needed extra liquidity supports (Longworth, 2014; Bernanke, 2012).

The effects of liquidity on the performance of the firm will result in long conclusion that it's the measuring of the amount of profit and promotion of the firm. The extension of influence of profit and liquidity on the expansion and performance of the firm has been arguable and no census has been reached (Umobong, 2015). Liquidity is explained as a large position in assets or in cash which are easily can be changed to cash much liquid

assets produce flexibility for a firm with a minimum risk position according to researcher liquidity can be measured through liquidity ratios included current ratio, cash ratio and quick ratio current ratio can be measured through current assets divided by current liabilities same as it is cash ratio is measured through sum of cash and marketable securities divided by current liabilities and cash ratio is used to measure company's liquidity (Ngwili, 2013).

Studies of Nepalese banks' profitability are important as guidance towards enhancing the economy since banks do contribute to economic growth and stability. Stability in the banking sector helps to maintain stability in the economy (Baral, 2010). Few studies have been conducted on determinant of profitability of the commercial banks in Nepal, for example, (Karki, 2014) also found that the positive relationship between capital adequacy and profitability, (Joshi, 2014) found that the liquidity and banks loan are positively related to banks profitability and (Maharjan, 2007) revealed that the capital adequacy and liquidity is positively associated with banks profitability. (Karki, 2014) found that liquidity ratio was relatively fluctuating over the period, return on the equity is found satisfactory and there is positive relationship between deposits and loan advances. The recommendations made that are the existing condition of the liquidity of the banking and financial institutions needs to be reduced through an appropriate investment policy.

The samples banks are Nepal Bank Limited, Agriculture Development Bank Limited, Standard Chartered Bank Limited, Nepal Investment Bank Limited, Nabil Bank Limited and Sunrise Bank Limited. These banks are selected to examine the liquidity position, profitability position and impact of liquidity on bank profitability in Nepalese commercial banks. The samples are taken based on cluster of bank to find the impact of liquidity on profitability. NBL, ADBL are government ownership bank, SCBL and NIBL are joint venture bank and NABIL and SBL are private banks. Based on cluster, government ownership bank, joint venture bank and private banks are chosen to conduct the research. This study finds real the profitability position, liquidity position and impact of liquidity on bank's financial performance in Nepal from the different cluster.

In conclusion, it is a dynamic concept. Every research is only based on some specific period of time. So, liquidity and profitability position has been changing according to

different factor like external and internal factor. Therefore, this study has been made to analyze the impact of liquidity on bank profitability of commercial bank. A bank has to perform the several functions and among them, maintaining a balance between liquidity and profitability is very crucial. Without proper balancing and analyzing its impact on profitability, a bank cannot function properly in the market. So, the main purpose of the study is to analyze the effect of bank liquidity on bank's financial performance in Nepalese commercial banks. Specifically, it examines the impact of investment ratio, liquidity ratio, quick ratio, capital ratio, and interest coverage ratio to return on asset, return on equity and earning per share of commercial banks of Nepal.

1.2 Focus of the Study

This study focuses on the impact of liquidity on bank profitability of Nepalese commercial banks NBL, ADBL, NIBL, SCBL, NABIL, and SBL from 2011/12 to 2016/17 which has been first established governmental, joint venture and private bank respectively. Two commercial banks are selected from each cluster based on convenience. These banks have selected based on cluster sampling. This study will focus on identifying the strength and weakness of sampled banks in term of liquidity position and profitability position. This research focuses on comparative study of liquidity position and profitability position of Nepalese commercial banks. In this study, attempts will be made to get knowledge about the impact of liquidity on bank profitability and relationship between liquidity and profitability, operational efficiency of the management, efficient use of total assets by the management, shareholder's return and earnings per share etc. For this purpose of the study, evaluation of the bank is made with respect to the liquidity and profitability ratio.

1.3 Statement of the Problem

The management of a firm's liquidity is necessary for all businesses, small, medium or large. When a business does not manage its liquidity well, it will have cash shortages and as a result experience problems paying its obligations when they fall due. Indeed, Rafuse (2010) observed that liquidity crisis has generally been credited as a major cause, if not the main cause of small business failure in many developed and developing countries. Currently, the business environment has become unpredictable and as a result, there is

need for business entities to put in place effective management of liquidity policy that will even be able to cover the firms during challenging period. With the high level of competition from both local and international competitors, the predictability of a firm's ability to meet its short term obligations when they fall due becomes of great importance. The importance of managing liquidity requirements of a firm to ensure an improvement in firm's market value and profitability and this aspect must form part of the company's strategic thinking in order to operate effectively and efficiently (Brigham, 2013).

Several studies have been conducted on how various financial elements impact on the firm's profitability. The studies include those by Uyar (2009) and Samiloglu and Demirgunes (2008). With reference to Kenya, a number of studies have been conducted on how various financial elements impact on the firm's profitability. Kimani (2009) undertook a research on the relationship between firm's profitability and its size and the book to market value: Evidence from the NSE. The study found out that the growth in sales of a firm is positively related to the firm profitability. The study further concluded that a firm that manages to increase its sales output improves its revenue and as a result having more funds available for further expansion.

In other countries' research report, holding more liquid assets diminishes a commercial bank's profit and hinders the investment prospect of the bank, which could lead to growth and expansion. However, if it wishes to maximize profit, the commercial bank will have to reduce the level of liquid assets it holds on the balance sheet. Holding too much illiquid asset will expose the commercial bank to liquidity risk and huge interest charges in an even of fire sales (Casu et al, 2015).

The review of previous studies conducted showed that the liquidity position of a commercial bank seriously impacted it profitability. Further studies also showed that the functioning of capital market and money market depends much on the liquidity position of commercial banks. The maximization of the firm's return could seriously threaten it liquidity position and the pursuit of liquidity had a tendency to dilute returns. Those previous studies also examined a set of commercial banks that provided services in the services the same economy and operating in the same environment. More to that, those studies were interested in establishing differences, if any, in the relative liquidity position

of those commercial banks. This research paper seeks to establish how the liquidity position impacts the profitability of commercial bank in an economy.

Customer, general public, university scholars (in commerce and economics) can't identify the impact of liquidity to the national economy and its major causes having such lack of proper analytical capacity, the study will be vague and complicated. So, the study is expected to focus and answer the following research questions:

- What is the liquidity position and profitability position of selected commercial bank in Nepal?

- What is the relationship between liquidity and profitability of Nepalese commercial bank?

- Does liquidity affect the profitability of commercial banks in Nepal?

1.4 Objectives of the Study

The main objective of this study is to evaluate and examine the impact of liquidity on profitability of Nepal Bank Ltd., Agriculture Development Bank Ltd., Standard chartered Bank Ltd., Nepal Investment Bank Ltd, Nabil Bank Ltd and Sunrise Bank Ltd. and other specific objectives are as follows:

- To analyze the profitability and liquidity position of selected commercial banks.

- To analyze the relationship between liquidity and profitability position of selected commercial banks.

- To establish the impact of liquidity on bank profitability of selected commercial banks.

1.5 Significance of the Study

The bank and financial institutions are facing the problem of liquidity in the context of Nepal which would affect the financial performance in the market. Due to lack of sufficient knowledge on impact of liquidity on bank profitability, they are suffering from the problem of liquidity. So, present study will be of substantial importance for banks,

researcher, scholar, research executives, planners, professionals and investors to meet the objective of research and individual and organizational objectives. Then, this study will be beneficial to different parties like management, shareholders, government, competitors and customers. They will be helpful to find the appropriate bank among them. So, the study is significance.

The study will be helpful to regulatory authority to formulate the effective policy, guidelines, rules about liquidity and capital adequacy to run the commercial bank which study will suggest them to formulate the proper policy on that topic. It helps to mobilize the fund effectively within bank such effective management ideas will be helpful for achieving the organizational investment opportunities. The financial agencies stock exchange and stock traders are also interested to know the bank's performance as well as customer. Such position of liquidity and profitability will be effective measurement factor for the customers. This study is helpful for self - assessment of respective bank. Management can analyze their weakness and strength reports. Policy makers at the macro level that is government and NRB will also be benefit regarding the formulation of further policies and deciding about maintaining the liquidity position in the bank.

1.6 Limitations of the Study

The study will have some positive and negative aspects. So, they have to study with the certain framework. It follows the rules and regulation. It has some time constraint, lack of data, cost, and information. There is considerable place for arguing about its accuracy and reliability, the period, reliability of statistical tools, data and variances. The following limitations are pointed out in this study of impact of liquidity on profitability position of selected commercial banks.

- The study is mainly conducted on the basis of secondary data. Therefore, it has limitation of inaccuracy and inappropriateness in psychological aspects.

- The study focuses only six banks, namely Nepal Bank Limited, Agriculture Development Bank Limited, Standard chartered Bank Limited, Nepal Investment Bank Limited, Nabil Bank Limited and Sunrise Bank Limited, which have not truly generalize this results for 28 commercial banks.

- This study only includes the analysis of data from fiscal year 2011/12 to 2016/17. The findings are only based on that period.

- The study focuses only on the liquidity and profitability analysis and does not cover other aspects of bank's activities.

- The validity of a secondary sources data depends on the reliability of the annual reports of the commercial banks.

1.7 Organization of the Study

The study has been categorized into five chapter, all are related to study of impact of liquidity on bank profitability in commercial banks. Five chapters are as follows:

Chapter- I Introduction /Research Overview

These chapters provides an overview of the research topic of impact of liquidity on bank profitability of commercial banks in Nepal and present the research background of subject matters of the study, statement of the problem, objectives of the study (it consists of general objective and specific objective), significance of the study and limitation of the study, chapter layout and conclusion.

Chapter- II Literature Review

This chapter discusses and elaborates further on the study of impact of liquidity on bank profitability of commercial banks in Nepal on previous studies and past literature review. This chapter presents the part of introduction, review of the literature, research gap, review of relevant theoretical models, proposed theoretical of conceptual framework and conclusion.

Chapter- III Research Methodology

This chapter describes how the research to be done by using the data collection method and data analysis method. This chapter lists down all the data collection method and sampling design on how the research is carried out. This chapter consists of introduction, research design, data collection methods which includes primary data and secondary data, sampling design which contains target population, sampling frame and sampling location,

sampling elements, sampling techniques and sampling size, research instrument, data analysis and conclusion part.

Chapter- IV Data Analysis

This chapter briefly discusses and elaborates the patterns of the results and analyses of the results which are pertaining to the research question. Part of introduction, descriptive analysis which includes arithmetic mean, standard deviation, correlation coefficient, coefficient of variance and regression analysis, coefficient of multiple determination, various chart, figure, other statistical tools, financial tools and conclusion are included in this chapter.

Chapter- V Summary, Conclusion and Implications

This chapter includes the research area by providing discussion on the research findings, conclusions, limitations and implication of the study and recommendation for the future research and future growth and improvement of the concerned commercial bank based on the data presentation and its analysis using the tools used in the analysis.

These chapters, reference and appendix are also included at the end of the study.

CHAPTER - 2
REVIEW OF LITERATURE

Literature review includes the previous studies that are related of our research that plays a significant role in conducting any type of research. This chapter highlights up on the existing literature for this several books, dissertation reports, handout and articles published journal and newspaper are reviewed because the researchers by taking guidelines form such studies can make our research more valuable. The few studies that are related our research is given below:

2.1 Conceptual Review

2.1.1 Financial Statement Analysis

Financial analysis means the analysis of financial statement of a firm to ensure its comparative strength and weakness. In other words, financial analysis involves analyzing financial statements prepared in accordance with generally accepted accounting principles to ascertain information concerning the magnitude, timing and riskiness of future cash flows. It establishes the relationship between the items of the balance sheet and the income statement. It also provides the framework for financial planning and control. The companies have variety of stakeholders such as shareholders, bondholders, bankers, suppliers, employees and management. The stakeholders need to monitor the firm and to ensure that their interests are being served. They rely on the company's financial statement for their interest. They will analyze the financial statement to have information about the earnings of the company and short term and long term solvency position of the firm (Brigham, 2013)

It is essential to make a meaningful conclusion about what a particular figure in the firm's financial performance. Financial statement analysis involves comparing the firm's performance with that of other firms in the same industry and evaluating trends in the firm's financial position. Internally, the financial manager use the information provided by the financial analysis to help to take financing and investment decision. Externally, the other stakeholders use financial statement analysis is to evaluate the attractiveness of the firm.

2.1.2 Income Statement

Income statement is a statement summarizing the firm's revenues and expenses over an accounting period, generally a quarter or a year. The income statement is also known as profit and loss account.

The income statement summarizes the results of operations of an entity for a period of time. It provides the real income picture of the company by deducting all operating expenses from operating income. Income statement is the financial statement of banks earning power and cost. Banks have to efficient in minimizing the cost and generating the income. It is the major indicator of bank's success and failure. The income statement reflects the earning power of the banks. Generally, bank can raise the income by providing higher rate of interest on credit (loan) than rate of interest paid on deposits (Brigham, 2013).

2.1.3 Balance Sheet

Balance sheet is statement of firm's financial position of the concern at the end of the accounting period Balance sheet is prepared to know about the assets and liabilities at that movement. The balance sheet shows assets on one side and liabilities and capital on the other, the balancing of the statement being immediately apparent. Thus, balance sheet disclosed the information regarding assets, liabilities and capital. It discloses how much business owes to others and how much others owe to business.

The balance sheet of commercial bank is a statement of total assets and liabilities for a particular day, so it discloses the financial position on a particular day and not for a particular period. In fact, commercial banks are able to concrete opinion about the interest earning assets that includes mostly loan and investment and interest paying liabilities that cover mainly deposit and borrowing. Balance sheet helps to ascertain the financial position of business on a particular date and also helps to decide the amount of provisions of reserves which should be created for meeting future contingencies. Further, it helps to ascertain the equity on the date of balance sheet. It contributes more other information about the total assets and equity current assets and fixed assets and current liabilities and long term liabilities (Brigham, 2013).

2.1.4 Financial Ratio Analysis

Financial ratio analysis is used as a technique to quantify the relationship between two or more sets of financial data taken from income statement and balance sheet. It provides the financial information about strength and weakness of a financial data in relation to other proper analyzing the financial statement will provide the meaningful ascertainment of financial results obtained by the bank.

"A ratio is simply one number expressed in term of analysis. It is found by dividing one number by another. A percentage is a kind of ratio in which the base is taken as equally the 500 and the quotient is expressed as per hundred of the base" (Anthony, 2012).

Ratio is very useful for the purpose of identifying financial position and results with company standard which will determine the success and failure of the company. To identify the financial position and performance of a company; its ratio may be compared with average ratios to the industry of which the firm is involved. Financial managers need the information provided by analysis, which highlights the key aspects of firm's operation (Brigham, 2013). Various ratios are used to measure the financial performance of the company. Among them only liquidity and profitability analyze here.

2.1.5 Concept of Liquidity

According to business dictionary, liquidity is a measure of the extent to which a person or organization has cash to meet immediate and short-term obligations or assets that can be quickly converted to do this. Liquidity can also be a measure of the ability and ease with which assets can be converted to cash. Liquid assets are those that can be converted to cash quickly if needed to meet financial obligations; examples of liquid assets generally include cash, central bank reserves and government debt. To remain viable, a financial institution must have enough liquid assets to meet its short term obligations, such as withdrawals by depositors. In fact, "liquidity is a prerequisite for the very survival of firm. The short-term creditors of the firm are interested in the solvency or liquidity of a firm, but liquidity implies from the view point of utilization of the funds of the firm that funds idle or they earn very little" (Khan and Jain, 2012).

"Liquidity ratios measure a firm's ability to satisfy its short term commitment out of current or liquid assets. These ratios focus on current assets and liabilities and are used to ascertain the short term solvency position of a firm. The two primary tests of liquidity are current ratio and quick ratio. Liquidity refers to the speed and ease with which assets can be converted cash gold is relatively liquid assets. Liquidity includes the cash and cash equivalent items or that can be converted to cash over the next 12 months. Liquid assets are those assets which can be converted into cash without a substantial price reduction. The liquid assets are current assets like receivable, inventory, cash balance in NRB. Current assets are relatively liquid and include cash and those assets that we expect to convert to cash" (Shrestha, 2012).

Bank Liquidity refers to the ability of the bank to ensure the availability of funds to meet financial commitments of maturing obligations at a reasonable price at all times. Bank liquidity means a bank having money where they need it particularly to satisfy the withdrawal needs of the customers (wasiuzzaman and tarmizi, 2015). The amount of liquidity that a commercial banking system should maintain is one of the basic problems of the bank system. As for going income, too little, however may be fatal not only to an individual bank, but to the commercial banking system as a whole, the financial structure of the country and the economy of the nation. Too little liquidity and the demands of the depositors in the form of 'ruins' on the banks are like oil and water, they do not mix well (Reed and Edward, 2015).

According to GARP (2013), liquidity can further be termed as a bank's capacity to fund increase an asset and meet both expected and unexpected cash and collateral obligations at a reasonable cost and without incurring unacceptable losses. Also, liquidity is a financial term that means the amount of capital that is available for investment. Today, most of this capital is credit, not cash. Bank Liquidity simply means the ability of the bank to maintain sufficient funds to pay for its maturing obligations. It is the bank's ability to immediately meet cash, cheques other withdrawals obligations and legitimate new loan demand while abiding by existing reserve requirements.

"Liquidity is the status and part of the assets which can be used to meet the obligation. Liquidity can be viewed in terms of liquidity stored in the balance sheet and in terms of

liquidity available through purchased funds. The degree of liquidity depends upon the relationship between cash assets plus those assets which can be quickly turned into cash and the liability awaiting payment. Generally, the definition of liquidity can't be found in the same way, in the countries of whole world. Because, it is known, as much as the development of the monetary sector take place or the use of monetary devices increases. So much the definition of it goes wider. Liquidity means the whole money stock money" (Bhandari, 2014).

"Liquidity suggests that a liquid asset should be maintained by each commercial bank for day to day operation of business smoothly. Such liquidity position should be maintained by raising the funds and selling the assets. Appropriate level of liquidity determined by central bank is an important phenomenon if they can't raise the liquid assets, funds. It may still be in problem. Many banks assume that liquid funds have to be maintained at any time to fulfill the daily demand of fund. The enormous cash shortages to mobilize the fund or cash from bank to customer, then it will create the serious problem for operating the bank. Liquidity ratios attempt to reflect the picture of capacity of bank to meet short term obligation. Similarly, it will measure a firm's ability to satisfy its short term commitments out of current of liquid assets. These ratios focus on current assets and liabilities and are used to ascertain the short term solvency position of a firm. If the company is unable to meet its short term obligations due to lack of sufficient liquidity it will result in bad credit ratings and loss of degree of liquidity. Large liquidity assets can't be produced the productive results in the organization. The appropriate level of combination of current assets and fixed assets liquid assets and illiquid assets should be managed by the company" (Pandey, 2015).

Liquidity management is very important than we may realize, because a bank can be closed if it cannot rise enough liquidity even through technically it may still be solvent. Many banks assume that liquid funds can borrowed virtually without limit any time they are needed. So, they need to keep certain form of easily marketed, stable price assets in the bank. The high cash shortages experienced in recent years by banks in trouble make clear that liquidity needs cannot be ignored.

"Liquidity management is an important tool for the management of organization; it reflects the organization's ability to repay short-term liabilities, which include operating expenses and financial expenses and financial expenses resulting within the organization in the short term. As well as part of long term debt during the financial year or the operating cycle, whichever is longer? There are many liquidity ratios, cash ratio, defensive interval ratio) which can greatly affect the financial performance of companies" (Robinson et al., 2016).

(Keynes, 1964) postulated that liquidity preference theory consists in the statement that the rate of interest at any time, being the reward for parting with liquidity, is a measure of the unwillingness of those who possess money to part with their liquid control over it. The rate of interest is the price which equilibrates the desire to hold wealth in the form of cash with the available quantity of cash. The reasons to have a preference for liquidity are because there are several reasons for holding cash. These motives became known as transactions, speculative and precautionary motives to demand money. In the world of Keynes General Theory (1936), however, the quantity of money in existence is the ultimate independent variables determined by the action of the central bank. Seemingly, Keynesian writings described liquidity preference to mean demand for money and liquidity preference theory as a theory whereby the rate of interest is determined by demand and supply of money.

The liquidity position of a firm would be satisfactory if it is able to meet its current obligations when they become due. A firm can be said to have the ability to meet its short- term liabilities if it has sufficiently liquid funds to pay the interest on its short maturing debt usually within a year as well as to repay the principal. This ability is reflected in the liquidity ratios of affirm. The liquidity ratios are particularly useful in credit analysis by banks and other suppliers of short – term loans.

This ratios measure the ratio liquid assets by total assets. Liquid assets include cash and equivalent and cash reserve at the central bank, short term deposits in banks and other government and non - government guaranteed securities as a percentage of total bank assets. Liquidity risk is one the types of risk for banks when banks hold a lower amount of liquid assets they are more vulnerable to large deposit withdrawals. Therefore,

liquidity risk is estimated by the ratios of liquid assets to deposit and liquid assets to total asset. Various types of ratios have been used to measure the liquidity position of an bank in concern with commercial banks different liquidity ratio such as cash and bank balance to total deposit ratio (as per NRB directive), cash and bank balance to current deposit ratio, investment ratio, capital ratio, quick ratio, and interest coverage ratio are used to measure the liquidity position of commercial banks.

2.1.6 Importance of Liquidity

A bank and financial institution cannot be run with liquidity. The commercial banks and other financial institutions should keep the stock of liquid assets in the ratio of their deposit liability as fixed by the NRB. If commercial banks and financial institution maintain the stock of liquid properly as per the law and policy of the central bank then there is no dispute that liquidity is the most important thing for a bank. The Commercial bank and financial institutions should maintain the balance of cash fund in required amount that the monetary policy fixes. The importance of liquidity is considered very sensitive because if it can't maintain the liquidity, it has to pay fine. So, they have to maintain certain amount determined by the NRB.

People deposit their savings into bank to safeguard them, earn interest, and get back whenever they need .liquidity is the life blood of bank, without which a bank cannot survive for long. Banking transactions are more dependent upon the mutual faith between bankers and customers. It is essential to maintain sufficient cash reserve in bank to maintain the customer faith. Banks and financial institution should maintain some liquidity to refund the deposit when account holders withdraw deposit. Hence, liquidity is the life blood of bank. Since importance of liquid assets are as follows:

- To run the daily operating expenses.
- To meet the customer demand of fund.
- Liquidity is necessary for the efficient and healthy competition among banks.
- To control the economic fluctuation.
- To gain trust from public and including other stakeholders.
- It is important to maintain statutory liquidity ratio in banks.

- It is essential for the payment of all sorts of deposits such as current, saving and fixed account of its customer's.

2.1.7 Motive for Holding Liquidity by Commercial Bank

Liquidity generally related with cash and cash equivalent items and it is the most liquid and least productive current assets. Cash, if it remains idle, earns nothing but involves cost on terms of interest payable to finance it. If cash is the least productive current assets, why should a firm hold the cash and keep in liquid form? There are four motives for holding liquid assets:

1. Transaction Motive

The motive for holding liquidity is to satisfy ongoing operation of firm. It refers the need to hold liquid assets to satisfy normal disbursement collection activities associated with a firm's ongoing operation. In its ordinary course of action, a firm frequently involves in purchases and sales of goods or services. A firm should make payment of wages, salary, interest, commission, brokerage, rent, taxes, and insurance dividend and so on. Individual and business firms keep some amount in liquid form for daily expenditure and transaction. So, keeping some amount in ready cash (money) will help them in carrying out the daily transactions. Keynes has divided the demand form money in transaction motive into two parts. They are income motive and business motive (Subedi, 2015).

2. Precautionary Motive

Precautionary motive refers to holding cash as a safety margin to act as a financial reserve. A firm should also hold some cash for the payment of unpredictable or unanticipated events. A firm may have to face emergencies such as strikes and luck- ups form employees increase in cost of raw material, funds and labor fall in market demand and so on. People desire to keep some ready money with them to solve the unforeseen incidents that may occur in the future. This type of demand for money is known as the demand for precautionary motive. People will be fully unaware of illness, accidents, etc. that may occur in the future (Subedi, 2015).

3. Speculative Motive

People desire to hold their resources in liquid form in order to take advantage of market movements regarding the future changes in the interest rate. So, this type of demand for money is known as the demand for money for speculative motive. It refers to the need to hold liquidity to take advantage of bargain purchases, attractive interest rates, and favorable exchange rate fluctuations. Speculative need for holding liquidity requires that a firm possibly may have some profitable opportunities to exploit which are out of the normal course of business. These opportunities a rise in conditions, when price of raw material is expected to decline and purchase of inventory occurs at reduced price on immediate cash payment (Subedi, 2015).

4. Compensating Balance

The firm should maintain the minimum cash balance with central bank for operating the daily operation of bank. The cash balance that a firm must have to maintain with a bank, to compensate that bank for services rendered or for granting a loan. Firm often maintains bank balance in excess of transaction needs as means of compensating for the various services. Bank provides various services to the firm like payment of check, and information of credit, loan etc. (Subedi, 2015).

2.1.8 Concept of Profitability Ratio

Profitability ratio is the end results of a number of corporate policies and decisions. It measures how effectively the firm is being operated and managed. Various stakeholders' owners, managers, and creditors are interested to know the financial soundness of the firm. Profitability ratio depicts almost entire financial performance of the bank. The bank are established, operated and run to gain the profit by providing financial services to their customers.

Profit is the excess amount of revenue over expenses. For specific period of time commercial banks are established to earn profit as well as providing financial services to customer. All stakeholders of the bank put pressure on the bank management to earn profit by providing excellence services to customer in the competitive financial world. Every investor, depositors and other concerned stakeholders have a positive attitude towards the highly profitable of financially viable and sound bank.

"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 testability of the financial system." (Brissimis and Delis, 2010).

"Profitability is the ability of a given investment to earn a return from its use. Profitability means ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It shows how efficiently the banks management can make profit by using all the resources available in the market. However, the term 'Profitability' is not substitutable for the term 'Efficiency'. Profitability is an index of efficiency; and is regarded as a measure of efficiency and management guide to greater efficiency. Though, profitability is an important yardstick for measuring the efficiency, the extent of profitability cannot be taken as a final proof of efficiency. Sometimes satisfactory profits can mark inefficiency and conversely, a proper degree of efficiency can be accompanied by an absence of profit. The net profit figure simply reveals a satisfactory balance between the values receive and value given. The change in operational efficiency is merely one of the factors on which profitability of an enterprise largely depends. Moreover, there are many other factors besides efficiency, which affect the profitability." (Harward and Upton, 2012).

"The word profitability is composed of two words 'profit' and 'ability'. On this basis, the concept of profitability may be defined as the ability of a given investment to earn a return from its use." (Howard, 2012).

"Profit is not the surplus of receipts over payments, but the surplus there with be loss. By revenue is meant what the business earns in the period under view usually what goods or services it has sold." (Langley, 2013).

 "Profitability ratios are designed to provide answers to questions such as: (i) what is the earning per share? (ii) what is the rate of return on shareholders' equity? (iiii) what is the rate of return on total assets? (iv) is the profit earned by the bank adequate? (v) what is the rate of profit for various departments? And so on" (Khan and Jain, 2014).

"Profit is the difference between revenues and expenses over a period of time (usually one year). Profit is the ultimate output of a company, and it will have no future if it fails to make sufficient profits. Therefore, the financial manager should continuously evaluate the efficiency of the company in term of profits. The profitability ratios are calculated to measure the operating efficiency of the company. Besides management of the company, creditors and owners are also interested in the profitability of the firm. Creditors want to get interest and repayment of principal regularly. Owners want to get a required rate of return on their investment. This is possible only when the company earns enough profits" (Pandey, 2015).

"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." (Alshatti, 2015).

Therefore, profitability measures the success of firm in earning a net return on sale or investment profitability measures the operating efficiency of the banks. It ensures the long term viability of the company. The stakeholders like creditors, owners, and potential investors are also invested to the profitability of the firm. Higher profitability ratio ensures to stakeholders that their investment is safe and they can get regular return. It shows the combined effect of liquidity, assets management and debt management on operating results.

2.1.9 Impact of Liquidity on Bank Profitability

For bank, the words liquidity and profitability come again and again. There is no possibility of profitability without liquidity. Also there is no growth in liquidity without profitability. There are complements to each other, but these two also are opponent to each other if there is high liquidity in bank, bank can't gain profit. Because most part of the liquidity is reserved in the bank, it does not give profit to the bank. The bank can't invest the amount. It is not possible to hope profitability without investment.

Cash is the important current assets for the operation of any business. It is the input needed to keep the business running continuously. A bank as a business concern needs to have cash and liquid assets which it can easily convert into cash at short notice. Pandey (2015) identifies the types of assets available to a bank to include cash, deposits with the central bank, treasury bills. Thus, for banks to remain in the business of financial intermediation, they must formulate policies to ensure the availability of cash and liquid assets in the asset portfolio at any point in time.

Liquidity risk reduces the ability of the bank to meet its financial obligations as they fall due. When this risk remains unchecked, banks will lose customers thereby reducing the volume of deposits. When deposits reduce, the bank will have insufficient funds for other investments; this significantly reduces the level of profitability. Again, a high liquidity risk causes a run on the bank. This run is evidenced in the panic withdrawal of deposits by customers from the bank. This adversely affects the potentials of the bank by keeping away would be customers and potential investors from the bank consequent upon this, the bank's operations reduce drastically and results in a significant reduction in profit.

Liquidity also refers to the ability of the commercial bank to convert its non-cash assets into cash easily and without loss. The bank cannot have all its assets in the form of cash because cash is an idle asset which does not fetch any return to the commercial bank. So some of the assets of the bank, money at call and short notice, bills discounted, etc. could be made liquid easily and without loss (Saunders and Cornett, 2015). The principality of liquidity and profitability are very much crucial.in the lack of liquidity the bank can't give payment to the depositors in the time of their demand can't pay the loan to the creditors. The bank, under the law can't keep and maintain the capital funds not only this much, the bank also becomes unable to face any economic rise and fall occurring in coming days to keep liquidity very important. If high liquidity is harmful to the bank, liquidity crisis is malignant to the bank .To be free from both of these two creditors, the bank should be able to maintain balance of liquidity.

.2.2 Theoretical Review

2.2.1 Theories of Liquidity

The major objective of a commercial bank is to create liquidity while remaining financially sound. However, there are a number of dimensions in the way banks concretely manage their liquidity risk. In plain words, there are competing liquidity management theories. Liquidity management theories encompass where it is exactly performed in the organization, how liquidity is measured and monitored, and the measures that banks can take to prevent or tackle a liquidity shortage. These competing theories include: Commercial Loan Theory, Shiftability Theory and Anticipated income theory.

2.2.2 Commercial Loan (Traditional) Theory of Liquidity

Adam Smith provided the first systematic exposition of the doctrine in his Wealth of Nations (1776)). Basically, it is a theory of asset management that emphasized liquidity; the doctrine held that banks should restrict their earning assets to "real" bills of exchange and short-term, self-liquidating advances for commercial purposes. In this way, it was argued; individual banking institutions could maintain the liquidity necessary to meet the requirements of deposit withdrawals on demand. Under a somewhat modified character this basic doctrine came to be known in the U. S. as the commercial loan theory of credit.

The commercial loan theory of credit became obsolete both because of its conceptual flaws and its impracticality. A critical underlying assumption of the theory held that short-term commercial loans were desirable because they would be repaid with income resulting from the commercial transaction financed by the loan. It was realized that this assumption would certainly not hold during a general financial crisis even if bank loan portfolios did conform to theoretical standards, for in most commercial transactions the purchaser of goods sold by the original borrower had to depend to a significant extent on bank credit. Without continued general credit availability, therefore, even short-term loans backing transactions involving real goods would turn illiquid. Rigid adherence to the orthodox doctrine was, furthermore, a practical impossibility if banks were to play a role in the nation's economic development (Casu, et al., 2016). Moreover, the practice of

continually renewing short- term notes for the purpose of supporting long-term capital projects proved unacceptable. The failure or inability of banks to tailor loan arrangements to the specific conditions encountered with longer-term uses in fact contributed to the demise of the practice.

2.2.3 The Shiftability Theory of Liquidity

The Shiftability theory liquidity replaced the commercial loan theory and was supplemented by the doctrine of anticipated income. Formally developed by Harold G, Moulton in 1915, the Shiftability theory held that banks could most effectively protect themselves against massive deposit withdrawals by holding, as a form of liquidity reserve, credit instruments for which there existed a ready secondary market. Included in this liquidity reserve were commercial paper, prime bankers' acceptances and, most importantly as it turned out, treasury bills. Under normal conditions all these instruments met the tests of marketability and, because of their short terms to maturity, capital certainty.

A major defect in the Shiftability theory was discovered similar to the one that led to the abandonment of the commercial loan theory of credit, namely that in times of general crisis the effectiveness of secondary reserve assets as a source of liquidity vanishes for lack of a market (Casu et al, 2016). The role of the central bank as lender of last resort gained new prominence, and ultimately liquidity was perceived to rest outside the banking system. Furthermore, the soundness of the banking system came to be identified more closely with the state of health of the rest of the economy, since business conditions had a direct influence on the cash flows, and thus the re-payment capabilities, of bank borrowers. The shiftability theory survived these realizations under a modified form that included the idea of ultimate liquidity in bank loans resting with shiftability to the Federal Reserve Banks. Under this institutional scheme, the liquidity concerns of banks were partially returned to the loan portfolio, where maintenance of quality assets that could meet the test of intrinsic soundness was paramount (Allen and Gale, 2014).

2.2.4 Anticipated Income Theory of Liquidity

The doctrine of anticipated income, as formalized by Herbert V. Prochnow in 1949, embodied these ideas and equated intrinsic soundness of term loans, which were of growing importance, with appropriate repayment schedules adapted to the anticipated income or cash flow of the borrower. The credit demands of business were well accommodated under this system of banking policy, and the use of loan commitments was freely pursued. Changing economic conditions, however, placed extra demands on the banking system that resulted in a new approach to balance sheet management, and businesses faced new financial challenges. Under this emerging state of affairs, bank loan commitment policies would come to play a more important part in the credit process.

2.2.5 Theories of Profit

Economists have developed several theories of profits to describe profits of entrepreneurs. Most of the theories are focused on the controversy about the role of entrepreneur. Here some of the fundamental theories of profit have reviewed in detail.

2.2.5.1 Innovation Theory of Profit

This theory of profits explains that economic profits arise because of successful innovation introduced by the entrepreneurs. Austrian economist joseph A. Schumpeter (1853 -1950) is the originator of the innovation theory of profit. Schumpeter holds that the main function of the entrepreneur is to introduce innovation in the economy and profits are reward for performing this function. Innovation, as used by Schumpeter, has a very wide connotation. Any new measure or policy adopted by an entrepreneur to reduce his cost of production or to increase the demand for his product is an innovation.

Innovation may be of two types: (i) those which reduce cost of production. They include the introduction of new machinery, improved production techniques or processes (i.e, innovation of new technique and product, and exploitation of a new source of raw material of a new and better organizational pattern for the firm i.e, (innovation of new market for the product and innovation of new method of organization.

The second type of innovations are those which are considered to increase the demand for the product by introducing a new product or a new variety of an old product, new and

more effective mode of advertisement, discovery of new markets.

So profits are cause and effect of innovations. Profits served as a necessary incentive for making innovations; hence they are a cause of innovations. Profits are also the effect of innovations, new and superior types of innovation in production, management and marketing helps firms to earn profit.

2.2.5.2 Managerial Efficiency Theory of Profits

The theory explain that some firm are efficient than others in term of management of production, operations and successfully meeting the needs of consumers. Firms with average level of efficiency earns average rate of return. Firms with higher managerial skills and production efficiency are required to be compensated by above – normal profits (i.e. economic profits). Therefore, this theory is also called compensatory theory of profits. The conclusion is that above normal profits can arise because of exceptional managerial skills. Ability to earn above normal profits is a continuing incentive for greater efficiency (Shreshtha, Dahal, and Kharel, 2012).

2.2.5.3 Risk and Uncertainty Bearing Theory of Profit

This theory explains that profits are necessary reward of the entrepreneur for bearing risk and uncertainty in a changing economy. Profits arise as a result of uncertainty of future. Entrepreneurs have to undertake the work of production under condition of uncertainty. In advance, they have to make estimates of the future conditions regarding demand for the product and other factors which affect price and costs.

Risk and Uncertainty theory explains why super- normal profits (that is economic profits) are required by the firms who operate in such fields as petroleum exploration which involves relatively higher risk. Likewise, expected return on stocks should also be higher than the interest on bonds because of greater uncertainty and riskiness of investment in stocks of the companies. Hence, economic profits above a normal return are necessary to compensate the owners of the firm for the risk. Since shareholders are residual claimants, they need to be compensated for risk in the form of a higher return (Shreshtha, Dahal, and Kharel, 2012).

2.2.5.4 Dynamic Theory of Profit

The dynamic theory of profit was developed by an American economist J.B Clark. According to him, profit is the difference between price and production cost of a commodity. This theory states that, "Profit arises due to dynamism in the economy." According to this theory, there are two types of economies.

Static economy refers to such type of economy where there are no risk and uncertainties. In this type of economy, price and average cost of production are equal so that each firm just earns normal profit. The forces of demand and supply do not change and even if they change. Price of goods and production cost like wages and interest remain at their natural level or normal level. Frictional profit will exist in the economy. In a dynamic economy, profits arise due to dynamic changes in the society. Changes are constantly taking place in the dynamic economy. In dynamic economy, there exist risk and uncertainties. Due to risk and uncertainties, cost and demand conditions changes frequently create profits for the firm.

2.2.5.5 Review of Related Studies

Various Studies have been conducted in many aspects of commercial banks. The conclusions of the previous studies on many aspects of commercial bank are relevant to this study. Since, the studies of previous articles, journals and thesis reviewed in this regard.

Review of Journal and Articles

Shrestha (2012) examined the impact of liquidity on profitability of commercial banks in Nepal. To address the objective, the article has sampled 8 commercial banks established in and before 1995 for the period between 2003/04 and 2010/11. Profitability analysis showed that the overall profitability (i.e. ROA) of the sample banks has normally an increasing trend. The overall trend of liquidity ratios is not largely smooth. Fluctuating trend of the liquidity ratios does not make easy in increase trend of profitability of commercial banks in Nepal. Since liquidity management can increase the banks' profitability, the study has examined their liquidity management as well as profitability positions, using various financial tools. There is a significant impact of Nepal Rastra

Bank to total deposit ratio and cash vault to total deposits on profitability of commercial banks in Nepal. This indicated that increase in these liquidity ratios boosts the bank profitability and vice-versa. But, there is no significant impact of total liquid fund to total deposit ratio, cash and bank balance to total deposits ratio, and total liquid fund to current liabilities ratio on profitability. This revealed that profitability has no relationship with those liquidity ratios. It has also studied data of only 8 fiscal years. Therefore, further studies should also cover as many more banks and years as possible to make their findings more valid and should use more scientific tools and analysis.

Shahchera (2012) conducted an impact of liquid asset holdings on bank profitability for a sample of Iranian banks. Using the Generalized Method of Moment (GMM), this study analyzed the profitability of listed banks using unbalanced panel data over the period of 2002-2009. This study used the liquidity asset and liquidity asset ratio square for estimating liquid asset and profitability relationship. The estimated relationship between liquid assets and bank profitability is as expected. Coefficients for the liquid assets ratio, its square, business cycle, regulation and its product are all statistically significant. As expected, it was found evidence of a non - linear relationship between profitability and liquid asset holdings. An important finding of this study is that the business cycle significantly affects bank profits. The coefficient of business cycle has a positive and statistically significant impact on bank profitability in results of the model; this suggested that profitability exhibits pro-cyclical behavior. The coefficient of regulation is negative and significant. Therefore, if regulators reduce the constraints imposed on banks, banks can make profits.

Pradhan (2013) found that liquidity ratio was relatively fluctuating over the period, return on the equity is found satisfactory and there is positive relationship between deposits and loan advances. It is also found that the liquidity and banks loan are positively related to banks profitability. This study is based on secondary sources of data of 16 commercial banks for the year 2005/6 to 2013/14 leading to the total observations of 144. The regression models were estimated to test the significance and effect of bank liquidity on performance of Nepalese commercial bank. Result revealed that return on equity is positively related to investment ratio. This indicated that higher the investment ratio

higher would be the return on assets and return on equity. Similarly, correlation between capital ratio and ROA and ROE is found to be positive indicating higher the capital ratio higher would be ROA and ROE. However, the correlation between return on equity and liquidity ratio is found to be negative indicating higher the liquidity in the bank lower would be the return on equity. Further, the correlation is found to be negative for quick ratio with return on equity. This study concluded that liquidity status of the bank plays important role in banking performance in case of Nepalese commercial banks. This study revealed that investment ratio, liquidity ratio and capital ratio has positive impact on bank performance, while quick ratio has negative impact on the same. The study suggested that banks willing to increase bank performance should increase capital ratio and investment ratio while should control liquidity ratio and quick ratio.

Lartey, Antwi and Boadi (2013) evaluated both the liquidity and the profitability levels of the listed banks were decreasing within the period 2005 – 2010. There was a weak positive relationship between the liquidity and the profitability of the listed banks. These findings support Bourke (1989) who found some evidence of a positive relationship between liquid assets and bank profitability for 90 banks in Europe, North America and Australia from 1972 to 1981. In view of the fact that liquidity has some amount of bearings on the profitability of a bank, it is important that banks manage their liquidity very well. When banks hold adequate liquid assets, their profitability would improve. Adequate liquidity helps the bank minimize liquidity risk and financial crises. The bank can absorb any possible unforeseen shock caused by unexpected need for decrease in liabilities or increase in assets side of the statement of financial position. However, if liquid assets are held excessively, profitability could diminish. Liquid assets usually have no or little interest generating capacity. The opportunity cost of holding low- return assets would eventually outweigh the benefit of any increase in the bank's liquidity resiliency as perceived by funding markets.

Karki (2014) found that liquidity ratio was relatively fluctuating over the period, return on the equity is found satisfactory and there is positive relationship between deposits and loan advances. The recommendations made that are the existing condition of the liquidity of the banking and financial institutions needs to be reduced through an appropriate

investment policy. Further, Joshi (2014) analyzed financial performance through the use of appropriate financial tools like ratio analysis, simple regression analysis and to show the cause of change in cash position of the two banks. In which he stated that bank profitability uses the return on assets, the return on equity and net interest margin. The study found that liquidity and bank loan are positively related to bank profitability. These studies suggested using the more banks as a sample, using for scientific tools and multiple regression technique of data analysis.

Akter and Mahmud (2014) examined the relationship the liquidity and profitability. The profitability was measured as return on assets ratio and liquidity was measured a current ratio. The data for this study was taken from the specific commercial banks income statements and balance sheets of published in the annual report of such bank. The twelve specific banks were taken as sample. For analysis of data a number of techniques were used which included the correlation technique; regressions & descriptive statistics and SPSS. The overall findings of this study are that there was no significant relationship exists between liquidity and profitability in all the categories on banks in Bangladesh. This study suggested using more variable of profitability and liquidity to find out the relationship between them.

Abdullah (2014) focused on two important issues of main stakeholders of bank which were liquidity and profitability. The shareholders desire maximum profitability as a return on their investment, while the depositors option for a maximum liquidity as a guarantee for safety and ability to pay their money on demand. Statistical significance of liquidity on profitability can be great factor for existing and potential stakeholders. Therefore, this study had attempted to investigate the impact of liquidity and profitability of the private commercial banks of CSE-30 in Bangladesh by focusing on certain ratios over a period of five years. Five private commercial banks have been selected to undertake the research. Profitability measures - ROA and ROE were dependent variables and liquidity measured - loan deposit ratio, deposit asset ratio and cash deposit ratio were selected as independent variables. The research carried out simple regression analysis to test the hypotheses. However, the null hypothesis was accepted in this study indicating that there is no significant relationship between liquidity and profitability.

Alshatti (2014) investigated the effect of liquidity management on profitability in the Jordanian commercial banks during the time period (2005–2012). Thirteen banks have been chosen to express on the whole Jordanian commercial banks. The liquidity indicators were investment ratio, quick ratio, capital ratio, net credit facilities/ total assets and liquid assets ratio, while return on equity (ROE) and return on assets (ROA) were the proxies for Profitability. Augmented Dickey Fuller (ADF) stationary test model was used to test for a unit root in a time series of the research variables and then testing hypothesis by using regression analysis. The empirical results show that an increase in the quick ratio and the investment ratio of the available funds leads to an increase in the profitability, while an increase in the capital ratio and the liquid assets ratio leads to decrease in the profitability of the Jordanian commercial banks. The researcher recommends that there is a need for an optimum utilization of the available liquidity in a various aspects of investment in order to increase the banks' profitability, and banks should adopt a general framework of liquidity management to assure sufficient liquidity for executing their operations more efficiently, and they should initiate an analytical study of the evolution rates of liquidity and their ability to achieve a balance between sources and uses of funds.

Das et al. (2015) analyzed better liquidity management depends on the market condition, internal regulations and implementation of these regulations. If banks want to increase the profitability, liquidity should be managed very efficiently. This research is conducted by considering the banking condition and it proves that excess liquidity reduces the profitability. Several techniques have been used to find out this truth.it recommended to analyze the deposit and advancement policy the bank which would focus on maintaining the liquidity of the bank.

Rehaman et al (2015) investigated the growth and survival of business houses hinges in the liquidity and profitability. The dexterity to lever between the two domains is of paramount significance for the financial managers. The current study made an earnest endeavor to investigate the relationship between liquidity and profitability of companies listed in Saudi Stock Exchange (Tadawul). The study encompassed 99 listed companies in (Tadawul). The data were collected from audited annual financial statements of listed

companies for a period of five years from 2008 to 2012. The profitability facets of the companies were represented by the variables, namely, return on assets (ROA) and return on equity (ROE). The liquidity of the companies was gauged by current ratio, quick ratio and the absolute liquid ratio. The overall results revealed that there is only one positive significant relationship 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 quick ratio (QR) & cash ratio (CR) of the companies in Saudi Arabia. Likewise in the case of return on equity (ROE), there is insignificant relationship with the three selected independent variables, namely, current ratio (CR), quick ratio (QR) and cash ratio (CR). This study suggested for using regression and correlation technique to find the relationship between liquidity and profitability.

Alshatti (2015) investigated that there is relationship between the liquidity management on profitability in the Jordanian commercial banks during the period (2005 – 2012). The research paper taking the investment ratio, capital ratio, liquid ratio, net credit facilities to total assets and quick acid ratio as to measure the liquidity management independent variable and return on assets and return on equity to measure the profitability dependent variable. Quantitative approaches and ratio analysis were used to analysis the data. The study explained that the impact of investment and quick ratio is positive on profitability when it measure by return on equity and the impact of capital ratio is also positive when it is measured by return on assets and the impact of other independent variable is negative on the two measure of profitability (return on assets and return on equity).

Salim and Bilal (2016) explained that there is meaningful relationship between the bank's liquid assets to deposits; liquid assets divided by short term liabilities and return on equity. The study found the significant relationship between the bank's loans to total assets, loan to deposit and short term liabilities, Bank's loans – customer bank deposit to total assets and return on assets. The study also found that no meaningful relationship between Omani bank liquidity position and NIM (net interest margin). The data was collected from the financial statement of four banks to examine the relationship between the liquidity and financial performance of five periods of 2010 to 2014. The data

analyzed by using multiple regression analysis. This study suggested for using the more variable of liquidity and profitability as dependent and independent variable to explore the relationship.

Vintila (2016) focused on the relationship between market's liquidity and the real economy, and also on the effects that the banking system could generate, as the basis of the entire financial system. This study started from the assumption that liquidity and profitability are issues of significant impact on companies' stability and development. The analysis was conducted on companies listed on the Bucharest Stock Exchange. In order to observe the changes recorded before the crisis and the subsequent evolution, data were collected for a period of 10 years, from 2005 to 2014. In this paper, it did not focus on testing a certain model, but analyzed the correlations between the studied variables. In the first part of the study, a graphical analysis was conducted regarding the trend of current liquidity and leverage ratios. Also, the effective tax rate was analyzed in order to monitor the impact of tax pressure and changes recorded during the financial crisis. The empirical study was conducted by econometric analysis, using multivariate regression models for unbalanced panel data. Financial performance was approached through accounting measures using return on assets and return on equity. Factors that could influence firm's performance were focused on liquidity and solvency indicators. The results confirmed the statistically significant relationship between the analyzed variables and revealed a negative correlation between liquidity and corporate financial performance.

Khan and Ali (2016) researched the relationship between liquidity and profitability of Commercial banks in Pakistan. The main objective of the study was to find the nature of relationship and the strength of relationship exists between the variables. Correlation and regression were used respectively to find the nature of the relationship and extent of relationship between dependent and independent variables. Secondary data was used for analysis which was extracted from the last five years (2008 - 2014) annual accounts of Habib Bank Limited. After conducting correlation and regression analysis it was found that there is significant positive relationship between liquidity with profitability of the banks. Since, the data of the banking sector was used; hence the results could not be

generalized to other sectors. It has considerable impact on the profitability of commercial banks in Pakistan. With the growing liquidity level to ascertain limit the profitability also increases none of the variable shows negative relationship. Every ratios of liquidity showed a positive relation with all the ratios of liquidity. Therefore, it is suggested that banks should keep considerable amount of their liquid assets in order to get higher rate of profit.

Aliraza (2016) concluded that profitability play very important role in every organization. In banking sector tells about how much we have earn against its expenses and how much we have to bear within a year or more than one year. And this research paper showed the impact of liquidity management on profitability. Liquidity means that easily convertible to cash in other words those assets which are can be converted into cash in short term period. And profitability means revenues more than its total expense is called profitability. And the banking sector of Pakistan is chose as sector and country is Pakistan and there was a significant relationship between liquidity and profitability eight 8 banks financial reports were taken and 8 years data were taken from 2004 to 2015 for this research paper and the banks were selected bank of Punjab, allied bank, united bank, askari bank, alfalah bank, meezan bank, Jahangir saddiqui bank and Muslim commercial bank limited were selected. Pooled analysis was used to summarize the data of correlation and regression. There was a short time to collect data more than eight banks and 8 years data and further it is suggested that new researcher can take more than eight 8 banks and can take more than 8 years data from financial reports and also can take other formulas in profitability and liquidity like quick ratio, return on equity, return on investment and net profit margin as for further research and also can take other ratios as dependent and independent variable in different sectors.

Maqsood et al. (2016) explained that there is significant impact of liquidity on bank profitability in the banking sector. The data that is used in this is taken from financial statement of 8 different banks from 2004 to 2015. The regression and correlation technique were used in this study. To look the liquidity it used the current and cash ratio as independent variable and to measure the profitability uses the return on assets as

dependent variable. It suggested using scientific tools and more variable to measure the impact of liquidity on profitability.

Nabeel and Hussain (2017) examined the effect of liquidity management on profitability in the banking sector of Pakistan. Liquidity management is independent and profitability is dependent variable. The secondary data used for this study and taking from publish annual report of ten banks (2006-2015). The data was analyzed by using correlation, descriptive statistics and regression techniques. The quick, current, cash, interest coverage and capital adequacy ratios were taken as dimension of liquidity and return on assets, return on equity, and earnings per share as dimension of profitability. The research findings showed that interest coverage, capital adequacy and quick ratio had a positive whereas the cash and current ratio had negative relationship with bank's profitability. The data was taken from annual reports of ten banks from 2006-2015. The results showed that most liquidity ratios had positive and some liquidity ratios had negative relationship with the bank's profitability. The findings of such study clarify that interest coverage ratio had positive and significant relationship with banks profitability when it analyzed with return on assets and return on equity. The capital adequacy ratio had positive and significant relationship with return on equity and earning per share. The quick ratio had positive relationship with profitability. The current ratio suggested the positive but insignificant relationship when look the relationship with return on assets. And current ratio suggested the negative and significant relationship with return on assets and negative and insignificant with earning per share. Therefore, the overall results explained that liquidity management has positive related with banks profitability.

Review of Thesis

Karki (2013) prepared thesis report on "Liquidity and profitability position in commercial banks in Nepal" which included SCBL, HBL, NABIL, EBL, and NIBL with the objective to examine the liquidity and profitability position of the commercial banks of Nepal. This study investigated followings findings.

1. Liquid assets of Nabil is higher than that of SCBL.
2. The liquid assets are higher than that of other sampled bank.
3. In cash reserve ratio, Liquidity position of NIBL is very sound.

4. The average net profit for SCBL is higher. Net profit margin for SCBL is very efficient.

As per this thesis, it would be better if SCBL increased the liquid assets considering the short term liabilities requirement NABIL and SCBL should be cautious enough while maintaining CRR, and thus should not maintain the credibility of the bank. Banks should restructure the portfolio of its investment to achieve higher profit.

Paudel (2014) researched the master's thesis on "Performance Measurement of Joint Venture Commercial Banks of Nepal with reference to Standard chartered Bank Limited, Nepal SBI bank, Everest Bank and NABIL Bank Limited". The main objective of his study was to identify the investment policy and strategies followed by the banks under study. The major findings of this study are as follows:

1. NABIL has maintained highest cash and bank balance total deposit ratio among the entire sampled bank under study.
2. All sampled banks have maintained moderate level of investment to total deposit ratio.
3. EBL has a highest EPS, then other banks under study etc.
4. SCBL has the highest mean current ratio whereas NABIL has the poorest.

With the analysis and evaluation of various financial and statistical tools, he recommended that all sampled banks under study should collect more amounts of deposit through variety of deposit schemes and facilities. Moreover, he also suggested SCBL to keep wide vision in investment. Further, he also recommended the banks to invest its funds in share and debentures.

2.2.5.6 Conceptual Framework

Conceptual Framework Figure 2.1

Liquidity		Profitability
Liquidity ratio Quick ratio Capital ratio Investment ratio Interest coverage ratio	→	Return on assets Return on equity Earnings per share
Independent variables		**Dependent variables**
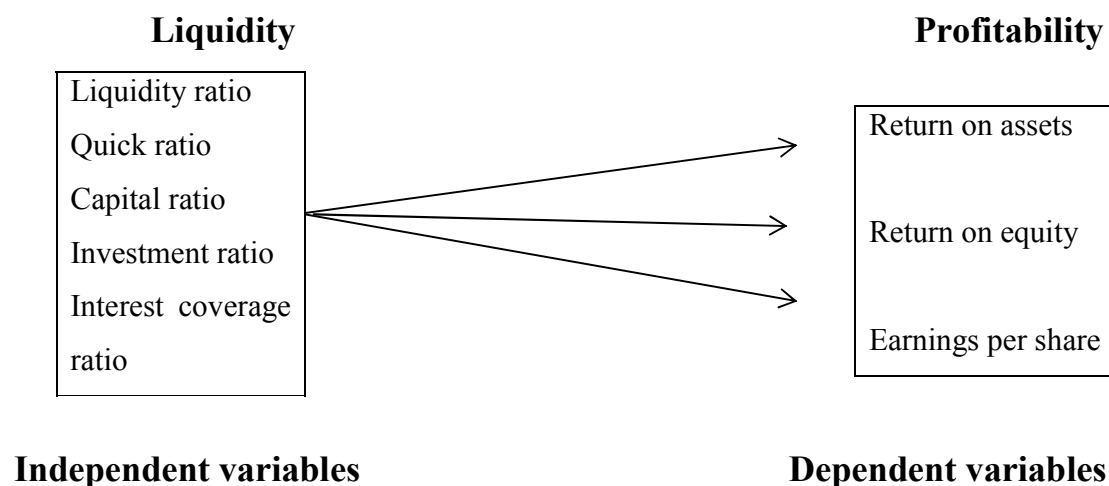
Source: International Journal of Business and Management Invention, ijbmi.org/pp-30

Liquidity refers to the ability of the bank to ensure the availability of funds to meet financial commitments or maturing obligations at a reasonable price at all-time. The conceptual framework can be developed based on above theory or review of literature. To examine the impact of liquidity on profitability of commercial bank, independent variables are liquidity ratio, quick ratio, capital ratio, investment ratio, and interest coverage ratio and dependent variables are return on assets, return on equity and earing per share. The return on assets is a financial ratio which shows the percentage of return on total assets and return on equity is also percentage of return on total shareholder's equity. Then, earning per share is earnings available to shareholders divided by number of share outstanding. The liquidity ratio measures the ratio of liquid assets by total assets. Generally, higher the liquidity ratio lower will be the profitability and vice versa. Quick ratio measures the bank's ability to repay short term obligation. And investment ratio is the ratio of loan to deposit. This indicates to the appropriateness of investing the available funds to the bank. Capital ratio can be calculated by dividing capital by total assets. Interest coverage ratio can be calculated earnings before interest and taxes divided by total interest expenses. The relationship between dependent and independent variables are as follows.

Some researcher found that negative relationship between the liquidity ratio and profitability in the Nepalese commercial banks and also capital ratio, interest coverage ratio and quick ratio have positive and significant relationship with banks profitability. Then, there is positive relationship between investment ratio and profitability in the Nepalese commercial bank.

2.3. Research Gap

The impact of liquidity on bank profitability of commercial bank in Nepal has been conducted by few researchers. However, the researcher conducts study according to some randomly selected commercial bank which is not specified the category of bank. They are only concerned with selected sector like private, and joint venture. Nobody has taken into consideration for these sectorial or cluster wise categorization to identify the impact of liquidity on profitability of commercial bank of Nepal. Previous researchers have not taken the latest updated data from annual report of concerned bank from Nepalese context. In international context, various related research between banks of different nations has been taken into consideration.

The previous research is only limited to financial and statistical analysis of commercial banks of Nepal. This study has conducted with considering multiple regression analysis. The previous researcher has been incomplete to show the impact of liquidity on bank profitability of commercial banks; it has only explained the trend that has been established between the liquidity and profitability. This study tries to find out the impact of loan to deposit ratio, profit before interest and tax to interest expenses ratio, capital ratio on profitability, and cash and cash equivalent items to total assets in selected banks and its impact on financial performance of the commercial bank. Liquidity position and its impact on earnings per share have also examined which shows the clear picture of return to shareholder providing by the company. Therefore, this research is broader and is aimed to analyze the impact of liquidity on profitability and liquidity by analyzing their trends using statistical and financial tools to draw the effective conclusion.

The previous researcher had selected sample of banks as randomly but in this study sample has selected on the basis of cluster that government ownership bank, private ownership bank and Joint venture bank. So, this is the research gap of study.

CHAPTER – 3
RESEARCH METHODOLOGY

In this chapter, research methodologies have been developed and discussed. It is very important to have a well-designed research methodology as it helps to improve the degree of accuracy and significant contribution of the research and secondary data is used in this research. It includes the research design, data collection methods, sampling design, research instruments, data processing and data analysis. The sampling design include sampling frame, sampling technique, and sample size.

The research methodology is the general research strategy that outlines the way in which research is to be undertaken and identifies the methods to be used in it. Thus, it is the systematic method of finding solution to a problem that is systematic collection, recording analysis interpretation and reporting of information about various facts of a phenomenon under study. It is the nature and kind of process to be followed in a particular research.

3.1 Research Design

The research design is a blueprint specifying the method to be adopted for gathering and analyzing data. It is a strategy of obtaining information for the purpose of conducting a study and making generalizations about the population. Research designs are the plan, structure, and strategy of investigation conceived so as to obtain answers to research question. The plan is the overall scheme or program of the research. It includes an outline of what the investigator will so from writing the hypotheses and their operational implications to the final analysis of data (Kerlinger, 1986).

Research design is a basic and systematic plan which is used for collecting and utilizing data in order to obtain the desired information (Zikmund, 2013). Before examining the types of research designs, it must be clearly defined the role and purpose of the research design. The purpose of the research design is to provide a plan of study which allows accurate assessment of cause and effect relationships between the dependent variable which is profitability while the independent variables are liquidity ratio, capital ratio,

quick ratio, interest coverage ratio, investment ratio ensuring that the research design fix into the whole research process.

There are different types of research design such as qualitative research and quantitative research; it is not limited to a particular type of research. In this research paper, it used quantitative research as it present the numerical data to conduct the study. Quantitative research gathers all the data in numerical form which can be put into categories of measured in units of measurement. Here to achieve the specific objective of the study, descriptive research design has been carried out in terms of liquidity and profitability of Nepal Bank Limited, Agriculture Development Bank Limited, Nabil Bank Limited, and Sunrise Bank Limited, Nepal Investment Bank Limited and Standard Chartered Bank Limited.

3.2 Sources and Types of Data

Data is important for analyzing of examining something that someone wishes to know. It helps to perform the analysis which is showed the pattern of the profitability over the particular period happens in Nepal. For this study, data will be collected from secondary sources on annual basis from the financial report of concerned commercial bank. The secondary data is cheaper and economical which saves efforts and expenses. It is time saving due to it can be more quickly obtained than the primary data. In additional, the secondary data may also be available when primary data cannot be obtained at all. These published and unpublished sources are:

- Financial statement of concerned bank
- Annual report of the bank
- Different articles and journal published by these banks and other articles.
- Related bulletins, reports, periodically published by various government bodies and economic news, financial times, business news and unpublished thesis report.

3.3 Population and Sampling

In present day, there are 28 commercial banks operating in Nepal. It all includes the population. Among them, only six commercial banks have been selected for studying on impact of liquidity on profitability of Nepalese commercial bank. Sample size means the

number of observations in a population to be studied. Six commercial bank are selected on based of cluster sampling method where cluster includes first established government bank, first established private joint venture bank, and first established private bank. From each cluster, two commercial banks have been taken as sample and also based on data availability and applying the convenience sampling method to be studies the impact of liquidity on bank profitability of Nepalese commercial bank. The Nepal bank limited and agricultural development banks are taken from first established government bank of Nepal and Nepal Investment Bank Limited and Standard Chartered Bank Limited are selected as a first established joint venture bank from private sector and Nabil bank limited and Sunrise Bank Limited are selected as a first established private commercial bank of Nepal. They are also selected based on data availability to analyze the impact of liquidity on bank profitability of Nepalese commercial banks. Six years data will be taken into consideration for the study from 2011/2012 to 2016/2017.

Sample Size of Commercial Banks

S.N	Commercials Banks	Total	Sample Size
1.	Government Banks	3	2
2.	Joint-Venture Banks	6	2
3.	Private Banks	19	2
Total		28	6

3.4 Research Instrument/ Method of Data Analysis

In order to ascertain real financial picture of any company, various analytical tools can be used. The tools and methods should be used according to available of data, nature of statement which gives the fruitful research results. It will help to achieve research objective with these financial tools and statistical tools and technique. They are:

3.4.1 Financial Tools

Financial ratios are calculated to examine the liquidity position of the commercial banks. It is the relationship between financial variables contained in the financial statement (i.e., balance sheet and income statements). It helps the stakeholders to spot out the financial strength and weakness of the bank. There are several financial tools, which can be applied in order to analyze the liquidity position and profitability of commercial banks. Ratio analysis is one of the most commonly used techniques of financial statement analysis. This study includes the following ratios.

Liquidity Ratio

This ratio measures the ratio of liquid assets by total assets. In other word, it is a firm's ability to satisfy its short term commitments. Liquid assets includes cash & equivalent and cash reserve at the central bank, short-term deposits in banks and other government and non-government guaranteed securities as a percentage of total bank assets. Liquidity risk is one of the types of risk for banks; when banks hold a lower amount of liquid assets they are more vulnerable to large deposit withdrawals. Therefore, liquidity risk is estimated by the ratio of liquid assets to deposit and liquid asset to total asset. It can be computed as follows:

$$\text{Acid - Liquid Assets} = \frac{\text{Acid} - \text{Liquid Assets}}{\text{Total Assets}}$$

Quick Ratio

Quick ratio measures the bank's ability to repay short term obligation during a very limited period (a few days). Quick ratio can be calculated by dividing the difference of current assets and inventory by current liabilities. Bank profitability is the ability of a bank to generate revenue in excess of cost, in relation to the bank's capital base. This study sought to find out whether liquidity through quick ratio has significant impact on Jordanian banks profitability through (ROA). Quick ratio measures of short – term solvency of a firm. Quick ratio is defined as quantitative relationship between quick assets and current liabilities. It can be calculated as follows.

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

Where, Quick Assets = Current Assets – Inventory

Investment Ratio

Loan to deposit is the most important ratio to measure the liquidity condition of the bank. Loan means the advances for the conventional banks. Banks with low LDR is considered to have excessive liquidity, potentially lower profits, and hence less risk as compared to the bank with high LDR. However, high LDR indicates that a bank has taken more financial stress by making excessive loan and also shows risk that to meet depositors. The investment ratio indicators to the appropriateness of investing the available funds to the bank which derived from deposits to need the demand of credited loans and advancement.it can be computed as follows.

$$\text{Investment Ratio} = \frac{\text{Total loan}}{\text{Total deposit}}$$

Capital Ratio

It measures the financial strength of a bank and indicates the extent of financial stability at the bank. Capital can be calculated by dividing capital by total assets. The equity to asset ratio measures how much of bank's assets are funded with owner's funds and is a proxy for the capital adequacy of a bank by estimating the ability to absorb losses. So it can be calculated as follows.

$$\text{Capital ratio} = \frac{\text{Total capital}}{\text{Total Assets}}$$

Interest Coverage Ratio

The interest coverage ratio is a debt ratio and profitability ratio used to determine how easily a company can pay interest on its outstanding debt. The interest coverage ratio may be calculated by dividing a company's earnings before interest and taxes (EBIT) during a given period by the company's interest payments due within the same period. The interest coverage ratio measures how many times over a company could pay its current interest payment with its available earnings. It can be calculated as follows.

$$\text{Interest Coverage Ratio} = \frac{\text{Earning Before Interest and Taxes}}{\text{Interest Expenses}}$$

The following ratios are used to measure the profitability of a bank.

Return on Assets (ROA)

The return on assets (ROA), which is called the firm's return on total assets, measure the overall effectiveness of management in generating profit with its available assets. The higher the firm's return on assets the better it is doing in operation and vice versa. The higher ratio shows the efficiency financial resources invested in the company's assets to generate profitability. Return on assets (ROA) is a financial ratio that shows the percentage of profit that a company earns in relation to its overall resources (Total assets). This ratio measure for the operation efficiency for the company based on the firm's generated profits from its total assets. It shows the efficient management at using assets to generate earnings.

$$\text{Return on Assets (ROA)} = \frac{\text{Net Income}}{\text{Total Assets}}$$

Return on Equity (ROE)

The return on equity (ROE) measures the return on the owner's investment in the firm. Higher ratio of return on equity is better for owner. ROE is a direct measure of returns to the stockholders. Because rewards to the institution's owners are a key goal for the whole organization, ROE is generally superior to ROA as a measure of profitability. Management may be able to boost ROE simply through greater use of financial leverage that is, increasing the debt to equity capital. It also shows well the firm has utilized the resources of the owners. ROE measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested (Siraj and Pillai, 2012). It can be calculated as follows.

$$\text{Return on Equity (ROE)} = \frac{\text{Net Income}}{\text{Shareholders Equity}}$$

Earnings per Share (EPS)

Earnings per share measures the portion of a company's profit allocated to each outstanding share of common stock, Earing per share serves as an indicator of a company's profitability. EPS is the major indicators to shareholders to know the profitability of the bank. Higher the EPS, Higher is the profitability of the banks which provides the higher return per units of share and lowers the EPS, lower amount is paid to shareholders. It can be calculated as follows.

$$\text{Earnings per Share} = \frac{\text{Net Income} - \text{Dividends on preferred stock}}{\text{Average Outstanding Shares}}$$

3.4.2 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, Σx = sum of all values of the observations

n = Number of observation and x = Value of variables

B) Standard Deviation (S.D)

Standard deviation (s.d.) is defined as the positive square root of the mean of the square of the deviations taken from the A.M. and denoted by (ϭ). The most useful and frequently used measure of dispersion is the s.d. or root-mean square deviation. It can be calculated as follows.

$$\text{ϭ} = \sqrt{\frac{\Sigma \left(X - \overline{X}\right)^2}{n - 1}}$$

Where, ϭ = Standard deviation

$(X - \overline{X})^2$ = Sum of the square of mean deviation

n = No. of observation

C) Coefficient of Variation (C.V)

The relative measure of dispersion based on standard deviation is called coefficient of standard deviation and it is standard deviation divided by the expected return. It shows the risk per unit of return. It can be computed as follows.

$$C.V. = \frac{\sigma}{\overline{x}} x 100\%$$

Where, σ = Standard Deviation and $\overline{X}$ = average mean.

D) Correlation Coefficient (r)

The correlation is a statistical tool which studies the relationship between two variables and correlation analysis involves methods and techniques used for studying and measuring the extent of the relationship between the two variables" (Ibid: 510). Its value lies between +1 and − 1. Correlation analysis enables to have an idea about the degree and direction of the relationship between the two variables under study. However, it fails to reflect upon the cause and effect relationship between the variables. The coefficient of correlation, denoted by r is computed as under

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{[n\sum x^2 - \sum(x)^2][n\sum y^2 - \sum(y)^2]}}$$

E) Coefficient of Determination (r²)

The square of multiple correlation coefficients is known as the coefficient of multiple determinations that is r^2. It means that….% of the goodness of fit in regression line. Therefore, higher the degree, more the confidence in cost estimation. In other words,….% means the total variation of total cost is due to change in levels of activities and remaining in due to other factors other than the independent variable. It can be calculated as follows:

$$r = r * r$$

F) Regression Analysis

Regression is a statistical method for investing relationships between the variables by the establishment of an approximate functional relationship between them. It is considered as a useful tool for determining the strength of relationship between two (simple regression) or more (multiple regression) variables. It helps to predict or estimate the value of one variable when the value of other variable/variables is known. The multiple regressions model can be written as:

$$ROE = a + b_1 LR + b_2\ CR + b_3 QR + b_4 ICR + b_5 IR + E$$
$$ROA = a + b_1 LR + b_2\ CR + b_3 QR + b_4 ICR + b_5 IR + E$$
$$EPS\ \ = a + b_1 LR + b_2\ CR + b_3 QR + b_4 ICR + b_5 IR + E$$

In above this model, ROE, ROA, and EPS measure the profitability of bank which variable are dependent and a is constant and b_1, b_2, b_3, b_4, and b_5 are regression coefficient and LR is liquidity ratio, QR is quick ratio, CR is capital ratio and IR is investment ratio and ICR is interest coverage ratio. They are independent variable. And E is error term.

G) Standard Error (S.E)

The statistical measures which is used to study the degree of variability between actual and estimated value of dependent variable. It will measure the variability and scatterness of the observed values around the multiple regression line. The lesser the value of the standard error of estimate the better is the model fitted.

$\sigma 1.23$ = Standard error of estimate for dependent variable X1 on independent variable X2 & X3.

$$S.E = \sqrt{\frac{\sum x1^2 - a\sum x1 - b1\sum x1x2 - b2\sum x1x3}{n-3}}$$

CHAPTER - 4
PRESENTATION AND ANALYSIS OF DATA

This chapter entitled "Presentation and Analysis of Data" is an important chapter and has been organized to present the result and analyze them properly. The basic objective of this study is to observe and analyze the relationship between liquidity and profitability position and impact of liquidity on profitability Nepalese commercial bank of NBL, ADBL, SCBL, NIBL, NABIL and SBL which are sampled commercial bank of government, joint venture, and private commercial bank respectively. The presentation and analysis of data in this study have been done through the help of financial statements and annual report of the year from FY 2011/12 to FY 2016/17.

This chapter provides a mechanism for meeting the basic objectives as stated earlier in the first chapter of the study. The study has followed the methodology as described in the third chapter in order to attain the objectives. Data collected for the analysis of relationship between liquidity and profitability position and impact of liquidity on profitability of NBL, ADBL, SCBL, NIBL, NABIL and SBL are presented in the form of tabular and diagrammatic form and are analyzed with the help of widely accepted tools of financial ratios and statistical tools. But it is informed that all types of financial ratios and statistical tools are not studied under this chapter. Only those ratios are calculated, analyzed and presented which are very significant to research topic. Moreover, statistical tools such as, average mean, standard deviation, co-efficient of variation, multiple correlation co-efficient, multiple regression analysis have been used to analyze the data.

Commercial banks require liquidity to meet deposit withdrawals and loan demand of customer. Liquidity is also required for the purpose of meeting cash reserve ratio (CRR) standard prescribed by NRB. The commercial banks should ensure that they do not have a liquidity problem and should ensure that it does not have excess liquidity as well. They should also focus on profitability to long term sustain in the market. So, quantitative data analysis of relationship between liquidity and profitability and impact of liquidity on profitability Nepalese commercial bank is observed as follows.

4.1 Liquidity Position

Liquidity is crucial to run the bank and financial institutions. Commercial bank should consider the maintaining proper liquidity to meet the loan demand and deposit withdrawals. So it can be observed by following financial ratio to examine the position of liquidity and its impact on profitability to get the proper results as per objective of the study.

4.1.1 Liquidity Ratio

This ratio measures the relation between liquid assets and total assets in the commercial bank. Liquid assets include cash and cash equivalent and cash reserve at the central bank, short- term deposits in banks and other government and non - government guaranteed securities as a percentage of total assets. It is computed as under:

Table 4.1

Liquidity Ratio of Sampled Commercial Bank

Year	NBL	ADBL	SCBL	NIBL	NABIL	SBL
2011/12	24.37%	26.01%	39.24%	27.65%	20.73%	27.07%
2012/13	30.54%	23.89%	31.22%	26.66%	21.07%	27.16%
2013/14	32.49%	20.14%	36.54%	30.26%	21.80%	27.63%
2014/15	24.06%	21.96%	43.52%	22.44%	22.85%	11.94%
2015/16	27.42%	15.32%	26.58%	17.69%	19.69%	12.40%
2016/17	21.22%	16.90%	41.48%	14.42%	17.55%	15.41%
Average mean	26.68%	20.70%	36.43%	23.19%	20.62%	20.27%
Standard Deviation	4.27%	4.09%	6.45%	6.16%	1.84%	7.78%
C.V	0.16	0.20	0.18	0.27	0.09	0.38

Source: Appendix 1I and 1II

The table 4.1 presents that the liquidity ratio of NBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, FY 2016/17 are 24.37%, 30.54%, 32.49%, 24.06%, 27.42%, and 21.22% respectively. Its average liquidity ratio is 26.68%, standard deviation is 4.27% and coefficient of variation is 0.16. The liquidity ratio of ADBL in the

FY 2011/12 to FY 2016/17 are 26.01%, 23.89%, 20.14%, 21.96%, 15.32%, and 16.90% respectively. Its average liquidity ratio is 20.70%, standard deviation is 4.09% and coefficient of variation is 0.20 which are reflected by government ownership bank. Then, the liquidity ratio for SCBL in FY 2011/12 to FY 2016/17 are 39.24%, 31.22%, 36.54%, 43.52%, 26.58%, and 41.48% respectively. Its average liquidity ratio is 36.43%, standard deviation is 6.45% and coefficient of variation is 0.18. The liquidity ratio of NIBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 27.65%, 26.66%, 30.26%, 22.44%, 17.69%, 14.42% respectively. Its average liquidity ratio is 23.19%, standard deviation is 6.16% and coefficient of variation is 0.27. The liquidity ratio of NABIL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 20.73%, 21.07%, 21.80%, 22.85%, 19.69%, 17.55% respectively. Its average liquidity ratio is 20.62%, standard deviation is 1.84% and coefficient of variation is 0.09. At last, the liquidity ratio of SBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, FY 2016/17 are 27.07%, 27.16%, 27.63%, 11.94%, 12.40%, and 15.41% respectively. Its average mean is 20.27% and standard deviation is 7.78% and coefficient of variation is 0.38.

Figure 4.1

Liquidity Ratio of Sampled Commercial banks
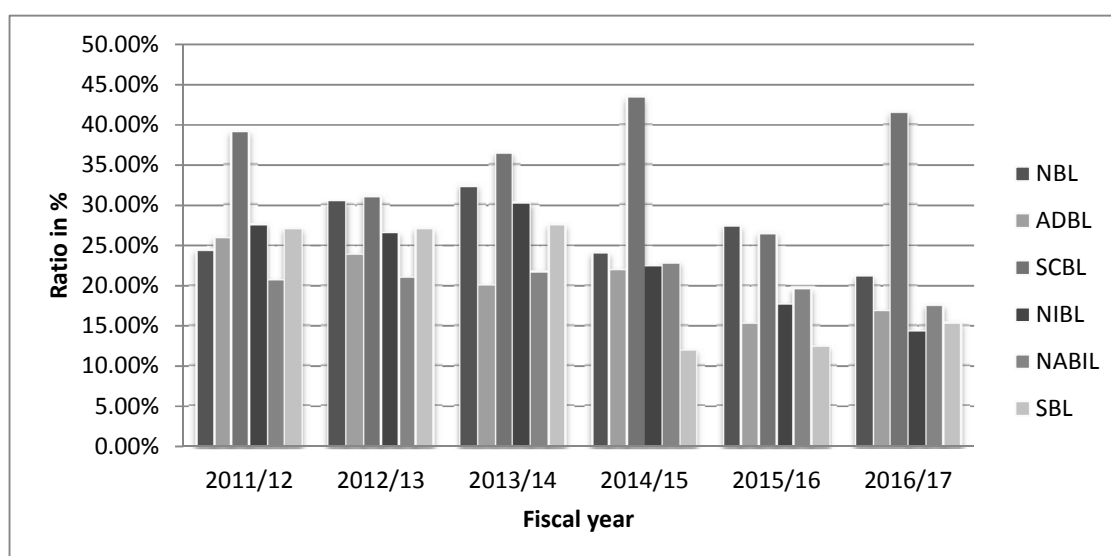
 Based on above results, higher average mean indicates the good liquidity position of commercial bank and lower average mean shows the bad liquidity position in bank comparatively. Government ownership bank NBL has a good liquidity position than ADBL by observing average mean. Joint venture commercial bank SCBL has good liquidity position than NIBL. NABIL has good liquidity position as compared to SBL by observing the average liquidity ratio.

Similarly higher the coefficient of variation reveals that it is more fluctuating in maintaining the liquidity in cash and cash equivalent items to run the daily operation of the bank. On the other hand, lower coefficient of variation shows that it is more consistent in maintaining the liquidity in the bank. C.V of Government ownership bank NBL has a lower which shows the more consistent in maintaining the liquidity than ADBL. Similarly SCBL has lower C.V than NIBL through the joint venture commercial bank. Such lower C.V shows the more consistent in maintaining the cash or liquidity than NIBL. In private Nepalese commercial bank, NABIL has lower coefficient variation which shows that more consistent in maintaining the liquidity position in the market as compared to SBL. Among this sampled commercial banks, NABIL has maintaining more consistent liquidity.

4.1.2 Quick Ratio

Quick ratio measures the bank's ability to repay short-term obligations during a very limited period. It is computed as follows.

Table 4.2

Quick Ratio of Sampled Commercial Bank

Year	NBL	ADBL	SCBL	NIBL	NABIL	SBL
2011/12	0.64x	0.79x	0.53x	0.51x	0.35x	0.51x
2012/13	0.75x	0.70x	0.40x	0.42x	0.18x	0.59x
2013/14	0.75x	0.35x	0.46x	0.46x	0.33x	0.53x
2014/15	0.45x	0.57x	0.52x	0.36x	0.33x	0.28x
2015/16	0.44x	0.42x	0.33x	0.25x	0.28x	0.30x

2016/17	0.41x	0.58x	0.79x	0.31x	0.30x	0.48x
Average mean	0.57x	0.57x	0.51x	0.38x	0.29x	0.45x
Standard Deviation	0.16	0.16	0.16	0.10	0.06	0.13
C.V	27.70%	28.94%	30.99%	25.56%	21.03%	28.54%

Source: Appendix 2I and 2II

The table 4.2 presents that the quick ratio of NBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 0.64x, 0.75x,0.75x, 0.45x, 0.44x, and 0.41x respectively. Its average quick ratio is 0.57x, standard deviation is 0.16x, and coefficient of variation is 27.70%. The quick ratio of ADBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 0.64 are 0.79x, 0.70x, 0.35x, 0.57x, 0.42x and 0.58x. Its average quick ratio is 0.57x, standard deviation is 0.16x and coefficient of variation is 28.94%. then, the quick ratio of SCBL in FY 2011/12 to FY 2016/17 are 0.53x, 0.40x, 0.46x, 0.52x, 0.33x, 0.79x respectively. Its average mean is 0.51x, standard deviation is 0.16x and coefficient of variation is 30.99 %. Similarly, the quick ratio for NIBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 is 0.51x, 0.42x, 0.46x, 0.36x, 0.25x, 0.31x respectively. Its average quick ratio is 0.38x, standard deviation is 0.10x and coefficient of variation is 25.56%. They are sample of joint venture bank. The quick ratio of NABIL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 0.35x, 0.18x, 0.33x, 0.33x, 0.28x, 0.30x respectively. Its average quick ratio is 0.29x, standard deviation is 0.06x and coefficient of variation is 21.03%. Similarly, the quick ratio of SBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 0.51x, 0.59x, 0.53x, 0.28x, 0.30x, and 0.48x respectively. Its average quick ratio is 0.45x, standard deviation is 0.13x and coefficient of variation is 28.54 % which are reflected by private commercial bank in Nepal.

Figure 4.2

Quick Ratio of Sampled Commercial Bank
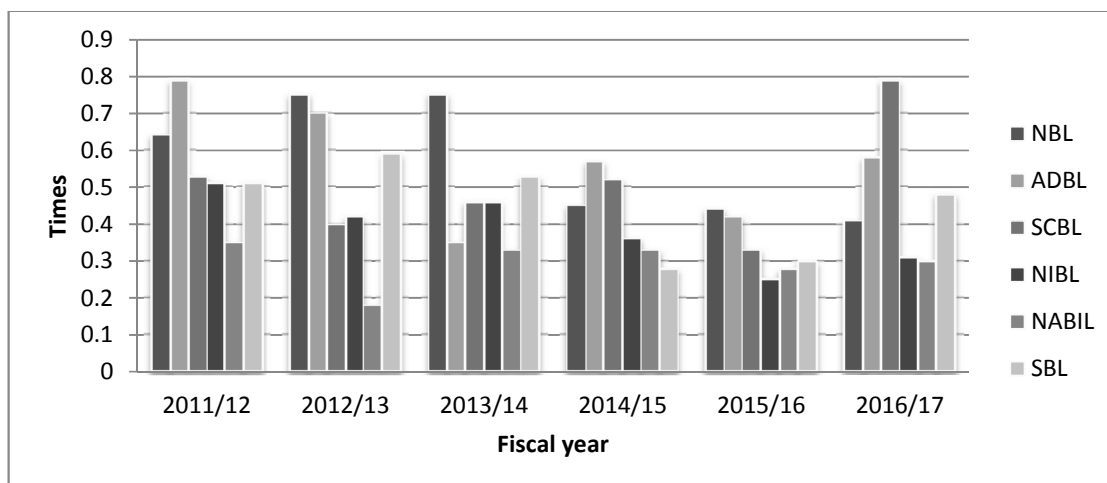
Based on above figure 4.2, the average quick ratio for each sampled commercial banks are less than 1. Generally, such ratios for commercial bank don't have ability to pay the short term obligation. This is because, they have more inventory or prepaid expenses. So, it does not mean that they have been going to liquidation or problem of solvency risk. According to average mean of NBL and ADBL, both have equal consistency of quick ratio maintaining by this bank. By observing joint venture bank, SCBL has good liquidity position considered to average quick ratio. SBL also has a good liquidity position considered to average quick ratio. Among all these bank, NBL and ADBL has a better position of average quick ratio. According to coefficient of variance, NBL has a more consistent in liquidity position as compared to ADBL, NIBL, and NABIL have also good liquidity condition in term of coefficient of variance of quick ratio. Among this entire bank, NABIL has maintained the good liquidity position in terms of coefficient of variance of quick ratio than NIBL, NBL, SBL, ADBL, and SCBL are followed respectively.

4.1.3 Investment Ratio

The investment ratio indicates to the appropriateness of investing the available funds to the bank which derived from deposits to need the demand of credited loans and

advancement. It is computed as total loan divided by total deposit. The result is calculated below.

Table 4.3

Investment ratio of Sampled Commercial Bank

Year	NBL	ADBL	SCBL	NIBL	NABIL	SBL
2011/12	49.37%	91.13%	54.43%	73.03%	75.61%	76.27%
2012/13	56.54%	91.20%	57.84%	74.32%	72.90%	76.19%
2013/14	56.30%	86.78%	56.11%	89.69%	72.55%	74.91%
2014/15	65.35%	89.02%	48.32%	57.40%	62.84%	78.78%
2015/16	68.50%	90.96%	56.17%	78.67%	69.02%	83.00%
2016/17	76.37%	88.37%	61.47%	83.25%	75.59%	83.22%
Average mean	62.07%	89.58%	55.72%	76.06%	71.42%	78.73%
Standard Deviation	9.82%	1.82%	4.34%	11.00%	4.85%	3.62%
C.V	0.16	0.02	0.08	0.14	0.07	0.05

Source: Appendix 3I and 3II

The above table 4.3 shows the results the relationship between total loans to total deposit. The investment ratio of NBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 49.37%, 56.54%, 56.30%, 65.35%, 68.50%, and 76.37% respectively. The average investment ratio is 62.07 % for NBL, standard deviation is 9.82 % and coefficient of variance is 0.16. Similarly the investment ratio of ADBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 91.13%, 91.20%, 86.78%, 89.02%, 90.96%, and 88.37% respectively. Its average investment ratio is 89.58% which is higher as compared to other sampled commercial bank and its standard deviation is 1.82 % and coefficient of variance is 0.02. Then, the investment ratio of joint venture bank SCBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 54.43%, 57.84%, 56.11%, 48.32%, 56.17%, and 61.47% respectively. Its average investment ratio is 55.72%, standard deviation is 4.34% and its coefficient of variance is 0.08%. Similarly the investment ratio of NIBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY

2015/16, and FY 2016/17 are 73.03%, 74.32%, 89.69%, 57.40%, 78.67%, and 83.25% respectively. Its average investment ratio is 76.06% ,standard deviation is 11% and coefficient of variance is 0.14.the investment ratio of NABIL in FY 2011/12 to FY 2016/17 are 75.61%, 72.90%, 72.55%,   62.84% 69.02%, and 75.59%. Its average investment ratio is 71.42%, standard deviation is 4.85% and coefficient of variance is 0.07. The SBL's investment ratio in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 76.27%, 76.19%, 74.91%, 78.78%, 83.00%, and 83.22% respectively. Its average investment ratio is 78.73%, standard deviation is 3.62% and coefficient of variance is 0.05.

Figure 4.3

Investment Ratio of Sampled Commercial Bank
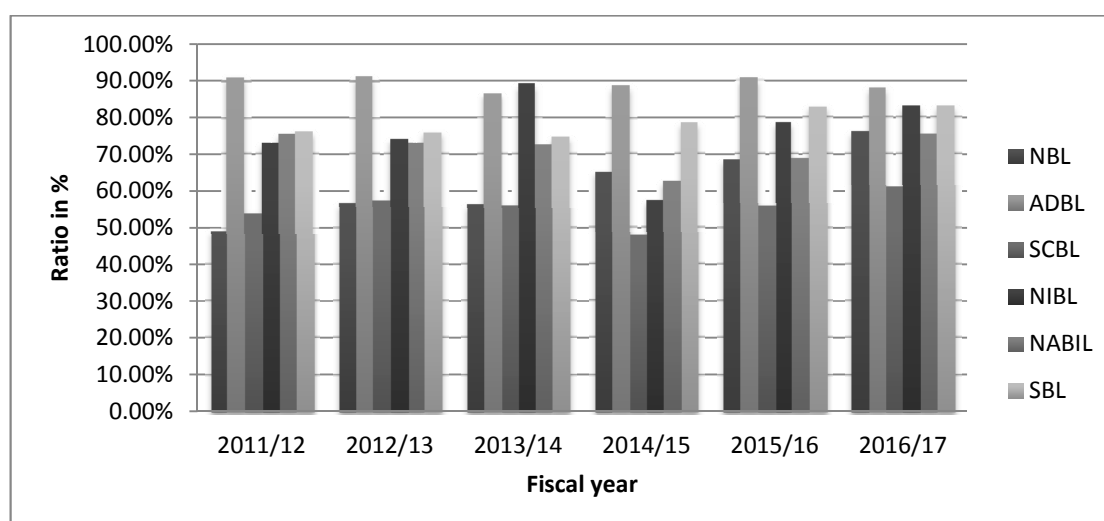
Based on above figure 4.3, government ownership bank ADBL has a higher LDR ratio that investment ratio by observing to average investment ratio this level of ratio is said to be good liquidity management with considering to make a payment for customer and operating the daily activities rather than NBL. NBL has moderate level of liquidity in bank. ADBL has focused on making profit by keeping higher average LDR ratio. Then, joint venture bank NIBL has an effective management of liquidity as compared to SCBL which ensure the better profitability position in the bank. Similarly, SBL has also better liquidity management by observing the average investment ratio. Among them, ADBL

has managed the liquidity considering the profitability based on average LDR ratio. Based on coefficient of variance, ADBL has more consistent in maintaining the liquidity as compared to other sampled joint venture and private bank. SCBL also managed the more consistently in liquidity in joint venture bank as compared to NIBL. Then SBL has also managed the more consistent liquidity management in private ownership bank as compared to NABIL.

4.1.4 Capital Ratio

It measures the relation of capital and assets. It also measures the financial strength a bank and indicates the extent of financial stability at the bank. It can be computed as follows.

Table 4.4

Capital Ratio of Sampled Commercial Bank

Year	NBL	ADBL	SCBL	NIBL	NABIL	SBL
2011/12	94.34%	93.77%	96.19%	98.36%	96.65%	98.27%
2012/13	92.00%	93.29%	96.61%	96.46%	96.39%	98.44%
2013/14	93.21%	94.86%	96.37%	96.59%	95.48%	98.83%
2014/15	92.77%	94.89%	97.42%	97.99%	98.31%	98.52%
2015/16	92.89%	95.00%	97.03%	97.64%	97.45%	98.69%
2016/17	94.07%	97.11%	97.84%	96.92%	97.16%	98.42%
Average mean	93.21%	94.82%	96.91%	97.32%	96.91%	98.53%
Standard Deviation	0.87%	1.32%	0.64%	0.79%	0.97%	0.20%
C.V	0.01	0.01	0.01	0.01	0.01	0.00

   Source: Appendix 4I and 4II

The above table 4.4 shows the results the relationship between total capitals to total assets. The capital ratio of NBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 94.34%, 92.00%, 93.21%, 92.77%, 92.89%, and 94.07% respectively. Its average capital ratio is 93.21%, standard deviation is 0.87% and coefficient of variation is 0.01. Then, the capital ratio of ADBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 93.77%,

93.29%, 94.86%, 94.89%, 95.00%, and 97.11% respectively. The average capital ratio is 96.91%, standard deviation is 0.64% and coefficient of variation is 0.01. The capital ratios of SCBL in the FY 2011/12 to FY 2016/17 are 96.19%, 96.61%, 96.37%, 97.42%, 97.03%, and 97.84% respectively. Its average capital ratio is 96.91%, standard deviation is 0.64 and coefficient of variation is 0.01. Similarly, the capital ratio of NIBL in the fiscal year 2011/12 to 2016/17 are 98.36%, 96.46%, 96.59%, 97.99%, 97.64%, and 96.92% respectively. Its average capital ratio is 97.32%, standard deviation is 0.79 % and coefficient of variation is 0.01.The private bank NABIL has 96.65%, 96.39%, 95.48%, 98.31%, 97.45%, 97.16% capital ratio in FY 2011/12 to 2016/17 respectively. Average capital ratio is 96.91%, standard deviation is 0.97 and coefficient of variation is 0.01. SBL has 98.27%, 98.44%, 98.83%, 98.52%, 98.69%, and 98.42% capital ratio in FY 2011/12 to FY 2016/17 respectively. Its average capital ratio is 98.53%, standard deviation is 0.20% and coefficient of variation is 0%.

Figure 4.4

Capital Ratio of Sampled Commercial Bank
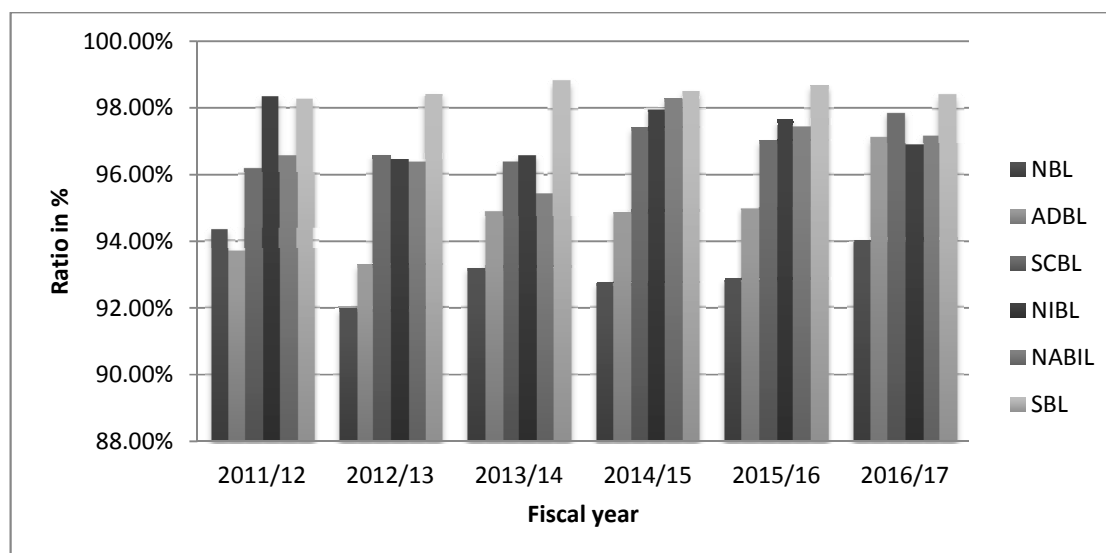
Above figure 4.4 shows the capital structure of each sampled bank. Government ownership bank ADBL has a high capital structure as compared to NBL. NIBL has also high capital structure as compared to SCBL. Then, sunrise has a high capital structure as compared to NABIL observing the average capital ratio. SBL has a more capable in

absorbing loss based on capital. Then, consistencies of capital of government ownership bank and joint venture bank have a same level of consistency. The private bank SBL has very high consistent in relationship of capital to total assets as compared to other sampled bank. SBL has high degree of consistency in maintaining the liquidity, and then other bank followed respectively.

4.1.5 Interest Coverage Ratio

The interest coverage ratio measures how many times over a company could pay its current interest payment with its available earnings. It is computed as follows.

Table 4.5

Interest Coverage Ratio of Sampled Commercial Bank

Year	NBL	ADBL	SCBL	NIBL	NABIL	SBL
2011/12	1.08x	1.87x	3.11x	1.19x	2.14x	0.50x
2012/13	1.42x	2.04x	4.16x	1.93x	2.93x	1.07x
2013/14	1.48x	1.52x	3.75x	1.99x	2.34x	1.30
2014/15	1.44x	2.35x	4.40x	1.99x	2.69x	1.48x
2015/16	3.51x	2.03x	3.90x	2.37x	2.67x	2.37x
2016/17	3.58x	1.88x	2.87x	2.34x	2.46x	3.39x
Average mean	2.08x	1.95x	3.70x	1.97x	2.54x	1.69x
Standard Deviation	113.85%	27.29%	59.66%	42.69%	28.15%	103.18%
C.V	54.62%	14.00%	16.13%	21.69%	11.09%	61.22%

Source: Appendix 5I and 5II

The above table 4.5 shows the interest coverage ratio of sampled bank. NBL has 1.08x, 1.42x, 1.48x, 1.44x, 3.51x, and 3.58x in FY 2011/12 to FY 2016/17 respectively. Its average interest coverage ratio is 2.08x, standard deviation is 113.85 %, and 54.62% is coefficient of variation. The interest coverage ratio of ADBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 1.87x, 2.04x, 1.52x, 2.35x, 2.03x, and 1.88x respectively. Its average ratio is 1.95x, standard deviation is 27.29% and coefficient of variation is 14%. The ratio of SCBL in the fiscal year 2011/12

to FY 2016/17 are 3.11x, 4.16x, 3.75x, 4.40x, 3.90x, and 2.87x respectively. Its average mean is 3.70x, standard deviation is 59.66% and coefficient of variation is 16.13%. The interest coverage ratios of NIBL in the FY 2011/12 to FY 2016/17 are 1.19x, 1.93x, 1.99x, 1.99x, 2.37x, and 2.34x respectively. Its average mean is 1.97x and standard deviation is 42.69% and coefficient of variation is 21.69%. NABIL has a 2.14x, 2.93x, 2.34x, 2.69x, 2.67x, and 2.46x in FY 2011/12 to 2016/17 respectively. Its average mean is 28.15% and coefficient of variation is 11.09%. SBL has a 0.50x, 1.07x, 1.30x, 1.48x, 2.37x, and 3.39x interest coverage ratio in FY 2011/12 to FY 2016/17 respectively. Its average ratio is 1.69x and its coefficient of variation is 61.22%.

Figure 4.5

Interest Coverage Ratio of Sampled Commercial Bank
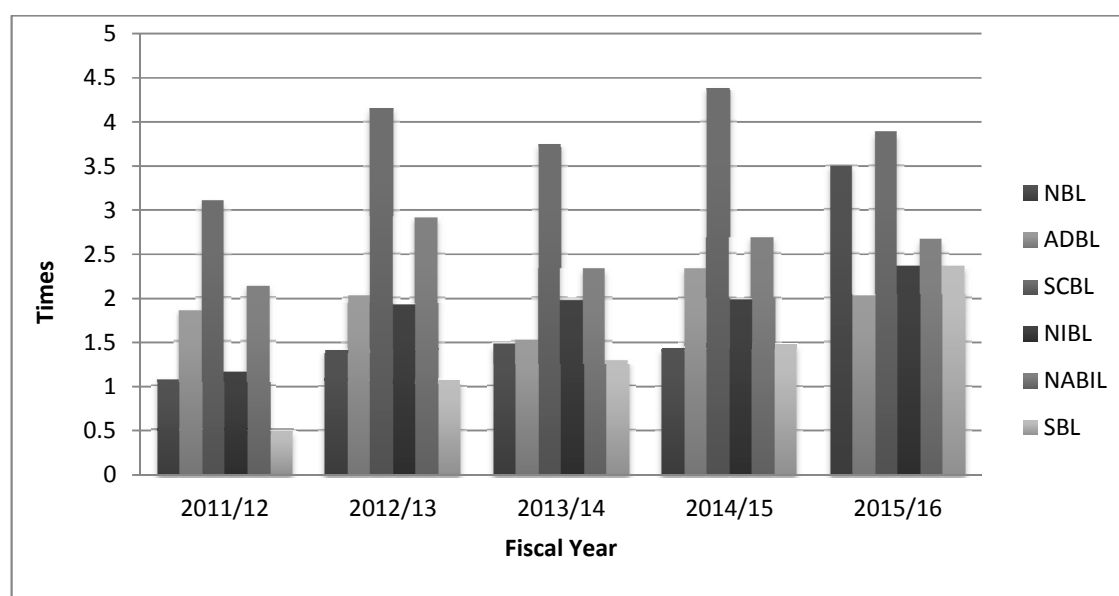
Above figure 4.5 presents the interest coverage ratio of all sampled bank government ownership bank, joint venture bank and private bank. NBL has a better condition liquidity by observing the interest coverage ratio as compared to ADBL. Similarly, ADBL has more consistency of interest coverage ratio to measure the liquidity as compared to NBL of government bank. Similarly SCBL and NABIL have better liquidity position based on average interest coverage ratio. Coefficients of variation for NABIL and SCBL from private bank and joint venture bank have more consistency of liquidity

condition. So, they have a good liquidity position in private and joint venture bank. Among these banks, NABIL has more consistent results by observing the interest coverage ratio then ADBL, SCBL, NIBL, NBL and SBL are followed respectively.

4.2 Profitability Ratio

The profitability ratio is the operational efficiency ratio of commercial bank. It is also efficiency of management to increase the performance of the bank. These performance ratios are as follows.

4.2.1 Return on Assets (ROA)

Return on assets (ROA) is a financial ratio that shows the percentage of profit that a company earns in relation to its overall resources (total assets). It can be computed as follows.

Table 4.6

ROA of Sampled Commercial Bank

Year	NBL	ADBL	SCBL	NIBL	NABIL	SBL
2011/12	0.30%	2.90%	2.80%	1.58%	2.68%	0.52%
2012/13	1.07%	2.97%	2.67%	2.62%	3.03%	1.19%
2013/14	0.92%	1.72%	2.51%	2.25%	2.66%	0.83%
2014/15	0.55%	3.46%	1.98%	1.88%	1.81%	1.26%
2015/16	2.79%	2.20%	1.98%	1.97%	2.21%	1.62%
2016/17	2.78%	2.02%	1.84%	2.06%	2.57%	1.66%
Average mean	1.40%	2.55%	2.30%	2.06%	2.49%	1.18%
Standard Deviation	1.11%	0.67%	0.41%	0.35%	0.43%	0.45%
C.V	0.79	0.26	0.18	0.17	0.17	0.38

Source: Appendix 6I and 6II

Above table 4.6 presents the return on assets of each sampled commercial bank. So, ROA of NBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 0.30%, 1.07%, 0.92%, 0.55%, 2.79%, and 2.78% respectively. The average

mean is 1.40%, standard deviation is 1.11% and coefficient of variation is 0.79. The ROA of ADBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 2.90%, 2.97%, 1.72%, 3.46%, 2.20%, and 2.02% respectively. The average ratio of ROA is 2.55% and standard deviation is 0.67 and coefficient of variation is 0.26. The ROA of joint venture bank SCBL in FY2011/12 to 2016/17 are 2.80%, 2.67%, 2.51%, 1.98%, 1.98%, and 1.84% respectively. The average mean is 2.30% and standard deviation is 0.41% and coefficient of variation is 0.18. Then, ROA of NIBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 1.58%, 2.62%, 2.25%, 1.88%, 1.97%, and 2.06% respectively. Its average mean is 2.06% and standard deviation is 0.35% and coefficient of variation is 0.17. The ROA of NABIL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 2.68%, 3.03%, 2.66%, 1.81%, 2.21%, and 2.57% respectively. Its average mean is 2.49% and standard deviation is 0.43%, and coefficient of variation is 0.17. ROA of SBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are 0.52%, 1.19%, 0.83%, 1.26%, 1.62%, and 1.66% respectively. Average ROA of SBL is 1.18% and standard deviation is 0.45 % and coefficient of variation is 0.38.

The figure 4.6 presents the comparative analysis of return on assets of government bank, joint venture bank, and private respectively. ADBL has a better average return on assets as compared to NBL. ADBL have been utilizing the assets properly than NBL. Similarly SCBL also has better ROA as compared to NIBL, so, SCBL generates the more profit by utilizing total assets as compared to NIBL. In private sector, NABIL has better profitability position as compared to SBL. NABIL has been generating more return on assets by utilizing total assets. Based on average ROA, ADBL has better profitability position. Then NABIL, SCBL, NIBL, NBL and SBL are followed respectively. Based on coefficient of variation, NABIL and NIBL has been maintaining the high consistent in ROA. NBL has a more fluctuation in maintaining the ROA. So, private and joint venture bank has consistent profitability position in the market.

Figure 4.6

ROA of Sampled Commercial Bank
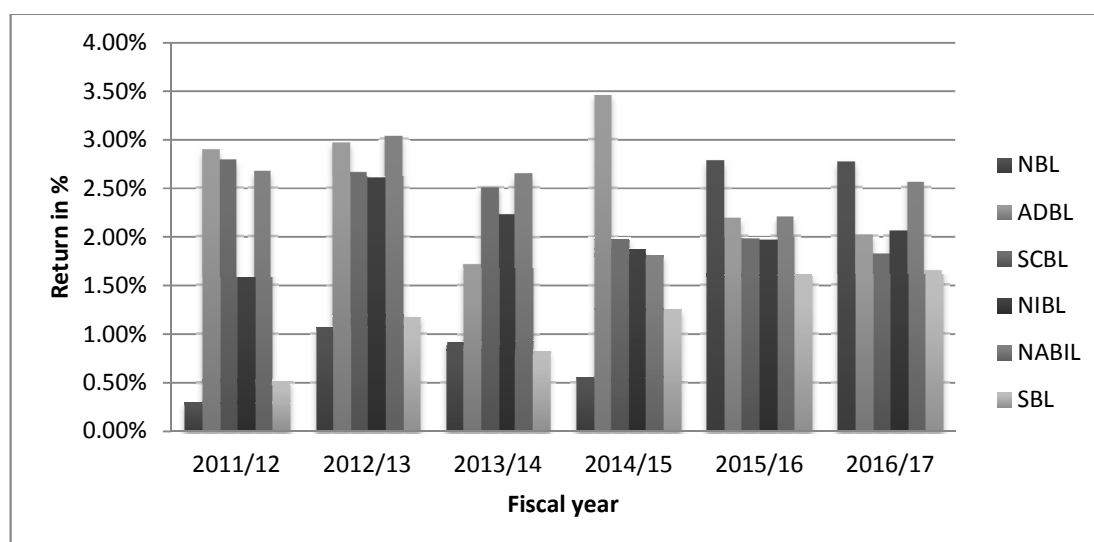
4.2.2 Return on Equity (ROE)

The amount of net income returned as a percentage of shareholders equity or owner's investment in the firm. It is computed as follows.

Table 4.7

ROE of Sampled Commercial Bank

Year	NBL	ADBL	SCBL	NIBL	NABIL	SBL
2011/12	-6.07%	13.97%	28.36%	17.18%	31.12%	5.17%
2012/13	-361.36%	16.10%	26.38%	27.28%	33.17%	12.71%
2013/14	21.42%	10.09%	26.27%	24.47%	30.36%	9.15%
2014/15	12.63%	21.66%	21.17%	20.00%	22.07%	14.06%
2015/16	42.94%	13.60%	17.18%	15.66%	24.32%	15.48%
2016/17	27.23%	11.77%	11.98%	16.65%	25.63%	12.52%
Average mean	-43.87%	14.53%	21.89%	20.21%	27.78%	11.52%
Standard Deviation	156.38%	4.05%	6.36%	4.71%	4.38%	3.76%
C.V	-3.56	0.28	0.29	0.23	0.16	0.33

 Source: Appendix 7I and 7II

The above table 4.7 presents the ROE of all sampled bank, the ROE of NBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are -6.07%, -361.36%, 21.42%, 12.63%, 42.94%, and 27.23% respectively. Its average ROE is -43.87%, standard deviation is 156.38 % which is higher risky for shareholder. Coefficient of Variation is -3.56. The ROE of ADBL in the FY 2011/12 to FY 2016/17 are 13.97%, 16.10%, 10.09%, 21.66%, 13.60%, and 11.77% respectively. Its average ratio is 14.53% and standard deviation is 4.05% and coefficient of variation is 0.28. Similarly, the SCBL's ROE in FY 2011/12 to FY 2016/17 are 28.36%, 26.38%, 26.27%, 21.17%, 17.18%, and 11.98% respectively. Its average ROE is 21.89% and standard deviation is 6.36% and coefficient of variation is 0.29. The ROE of NIBL in FY 2011/12 to 2016/17 are 17.18%, 27.28%, 24.47%, 20.00%, 15.66%, and 16.65% respectively. Its average ratio is 20.21%, standard deviation is 4.71% and coefficient of variation is 0.23. The ROE of NABIL in the FY2011/12 to 2016/17 are 31.12%, 33.17%, 30.36%, 22.07%, 24.32%, and 25.63% respectively. Its average ROE is 27.78% and standard deviation is 4.38 and coefficient of variation is 0.16. Then, ROE of SBL in the FY 2011/12 to 2016/17 are 5.17%, 12.71%, 9.15%, 14.06%, 15.48%, and 12.52% respectively. Its average ratio is 11.52% and standard deviation is 3.76% and coefficient of variation is 0.33.

The figure 4.7 presents the ROE of sampled commercial bank. In government bank NBL has been providing worst return to shareholders. The NBL have faced the great loss. Then ADBL has been providing average rate of return during this period. ADBL has been providing good return to shareholder's as compared to NBL. In joint venture, SCBL has been providing good return to shareholder as compared to NIBL. Since, SCBL has better profitability position. In private bank, NABIL is providing superior return to shareholders as compared to SBL and other commercial bank. Since based on that average return, NABIL has superior profitability position in the market and then SCBL, NIBL, ADBL, SBL, and NBL are followed respectively. Based on coefficient of variation, NABIL has been providing more consistent return to shareholders as compared to other joint venture and government bank. So, it has better profitability position in terms of ROE. NIBL has also provided consistent return to shareholders. Then, NBL's ROE has negative coefficient of variance which have a very worst situation to shareholders.

Figure 4.7

ROE of Sampled Commercial Bank
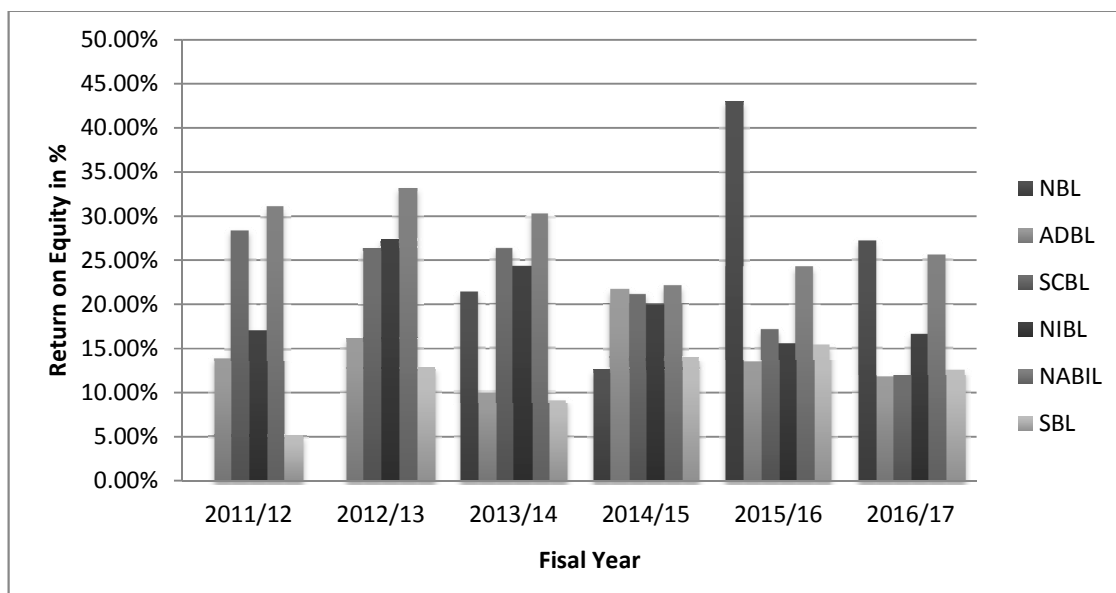
Note: Return on equity (ROE) is not shown in figure 4.7 in FY 2011/12 and 2012/13 due to highly negative figure of shareholders equity.

4.2.3 Earning per Share (EPS)

Earnings per share measures the portion of a company's profit allocated to each outstanding share of common stock. Shareholder gets the amount of return on per share invested by them. It can be computed as follows.

Table 4.8

EPS of Sampled Commercial Bank (per share in Rs)

Year	NBL	ADBL	SCBL	NIBL	NABIL	SBL
2011/12	4.41	45.43	72.60	34.49	83.57	5.52
2012/13	18.88	59.47	65.70	50.82	91.05	13.93
2013/14	17.92	35.46	65.47	46.77	76.12	11.03
2014/15	7.48	90.66	57.38	41.12	57.24	19.14
2015/16	44.59	35.19	45.96	35.16	59.27	23.93
2016/17	38.77	31.59	35.49	33.70	58.41	16.78
Average mean	22.01	49.63	57.10	40.34	70.95	15.05
Standard Deviation	16.36	22.50	13.97	71.7	14.64	64.31
C.V	0.74	0.45	0.24	0.18	0.21	0.43

Source: Appendix 8I and 8II

Above table 4.8 presents the EPS of all sampled bank. The EPS of NBL in the FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, FY 2015/16, and FY 2016/17 are Rs 4.41, Rs.18.88, Rs.17.92, Rs.7.48, Rs.44.59, and Rs.38.77 per share respectively. Its average mean is Rs.22.01 and standard deviation is Rs.16.63 and coefficient of variance (C.V) is 0.74. The EPS of ADBL in FY2011/12 to FY2016/17 are Rs.45.43, Rs.59.47, Rs.35.46, Rs.90.66, Rs.35.19, and Rs.31.59 respectively. Its average ratio is Rs.49.63 and standard deviation is Rs.22.50 and coefficient of variation is 0.45. EPS of SCBL in FY 2011/12 to 2016/17 are Rs.72.60, Rs 65.70, Rs.65.47, Rs.57.38, Rs.45.96, Rs35.49 respectively. Then, the EPS of NIBL in FY 2011/12 to FY 2016/17 are Rs34.49, Rs. 50.82, Rs 46.77, Rs.41.12, Rs.35.16, and Rs 33.70 respectively. Its average EPS is Rs. 40.43, standard deviation is 71.7 and coefficient of variance is 0.18. Then, EPS of NABIL in FY 2011/12 to FY 2016/17 are Rs.83.57, Rs.91.05, Rs.76.12, Rs.57.24, Rs. 59.27, Rs.59.27 and Rs.70.95 respectively. Its average EPS is Rs.70.95, and standard deviation is Rs.14.64 and Coefficient of variance is 0.21. Similarly, EPS of SBL in FY 2011/12 to FY 2016/17 are Rs.5.52, Rs.13.93, Rs.11.03, Rs.19.14, Rs.23.93, and Rs.

16.78 respectively. Its average EPS is Rs.15.05, standard deviation is 64.31 and coefficient of variance is 0.43.

The figure 4.8 presents the earning per share of all sampled bank. Based on average EPS, ADBL has good profitability position as compared to NBL by observing the government ownership bank. EPS of ADBL has more consistent than NBL based on coefficient of variance. Similarly, joint venture bank SCBL has better profitability position in term of EPS as compared to NIBL. Based on coefficient of variance, NIBL has more consistent earnings per share provided to shareholders rather than SCBL. In private Bank, NABIL bank has provided higher EPS than SBL to shareholders. The profitability position of NABIL is very high as compared to other commercial bank. Based on C.V, NABIL has been providing more consistent EPS to shareholders. At last, observing the all EPS of sampled bank, NABIL has provided higher return to shareholders in comparison to other commercial bank, and then followed by SCBL, ADBL, NIBL, NBL, and SBL respectively.

Figure 4.8

EPS of Sampled Commercial Banks
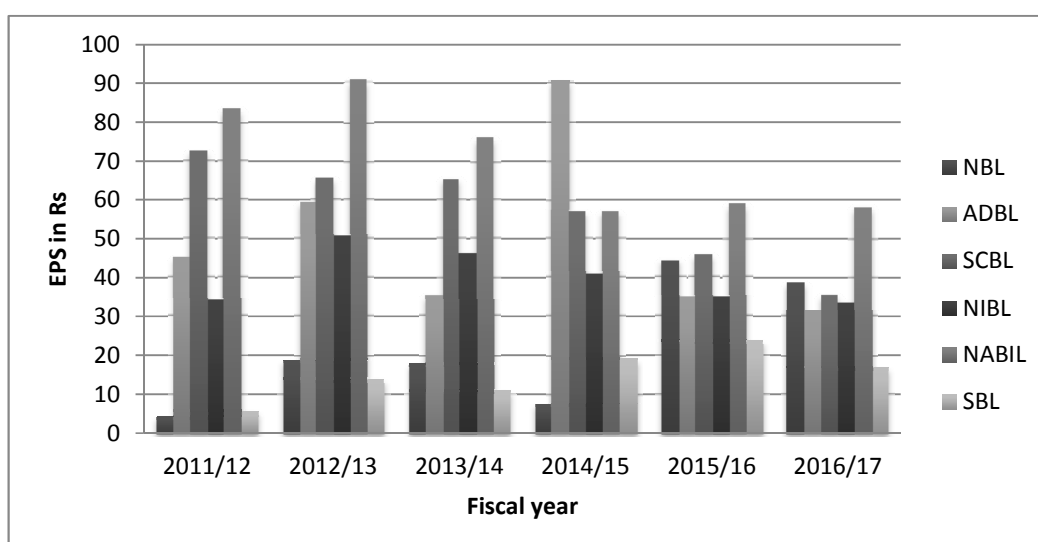
4.3 Descriptive Statistics

The descriptive statics used in this study consists of mean, standard deviation, minimum and maximum values associated with variables under considerations. The descriptive statistics are summarized on table 4.9

The table summarizes the descriptive statistics mean values, standard deviation of different variables used in this study during the period 2011/12 to 2016/17 associated with 6 sample bank. ROA, ROE, and EPS are the variables used to measure the financial performance of commercial bank. The dependent variables used in the study are; ROA is return on assets, ROE is return on equity, the independent variables are; LR as liquidity ratio, QR as quick ratio, CR as capital ratio, IR as investment ratio, and ICR as interest coverage ratio.

Descriptive Statistics Table 4.9

	N	Minimum	Maximum	Mean	Std. Deviation
Return on Equity (in %)	36	-361.36	42.94	8.6756	64.07373
Return on Assets (in %)	36	.30	3.46	1.9861	.79388
Earnings Per share (in %)	36	441.00	9105.00	4250.9167	2383.35873
Liquidity Ratio (in %)	36	11.94	43.52	24.6478	7.68795
Quick Ratio (in %)	36	18.00	79.00	46.2500	15.97923
Capital Ratio (in %)	36	92.00	98.83	96.2564	1.98728
Investment Ratio (in %)	36	48.32	91.20	72.2631	12.85670
Interest Coverage Ratio (in %)	36	50.00	440.00	232.0556	94.58570

The table shows that return on equity (ROE) ranges from minimum value of -361.36% to maximum value of 42.94% leading to the average of 8.6756%. The average return on assets (ROA) is 0.79388 percent with the minimum value of 0.30 % and maximum value of 3.46%. The EPS ranges from minimum 441% to maximum 9105% leading to the average of 4250.92%.

Similarly, the descriptive statistics for the independent variable shows that liquidity ratio has value of 11.94% and maximum value of 43.52% leading to the mean of 24.65%. The average quick ratio of the sample banks is noticed to be the 46.25% with a minimum value of 18.00% and maximum value of 79%. Capital ratio ranges from minimum value of 92% to maximum value of 98.83% with an average of 0.076%. Investment ratio ranges from minimum value of 48.32% to maximum value of 91.20% with an average of 72.26%. Similarly, interest coverage ratio ranges from minimum 50% to maximum 440 % with average 232.05%.

4.4 Correlation Analysis

Bivariate Persons correlation coefficient analysis has been attempted to find the correlations between dependent and independent variables and the results.

Multiple Correlation Tables 4.10

		Return on Assets	Return on Equity	Earnings Per share	Liquidity Ratio	Quick Ratio	Investment Ratio	Capital Ratio	Interest Coverage Ratio
Return on Assets	Pearson Correlation	1	.295	.873**	.012	-.192	.269	-.121	.568**
	Sig. (2-tailed)		.081	.000	.946	.261	.112	.481	.000
	N	36	36	36	36	36	36	36	36
Return on Equity	Pearson Correlation	.295	1	.269	-.109	-.354*	.192	.346*	.239
	Sig. (2-tailed)	.081		.113	.526	.034	.261	.039	.160
	N	36	36	36	36	36	36	36	36
Earnings Per share	Pearson Correlation	.873**	.269	1	.127	-.301	.006	-.017	.538**
	Sig. (2-tailed)	.000	.113		.461	.074	.971	.920	.001
	N	36	36	36	36	36	36	36	36
Liquidity Ratio	Pearson Correlation	.012	-.109	.127	1	.537**	-.623**	-.129	.268

	Sig. (2-tailed)	.946	.526	.461		.001	.000	.452	.114
	N	36	36	36	36	36	36	36	36
Quick Ratio	Pearson Correlation	-.192	-.354*	-.301	.537**	1	-.099	-.414*	-.264
	Sig. (2-tailed)	.261	.034	.074	.001		.567	.012	.120
	N	36	36	36	36	36	36	36	36
Investment Ratio	Pearson Correlation	.269	.192	.006	-.623**	-.099	1	.065	-.315
	Sig. (2-tailed)	.112	.261	.971	.000	.567		.706	.061
	N	36	36	36	36	36	36	36	36
Capital Ratio	Pearson Correlation	-.121	.346*	-.017	-.129	-.414*	.065	1	.066
	Sig. (2-tailed)	.481	.039	.920	.452	.012	.706		.701
	N	36	36	36	36	36	36	36	36
Interest Coverage Ratio	Pearson Correlation	.568**	.239	.538**	.268	-.264	-.315	.066	1
	Sig. (2-tailed)	.000	.160	.001	.114	.120	.061	.701	
	N	36	36	36	36	36	36	36	36

**. Correlation is significant at the 0.01 level (2-tailed).

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

Based on above table, correlations between dependent and independent variables results are presented in table 4.10, this table shows that liquidity ratio and investment ratio is positive but insignificant to return on assets which indicate that higher the liquidity ratio and investment ratio higher would be the return on assets of the banks. Quick ratio is negatively related but not significantly to return on assets which indicate that higher the quick ratio lower would be the return on assets of the bank. However, correlation between quick ratio and return on assets shows negative relation indicating there is negative relation of return on assets and quick ratio of the bank. Capital ratio is negatively related to return on assets indicating that higher the capital ratio lower would

be the profitability. So, it is negatively correlated to return on assets. These finding are consistent with the finding of Pradhan (2013). Then, interest coverage ratio is positively related to return on assets however it is significant at 1% level. Therefore, higher the interest coverage ratio higher will be the return on assets that ICR has a positive impact on return on assets. This result is also consistent with findings of Nabeel, and Hussain (2017) but quick ratio and capital ratio are not consistent with profitability.

Again, liquidity ratio is negatively related to return on equity that is higher the liquidity ratio lower would be the return on equity. So, LR has a negative impact on return on equity. Quick ratio is also negatively related to return on equity. So, higher the quick ratio lower will be the return on assets. However, it is significantly correlated at 5% level. The return on equity is positively related to investment ratio. This indicates that higher the investment ratio higher would be the return on assets and return on equity. Similarly, correlation between capital ratio and return on equity found to be positive indicating higher the capital ratio higher would be the return on equity. However, it is significantly related to ROE at 1 % level. Interest coverage ratio is positively related with return on equity indicating higher the interest coverage ratio higher would be the return on equity. So, it has positive impact on ROE. These findings are consistent with findings of Pradhan (2013). However, quick ratio and capital ratio are not consistent with the result of; Alshtti (2014); Nabeel and Hussain (2017).

Earnings per share is positively related with liquidity ratio, however, quick ratio is negatively related to EPS indicating that higher the quick ratio lower would be the earning per share. EPS is positively related to investment ratio indicating that higher the investment ratio higher would be the earnings per share. Similarly, the interest coverage ratio is positively related to EPS and higher the ICR higher would be the EPS. However, it is significantly related with EPS at 1% level. The result indicates that capital ratio is negatively related with EPS indicating that higher the capital ratio lower would be the EPS. QR and ICR are consistent with findings of Nabeel and Hussain (2017).

4.5 Regression Analysis

Regression analysis results are the statistical tools for the data analysis. The regression analysis has been conducted to examine whether or not the return on assets and return on equity are affected by liquidity determinants of Nepalese commercial banks. The regression results of return on assets with liquidity variables are shown in table 4.11.

Multiple regression of return on assets Table 4.11

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.799[a]	.639	.579	.515	.639	10.628	5	30	.000	1.918

a. Predictors: (Constant), Investment Ratio, Capital Ratio, Interest Coverage Ratio, Quick Ratio, Liquidity Ratio

b. Dependent Variable: Return on Assets

The above table 4.11 shows the adjusted R^2, also called the coefficient of multiple determinations, is the percentage of the variance in the dependent variable explained uniquely or jointly by the independent variables (liquidity ratio, quick ratio, interest coverage ratio, capital ratio, and investment ratio) and is 57.9%. This means that 57.9% of the changes in the bank's profitability will be explained by the changes in the independent variables and control variables in the model. The remaining 42.1% of the changes in the profit is explained by other factors in the model. The Durbin Watson is 1.918 which is less than 2.5, it means that there is no autocorrelation in the independent variables and it can be concluded that there independent variables don't depend on each other.

Multiple regression of return on assets Table 4.12

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	7.885	4.851		1.625	.115
Liquidity Ratio	.042	.020	.408	2.072	.047
Capital Ratio	-.111	.049	-.277	-2.236	.033
Quick Ratio	-.015	.009	-.292	-1.661	.107
Interest Coverage Ratio	.005	.001	.623	4.697	.000
Investment Ratio	.044	.009	.709	4.665	.000

a. Dependent Variable: Return on Assets

Based on above table 4.12, regression result of variables based on panel data 6 commercial banks from the year 2011/12 to 2016/17. This table shows regression result of model one as ROA = a + b_1LR + b_2CR + b_3QR + b_4ICR + b_5IR + E in the form of multiple regressions. The reported values are intercepts and slope coefficients of respective explanatory variables. The coefficient of intercept is 7.885 which have insignificant. The profitability is measured by ROA and others are independent variables. Liquidity means availability of cash and how a bank can rapidly convert its assets into cash to meet the need of short term. Higher amount of the liquid assets reflect the greater liquidity of the bank. The following liquidity measures are used to measure the liquidity efficiency; based on liquid asset to total assets. Higher ratio shows the more liquid commercial bank less in danger than the financial institution. It is positively related with ROA which is significant at 95% level of confidence. This 0.042 means that if the liquidity ratio is changed by 1%, then bank profitability will be changed by 0.042.

Similarly, standard error is 4.851 and however regression coefficients for independent variables capital ratio, quick ratio are - 0.111 and - 0.015 respectively. Since, this result revealed that beta coefficient is negative for CR and QR with return on assets which indicates that increased these ratios decreases the return on assets of the banks that is 1%

changes in CR and QR, ROA changes by - 0.111 and - 0.015. Again, interest coverage ratio and investment ratio is positive and significant with return on assets which indicates that increases these ratio return on assets also increases. So, 1% changed in ICR and IR, ROA will be changed by 0.005 and 0.044. These findings except liquidity ratio are consistent with findings of Pradhan (2013). The result of liquidity ratio does not match with his findings because of sample size. These finding of quick ratio does not match with finding of Nabeel and Hussain (2017) due to sample size.

Multiple regression of return on equity Table 4.13

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.526[a]	.277	.156	58.8597	.277	2.295	5	30	.070	2.753

a. Predictors: (Constant), Investment Ratio, Capital Ratio, Interest Coverage Ratio, Quick Ratio , and Liquidity Ratio

b. Dependent Variable: Return on Equity

The above model summary 4.13 shows the adjusted R^2, also called the coefficient of multiple determinations, is the percentage of the variance in the dependent variable explained uniquely or jointly by the independent variables (liquidity ratio, quick ratio, interest coverage ratio, capital ratio, and investment ratio) and is 15.6%. This means that 15.6% of the changes in the bank's profitability (ROE) will be explained by the changes in the independent variables and control variables in the model. The remaining 84.4% of the changes in the profit is explained by other factors in the model. The Durbin Watson is 2.753 which is greater than 2.5, it means that there is autocorrelation in the independent variables and it can be concluded that there independent variables depend on each other.

Multiple regression of return on equity Table 4.14

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-792.764	554.323		-1.430	.163
	Liquidity Ratio	2.435	2.322	.292	1.049	.303
	Capital Ratio	6.635	5.650	.206	1.174	.249
	Quick Ratio	-1.369	.997	-.341	-1.373	.180
	Interest Coverage Ratio	.121	.127	.178	.948	.351
	Investment Ratio	1.911	1.072	.383	1.782	.085

a. Dependent Variable: Return on Equity

This table 4.14 shows regression analysis results of variables based on panel data of 6 commercial banks from the year 2011/12 to 2016/17. This table shows regression results of model two as: $ROE = a + b_1LR + b_2CR + b_3QR + b_4ICR + b_5IR + E$ in the form of multiple regressions. The reported values are intercepts and slope coefficients of respective explanatory variables. The constant value is -792.764. So, standard error is 554.323. The profitability is measured by ROE and the beta coefficient for LR, CR, ICR and IR are 2.435, 6.635, 0.121 and 1.911 respectively. These mean that if 1% changes in respective ratio, ROE will be changed by 2.435, 6.35, 0.121 and 1.911 respectively. So, they have a positively impact on profitability of the bank in term of ROE. The study reveals that increasing these ratios increase the ROE of the bank.

The beta coefficient for quick ratio is - 1.369. However, this ratio for quick ratio is negative with return on equity. This result indicates that higher the quick ratio leads to lower return on equity for commercial bank of Nepal that is 1% changes in QR leads to changes by -1.369 in ROE. These findings except liquidity ratio are consistent with findings of Pradhan (2013). The result of liquidity ratio does not match with his findings

because of sample size. These finding of quick ratio does not match with finding of Nabeel and Hussain (2017) due to sample size.

Multiple regressions of earnings per share Table 4.15

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.676	.457	.367	1896.6114	.457	5.054	5	30	.002	1.558

a. Predictors: (Constant), Quick Ratio, Investment Ratio, Capital Ratio, Interest Coverage Ratio, and Liquidity Ratio

b. Dependent Variable: Earning Per share

Coefficients

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
		B	Std. Error	Beta		
1	(Constant)	21729.927	17861.727		1.217	.233
	Liquidity Ratio	174.113	74.821	.562	2.327	.027
	Capital Ratio	-272.499	182.056	-.227	-1.497	.145
	Interest Coverage Ratio	10.009	4.100	.397	2.441	.021
	Investment Ratio	81.964	34.550	.442	2.372	.024
	Quick Ratio	-81.869	32.140	-.549	-2.547	.016

a. **Dependent Variable: Earning Per Share**

The above model summary 4.15 shows the adjusted R^2, also called the coefficient of multiple determinations, is the percentage of the variance in the dependent variable explained uniquely or jointly by the independent variables (liquidity ratio, quick ratio, interest coverage ratio, capital ratio, and investment ratio) are 36.7%. This means that

36.7% of the changes in the bank's profitability (EPS) will be explained by the changes in the independent variables and control variables in the model. The remaining 63.3% of the changes in the profit is explained by other factors in the model. The Durbin Watson is 1.558 which is less than 2.5, it means that there is no autocorrelation in the independent variables and it can be concluded that there independent variables don't depend on each other.

The above table regression coefficient 4.15 shows regression analysis results of variables based on panel data for 6 commercial banks from the year 2011/12 to 2016/17. This table shows regression results of model three as: EPS = a + b_1LR + b_2 CR + b_3QR + b_4ICR + b_5IR + E, in the form of multiple regressions. The reported values are intercepts and slope coefficients of respective explanatory variables. The profitability is measured by EPS. The constant value and standard error is 21729.927 and 17861.727 respectively. The beta coefficient for LR, IR, and ICR are 174.113, 81.964 and 10.009 respectively. These ratios have a positive and significant (95% level of confidence) impact on profitability in term of EPS. It implies that 1% changes in coefficient for LR, IR and ICR, then EPS will be changed by 174.113, 81.964 and 10.009 respectively. However, coefficient for CR and QR are -272.499 and - 81.869, these coefficients indicate a negative impact on EPS indicating 1% changes in CR and QR EPS will be changed by -272.499 and - 81.869 in Nepalese commercial banks. The results of quick ratio except other ratio are only consistent with result of Nabeel and Hussain (2017).

4.6 Major Findings of the Study

1. The average liquidity ratio of NBL, ADBL, SCBL and NIBL, NABIL, and SBL are 26.68%, 20.70%, 36.43%, 23.19%, 20.62%, and 20.27% respectively. Moreover, the C.V of such banks is 0.16, 0.20, 0.18, 0.27, 0.09, and 0.38 respectively. It shows that NABIL is more consistent in maintaining the liquidity ratio from private bank among the other 5 banks. NBL is more consistent from government ownership bank and SCBL is more consistent in maintaining liquidity from joint venture banks.

2. The average quick ratio of NBL, ADBL, SCBL, NIBL, NABIL, and SBL are 0.57x, 0.57x, 051x, 0.38x, 0.29x, and 0.45x respectively. It shows that NBL and ADBL have a

better position of liquidity in terms of quick ratio as compared to other banks whereas the position of NABIL seems to be weak on such regard but its quick ratio is more consistent as compared to other commercial bank in terms of coefficient of variance. From the joint venture bank, NIBL has more consistent in maintaining the liquidity and NBL is maintaining the consistent from coefficient of variance of liquidity.

3. The average investment ratio for NBL, ADBL, SCBL, NIBL and NABIL and SBL are 62.07%, 89.58%, 55.72%, 76.06%, 71.42% and 78.73% respectively. It shows that ADBL is in better position of investment ratio as compared to other commercial bank which is also represents from the government bank and ADBL is also more consistent in maintaining the investment ratio by observing coefficient of variance.

4. The average capital ratio for NBL, ADBL, SCBL, NIBL, NABIL, and SBL are 93.21%, 94.82%, 96.91%, 94.32%, 96.912%, and 98.53% respectively. It shows that SBL has better capital ratio as compared to other sample commercial banks and coefficient of SBL is lower or zero which is more consistent in maintaining the capital ratio.

5. The average interest coverage ratio of NBL ADBL, SCBL, NIBL, NABIL and SBL are 2.08x, 1.95x, 3.70x, 1.97x, 2.54x, and 1.69x respectively. So, average interest coverage ratio for SCBL is better as compared to other commercial banks and based on coefficient of variance, NABIL has been maintaining the more consistent in interest coverage ratio among these sample banks.

6. The average ROA for NBL, ADBL, SCBL, NIBL, NABIL, and SBL are 1.40%, 2.55%, 2.30%, 2.06%, 2.49%, and 1.18% respectively. It shows that ADBL has better profitability in terms of ROA. And NIBL, and NABIL are maintaining more consistent ROA as compared to other commercial banks and NBL has a more fluctuated the level of ROA.

7. The average ROE (Return on Equity) for NBL, ADBL, SCBL, NIBL, NABIL and SBL are -43.87%, 14.53%, 21.89%, 20.21%, 27.78%, and 11.52% respectively. So average ROE for NABIL is better than other commercial banks whereas NBL has a weak profitability in terms of ROE and coefficient of variance for NABIL is lower which is

more consistent in maintaining ROE as compared to other commercial banks. And NBL has a negative coefficient of variance which has more fluctuated in maintaining the ROE.

8. The average EPS for NBL, ADBL, SCBL, NIBL, NABIL, and SBL are Rs. 22.01, Rs. 49.63, Rs. 57.10, Rs. 40.34, Rs. 70.95, and Rs. 15.05 per share respectively. The NABIL has a higher average earning per share as compared to other commercial banks and SBL has a lower earnings per share (EPS) as compared to other commercial banks. Then, based on coefficient of variance, NIBL has more consistent in maintaining the profitability during 2011/12 to 2016/17 in term of EPS. NBL has a less consistent in maintaining the EPS.

9. The descriptive statistics shows the minimum return on equity is -361.36 % and maximum is 42.94% and ROA is 0.30% and maximum is 3.46% and minimum EPS is Rs.4.41 and maximum is Rs.91.05 and LR is 11.94% and maximum LR is 43.02 and minimum QR is 18 % and maximum QR is 79%. Minimum and maximum value of CR, IR, and ICR are 92%, 48.32, 50%, and 98.83%, 91.20%, and 440% respectively.

10. Based on multiple correlation analysis liquidity ratio and investment ratio is positive but insignificant relationship between return on assets and quick ratio is negative relationship and insignificant relationship to ROA. The capital ratio is also negative relationship to ROA and ICR has positive impact on ROA. Liquidity is negatively related to return on equity and so, it has negative impact on profitability in terms of ROE. Return on equity is positively related to investment ratio and capital ratio and interest coverage ratio is positively related to return on equity and EPS is positively related with liquidity ratio and quick ratio is negatively related to EPS and EPS is positively related to investment ratio and capital ratio is negatively related to EPS. It has negative impact on profitability in term of EPS.

11. Regression coefficient for LR, CR, QR, ICR, and IR are 0.042, 0.111, 0.015, 0.005, and 0.44 respectively. The multiple regression analysis shows that liquidity ratio has positive and significant impact on return on assets and capital ratio is low degree of negative and significant impact on profitability in term of return on assets. Quick ratio is also negatively and insignificant impact on profitability in term of ROA and interest

coverage ratio and investment ratio is positive and significant impact on ROA and 57.9% of dependent variable (ROA) is explained by independent variable. The Durbin Watson is 1.918 which is less than 2.5, it means that there is no autocorrelation in the independent variables and it can be concluded that these independent variables don't depend on each other. Similarly, regression coefficient for LR, CR, QR, ICR, and IR with ROE are 2.135, 6.635, -1.369, 0.12, and 1.911. So, LR, CR, ICR and IR are positive and insignificant impact on ROE. However, quick ratio has a negative impact on profitability in term of return on equity and only 15.6% of dependent variable ROE is explained by independent variable. The unexplained portion might be the other variable capital structure, other internal and external factors etc. The Durbin Watson value is 2.753, it is greater than 2.5. So, independent variables depend on each other. The regression coefficient for LR, CR, ICR, IR, and QR with EPS are 174.173, -272.499, 10.009, 81.964, and -81.869 respectively. And 36.7% of dependent variable (EPS) is explained by independent variable like LR, CR, ICR, IR and QR respectively. So, unexplained portion is explained by other factors like capital structure, efficiency, environment, and management efficiency. The Durbin Watson value is 1.558, it is less than 2.5. So, independent variables don't depend on each other. Since, LR, ICR, IR, and QR are positive and significant impact on profitability at 5% level in term of EPS and CR negative and insignificant relationship or impact on profitability in term of EPS.

12 Based on above financial ratio and statistical tools SPSS version 22, they are clearly shows the NABIL, and ADBL and SCBL has a better position of liquidity ratio and quick ratio from private banks, government and joint venture banks. And quick ratio for NIBL is more consistent, based on IR, ADBL, SCBL, and SBL have been maintaining better investment ratio. Then, based on capital ratio government, joint venture and private bank have a same position of capital. Based on ICR, ADBL, SCBL, and NABIL have a better ICR from government bank and joint venture and private bank. Similarly based on profitability, ADBL, SCBL, and NABIL have sound profitability in terms of ROA and ROE from government, joint venture and private bank. Similarly based on EPS, NABIL, NIBL, and ADBL have sound profitability in terms of EPS.

CHAPTER - 5
SUMMARY AND CONCLUSIONS

5.1 Summary

1. The institutions engaged in financial activities and monetary activities are known as commercial bank. Commercial banks are a financial intermediary who collects the deposit from surplus units (savers) and provides the loan to shortage unit (borrowers) that is money can be mobilized in the productive sectors.

2. This study has been prepared to know about the relationship between liquidity and profitability and position of liquidity and profitability in NBL, ADBL, SCBL, NIBL, NABIL, and SBL from government bank, joint venture bank, and private bank and impact of liquidity on profitability based on multiple regression analysis tools with help of SPSS version. 22, sample banks are selected on the basis of cluster wise. Two are chosen from each sector. The results reveal that liquidity factors or variable affects the profitability positively and negatively. Independent variables are LR, QR, CR, IR, and ICR and dependent variable are profitability ratio such as ROA, ROE and EPS.

3. In the first chapter, the background, introduction banks, and subject matter of the study considering focus of the study, statement of problem, objectives of the study, significance of the study, limitations of the study and organization of the study are included. Then, second chapter includes the literature review such as conceptual review, theoretical review liquidity and profitability, related journal and articles, unpublished thesis and research report and third chapter includes the research methodology that has been used to evaluate the liquidity and profitability position of government sector bank, joint venture banks, and private ownership banks. The fourth chapter deals with the data analysis, presentation, interpretation through financial tools and statistical tools and SPSS version.22. Finally, fifth and last chapter summary, conclusion and implications have been made regarding the entire study.

4. For the purpose of analysis and evaluation, different financial and statistical tools have been used. Here, financial tools include liquidity ratio, quick ratio, capital ratio,

investment ratio, and interest coverage ratio and profitability ratio (ROE, ROA, and EPS) whereas statistical tools include average mean, standard deviation, coefficient of variations and multiple correlation, multiple regression, coefficient of multiple determination. These financial tools and statistical tools help to analyze and evaluate the liquidity position of banks. Similarly, the profitability ratios such as EPS, ROE, and ROA have been used to analyze and evaluate the profitability position of banks. Multiple correlations, multiple regression, and coefficient of determination are used to examine the impact of liquidity on profitability position of commercial banks with the help of SPSS. 22 version.

5. The data that have been analyzed by such financial and statistical tools includes from FY 2011/12 to FY 2016/17. This study is mainly conducted on the basis of secondary data. Therefore, the study has inherent limitations of the secondary data. The authenticity of the study depends on the genuineness of the data collected. For the systematic analysis of data, chapter plan have been prepared.

6. Generally, the entire research and study has focused on the descriptive study on impact of liquidity on profitability of Nepalese commercial banks of NBL, ADBL, SCBL, NIBL, NABIL, and SBL.

7. In this study attempts are made to get the result of the relationship between liquidity and profitability of Nepalese commercial banks and liquidity position and profit position of these sample banks. This study helps to identify the operational efficiency of the management, efficient use of total assets by the management and shareholders return and earnings per share of the sample commercial bank obtained by shareholder in the market.

5.2 Conclusion

The major purpose of this study is to determine the impact of bank liquidity on financial performance. This study is based on secondary sources of data of 6 commercial banks for the year 2011/12 to 2016/17 leading to the total observations of 36. The following conclusions are drawn below.

1. Liquidity is must sensible and crucial aspect of the bank, shortage of liquidity is often one of the first signs that a bank is in serious financial trouble and lead to the decrease in public faith upon banks. Thus, ensuring adequate liquidity is always required to continuous operation of banks. So, it has significant implications for the bank's profitability.

2. Liquidity creation itself is seen as the primary source of economic welfare contribution by banks and also as their primary source of risk. Therefore, virtually every financial transaction or commitments has implications for bank's liquidity. In Nepalese context, results have found that liquidity ratio was relatively fluctuating over the period, return on equity is found satisfactory and there is positive relationship between deposits and loan advances. It is also found that the liquidity and banks loan are positively related to bank's profitability and same authors revealed that the capital adequacy and liquidity is positively associated with banks profitability. It is the measurement of efficiency of banks. It indicates the achievement of entire performance of the banks.

3. On the basis of the study, the liquidity position of ADBL, SCBL, and NABIL has a better than other NBL, NIBL, and SBL from government ownership bank, joint venture banks, and private banks. And, based on ROA, ROE, and EPS, ADBL, SCBL, and NABIL have a sound average profitability or performance.

4. The results revealed that return on assets is positively related to liquidity ratio, investment ratio and ICR. This indicates that higher the LR, IR and ICR higher would be the return on assets and QR and CR is found to be negative with ROA. QR is consistent with Pradhan (2013) but CR is not consistent with findings. However, correlation between liquidity ratios and return on equity is found to be negative indicating higher the liquidity in the bank lower would be the return on equity, the correlation is found to be

negative for quick ratio with return on equity and IR, CR and ICR are found to be positive impact on ROE which indicating the higher these ratio higher would be the return on equity. Quick ratio and capital ratio is negative and insignificant relationship with EPS and liquidity ratio, investment ratio and interest coverage ratio are positively and insignificant impact on EPS.

Beta coefficient for liquidity ratio, interest coverage ratio, and investment ratios are found to be positive and significant with return on assets which indicates that increased these ratio increases the ROA. And, capital ratio and quick ratio is negatively related with ROA which indicates higher the capital ratio and quick ratio lower will be the return on assets. Then, the relationship between liquidity ratio and capital ratio is not consistent with Pradhan (2013) due to sample size. The finding of quick ratio is consistent with the findings of Pradhan but not with Nabeel and Hussain (2017). Beta coefficient for LR, CR, ICR, and IR are positive with ROE. However, quick ratio is found to be negative with ROE. All these results except liquidity ratio are consistent with Pradhan (2013) and the results of quick ratio and ICR are not consistent with Nabeel and Hussain (2017) due to sample size. For EPS, the result shows that LR, ICR, and IR are positive and significant impacts on profitability. QR has negative and significant (at 5% level) impact on profitability and CR shows negative and insignificant impact on profitability which indicates the higher capital ratio and quick ratio lower would be the earnings per share or profitability of the Nepalese Commercial Banks.

5. This study concludes that liquidity status of the bank plays important role in banking performance in case of Nepalese commercial banks. This study revealed that investment ratio, liquidity ratio, and interest coverage ratio has positive impact on bank performance, while quick ratio and capital ratio has negative impact on the same.

5.3 Implication

The study concludes that liquidity status of the bank plays important role in banking performance in case of Nepalese commercial banks. There is a direct effect of current state of interest rate instability of our country in the field of NRB direction and policy of commercial bank and financial sector due to the violating environment in the country. Most of commercial banks have been facing the high liquidity crisis in the market. Bank and financial institution were increased the interest rate to get deposit for maintaining liquidity adequate. Despite such conditions, these commercial banks have been managed it appropriately in such critical situations.

1. Since, the average liquidity ratio of ADBL, NIBL, and SBL is comparatively lower than that of other three banks under this study, and quick ratios for sample banks are below standard as well NABIL has especially lower quick ratio. So, NABIL is strongly suggested to increase its liquidity position in term of quick ratio.

2. The C.V of liquidity ratio of ADBL, NIBL and SBL are very high. So these banks should be maintained consistent in liquidity position in term of liquidity ratio and quick ratio.

3. The investment ratio for NBL, SCBL, and NABIL has low and coefficient of variance for NBL and NIBL is fluctuating more. So investment ratio for these banks should be increased because higher the investment ratio higher would be profitability. They should maintain the consistent investment ratio.

4. Capital ratio for NBL is comparatively lower than other commercial bank and coefficient are consistent for all sample banks which should be maintained consistent upcoming year and NBL should increase the capital ratio for increasing the profitability.

5. ICR for ADBL, NBL, and SBL is low as compared to other bank which should be increased in the future. So, higher ICR higher would be the profitability. C.V for NBL, NIBL and SBL are more fluctuating or higher. So, they should be maintained more consistent the ICR during upcoming year for higher profitability.

6. Profitability for NBL, SCBL, and SBL is low as compared to other ADBL, NIBL and NABIL in terms of ROA which should be increased in the future. ROE for NBL, NIBL and SBL is low. They have to increase the profitability in term of ROE for better performance and better return to shareholders. Among these banks, NBL's profitability is very low which seems to improve the performance in the coming year. And EPS for NBL, NIBL, and SBL is low. So, this study is suggested to enhance their EPS. NIBL has more consistent in maintaining the EPS. NBL has more fluctuated too over six year as compared to other bank. Finally, joint venture both bank and private NABIL and ADBL's profitability position seem too good.

7. The scope of further research may be extended to the liquidity level components including cash, marketable securities, receivables and inventory level and their effects on the firms' profitability. In addition, it is suggested that a further research be conducted on the same topic with different sector companies and extending the years of the sample.

8. All these sample bank under study are suggested to concentrate more on their performance, maintaining the liquidity, business growth rate, asset quality and governance practices. Apart from these, market reputation, diversified service, corporate social responsibility should also be taken into account. It not only be beneficial for the bank but will also play a vital criteria of tool in regarding a reward as one of the best bank of the nation.

9. The study may be helpful to fulfill the gap of proper research about the impact of liquidity and profitability. This research covers the existing liquidity position of commercial banks and its trends, factor of liquidity, profitability position. So, other researcher may make their study by selecting different topic such as the relationship between profitability and liquidity and impact of liquidity on share price. Previous researchers have done study only selected simple correlation and simple regression with manufacturing companies, other selected commercial banks like government, joint venture. Finally, it may provide the adequate knowledge about liquidity position in Nepalese commercial banks, their profitability position on cluster basis, and impact of liquidity on profitability to all people who want to study about the bank.

REFERENCES

Khan, A., & R. Mutahhar Ali. (2016). Impact of Liquidity on Profitability of Commercial Banks in Pakistan: An Analysis on Banking Sector in Pakistan. *Global Journal of Management and Business Research* 16 (1): 2249 – 4588.

Alshatti, & A.S. (2015). The Effect of the Liquidity Management on Profitability in the Jordanian Commercial Banks. *International Journal of Business and Management* 10 (1): 62.

Das, B.C., Chowdhury, M., Rahamn,.& Dey, N.K. (2015). Liquidity management and Profitability Analysis of Private Commercial Banks in Bangladesh, *International Journal of Economics, Commerce and Management*, III(1), 1-34.

Lartey, V.C., S. Antwi, & E. K. Boadi. (2013). The relationship between liquidity and profitability of listed banks in Ghana. *International Journal of Business and Social Science* 4 (3). 48-56.

Qasim, k.c., & E.G Ramiz (2011). The determinants of European bank profitability. *International Business & Economics Research Journal* 3 (6), 69-83.

Karki, L. (2014). Liquidity ratio with loan and advances, *Journal of Nepalese Business Studies*, 2(4), 32-45.

Bodie, Z., Kane, A.,Marcus, A.J., & Mohanty, p. (2013). *Investment* (10th ed.). India Mc Graw Hill Education.

Botoe (2012), The impact of liquidity on profitability of commercial banks in Liberia, thesis report writing, 7-11.

Joshi, R.K. (2014). Liquidity ratio with loan and advances. *Journal of Nepalese Business Studies*., 2(4), 12-18.

Malik, Awais, & Khursheed, (2016). The impact of liquidity on profitability of private bank of Pakistan, *International Journal of Economics and Finance* 8 (3), 69-73.

Niresh, (2012). Trade – off between liquidity and profitability of selected manufacturing firms in Srilanka, *International Journal of Arts, Science & Commerce* III, 4(2), 35-39.

Ali abdi sheikhdom, & S. kavale. (2016). Effect of liquidity management on financial performance of commercial banks in Mogadishu, Somalia. *International Journal for Research in Business, Management and Accounting* 2 (5):23.

Pradhan, R.S. & Shrestha, D. (2014). Impact of Liquidity on Bank Profitability in Nepalese Commercial Bank*:* https://ssrn.com/abstract=3044041.

Saleem, Q., and R.U. Rehman. (2015). Impacts of liquidity ratios on profitability. Interdisciplinary. *Journal of Research in Business* 1(7): 95-98

Vintila, G. & Nenu, E. A. (2016). Liquidity and Profitability Analysis on the Romanian Listed Companies. *Journal of Eastern Europe Research in Business & Economics*, Vol. 2016(2016) DOI: 10.5171/2016. 161707.

Nabeel, M., & Hussain, S. M. (2017) Liquidity Management and its impact on Bank Profitability: A Perspective of Pakistan. *International Journal of Business and Management Invention* 6 (5), 28-23.

Brigham & Chrhardt (2013). *Financial management* (13th ed.). Cengage Learning India Pvt. Ltd.

Thapa. K, (2012), *Financial Institutions and Markets* (3rd ed.). Kathmandu: Asmita Books Publishers and Distributors Pvt. Ltd.

Pant, P. R (2016). *Social Science Research and Thesis writing* (7th ed.)*,* Kathmandu Buddha Publications Pvt. Ltd.

Karki, L.B (2013). Performance Measurement of Joint Venture Banks in Nepal with reference of EBL, SCB, NSBI, and NABIL, Unpublished Master Degree Thesis, Public Youth Campus, Kathmandu.

Akter, A., & K. Mahmud. (2014). Liquidity – profitability relationship in Bangladesh Banking industry. *International Journal of Empirical Finance* 2(4): 112-134.

Poudel, R. B., Baral, K.J., Gautam, R.R. & Rana (2014). *Managerial Finance* (2nd ed.), Kathmandu: Asmita Books Publishers and Distributors Pvt. Ltd.

Ibrahim. S.S. (2017). The impact of liquidity on profitability in banking sectors of Iraq: *Journal of Finance and Banking Studies* 6(1), 2017: 113-121.

Nimer, E. & U. Baumann (2016) Market discipline, disclosure and moral hazard in banking. *Journal of Financial Intermediation*, 15 (3), 332-361.

Shrestha, B.P (2012). Impact of Liquidity on Bank Profitability in Nepalese Commercial Bank: *Nepal Journal of Management*, vol 1: 28-37.

Nepal Bank Limited. 2012- 2017 Annual Report of the Nepal Bank Limited.

Agriculture Development Bank Limited. 2012- 2017 Annual Report of the Agriculture Development Bank Limited.

Nepal Investment Bank Limited. 2012- 2017 Annual Report of the Nepal Investment Bank Limited.

Standard Chartered Bank Limited. 2012- 2017 Annual Report of the Standard Chartered Bank Limited.

Nabil Bank Limited. 2012- 2017 Annual Report of the Nabil Bank Limited.

Sunrise Bank Limited. 2012- 2017 Annual Report of the Sunrise Bank Limited.

Abdullah, M.N & Jahan. N. (2014). The Impact of Liquidity on Profitability on Banking Sectors of Bangladesh. *International Journal of Economics and Business Review* 2(10): 17- 22.

Maqsood, T. ,M. A. Anwer, A. Raza, M. Ijaz, & U. Shouqat. (2016). Impact of Liquidity Management on Profitability in Banking Sector of Pakistan. *International Review of Management and Business Research* 5(2).

Shahchera, M. (2012). The Impact of Liquidity on Iranian Bank Profitability. *Journal of Money and Economy* 7(2): 140- 154.

APPENDICES

APPENDIX 1I

Liquidity Ratios of Sample Banks

Year	Total Assets	Liquid Assets	Ratio
Nepal Bank Limited			
2011/12	58,615,520,783	14,284,054,777	24.37%
2012/13	70,776,982,567	21,615,272,429	30.54%
2013/14	77,980,528,805	25,339,591,679	32.49%
2014/15	88,211,085,964	21,221,188,111	24.06%
2015/16	103,479,534,057	28,374,365,046	27.42%
2016/17	112,057,149,438	23,781,972,863	21.22%
Average Mean			26.68%
Standard Deviation			4.27%
Co-efficient of variation			0.16
Agriculture Development Bank Limited			
2011/12	63,521,407,442	16,520,981,732	26.01%
2012/13	77,097,348,840	18,422,173,297	23.89%
2013/14	88,519,685,712	17,829,868,462	20.14%
2014/15	100,812,328,142	22,140,414,884	21.96%
2015/16	111,786,100,812	17,124,110,291	15.32%
2016/17	126,866,600,103	21,444,494,104	16.90%
Average Mean			20.70%
Standard Deviation			4.09%
Co-efficient of variation			0.20
Standard Chartered Bank Limited			
2011/12	41,677,052,360	16,354,985,343	39.24%
2012/13	45,631,100,342	14,244,961,522	31.22%
2013/14	53,324,102,172	19,482,532,371	36.54%
2014/15	65,059,044,079	28,312,223,961	43.52%
2015/16	65,185,732,479	17,323,335,778	26.58%
2016/17	77,408,597,693	32,108,707,132	41.48%
Average Mean			36.43%
Standard Deviation			6.45%
Co-efficient of variation			0.18

APPENDIX 1II

Nepal Investment Bank Limited			
2011/12	65,756,231,954	18,178,599,786	27.65%
2012/13	73,152,154,761	19,504,977,960	26.66%
2013/14	86,173,927,574	26,080,169,038	30.26%
2014/15	104,345,436,413	23,418,131,082	22.44%
2015/16	129,782,705,314	22,959,247,065	17.69%
2016/17	150,818,033,554	21,741,524,871	14.42%
Average Mean			23.19%
Standard Deviation			6.16%
Co-efficient of variation			0.27
Nabil Bank Limited			
2011/12	63,200,298,255	13,102,235,030	20.73%
2012/13	73,241,259,671	15,430,877,091	21.07%
2013/14	87,274,619,480	19,021,523,022	21.80%
2014/15	115,985,701,411	26,504,210,936	22.85%
2015/16	127,300,195,373	25,068,533,347	19.69%
2016/17	140,332,060,182	24,632,461,295	17.55%
Average Mean			20.62%
Standard Deviation			1.84%
Co-efficient of variation			0.09
Sunrise Bank Limited			
2011/12	21,279,008,407	5,760,192,264	27.07%
2012/13	26,128,839,533	7,096,984,768	27.16%
2013/14	29,661,322,460	8,195,471,784	27.63%
2014/15	37,388,814,893	4,463,380,019	11.94%
2015/16	58,559,206,081	7,262,775,124	12.40%
2016/17	71,558,496,024	11,024,541,287	15.41%
Average Mean			20.27%
Standard Deviation			7.78%
Co-efficient of variation			0.38

Sources: Annual Report of NBL, ADBL, SCBL, NIBL, NABIL and SBL

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APPENDIX 2I

Quick Ratios of Sample Banks

Year	Current Liabilities	Quick Assets	Ratio
Nepal Bank Limited			
2011/12	34,972,664,305	22,396,020,979	0.64
2012/13	41,233,185,648	31,022,779,551	0.75
2013/14	46,326,623,983	34,544,906,990	0.75
2014/15	70,590,349,302	31,851,570,816	0.45
2015/16	84,111,024,208	36,775,853,520	0.44
2016/17	79,129,936,425	32,532,357,248	0.41
Average Mean			0.57
Standard Deviation			15.87%
Co-efficient of variation			27.70%
Agriculture Development Bank Limited			
2011/12	28,148,864,129	22,187,948,540	0.79
2012/13	36,320,555,682	25,575,147,962	0.70
2013/14	71,747,912,969	25,441,319,095	0.35
2014/15	49,199,054,875	27,848,161,213	0.57
2015/16	55,987,514,578	23,424,539,348	0.42
2016/17	47,659,073,523	27,448,765,869	0.58
Average Mean			0.57
Standard Deviation			16.43%
Co-efficient of variation			28.94%
Standard Chartered Bank Limited			
2011/12	32,026,318,989	16,882,297,749	0.53
2012/13	36,570,378,109	14,777,923,508	0.40
2013/14	43,455,493,986	20,198,514,209	0.46
2014/15	55,161,256,212	28,934,873,271	0.52
2015/16	53,864,621,816	17,976,111,051	0.33
2016/17	41,652,753,523	32,942,695,157	0.79
Average Mean			0.51
Standard Deviation			15.73%
Co-efficient of variation			30.99%

APPENDIX 2II

Nepal Investment Bank Limited			
2011/12	37,160,114,552	18,767,920,705	0.51
2012/13	48,027,223,542	20,206,274,082	0.42
2013/14	57,620,994,066	26,792,031,326	0.46
2014/15	69,397,024,623	24,670,024,793	0.36
2015/16	97,009,947,239	23,787,544,641	0.25
2016/17	74,220,111,246	23,034,753,416	0.31
Average Mean			0.38
Standard Deviation			9.80%
Co-efficient of variation			25.56%
Nabil Bank Limited			
2011/12	42,248,282,815	14,612,596,762	0.35
2012/13	54,285,361,427	9,626,989,248	0.18
2013/14	65,777,006,618	21,716,039,461	0.33
2014/15	88,466,704,829	28,831,309,894	0.33
2015/16	101,846,051,735	28,245,812,524	0.28
2016/17	95,964,198,644	28,557,273,938	0.30
Average Mean			0.29
Standard Deviation			6.15%
Co-efficient of variation			21.03%
Sunrise Bank Limited			
2011/12	11,868,470.013	6,032,265,040	0.51
2012/13	12,499,681,230	7,320,206,404	0.59
2013/14	16,179,444,230	8,501,615,954	0.53
2014/15	17,299,709,599	4,819,969,899	0.28
2015/16	25,986,620,085	7,724,111,064	0.30
2016/17	25,413,486,304	12,093,834,945	0.48
Average Mean			0.45
Standard Deviation			12.71%
Co-efficient of variation			28.54%

Sources: Annual Report of NBL, ADBL, SCBL, NIBL, NABIL and SBL

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APPENDIX 3I

Investment Ratios of Sample Banks

Year	Total Deposit	Total Loan	Ratio
Nepal Bank Limited			
2011/12	56,052,372,757	27,670,840,071	49.37%
2012/13	62,984,350,047	35,611,699,549	56.54%
2013/14	69,337,609,696	39,035,600,831	56.30%
2014/15	77,998,775,919	50,970,857,910	65.35%
2015/16	89,410,018,773	61,250,072,485	68.50%
2016/17	93944014252	71745887800	76.37%
Average Mean			62.07%
Standard Deviation			9.82%
Co-efficient of variation			0.16
Agriculture Development Bank Limited			
2011/12	43,264,087,394	39,427,044,792	91.13%
2012/13	54,477,651,530	49,685,827,208	91.20%
2013/14	65,898,412,646	57,186,253,206	86.78%
2014/15	77,035,056,186	68,578,360,411	89.02%
2015/16	87,387,154,947	79,489,556,232	90.96%
2016/17	99,816,272,142	88,206,549,358	88.37%
Average Mean			89.58%
Standard Deviation			1.82%
Co-efficient of variation			0.02
Standard Chartered Bank Limited			
2011/12	35,965,630,744	19,575,968,330	54.43%
2012/13	39,466,453,239	22,828,838,456	57.84%
2013/14	46,298,532,040	25,976,584,629	56.11%
2014/15	57,286,482,037	27,681,313,256	48.32%
2015/16	55,727,178,456	31,302,949,596	56.17%
2016/17	63,872,885,452	39,263,690,286	61.47%
Average Mean			55.72%
Standard Deviation			4.34%
Co-efficient of variation			0.08

APPENDIX 3II

Nepal Investment Bank Limited			
2011/12	57,010,603,789	41,636,998,817	73.03%
2012/13	62,428,845,372	46,400,053,693	74.32%
2013/14	73,831,375,915	66,219,232,015	89.69%
2014/15	90,631,486,765	52,019,765,103	57.40%
2015/16	108,626,641,994	85,461,050,976	78.67%
2016/17	125,669,354,732	104,624,807,710	83.25%
Average Mean			76.06%
Standard Deviation			11.00%
Co-efficient of variation			0.14
Nabil Bank Limited			
2011/12	55,023,695,253	41,605,682,634	75.61%
2012/13	63,609,808,199	46,369,834,571	72.90%
2013/14	75,388,790,862	54,691,648,194	72.55%
2014/15	104,237,910,083	65,501,925,164	62.84%
2015/16	110,267,271,749	76,106,016,881	69.02%
2016/17	118,896,156,802	89,877,127,406	75.59%
Average Mean			71.42%
Standard Deviation			4.85%
Co-efficient of variation			0.07
Sunrise Bank Limited			
2011/12	18,758,999,877	14,306,651,407	76.27%
2012/13	23,270,603,296	17,730,591,898	76.19%
2013/14	26,616,667,279	19,938,325,932	74.91%
2014/15	33,486,669,059	26,380,083,691	78.78%
2015/16	51,650,280,064	42,868,709,294	83.00%
2016/17	60,895,145,083	50,677,244,085	83.22%
Average Mean			78.73%
Standard Deviation			3.62%
Co-efficient of variation			0.05

Sources: Annual Report of NBL, ADBL, SCBL, NIBL, NABIL and SBL

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APPENDIX 4I

Capital Ratios of Sample Banks

Year	Total Assets	Total Capital	Ratio
Nepal Bank Limited			
2011/12	58,615,520,783	55,298,390,814	94.34%
2012/13	70,776,982,567	65,118,108,369	92.00%
2013/14	77,980,528,805	72,684,697,368	93.21%
2014/15	88,211,085,964	81,829,712,111	92.77%
2015/16	103,479,534,057	96,123,933,130	92.89%
2016/17	112,057,149,438	105,408,263,035	94.07%
Average Mean			93.21%
Standard Deviation			0.87%
Co-efficient of Variation			0.01
Agriculture Development Bank Limited			
2011/12	63,521,407,442	59,564,087,078	93.77%
2012/13	77,097,348,840	71,927,736,861	93.29%
2013/14	88,519,685,712	83,969,979,365	94.86%
2014/15	100,812,328,142	95,665,043,898	94.89%
2015/16	111,786,100,812	106,193,445,115	95.00%
2016/17	126,866,600,103	123,200,906,933	97.11%
Average Mean			94.82%
Standard Deviation			1.32%
Co-efficient of Variation			0.01
Standard Chartered Bank Limited			
2011/12	41,677,052,360	40,087,799,703	96.19%
2012/13	45,631,100,342	44,084,027,464	96.61%
2013/14	53,324,102,172	51,386,622,938	96.37%
2014/15	65,059,044,079	63,379,225,787	97.42%
2015/16	65,185,732,479	63,251,353,642	97.03%
2016/17	77,408,597,693	75,736,910,768	97.84%
Average Mean			96.91%
Standard Deviation			0.64%
Co-efficient of variation			0.01

APPENDIX 4II

Nepal Investment Bank Limited			
2011/12	65,756,231,954	64,678,124,202	98.36%
2012/13	73,152,154,761	70,560,055,469	96.46%
2013/14	86,173,927,574	83,231,194,259	96.59%
2014/15	104,345,436,413	102,251,555,576	97.99%
2015/16	129,782,705,314	126,714,873,141	97.64%
2016/17	150,818,033,554	146,168,563,062	96.92%
Average Mean			97.32%
Standard Deviation			0.79%
Co-efficient of variation			0.01
Nabil Bank Limited			
2011/12	63,200,298,255	61,085,660,624	96.65%
2012/13	73,241,259,671	70,598,952,710	96.39%
2013/14	87,274,619,480	83,329,850,918	95.48%
2014/15	115,985,701,411	114,023,501,570	98.31%
2015/16	127,300,195,373	124,060,330,948	97.45%
2016/17	140,332,060,182	136,347,301,584	97.16%
Average Mean			96.91%
Standard Deviation			0.97%
Co-efficient of variation			0.01
Sunrise Bank Limited			
2011/12	21,279,008,407	20,910,202,188	98.27%
2012/13	26,128,839,533	25,721,748,856	98.44%
2013/14	29,661,322,460	29,314,585,494	98.83%
2014/15	37,388,814,893	36,834,641,923	98.52%
2015/16	58,559,206,081	57,794,946,159	98.69%
2016/17	71,558,496,024	70,427,622,276	98.42%
Average Mean			98.53%
Standard Deviation			0.20%
Co-efficient of variation			0.00

Sources: Annual Report of NBL, ADBL, SCBL, NIBL, NABIL and SBL

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APPENDIX 5I

Interest Coverage Ratio of Sample Banks

Year	EBIT	Interest Expenses	Ratio
Nepal Bank Limited			
2011/12	2,374,489,527	2,197,137,378	1.08
2012/13	3,138,509,488	2,214,164,344	1.42
2013/14	3,245,161,516	2,187,645,803	1.48
2014/15	2,608,283,053	1,810,664,720	1.44
2015/16	5,816,641,032	1,658,477,928	3.51
2016/17	6,182,466,489	1728360491	3.58
Average Mean			2.08
Standard Deviation			113.85%
Co-efficient of Variation			54.62%
Agriculture Development Bank Limited			
2011/12	5,267,849,217	2,814,540,161	1.87
2012/13	5,787,251,080	2,840,110,876	2.04
2013/14	5,834,639,629	3,839,726,449	1.52
2014/15	7,433,262,043	3,158,248,760	2.35
2015/16	6,810,721,932	3,358,872,302	2.03
2016/17	7,961,531,149	4,224,871,172	1.88
Average Mean			1.95
Standard Deviation			27.29%
Co-efficient of Variation			14.00%
Standard Chartered Bank Limited			
2011/12	2,682,706,984	1,007,198,992	3.11
2012/13	2,353,378,859	611,382,395	4.16
2013/14	2,478,835,004	576,298,811	3.75
2014/15	2,535,215,273	661,074,838	4.40
2015/16	2,382,852,284	565,704,649	3.90
2016/17	2,892,540,661	863,459,635	2.87
Average Mean			3.70
Standard Deviation			59.66%
Co-efficient of Variation			16.13%

APPENDIX 5II

Nepal Investment Bank Limited			
2011/12	5,301,757,114	3,814,411,187	1.19
2012/13	5,512,370,845	2,774,788,162	1.93
2013/14	5,586,954,819	2,820,475,438	1.99
2014/15	5,624,765,195	2,807,361,350	1.99
2015/16	6,563,096,501	2,855,650,146	2.37
2016/17	8,942,784,170	4,464,551,946	2.34
Average Mean			1.97
Standard Deviation			42.69%
Co-efficient of Variation			21.69%
Nabil Bank Limited			
2011/12	5,571,875,481	3,155,490,469	2.14
2012/13	5,355,740,413	2,186,300,942	2.93
2013/14	5,242,306,660	1,939,745,260	2.34
2014/15	5,217,391,213	2,236,063,893	2.69
2015/16	5,837,465,151	1,829,689,197	2.67
2016/17	7,747,535,498	2,606,090,642	2.46
Average Mean			2.54
Standard Deviation			28.15%
Co-efficient of Variation			11.09%
Sunrise Bank Limited			
2011/12	1,568,339,672	1,410,695,996	0.50
2012/13	1,709,158,652	1,251,304,431	1.07
2013/14	1,687,114,034	1,328,711,949	1.30
2014/15	1,963,233,866	1,296,357,220	1.48
2015/16	2,964,594,885	1,591,976,978	2.37
2016/17	4,777,721,324	3,112,274,466	3.39
Average Mean			1.69
Standard Deviation			103.18%
Co-efficient of Variation			61.22%

Sources: Annual Report of NBL, ADBL, SCBL, NIBL, NABIL and SBL

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APPENDIX 6I

Return on Assets of Sample Banks

Year	Total Assets	Net profit	Ratio
Nepal Bank Limited			
2011/12	58,615,520,783	176,361,505	0.30%
2012/13	70,776,982,567	755,180,353	1.07%
2013/14	77,980,528,805	716,958,108	0.92%
2014/15	88,211,085,964	483,848,520	0.55%
2015/16	103,479,534,057	2,882,978,165	2.79%
2016/17	112,057,149,438	3,117,893,760	2.78%
Average Mean			1.40%
Standard Deviation			1.11%
Co-efficient of Variation			0.79
Agriculture Development Bank Limited			
2011/12	63,521,407,442	1,839,924,770	2.90%
2012/13	77,097,348,840	2,289,319,963	2.97%
2013/14	88,519,685,712	1,520,806,289	1.72%
2014/15	100,812,328,142	3,490,268,417	3.46%
2015/16	111,786,100,812	2,464,683,088	2.20%
2016/17	126,866,600,103	2,565,220,197	2.02%
Average Mean			2.55%
Standard Deviation			0.67%
Co-efficient of Variation			0.26
Standard Chartered Bank Limited			
2011/12	41,677,052,360	1,168,967,497	2.80%
2012/13	45,631,100,342	1,217,940,761	2.67%
2013/14	53,324,102,172	1,336,589,187	2.51%
2014/15	65,059,044,079	1,290,025,348	1.98%
2015/16	65,185,732,479	1,292,494,632	1.98%
2016/17	77,408,597,693	1,421,596,136	1.84%
Average Mean			2.30%
Standard Deviation			0.41%
Co-efficient of Variation			0.18

APPENDIX 6II

Nepal Investment Bank Limited			
2011/12	65,756,231,954	1,039,275,613	1.58%
2012/13	73,152,154,761	1,915,027,932	2.62%
2013/14	86,173,927,574	1,939,612,344	2.25%
2014/15	104,345,436,413	1,961,852,380	1.88%
2015/16	129,782,705,314	2,550,883,563	1.97%
2016/17	150,818,033,554	3,114,131,140	2.06%
Average Mean			2.06%
Standard Deviation			0.35%
Co-efficient of Variation			0.17
Nabil Bank Limited			
2011/12	63,200,298,255	1,696,276,110	2.68%
2012/13	73,241,259,671	2,218,761,843	3.03%
2013/14	87,274,619,480	2,319,631,032	2.66%
2014/15	115,985,701,411	2,093,813,608	1.81%
2015/16	127,300,195,373	2,819,333,752	2.21%
2016/17	140,332,060,182	3,613,200,322	2.57%
Average Mean			2.49%
Standard Deviation			0.43%
Co-efficient of Variation			0.17
Sunrise Bank Limited			
2011/12	21,279,008,407	111,193,516	0.52%
2012/13	26,128,839,533	311,609,038	1.19%
2013/14	29,661,322,460	246,772,655	0.83%
2014/15	37,388,814,893	470,857,056	1.26%
2015/16	58,559,206,081	951,378,476	1.62%
2016/17	71,558,496,024	1,189,620,441	1.66%
Average Mean			1.18%
Standard Deviation			0.45%
Co-efficient of Variation			0.38

Sources: Annual Report of NBL, ADBL, SCBL, NIBL, NABIL and SBL

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APPENDIX 7I

Return on Equity of Sample Banks

Year	SHE	Net profit	Ratio
Nepal Bank Limited			
2011/12	-2,907,776,423	176,361,505	-6.07%
2012/13	-208,980,570	755,180,353	-361.36%
2013/14	3,347,087,672	716,958,108	21.42%
2014/15	3,830,936,192	483,848,520	12.63%
2015/16	6,713,914,357	2,882,978,165	42.94%
2016/17	11,451,753,783	3,117,893,760	27.23%
Average Mean			-43.87%
Standard Deviation			156.38%
Co-efficient of Variation			-3.56
Agriculture Development Bank Limited			
2011/12	13,172,827,932	1,839,924,770	13.97%
2012/13	14,222,913,579	2,289,319,963	16.10%
2013/14	15,076,248,711	1,520,806,289	10.09%
2014/15	16,111,012,226	3,490,268,417	21.66%
2015/16	18,127,314,682	2,464,683,088	13.60%
2016/17	21,796,701,399	2,565,220,197	11.77%
Average Mean			14.53%
Standard Deviation			4.05%
Co-efficient of Variation			0.28
Standard Chartered Bank Limited			
2011/12	4,122,168,959	1,168,967,497	28.36%
2012/13	4,617,574,225	1,217,940,761	26.38%
2013/14	5,088,090,898	1,336,589,187	26.27%
2014/15	6,092,743,750	1,290,025,348	21.17%
2015/16	7,524,175,186	1,292,494,632	17.18%
2016/17	11,864,025,316	1,421,596,136	11.98%
Average Mean			21.89%
Standard Deviation			6.36%
Co-efficient of Variation			0.29

APPENDIX 7II

Nepal Investment Bank Limited			
2011/12	6,049,941,175	1,039,275,613	17.18%
2012/13	7,020,644,097	1,915,027,932	27.28%
2013/14	7,925,478,596	1,939,612,344	24.47%
2014/15	9,806,952,579	1,961,852,380	20.00%
2015/16	16,287,751,617	2,550,883,563	15.66%
2016/17	18,707,884,096	3,114,131,140	16.65%
Average Mean			20.21%
Standard Deviation			4.71%
Co-efficient of Variation			0.23
Nabil Bank Limited			
2011/12	5,450,885,371	1,696,276,110	31.12%
2012/13	6,689,144,511	2,218,761,843	33.17%
2013/14	7,641,060,056	2,319,631,032	30.36%
2014/15	9,485,591,487	2,093,813,608	22.07%
2015/16	11,593,059,199	2,819,333,752	24.32%
2016/17	14,094,834,782	3,613,200,322	25.63%
Average Mean			27.78%
Standard Deviation			4.38%
Co-efficient of Variation			0.16
Sunrise Bank Limited			
2011/12	2,151,202,311	111,193,516	5.17%
2012/13	2,451,145,560	311,609,038	12.71%
2013/14	2,697,918,215	246,772,655	9.15%
2014/15	3,347,972,864	470,857,056	14.06%
2015/16	6,144,666,095	951,378,476	15.48%
2016/17	9,501,673,554	1,189,620,441	12.52%
Average Mean			11.52%
Standard Deviation			3.76%
Co-efficient of Variation			0.33

Sources: Annual Report of NBL, ADBL, SCBL, NIBL, NABIL and SBL

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APPENDIX 8I

EPS of Sample Banks

Year	Number of Share	Earnings Available to shareholders	EPS
Nepal Bank Limited			
2011/12	40,000,000	176,361,505	4.41
2012/13	40,000,000	755,180,353	18.88
2013/14	40,000,000	716,958,108	17.92
2014/15	64,650,018	483,848,520	7.48
2015/16	64,650,018	2,882,978,165	44.59
2016/17	80,426,622	3117893760	38.77
Average Mean			22.01
Standard Deviation			16.36
Co-efficient of Variation			0.74
Agriculture Development Bank Limited			
2011/12	32,000,000	1,453,716,770	45.43
2012/13	32,000,000	1,903,111,963	59.47
2013/14	32,000,000	1,134,598,289	35.46
2014/15	34,240,000	3,104,060,417	90.66
2015/16	59,064,000	2,078,475,088	35.19
2016/17	70,876,800	2,239,257,477	31.59
Average Mean			49.63
Standard Deviation			22.50
Co-efficient of Variation			0.45
Standard Chartered Bank Limited			
2011/12	16,101,680	1,168,967,497	72.60
2012/13	18,539,000	1,217,940,761	65.70
2013/14	20,416,720	1,336,589,187	65.47
2014/15	22,481,612	1,290,025,348	57.38
2015/16	28,124,260	1,292,494,632	45.96
2016/17	40,057,153	1,421,596,136	35.49
Average Mean			57.10
Standard Deviation			13.97
Co-efficient of Variation			0.24

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Nepal Investment Bank Limited			
2011/12	30,129,242	1,039,275,613	34.49
2012/13	37,680,077	1,915,027,932	50.82
2013/14	41,467,075	1,939,612,344	46.77
2014/15	47,712,035	1,961,852,380	41.12
2015/16	72,555,098	2,550,883,563	35.16
2016/17	92,403,788	3,114,131,140	33.70
Average Mean			40.34
Standard Deviation			7.17
Co-efficient of Variation			0.18
Nabil Bank Limited			
2011/12	20,297,694	1,696,276,110	83.57
2012/13	24,368,414	2,218,761,843	91.05
2013/14	30,471,684	2,319,631,032	76.12
2014/15	36,576,540	2,093,813,608	57.24
2015/16	47,565,696	2,819,333,752	59.27
2016/17	61,855,070	3,613,200,322	58.41
Average Mean			70.95
Standard Deviation			14.64
Co-efficient of Variation			0.21
Sunrise Bank Limited			
2011/12	20,150,000	111,193,516	5.52
2012/13	22,366,500	311,609,038	13.93
2013/14	22,366,500	246,772,655	11.03
2014/15	24,603,150	470,857,056	19.14
2015/16	39,760,498	951,378,476	23.93
2016/17	70,891,757	1,189,620,441	16.78
Average Mean			15.05
Standard Deviation			6.43
Co-efficient of Variation			0.43

Sources: Annual Report of NBL, ADBL, SCBL, NIBL, NABIL and SBL

IMPACT OF LIQUIDITY ON BANK PROFITABILITY IN NEPALESE COMMERCIAL BANKS

(With Special reference to Nepal Bank Limited, Agriculture Development Bank Limited, Standard Chartered Bank Limited, Nepal Investment Bank Limited, Nabil Bank Limited and Sunrise Bank Limited)

A THESIS PROPOSAL

Submitted by

Sudeep Panta
Central Department of Management
Faculty of Management
Campus Class Roll No. 193/16
T.U Reg. No. 7-2-380-83-2012
Exam Roll No: 837/16

Submitted to:

Office of Dean
Faculty of Management
Tribhuvan University, Kirtipur
Kathmandu, Nepal

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1. INTRODUCTION

1.1 Background of the Study

The liquidity in the commercial bank represents the ability to fund its obligations by the contractor at the time of maturity, which includes lending and investment commitments, withdrawals, deposits, and accrued liabilities (Amengor, 2015). Liquidity means how quickly bank can get your hands on your cash. Liquidity refers to the conversion of assets into cash. Commercial bank has to maintain satisfactory level of liquid assets that are easy to sale at market price. If the commercial bank holds liquid assets balance in form of currency bank balance, marketable securities and other similar assets cash or cash equivalent. But these could be invested for short term period to earn interest than to keep the idle cash balance. In order to determine the optional investment in liquid assets, a commercial bank must assess the benefits and cost of holding these various balances. Since that higher the liquidity for the bank, lower will be the profitability because bank holds more assets as idle cash would create problem in gaining the profit. Similarly, lower the liquidity can also create problem for bank to repay demanding fund. Maintaining the proper liquidity is very difficult task for every commercial bank. Bank should maintain the proper liquidity in vaults according to NRB directions and policy of proper considering the profit side.

Liquidity management is of crucial importance in financial management decision. The optimal of liquidity management could be achieved by company that manages the trade-off between profitability and liquidity management (Bhunia and Khan, 2014).

Profitability refers to the net income of the company (Bank) where company's revenues exceed its expenses. Income is generated from the activities of the companies (Banks) and expense is the cost of resources which are used to generate profit. Profitability is the main objective of the companies. Businesses cannot survive in the market for the long run without profitability. So evaluating past profitability, calculating current profitability and foretelling future profitability is very important for the company. Revenue and expense are shown at the income statement which refers to the profitability of the

company while cash inflow & cash outflow are shown at cash flow statement which refers to the liquidity of the company (Das, Cwdhury, Rahman and Dey, 2015).

It has negative or inverse relationship between liquidity and profitability because huge liquidity position decreases the profitability of the bank and vice-versa. But in some cases, liquidity problem can create a panic to the depositor and banks can fall under trouble of repayment of deposited money. At the liquidity shortfall banks cannot increase the advance position to increase the profitability. So that banks try to manage the liquidity position very efficiently. To increase the profitability banks go to the risky investment because there is a positive relationship between higher risk and higher return. On the other hand, higher risk endangers the liquidity of the banks. When interest rate is lower, the liquidity position of any bank is higher and higher liquidity position indicates the availability of capital base. Liquidity surplus can be occurred if there is huge money at hand with too few investments in real sectors. As a result of economic depression fund usually is invested in bad ventures and bad ventures cannot repay the money of the banks because they do not do well in the business and banks suffer from liquidity position at hand for further investment or repayment of the depositor's money (Das et al, 2015).

Studies of Nepalese banks' profitability are important as guidance towards enhancing the economy since banks do contribute to economic growth and stability. Stability in the banking sector helps to maintain stability in the economy (Baral, 2010). Few studies have been conducted on determinant of profitability of the commercial banks in Nepal, for example, (Karki, 2014) also found that the positive relationship between capital adequacy and profitability, (Joshi, 2014) found that the liquidity and banks loan are positively related to banks profitability and (Maharjan, 2007) revealed that the capital adequacy and liquidity is positively associated with banks profitability. (Karki, 2014) found that liquidity ratio was relatively fluctuating over the period, return on the equity is found satisfactory and there is positive relationship between deposits and loan advances. The recommendations made that are the existing condition of the liquidity of the banking and financial institutions needs to be reduced through an appropriate investment policy.

The main purpose of the study is to analyze the effect of bank liquidity on bank's profitability in Nepalese commercial banks. Specifically, it examines the impact of

investment ratio, liquidity ratio, quick ratio, capital ratio, and interest coverage ratio to return on asset, return on equity and earning per share of commercial banks of Nepal. The sampled banks are Nepal Bank Limited, Agriculture Development Bank Limited, Standard Chartered Bank Limited, Nepal Investment Bank Limited, Nabil Bank Limited, and Sunrise Bank Limited selected from government ownership, joint venture, and private ownership bank respectively.

1.2 Focus of the Study

This study will focus on the impact of liquidity on bank profitability of commercial banks Nepal bank limited, Agriculture bank limited, Standard Chartered bank limited, Nepal investment bank limited, Nabil bank limited and Sunrise bank limited from 2011/12 to 2016/17 which has been first established governmental, joint venture and private bank respectively. Two commercial banks will be selected from each cluster based on convenience. These banks will be selected on the basis of cluster sampling. In this study, attempts will be made to get knowledge about the impact of liquidity on bank profitability and relationship between liquidity and profitability, operational efficiency of the management, efficient use of total assets by the management, and liquidity position etc. For this purpose of the study, evaluation of the bank will be made with respect to the liquidity and profitability ratio.

1.3 Statement of the Problem

Generally, the objective of the commercial bank is to maximize the shareholders wealth and maximize the profit. Banks are major financial institution which affects the achievement in growth of national economy by building capital. Therefore, bank should achieve the organizational objective to achieve the economic growth. For this achievement, bank's liquidity also affects the bank's profitability. It is very sensitive thing in banking business. In the present situation, banks are facing the problem of liquidity. This burning issue will affect their all financial activities or daily banking business. Such liquidity would create the serious problem in banks, if not proper management of cash and cash equivalent items. So, this study will try to pinpoint the liquidity status of commercial banks.

In other countries' research report, holding more liquid assets diminishes a commercial bank's profit and hinders the investment prospect of the bank, which could lead to growth and expansion. However, if it wishes to maximize profit, the commercial bank will have to reduce the level of liquid assets it holds on the balance sheet. Holding too much illiquid asset will expose the commercial bank to liquidity risk and huge interest charges in an even of fire sales (Casu et al, 2015).

Customer, general public, university scholars (in commerce and economics) can't identify the impact of liquidity to the national economy and its major causes having such lack of analyzing capacity of proper analytical capacity study will be vague and complicated. So, the study is expected to focus and answer the following research questions:

- What is the liquidity and profitability position of selected commercial bank in Nepal?

- What is the relationship between liquidity and profitability of Nepalese commercial bank?

- Does liquidity affect the profitability of commercial banks in Nepal?

1.4 Objectives of the Study

The main objective of this study is to evaluate and examine the impact of liquidity on profitability of Nepal Bank Ltd., Agriculture Development Bank Ltd., Standard chartered Bank Ltd., Nepal Investment Bank Ltd, Nabil Bank Ltd, and Sunrise Bank Ltd. and other specific objectives are as follows:

- To analyze the profitability position and liquidity position of selected commercial banks.

- To analyze the relationship between liquidity and profitability position of selected commercial banks.

- To establish the impact of liquidity on bank profitability of selected commercial banks.

1.5 Significance of the Study

The study will be helpful to regulatory authority to formulate the effective policy, guidelines, rules about liquidity and capital adequacy to run the commercial bank which study will suggest them to formulate the proper policy on that topic. It helps to mobilize the fund effectively within bank such effective management ideas will be helpful for achieving the organizational investment opportunities. The financial agencies stock exchange and stock traders are also interested to know the bank's performance as well as customer. Such position of liquidity and profitability will be effective measurement factor for the customers. This study is helpful for self - assessment of respective bank. Management can analyze their weakness and strength reports. Policy makers at the macro level that is government and NRB will also be benefit regarding the formulation of further policies and deciding about maintaining the liquidity position in the bank. This study will be useful and valuable for students, teachers and practitioners in the field of finance and accounting,

1.6 Limitations of the Study

The study will have some positive and negative aspects. So, they have to study with the certain framework. It will follow the rules and regulation. It will have some time constraint, lack of data, cost, and information. There is considerable place for arguing about its accuracy and reliability, the period, reliability of statistical tools, data and variances. The following limitations will be pointed out in this study of impact of liquidity on profitability position of selected commercial bank.

- The study will be conducted on the basis of secondary data. Therefore, the study has inherent limitation of the secondary data.

- The study will focus only six banks, namely Nepal Bank Limited, Agriculture Development Bank Limited, Standard chartered Bank Limited, Nepal Investment Bank Limited, Nabil Bank Limited, and Sunrise Bank Limited, which may not truly represent the whole population.

- This study will include the analysis of data from fiscal year 2011/12 to 2016/17. The findings will only be based on that period.

- The study will focus only on the liquidity and profitability analysis and will not cover other aspects of activities.

1.7 Organization of the Study

The study will be categorized into five chapter, they will be related to study of impact of liquidity on bank profitability of Nepalese commercial banks. Five chapters will be as follows:

Chapter- I Introduction /Research Overview

This chapter will provide an overview of the research topic of impact of liquidity on bank profitability of Nepalese commercial banks and present the research background of subject matters of the study, focus of the study, statement of the problem, objectives of the study, significance of the study, limitation of the study, and organization of the study.

Chapter- II Literature Review

It will include the theoretical review, conceptual review, conceptual framework, and review of related studies.

Chapter- III Research Methodology

This chapter will describe research methodology and tools, which include research design, data collection methods, sampling design, sampling frame and sampling location, sampling elements, sampling techniques and sampling size, and research instrument financial and statistical tools.

Chapter- IV Data Analysis and Presentation

It will include data analysis and presentation of liquidity and profitability through the financial and statistical tools.

Chapter- V Summary, Conclusion and Implications

This chapter will provide the summary and conclusion of overall study and recommendation for further study.

1.8 **Literature Review and Theoretical Framework**

Literature review is a very important part of the research. This chapter highlights up on the existing literature for this several books, dissertation reports, handout and articles published journal and newspaper will be reviewed.

Shrestha (2012) examined the impact of liquidity on profitability of commercial banks in Nepal. To address the objective, the article has sampled 8 commercial banks established in and before 1995 for the period between 2003/04 and 2010/11. Profitability analysis showed that the overall profitability (i.e. ROA) of the sample banks has normally an increasing trend. The overall trend of liquidity ratios is not largely smooth. Fluctuating trend of the liquidity ratios does not make easy in increase trend of profitability of commercial banks in Nepal. Since liquidity management can increase the banks' profitability, the study has examined their liquidity management as well as profitability positions, using various financial tools. There is a significant impact of Nepal Rastra Bank to total deposit ratio and cash vault to total deposits on profitability of commercial banks in Nepal. This indicated that increase in these liquidity ratios boosts the bank profitability and vice-versa. But, there is no significant impact of total liquid fund to total deposit ratio, Cash and bank balance to total deposits ratio, and total liquid fund to current liabilities ratio on profitability. This revealed that profitability has no relationship with those liquidity ratios. It has also studied data of only 8 fiscal years. Therefore, further studies should also cover as many more banks and years as possible to make their findings more valid and should use more scientific tools and analysis.

Pradhan (2013) found that liquidity ratio was relatively fluctuating over the period, return on the equity is found satisfactory and there is positive relationship between deposits and loan advances. It is also found that the liquidity and banks loan are positively related to banks profitability. This study is based on secondary sources of data of 16 commercial banks for the year 2005/6 to 2013/14 leading to the total observations of 144. The regression models were estimated to test the significance and effect of bank liquidity on performance of Nepalese commercial bank. Result revealed that return on equity is positively related to investment ratio. This indicated that higher the investment ratio higher would be the return on assets and return on equity. Similarly, correlation between capital ratio and ROA and ROE is found to be positive indicating higher the capital ratio higher would be ROA and ROE. However, the correlation between return on equity and

liquidity ratio is found to be negative indicating higher the liquidity in the bank lower would be the return on equity. Further, the correlation is found to be negative for quick ratio with return on equity. This study concluded that liquidity status of the bank plays important role in banking performance in case of Nepalese commercial banks. This study revealed that investment ratio, liquidity ratio and capital ratio has positive impact on bank performance, while quick ratio has negative impact on the same. The study suggested that banks willing to increase bank performance should increase capital ratio and investment ratio while should control liquidity ratio and quick ratio.

Lartey, Antwi and Boadi (2013) evaluated both the liquidity and the profitability levels of the listed banks were decreasing within the period 2005 – 2010. There was a weak positive relationship between the liquidity and the profitability of the listed banks. These findings support Bourke (1989) who found some evidence of a positive relationship between liquid assets and bank profitability for 90 banks in Europe, North America and Australia from 1972 to 1981. In view of the fact that liquidity has some amount of bearings on the profitability of a bank, it is important that banks manage their liquidity very well. When banks hold adequate liquid assets, their profitability would improve. Adequate liquidity helps the bank minimize liquidity risk and financial crises. The bank can absorb any possible unforeseen shock caused by unexpected need for decrease in liabilities or increase in assets side of the statement of financial position. However, if liquid assets are held excessively, profitability could diminish. Liquid assets usually have no or little interest generating capacity. The opportunity cost of holding low- return assets would eventually outweigh the benefit of any increase in the bank's liquidity resiliency as perceived by funding markets.

Karki (2014) found that liquidity ratio was relatively fluctuating over the period, return on the equity is found satisfactory and there is positive relationship between deposits and loan advances. The recommendations made that are the existing condition of the liquidity of the banking and financial institutions needs to be reduced through an appropriate investment policy. Further, Joshi (2014) analyzed financial performance through the use of appropriate financial tools like ratio analysis, simple regression analysis and to show the cause of change in cash position of the two banks. In which he stated that bank

profitability uses the return on assets, the return on equity and net interest margin. The study found that liquidity and bank loan are positively related to bank profitability. These studies suggested using the more banks as a sample, using for scientific tools and multiple regression technique of data analysis.
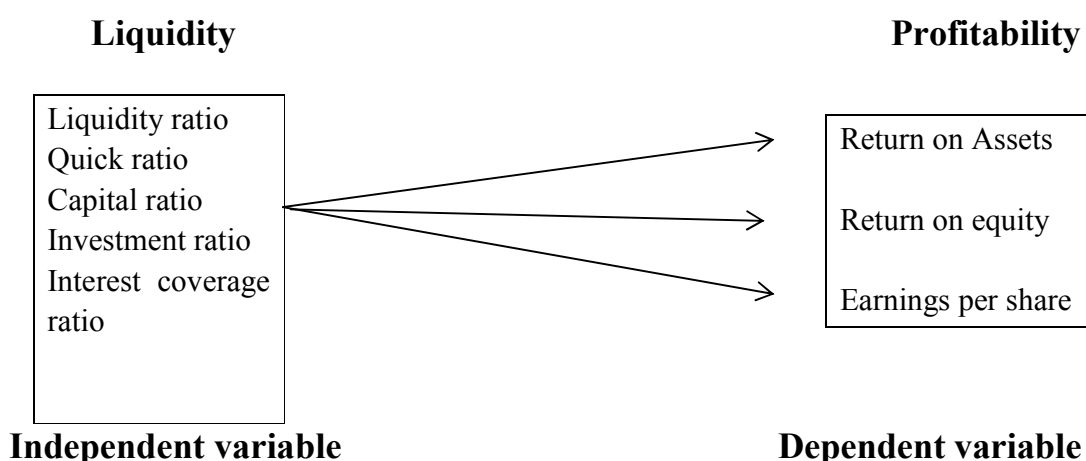
Akter and Mahmud (2014) examined the relationship the liquidity and profitability. The profitability was measured as return on assets ratio and liquidity was measured a current ratio. The data for this study was taken from the specific commercial banks income statements and balance sheets of published in the annual report of such bank. The twelve specific banks were taken as sample. For analysis of data a number of techniques were used which included the correlation technique; regressions and descriptive statistics through SPSS 22 version. The overall findings of this study are that there was no significant relationship exists between liquidity and profitability in all the categories on banks in Bangladesh. This study suggested using more variable of profitability and liquidity to find out the relationship between them.

Maqsood et al. (2016) explained that there is significant impact of liquidity on bank profitability in the banking sector. The data that is used in this is taken from financial statement of 8 different banks from 2004 to 2015. The regression and correlation technique were used in this study. To look the liquidity it used the current and cash ratio as independent variable and to measure the profitability uses the return on assets as dependent variable. It suggested using scientific tools and more variable to measure the impact of liquidity on profitability.

Nabeel and Hussain (2017) examined the effect of liquidity management on profitability in the banking sector of Pakistan. Liquidity management is independent and profitability is dependent variable. The secondary data used for this study and taking from publish annual report of ten banks (2006-2015). The data was analyzed by using correlation, descriptive statistics and regression techniques. The quick, current, cash, interest coverage and capital adequacy ratios were taken as dimension of liquidity and return on assets, return on equity, and earnings per share as dimension of profitability. The research findings showed that interest coverage, capital adequacy and quick ratio had a positive whereas the cash and current ratio had negative relationship with bank's profitability. The data was taken from

annual reports of ten banks from 2006-2015. The results showed that most liquidity ratios had positive and some liquidity ratios had negative relationship with the bank's profitability. The findings of such study clarify that interest coverage ratio had positive and significant relationship with banks profitability when it analyzed with return on assets and return on equity. The capital adequacy ratio had positive and significant relationship with return on equity and earning per share. The quick ratio had positive relationship with profitability. The current ratio suggested the positive but insignificant relationship when look the relationship with return on assets. And current ratio suggested the negative and significant relationship with return on assets and negative and insignificant with earning per share. Therefore, the overall results explained that liquidity management has positive related with banks profitability.

1.8.1 Conceptual Framework

Liquidity   **Profitability**

| Liquidity ratio
Quick ratio
Capital ratio
Investment ratio
Interest coverage ratio | | Return on Assets

Return on equity

Earnings per share |

Independent variable   **Dependent variable**

Source: International Journal of Business and Management Invention, ijbmi.org/pp-30

1.8.2 Research Gap

The impact of liquidity on bank profitability of commercial bank in Nepal has been conducted by few researchers. However, the researcher conduct study according to some randomly selected commercial bank which is not specified the category of bank. They are only concerned with selected sector like private, and joint venture. Nobody has taken into consideration for these sectorial or cluster wise categorization to identify the impact of liquidity on profitability of commercial bank of Nepal. Previous researchers have not taken the latest updated data from annual report of concerned bank from Nepalese

context. The previous researcher had selected sample of banks as randomly but in this study sample has selected on the basis of cluster that government ownership bank, private ownership bank and Joint venture bank. So, this is the research gap of study.

1.9 Research Methodology

The research methodology is the general research strategy that outlines the way in which research is to be undertaken and identifies the methods to be used in it. Thus, it is the systematic method of finding solution to a problem that is systematic collection, recording analysis interpretation and reporting of information about various facts of a phenomenon understudy. It is the nature and kind of process to be followed in a particular research.

1.9.1 Research Design

There are different types of research design such as qualitative research and quantitative research; it is not limited to a particular type of research. In this research paper, it will use quantitative research as it present the numerical data to examine the impact of liquidity on bank profitability. Quantitative research gathers all the data in numerical form which can be put into categories of measured in units of measurement. Here to achieve the specific objective of the study, descriptive research will be carried out. It will be carried out in terms of liquidity and profitability of Nepal Bank Limited, Agriculture Development Bank Limited, Nabil Bank Limited, and Sunrise Bank Limited, Investment Bank Limited and Standard Chartered Bank Limited.

1.9.2 Sources and Types of Data

For this study, data will be collected from secondary sources on annual basis from the financial report of concerned commercial bank. Other published and unpublished sources will be financial statement of concerned bank annual report of the bank, different article and journal published by these bank, related bulletins, reports, periodically published by various government bodies and economic news, business news and unpublished thesis.

1.9.3 Population and Sampling

In present days, there are 28 commercial banks operating in Nepal. It will all include the population. Among them, only six commercial banks will be selected for studying on impact of liquidity on profitability of Nepalese commercial bank. Six commercial bank will be selected on the base of cluster sampling method where cluster will include first established government bank, first established private joint venture bank, and first established private bank. NBL, ADBL, SCBL, NIBL, NABIL, and SBL are from each cluster, two commercial banks will be taken as sample and also based on data availability and applying the convenience sampling method to be studied the impact of liquidity on bank profitability of Nepalese commercial bank. Six years data will be taken into consideration for the study from 2011/2012 to 2016/2017.

1.9.4 Methods of Data Analysis

In order to ascertain real financial picture of any company, various analytical tools can be used. The tools and methods should be used according to available of data, nature of statement which gives the fruitful research results. It will help to achieve research objective with these financial tool and statistical tools and technique. They will be:

Financial Tools

- Ratio analysis which include liquidity ratio, quick ratio, capital ratio, investment ratio, and interest coverage ratio, return on assets, return on equity, and earnings per share.

Statistical Tools

- Arithmetic Mean, standard deviation.
- Coefficient of variance (C.V)
- Correlation coefficient
- Coefficient of Multiple Determination (R^2)
- Regression analysis

The model can be developed as follows:

ROE = a + b_1LR + b QR + b_3CR + b_4IR + b_5ICR + E

ROA = a + b_1LR + b_2QR + b_3CR + b_4IR + b_5ICR + E

EPS =   a + b_1LR + b_2QR + b_3CR + b_4IR + b_5ICR + E

In above this model, ROE, ROA, and EPS measure the profitability of bank which variable are dependent and a is constant and b_1, b_2, b_3, b_4, and b_5 are regression coefficient and LR is liquidity ratio, QR is quick ratio, CR is capital ratio and IR is investment ratio and ICR is interest coverage ratio. They are independent variable and E is error term.

- Figure and Tables

References

Khan, A., & R. Mutahhar Ali. (2016). Impact of Liquidity on Profitability of Commercial Banks in Pakistan: An Analysis on Banking Sector in Pakistan. *Global Journal of Management and Business Research* 16 (1): 2249 – 4588.

Nabeel, M., & Hussain, S. M. (2017). Liquidity Management and its impact on Bank Profitability: A Perspective of Pakistan. *International Journal of Business and Management Invention* 6 (5), 28-23.

Shrestha, B.P (2012). Impact of Liquidity on Bank Profitability in Nepalese Commercial Bank: *Nepal Journal of Management*, vol 1: 28-37.

Pradhan, R.S. & Shrestha, D. Impact of Liquidity on Bank Profitability in Nepalese Commercial Bank: https://ssrn.com/abstract=3044041

Lartey, V. C., S. Antwi, & E. K. Boadi. (2013). The relationship between liquidity and profitability of listed banks in Ghana. *International Journal of Business and Social Science* 4 (3), 48-55.

Brigham & Chrhardt (2013). *Financial management* (13th ed.). Cengage Learning India Pvt. Ltd.

Shrestha, B.P (2012). Impact of Liquidity on Bank Profitability in Nepalese Commercial Bank: *Nepal Journal of Management*, vol 1: 28-37.

Alshatti, & A.S. (2015). The Effect of the Liquidity Management on Profitability in the Jordanian Commercial Banks. *International Journal of Business and Management* 10 (1): 62.

Karki, L. (2004). Liquidity ratio with loan and advances. *Journal of Nepalese Business Studies*, 2(4), 32-45.

Pant, P. R (2016). *Social Science Research and Thesis writing* (7th ed.)*, Kathmandu Buddha Publications Pvt. Ltd.

Zikmund, W.G (2013). *Business research methods*. New Delhi: Thomson.