

**IMPACT OF LIQUIDITY RISK ON THE
PROFITABILITY IN THE COMMERCIAL BANK OF
NEPAL**

(With Reference To NABIL, HBL and ADBL)

A THESIS

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RECOMMENDATION

This is to certify that the thesis

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Entitled:

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IN THE COMMERCIAL BANK OF NEPAL**

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DECLARATION

I hereby declare that the work reported in this thesis entitled **IMPACT OF LIQUIDITY RISK ON THE PROFITABILITY IN THE COMMERCIAL BANK OF NEPAL (With Reference To NABIL, HBL and ADBL)** submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the degree of Master of Business Studies (MBS) under the supervision of **Kamla Prakash Adhikari** of Shanker Dev Campus, T.U.

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ABBREVIATIONS

C.V	Coefficient of Variation
CRR	Cash Reserve Ratio
DDC	District Development Charge
EBIT	Earnings Before Interest Tax
EBL	Everest Bank Limited
EPS	Earning Per Share
Etc	Etcetera
F.Y	Fiscal Year
Fig.	Figure
HBL	Himalayan Bank Limited
i.e.	That is
Ltd.	Limited
MBS	Masters in Business Studies
NBL	Nepal Bank Limited
NIBL	Nepal Investment Bank Limited
NRB	Nepal Rastra Bank
P.E	Probable Error
PEs	Public Enterprises
ROA	Return on Assets
S.D.	Standard Deviation
SWOT	Strength, Weakness, Opportunity and Threat
T.U	Tribhuvan University
US\$	United States Dollar
VAT	Value Added Tax

CHAPTER I:

INRODUCTION

1.1 Background of the study

Liquidity risk is defined as the possibility that over a specific horizon, the bank will become unable to settle obligations with immediacy (Drehmann & Nikolaou, 2013). Liquidity risk also known as the risk of being unable to liquidate a position timely at a reasonable price (Muranaga and Ohsawa, 2002). According to Jenkinson (2008), exposes banks to a larger number of risks which include liquidity risks, credit risks, foreign exchange risk, market risk, interest rate risk among others. Liquidity Risk is a normal aspect of everyday management of financial institution which is arising from a bank's inability to meet its obligations when they come due without incurring unacceptable losses. This risk may adversely affect both bank's earnings and the capital. Therefore, it becomes the most essential function of a bank's management to ensure the availability of sufficient funds to acheive future demands of providers and borrowers at reasonable price. Lion and Dragos (2006) explain the liquidity risk for a bank; as the expression of the probability of losing the capacity of financing its transactions, or the probability that the bank cannot honor its daily obligations to its clients which includes the withdrawal of deposits, maturity of other debt, and cover additional funding requirements for the loan portfolio and investment. Liquidity risk is the opportunity of terrible consequences on the activity of proprietors, clients and different partners of the monetary institution coming about from the failure to demand contemporary fees commitment in a convenient and cost-effective process except obtaining inadmissible hardships (Paul Tsi, 2018). Banks are especially inclined to liquidity risk due to the part in changing maturities and presenting ensures in arrange to demand the liquid funds of their contributors (Diamond & Dybvig, 1983; Rauch et al., 2008).

Profitability is a reflection of how banks run at the given environmental situation. More precisely, it should mirror the quality of a bank's management and shareholders' behaviors, bank's competitive strategies, efficiency and risk management capabilities (Aburime, 2007). Profitability is ability of a bank or financial institution to use its resources to generate revenues in excess of its expenses. It shows the banks capability of generating profits from its operations. Profitability is a measure of firm's efficiency (Khan & Jain, 1998). It is also a control measure of the earning power of a firm as well as operating efficiency. In short, profitability is

determined by the ability to make profit from the operations (Owolabi, 2012). Therefore, firms must identify an optimal level of liquidity—one that is neither excessively low nor overly high—to maximize profitability. Profitability is commonly assessed through metrics such as Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM), all of which are typically influenced by both internal and external factors, largely shaped by the strategic decisions and policies set by bank managers. ROA, calculated as net income divided by total assets, evaluates how effectively management uses the bank's assets to generate earnings. ROE, defined as net income divided by shareholders' equity, indicates the profit generated relative to the equity invested by shareholders. Meanwhile, NIM is the difference between interest income and interest expenses, expressed as a proportion of total assets.

According to Bagh, et al. (2017) “the Banking sector serves as a backbone for an economy, and occupies a paramount important place in the development and growth of country's economy. Banks engage in valuable economic activities in order to ensure their survival and profitability. Banks perform monetary activities on both sides of the balance sheet. On the asset side, they enhance the flow of funds by lending needed cash to users whereas on the liability side, they accumulate liquidity originating from savers (Diamond & Rajan, 2001). The banking system plays a major role in the financial intermediation process of every economy making its efficiency and effectiveness an essential requirement towards ensuring stability and growth (Halling and Hading, 2006). A major adequate financial intermediation requires the purposeful attention of the bank management to profitability and liquidity, which are two conflicting goals of the commercial banks. These goals are parallel in the sense that an attempt for a bank to achieve higher profitability will certainly erode its liquidity and solvency positions and vice versa (Olagunju et al., 2011). Lion and Dragos (2006) advice that the primary purpose of commercial banks liquidity is to support other banking functions by maintaining adequate reserve to meet un- anticipated withdrawals and an inventory of near cash funds to satisfy potential credit demands.

According to Mishkin and Eakins (2009) managers of banks have to make sure that the banks have enough ready cash to pay its depositors when there are deposits outflows: that is when deposits are lost because depositors make withdrawals and demand payment. That is the execution of the core mandate of commercial bank with respects to financial intermediation gives rise to an intrinsic risk that lies very deep in their daily operation risk that lies very deep

in their daily operation (Bonfim and Kim, 2012). According to Arif and Anees (2012) Liquidity difficulties may deleteriously affect a certain bank's earnings and capital. Under risky situations, it may become reason of failure otherwise solvent bank. Another hurdle may be meeting the depositor's demands. The highest priority of a bank's management is to pay the necessary consideration to the liquidity difficulties. The success and growth of financial institution is based on strategies of competitive marketing which are structured in the form of the activities that makes banks subject to risk, represented in credit risk, liquidity risk, interest rate risk, market risk, operational risk and others which in turn effects on banks profitability.

1.1.1 Brief history Sample banks

Nabil Bank Limited

Nabil Bank Limited, established in July 1984, is Nepal's first private sector bank. It was founded with the aim of delivering modern, international-standard banking services across various segments of society. To achieve this, Nabil offers a comprehensive range of commercial banking services through 118 service outlets and maintains a strong nationwide presence with over 1,500 Nabil Remit agents. As a trailblazer in Nepal's banking industry, Nabil has introduced numerous innovative products and marketing strategies, marking a turning point in the country's banking history by ushering in the era of modern, customer-centric banking. The bank's day-to-day operations and risk management are overseen by a highly skilled and experienced management team. It is also fully equipped with advanced banking technologies, including internationally recognized banking software that facilitates electronic channels and transactions. Nabil operates with the mission of becoming the "1st Choice Provider of Complete Financial Solutions" for all stakeholders, a vision encapsulated in its brand promise, "Together Ahead." The bank and its employees are guided by the core values represented by the acronym "C.R.I.S.P"—Customer Focused, Result Oriented, Innovative, Synergistic, and Professional.

Himalayan Bank Limited

Himalayan Bank, a joint venture with Habib Bank Ltd of Pakistan, was established in 1993 and has since become one of Nepal's leading financial institutions. The bank offers core banking services such as loans and deposits across the country, employing innovative approaches to

meet customer needs. Its wide range of products is designed to deliver high-quality service to its valued clients. Himalayan Bank was the first in Nepal to introduce ATMs and Tele-banking, setting a precedent for modern and technologically advanced banking in the country. It operates 65 branches and 72 ATM booths nationwide, supported by Globus (Temenos) as its technology platform. Notably, the bank has been recognized as the top bank in Nepal by Bankers' Almanac, a distinction that reinforces its status as a leader in the national banking sector.

Agricultural Development Bank Limited

Agricultural Development Bank Limited (ADBL) was established in 1968 under the ADBN Act 1967, with the primary goal of providing institutional credit to enhance agricultural production and productivity in Nepal. It succeeded the Cooperative Bank, and in 1973, it merged with the Land Reform Savings Corporation. Over time, legislative amendments allowed ADBL to expand its services, including extending credit to small farmers through group liability models and financing cottage industries. These changes also enabled the bank to engage in commercial banking activities to mobilize domestic resources. Since its inception, ADBL has played a crucial role as a leading rural credit institution, significantly contributing to the agricultural financing sector. Although rural finance was its main operational area initially, the bank began offering commercial banking services in 1984. The introduction of the Banks and Financial Institutions Act (BAFIA) brought all financial institutions under a unified legal framework, repealing the original ADBN Act. Consequently, ADBL transitioned into a public limited company in 2006 under the Companies Act and has since operated as an "A" class financial institution licensed by Nepal Rastra Bank. With a history spanning over 53 years, ADBL is now one of Nepal's leading commercial banks. It serves more than 1.2 million customers across all 7 provinces and 77 districts, operating through a widespread network of 278 offices. While it offers a full range of modern banking services, its core mission remains focused on supporting rural agriculture, productive sectors, and underserved communities. Through its extensive outreach and commitment to quality service, ADBL continues to contribute significantly to national development goals.

1.2 Statement of the Problems

The activities of banks are characterized by problems due to the fundamental role as they play in short term deposit maturity transformation to maturity transformation of long-term loans which are exposed to liquidity risk. In this scenario, banks are exposed to liquidity problems and the occurrence of such can frustrate bank customers which can ultimately impact negatively on the financial sector at large (Kiganda, 2014). There is a positive correlation between profitability measured by return on assets of Saudi and Jordanian banks and some liquidity indicators whereas there is a negative correlation between other liquidity indicators and profitability measured by return on assets (Almazari, 2014). Liquidity indicators of joint venture banks show that they have stored high level of liquidity and are not facing the liquidity deficit problem instead they are facing the high liquidity problem (Baral, 2005). Every bank has to ensure it works towards achieving its set profits target while at the same time satisfying customers' financial demands by keeping an optimum level of bank liquidity. Therefore, liquidity has significant influence bank profitability which is negative in the event of a mismatch between bank assets and liabilities (Mwangi, 2014). This situation may result in exposing an institution to financial losses. Liquidity risk evolve from the processes in the operations of banks. It could adversely impact on the overall bank earnings and capital (Kazeem, 2015). Banks should determine the optimal amount of cash that enable them in achieving balance between profitability and liquidity together, because each level of liquidity has a different effect on the levels of profitability, and the problem arises when the commercial banks try to maximize their profit at the expense of neglecting the liquidity effect, which may cause a technical and financial hardship with the consequent withdraw of deposits (Alshatti, 2015) . Marozva (2015) , Kamau & Njeru (2016), Muriithi & Waweru (2017) and Maaka & Ondigo (2013) on Liquidity risk and financial performance revealed that liquidity risk have a negative and significant statistical impact on financial performance. In nepal ,The mobilization of the capital in the productive sectors are found minimal by the commercial bank . Bank are not able to collect the fund and allocate them in effective and efficient sector which leads the inefficiency and weakness in the analysis of financial statement that may affect the bank's profitability. It reflects the inefficiency in liquidity management. The banking sectors are facing many problems in maintaining the liquidity position, as in banking sectors lack of adequate liquid assets may impact a negative effect on profitability due to incapacity in

delivering to pay short term debts and other financial expenses. Though the Basel committee (1988) had set out regulatory standards for the management of both credit and market risks in the Basel 1 Accord and that for operational risk in the Basel 11 Accord, regulatory standard for liquidity risks were seldom mentioned. Landskronner and Paroush (2008) also indicated that there has been extensive academic and regulatory discussion on major banking risks including credit risk, market risks and operation risk while little attention has been paid for liquidity risk faced by banks and other financial institutions in recent years. Liquidity risk may arise due to the breakdown or delays in cash flows from the borrower's or early termination of the projects especially risks arising from the asset side. Moreover, liquidity risk may also originate from the very nature of banking; macro factors that are exogenous and financing and operating policies that are endogenous (Ali, 2004). Based on the above discussion on the research problems, this study will deal with the following research questions

- Is there significant relationship between liquidity risk management and profitability?
- Which commercial bank has better liquidity and profitability position?
- How liquidity risk arises and how it is managed by the commercial banks?
- How does the liquidity risk management impact on the profitability position of the commercial banks?

1.3 Objective of the study

This study is guided by the following specific objectives;

- To examine the relationship between liquidity management and the profitability of sample banks.
- To explore the liquidity and profitability position of commercial banks.
- To identify major factors that arises liquidity risk and techniques to manage it.
- To measure the impact of liquidity risk management on the profitability position of the sample banks.

1.4 Significance of the study

This study aims to examine the impact of liquidity risk management on the profitability of Nepalese commercial banks. It explores the relationship between various dependent,

independent, and control variables to better understand how liquidity influences financial performance. Liquidity and profitability ratios are critical concerns for both bank managers and potential investors, as liquidity serves as a key indicator of a bank's solvency and potential risk of bankruptcy. By identifying the factors that affect a bank's liquidity position, financial consultants can offer more informed guidance, helping commercial banks enhance profitability. The study's findings will offer valuable insights for bank managers regarding the causes and determinants of liquidity risk and its effects on profitability. In turn, this can help prospective investors make more informed and rational investment decisions based on a bank's liquidity risk profile.

Additionally, this research contributes to a broader understanding of the importance of liquidity risk management in the banking sector. It is expected to assist bank management in identifying liquidity challenges and implementing appropriate recommendations. For academics, the study will highlight existing research gaps and encourage future studies in related areas. It will also promote financial literacy among readers by clarifying the role of risk management in banking. Moreover, the insights from this research can support policymakers in developing or updating policies and programs aimed at improving liquidity risk management. Investors will benefit by gaining a better understanding of the liquidity information disclosed in banks' financial statements. Ultimately, bank management may use this report as a practical guide for making capital structure and investment decisions that align with stakeholder interests.

1.5 Limitations of the study

This research study has following limitations

The research is conducted within limited time frame, data, resources and lack of research experiments and expertise.

- The study assumes of linear relationship between dependent and independent variables. Thus, study has not considered the non-linearity biases those are normally characterized in emerging countries.
- This research study will employed selective statistical and financial tools for the analysis and interpretation of available of data.
- The study demonstrate only historical data of the past 10 fiscal years of the selected 3 banks out of 20 commercial banks

- The study assumes a level of homogeneity across banks, which may not be true, since banks in our study are of different sizes and have different objectives.

The study has covered with only few factors related to liquidity and profitability as there are numerous factors and issues for analysis.

1.6 Organization of the Study

This study has been organized into five different segments or chapter to make the study more systematic. The chapters one to five convey the following titles:

Chapter-1 Introduction

This chapter contains the introduction part of the study. It describes the background of the study; it also deals with statement of the problem, objectives of the study, significance of the study, limitation of the study and organization of the study.

Chapter-II Review of the Literature

The second chapter deals with the conceptual framework, review of empirical works, relevant research studies, review of major studies in Nepal and finally conclusion of the literature.

Chapter-III Research Methodology

The third chapter contains research methodology employed in the study. It explain the research methods, research design nature and sources of data , data processing procedure , the basic tools and techniques and definitions of key terms.

Chapter-IV Data Presentation and Analysis

The fourth chapter contains presentation and analysis of data. In this chapter, data is collected through different sources such as reports, questionnaire, observation, information system and required statistical tools has performed analysis and interpretation of data.

Chapter-V Summary, Conclusion and Recommendations

The fifth chapter contains summary and conclusion of the study. After that all necessary recommendation are presented for the improvement of the further study and research.

CHAPTER II

REVIEW OF LITERATURE

This chapter provides conceptual framework of the study and deals with review of empirical studies associated with relationship between liquidity risk management and profitability of commercial banks. It is an imperative task to review different foreign and Nepalese literatures on the topic to study, so that it will be easier to reach at an important conclusion. The study can serve as a future reference for people who want to study on the similar topic. Thus, this study will facilitate to understand the impact of liquidity risk management on profitability of commercial banks.

2.1 Conceptual Review

2.1.1 Liquidity Preference Theory

Liquidity Preference refers to the demand for money i.e liquidity Nikolaou (2009) showed that a link exists between liquidity risk and bank liquidity based on the notion that there is high preference by investors for liquidity. The demand for liquidity is based on three motive; transaction, precautionary and speculative motives Bibow (2005). Keynes (1936) describes liquidity preference theory saying that people value money for both "the transaction of current business and its use as a store of wealth. Thus, they will sacrifice the ability to earn interest on money that they want to spend in the presents well as to have it on hand as a precaution. However, as interest rates rise, individuals are more likely to invest their money to earn returns, reducing their preference for holding liquid assets. This theory also explains why short-term securities tend to offer lower interest rates: investors are trading less liquidity and thus demand lower compensation for the shorter time frame. In contrast, long-term securities require investors to give up liquidity for a longer period, so they demand higher returns. The Liquidity Preference Theory is highly relevant to this study, as it provides a framework for understanding why banks choose to hold liquid assets. Customers tend to avoid banks with high liquidity risk, favoring those with strong liquidity positions. Customers avoid banks characterized by high liquidity risk as they opt for assets that are highly liquid, they do this as they pile up the their cash in banks that are highly liquid (Bonfim & Kim, 2011).

Consequently, higher liquidity enhances a bank's reputation, attracts more deposits, and improves overall profitability and performance. Thus, effective liquidity risk management, guided by the principles of liquidity preference, becomes essential for the financial success of commercial banks.

2.1.2 Shiftability Theory

Shift Ability Theory was proposed by Harold G. Moulton (1918) in USA which suggested that the liquidity of an institution is maintained when such institution holds assets which could be easily sold to other lenders or converted to other investments for cash. This theory explained that banks could protect themselves against excessive deposit withdrawals by holding as a form of liquidity reserve such as commercial paper, bankers acceptances and treasury bills and credit instruments for which there exists a ready secondary market. All these instruments meet the tests of marketability because of their short terms to maturity and capital certainty. So, Banks rely on assets that can be transferred to other banks before maturity to meet its cash requirements (Summers, 1975). Therefore, shiftability, marketability and transferability of the assets of bank is basis for enhancing liquidity (Ibe, 2013). This theory stated that securities held by banks that are highly marketable or transferrable become a vital source of bank liquidity (Maaka, 2013). Shiftability in this sense implies transfer of assets to the central bank and not to other banks i.e. shares, debentures, treasury bills where the central bank is the lender of last resort (Acharya & Naqvi, 2012). Brunnetti, Filippo and Harris (2011) put forward that the global crises exposed the inherent liquidity challenges faced by banks in the interbank market. Banks were however, not sure of the extent of liquidity problems on the balance sheets of other banks but were simply not willing to lend those seeking to borrow without any substantial or provision of accommodations for any possible counterparty risks. According to Nwankwo (1991) the theory argues that since banks can buy all the funds they need, there is no need to store liquidity on the asset side (liquidity asset) of the balance sheet. Saleem and Rehman (2011) explained that for ascertain corporate profitability financial ratios are very important because employees, management, owner, stakeholders are interested and they always have a quest to know about liquidity situation of any organization. This theory has been criticized by various scholars that in period of distress, it may be difficult to shift the credit instruments into cash as the market confidence would be seriously affected and thus

credit worthiness would be lacking (Maaka, 2013). This theory is relevant to this study because commercial banks try to keep up sufficient funds to meet the unexpected demands from depositors (Majid, 2003) and holding sufficient liquidity is necessary to insure against liquidity risk (Diamond & Rajan, 2001) but maintaining the cash is extremely expensive (Holmstrom & Tirole, 2000)

2.1.3 Loanable Funds Theory

Loanable Funds Theory attributed to the amount of money saved by individuals and organizations for the purpose of lending out to borrowers rather than being used for consumption. The supply of Loanable funds comes from organizations, businesses and individuals who have saved some extra money for investment purposes in this theory, he said the concentration of loans in a particular sector is the main cause of liquidity risk therefore loanable funds should be diversified (Bibow 2005). On the demand side of the Loanable Funds Theory, banks lend money to borrowers at an interest rate, and individuals or organizations seek loans primarily for investment purposes. For instance, a business might borrow funds to acquire capital assets such as machinery, while an individual may take out a loan to build a house—both with the expectation that these investments will appreciate in value over time. Thus, the demand for loanable funds is fundamentally driven by the intention to invest. Borrowers are willing to pay interest on these loans because they anticipate future returns that exceed the cost of borrowing. In essence, the greater the investment opportunities and expected profitability, the higher the demand for loanable funds. The demand and supply of this theory mentioned above gives a perfect example of market analysis of Loanable funds theory (bibow 2005). This theory assumes that a bank maintains adequate liquidity by relying on its self-liquidating assets—those that naturally convert into cash through the normal course of business, such as short-term loans and receivables. However, it overlooks critical practical challenges, particularly the impact of seasonal deposit withdrawals and unexpected credit demands, which can strain a bank's liquidity position. Moreover, the theory falls short in acknowledging the inherent instability of demand deposits. It presumes a consistent and predictable pattern in deposit behavior, which is not always the case in real-world banking. As a result, it fails to account for the volatility in customer withdrawals and the dynamic nature of credit requests, limiting its

effectiveness in ensuring robust liquidity management under unpredictable financial conditions.

2.2 Review of related study

This section includes review of related literature. This empirical literature is categorized into three section that are review of literature according to date. The literatures found in terms of popular write-ups, reports, studies/ articles were reviewed. Studies in fact demonstrative the relationship between selected variables and bank performance has been selected for review. In this section, a brief review of exciting studies, pertinent to present study has been presented. The review of literature has been undertaken as under

2.2.1 Review of journals & articles

Olagunju et al. (2011) conducted a study on the relationship between liquid assets and the performance of commercial banks in Nigeria. The primary objective was to provide empirical evidence on how effective liquidity management influences profitability and to explore ways commercial banks can strengthen both their liquidity and profitability positions. In this study, operational efficiency was used as the independent variable, while performance, measured by Return on Assets (ROA), served as the dependent variable. Using a multiple regression analysis, the results revealed a positive and significant relationship between liquid assets and bank performance. The research concluded that effective and efficient liquidity management is essential for the smooth operation and long-term survival of banks. It emphasized that both illiquidity (a shortage of liquid assets) and excess liquidity (holding too many idle funds) are harmful financial conditions. These can erode a bank's profitability base and hinder its ability to achieve higher levels of performance. Ultimately, the study reinforced that the success and stability of commercial banks are closely tied to how well they manage liquidity. Poor liquidity management, whether due to scarcity or surplus, can significantly impact a bank's ability to generate profits and maintain operational health.

Arif & Anees (2012) examined liquidity risk and the performance of conventional banks in Pakistan, using a sample of 22 banks over a six-year period from 2004 to 2009. The study employed a correlational research design, gathering primary data through unstructured interviews and secondary data from annual financial reports. The study concluded that

liquidity risk, measured by liquidity gap and non-performing loans (NPLs), has a significantly negative impact on bank profitability. It found that as liquidity risk increases, the ability of banks to generate profits declines. One of the key findings was that an increase in deposits can improve a bank's earnings by enabling it to extend more loans and, consequently, earn more interest income. This approach, the study argued, could help banks become more liquid and reduce reliance on costly overnight borrowing, while also minimizing the risk of asset fire sales. However, the study acknowledged limitations in its recommendations. It did not consider the interest expenses banks incur on these deposits or the liquidity risks arising from unexpected withdrawals by depositors, which can quickly erode liquidity. Furthermore, while increasing deposits can help in the short term, it may not be a sustainable strategy for long-term liquidity management.

Importantly, the study identified a negative relationship between non-performing loans, liquidity gaps, and profitability, suggesting that both credit risk and mismatches in asset-liability maturity structures harm financial performance. To address these shortcomings, the present study aims to fill the research gap by recommending more stable and sustainable funding sources for banks—such as an increase in retained earnings—to strengthen liquidity without over-reliance on volatile deposits. Muriithi & Waweru (2017) conducted a comprehensive study on the impact of liquidity risk on the financial performance of commercial banks in Kenya, covering all 43 registered commercial banks over a ten-year period from 2005 to 2014. The study employed a quantitative research design, using two key indicators to measure liquidity risk: the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). Return on Equity (ROE) was used as the metric for financial performance. The data was drawn from audited financial statements and annual reports of the banks, and transformed into unbalanced panel data. To ensure robust results, the study applied advanced econometric techniques such as the random effects model and the Generalized Method of Moments (GMM). These methods were used to correct for unobserved firm-specific effects and to mitigate endogeneity—a common issue in panel data analysis. Statistical tests including the Wald test, F-test, and coefficient of determination (R^2) were used to validate the significance and explanatory power of the regression models. The findings revealed that the Liquidity Coverage Ratio (LCR) did not have a statistically significant effect on the financial performance of the commercial banks.

In contrast, the Net Stable Funding Ratio (NSFR) showed a negative and significant impact on profitability, both in the short term and long term. This indicates that while short-term liquidity buffers may not immediately affect profitability, long-term funding imbalances (as captured by NSFR) do pose a threat to bank performance. The study concluded that liquidity risk negatively affects financial performance, and strongly recommended that bank management prioritize effective liquidity management to ensure financial stability and sustained profitability. The results also highlight the importance of long-term liquidity planning over short-term liquidity ratios in managing bank performance effectively.

According to Maaka (2013), liquidity risk is a significant challenge for modern banks. The study found that banks may fail to maintain good asset quality, strong earnings, and sufficient capital if they cannot preserve adequate liquidity. It examined the relationship between liquidity risk and the performance of 33 Kenyan commercial banks from 2008 to 2012 using secondary data and a correlational research design. Multiple regression analysis showed that liquidity risk negatively impacts profitability, mainly due to an increased liquidity gap and leverage. Key indicators like ROA, NIM, and ROE were linked to profitability variations. The study also revealed a positive relationship between customer deposits and profitability, indicating that higher deposits enable banks to lend more and earn greater profits.

Emami et al. (2013) conducted a study to examine the effect of liquidity risk on the performance of commercial banks in Iran, covering the period from 2003 to 2010 using panel data. The study incorporated both macroeconomic variables—such as gross domestic product (GDP) growth and consumer price index (CPI) for calculating inflation—and bank-specific factors in its empirical model. Data for the macroeconomic variables were obtained from the central bank's website, while bank-level data were collected from the commercial banks themselves. To determine the appropriate estimation method, the study employed the Limer's F-test to choose between common effects and fixed effects models, and the Hausman test to decide between fixed and random effects models. The analysis revealed that liquidity risk has a significantly negative effect on the performance of banks, as measured by both Return on Assets (ROA) and Return on Equity (ROE). The findings indicate a clear inverse relationship between liquidity risk and bank performance,

suggesting that increased liquidity risk undermines the profitability and overall financial health of commercial banks in Iran.

Siaw (2013) conducted an empirical study on the impact of liquidity risk on the profitability of 22 commercial banks in Ghana over the period 2002–2011. The study aimed to identify the key determinants of liquidity risk and assess how it influences bank profitability. Using secondary data from annual financial reports, the research employed a Generalized Least Squares (GLS) regression based on a random effects model, as determined by the Hausman test. Additionally, a two-stage least squares (2SLS) method was used to analyze the effect of liquidity risk while controlling for variables such as bank size, capital adequacy, non-interest income, operational costs, credit risk, industry concentration, and GDP growth. Liquidity risk was measured by the financing gap ratio and the net loan-to-deposit ratio. Key determinants with high statistical significance included bank size, liquid asset composition, non-deposit funding, inflation changes, and industry concentration. Notably, bank size, non-deposit dependence, and inflation had a negative effect on liquidity risk, while ownership structure showed no significant impact. The findings revealed a consistent positive relationship between liquidity risk and bank profitability, whether measured by return on assets (ROA) or return on equity (ROE). Banks with higher liquidity risk exposure tended to achieve greater profitability, largely due to higher net interest margins. The study emphasizes the importance of strengthening bank treasury departments to ensure effective liquidity risk management. By attracting more deposits through competitive interest rates and lending efficiently to businesses, banks can grow their funding base and profitability. This process not only benefits the individual banks but also contributes to broader economic growth by improving access to capital and stimulating business activity.

Mwangi (2014) investigated the impact of liquidity risk management on the performance of commercial banks in Kenya. Using a descriptive research design, the study examined 43 listed commercial banks between 2010 and 2013, relying on secondary data from published financial statements, including income statements, balance sheets, and other disclosures. A census approach was applied, and a multiple regression model was developed using ordinary least squares (OLS) to assess how liquidity risk affects financial performance, measured by return on assets (ROA). The independent variables used in the model were liquid assets to total deposits, liquid assets to total assets, interbank balances to total assets,

and asset quality. The findings revealed that liquidity risk has a significant negative impact on bank performance, indicating that careful management of liquidity is essential to enhance shareholder returns. Specifically, holding a higher ratio of liquid assets to total deposits significantly reduced profitability, while holding more liquid assets relative to total assets also led to lower returns, though not significantly at the 5% level. The study emphasized the importance of strategic liquidity planning to avoid reliance on the interbank market and suggested measures to reduce client withdrawals. It also proposed further research into the influence of endowment risk on financial performance and how liquidity management decisions play a role in shaping overall bank outcomes.

Marozva (2015) explored “Liquidity and bank performance” which has applied the Autoregressive Distributed Lag (ARDL)-bound testing approach and Ordinary Least Squares (OLS). The study applied both the Autoregressive Distributed Lag (ARDL) bounds testing approach and Ordinary Least Squares (OLS) to investigate the effect of funding liquidity on bank profitability, with net interest margin serving as the key performance indicator. Data were sourced from the South African Reserve Bank (SARB) and Bloomberg. The OLS method was used to analyze the direct relationship between net interest margin and funding liquidity, while the ARDL model, based on Pesaran et al. (2001), was used to test for long-run co-integration between liquidity and profitability. The findings showed a significant negative relationship between net interest margin and funding liquidity risk, indicating that increased liquidity risk tends to reduce bank profitability. However, the study found no significant long-term co-integrating relationship between net interest margin and the two liquidity measures considered. Based on these results, the study recommended that future research should explore liquidity risk within the framework of asset-liability mismatches to provide deeper insights into its impact on financial performance.

This paper investigates the relationship between liquidity risk (liquidity asset ratio-LIQR, cash ratio-CASR, current ratio-CURR and basic defense ratio-BDR) and bank profitability (Return on assets-ROA, return on equity-ROE and Net interest margin-NIM) for the banking sector in Egypt including public and private banks. Data was collected from the official website of the banks and the annual reports during the period from 2013 to 2019. The research methodology was built upon quantitative approach by collecting panel data (secondary data) for the assigned period to examine the research hypotheses. Pooled

regression, as well as the fixed effect and random effect analyses were used as the statistical tools to analyze the collected data. Results revealed that there was a significant relationship between liquidity risk and bank profitability in the period 2013 to 2019 in the Egyptian banking sector. But the relationship varied between being positive and negative according to the indicator used for measuring liquidity and banks profitability.

Ouma (2015) analyzed the impact of liquidity risk on the profitability of Kenya's commercial banks over the period 2010 to 2014. The study conducted a census survey of all 43 commercial banks using a descriptive research design, which allowed for a clear depiction of the situation with minimal bias in data collection. Secondary data were gathered from the banks' annual reports, and the analysis included statistical tools such as tables, charts, correlation analysis, standard deviations, and regression. Results showed that the current ratio had the highest standard deviation and strongest correlation with net interest income, followed by the liquidity ratio. The study found that increases in the current ratio, liquidity ratio, and deposits were positively associated with higher net interest income, suggesting that better liquidity management contributes to improved profitability. It recommended that commercial banks manage liquidity risk by maintaining adequate cash reserves, increasing their deposit base, and minimizing the liquidity gap. Additionally, the study advised policymakers to consider liquidity risk as a crucial factor in enhancing bank performance and profitability, particularly as measured by net interest margin (NIM). Future research was suggested to examine how the structure of funding affects the required level of liquid assets and overall bank performance.

Khanal (2019) on her study "Determinants of liquidity in commercial banks of Nepal" has adopted descriptive and analytical research methodology to find out determinants of the liquidity in commercial banks of Nepal. The study relied on secondary data collected from annual reports, bank websites, economic surveys, and other official sources covering the period from 2009 to 2017. Analytical tools such as ratio analysis, descriptive statistics, correlation analysis, and multiple regression were applied using MS Excel and E-Views 8. The key independent variables examined included capital adequacy ratio (CAR), non-performing loans (NPL), return on assets (ROA), return on equity (ROE), firm size, GDP growth rate, and inflation rate. The regression analysis revealed that ROA had a significant positive effect on the loan-to-deposit ratio, indicating that more profitable banks tend to

hold lower liquidity. On the other hand, ROE, bank size, and inflation showed a significant negative relationship with liquidity, suggesting that larger and more equity-efficient banks, as well as those operating in inflationary environments, maintain lower levels of liquidity. CAR and GDP growth had a negative but statistically insignificant impact, while NPLs had a positive but also insignificant relationship with liquidity. The study concluded that ROA, ROE, bank size, and inflation are the main determinants of liquidity in Nepalese commercial banks.

Leykun (2016), in his study “Determinants of Commercial Banks’ Liquidity Risk: Evidence from Ethiopia”, adopted a post-positivist, quantitative research paradigm using an explanatory research design. The study analyzed both bank-specific and industry-specific factors influencing liquidity risk in Ethiopian commercial banks over the period 2005 to 2014. Secondary data were primarily sourced from the National Bank of Ethiopia's annual publications and audited financial statements of individual commercial banks. Variables were selected based on prior research and expert judgment, with capital adequacy proxied by the equity-to-asset ratio, competition measured by the Lerner index, operational efficiency represented by the operating expense-to-total asset ratio, and liquidity risk measured through total loans-to-total assets and total deposits-to-total assets. The econometric analysis revealed that capital adequacy, total loans-to-total assets, and total deposits-to-total assets all had a statistically significant and negative impact on liquidity risk at the 0.01% significance level. These variables were identified as the most influential determinants of bank liquidity in Ethiopia. The findings support the "crowding-out of deposits" hypothesis, indicating that higher capital levels may reduce the incentive to attract deposits. Moreover, the study highlighted a mismatch between the sources of funds (liabilities) and their allocation (assets), emphasizing the need for banks to better align asset and liability maturities. Recommendations included shortening asset maturities, lengthening liability maturities, and improving the overall liquidity profile of bank assets to mitigate liquidity risk.

Vintilă & Nenu (2016) on their research article “Liquidity and profitability analysis on the Romanian listed companies” has applied descriptive and analytical research design to identify the relationship between liquidity and corporate financial performance. Initially, companies were classified using factor analysis and subsequently grouped through cluster

analysis with the SAS program. The researchers then applied multivariate regression models on unbalanced panel data to test selected variables. The results showed mixed findings on company size: while the number of employees positively influenced performance from an accounting perspective, total assets had a negative correlation from a market perspective. Indebtedness was negatively related to performance, whereas transparency and disclosure showed no significant effect. The study also found that a decline in liquidity was not considered a risk factor by Romanian companies. Covering periods before and after the global financial crisis, the research confirmed a significant relationship between liquidity and profitability. The crisis underscored the need for stronger capital adequacy, improved liquidity risk management, enhanced governance, and greater transparency in financial institutions. Special attention was recommended for managing capital adequacy risk, as failure to do so could expose banks to various operational and financial risks.

Muthoga (2019) investigated the impact of liquidity risk management on the financial performance of 11 commercial banks listed on the Nairobi Securities Exchange in Kenya, covering the period from 2010 to 2015. Grounded in Liquidity Preference Theory, Shift Ability Theory, and Financial Intermediation Theory, the study employed a causal research design with descriptive and regression analyses. The regression results revealed that an increase in the ratio of net loans to total assets significantly and negatively affected bank profitability, indicating that higher net loan holdings reduce profitability. Similarly, a higher ratio of non-performing loans to total loans was found to inversely impact profitability, while liquid asset holdings also had a significant negative effect. The findings suggest that all three factors—net loans, non-performing loans, and liquid assets—play crucial roles in determining the profitability of commercial banks. The study recommends that banks avoid allocating a large portion of their assets to long-term loans to prevent liquidity challenges. Furthermore, it emphasizes the need for effective credit risk management to reduce non-performing loans, which harm profitability. Lastly, it advises bank management to maintain higher liquid asset reserves during economic downturns to safeguard profitability and stability.

Oganda ,Mogwambo ,Otieno (2020) studied' liquidity risk management on fianancial performance of commercial banks in kenya where this study mainly focused on the effects of asset management and deposit management on performance of commercial bank. Using

a correlational research design with comparative analysis, the study analyzed panel data from 2007 to 2016, sourced from annual reports. Descriptive and inferential statistics revealed a statistically significant negative relationship between customer deposits and bank profitability, indicating that as deposits increase, profitability tends to decrease. The study recommends that banks focus on core deposits such as demand and savings accounts while diversifying funding sources, investments, and income streams. Additionally, the authors suggested expanding branch networks to better absorb public cash and leverage economies of scale to improve profitability. The study also compared performance metrics like return on deposits between local and foreign-owned banks to highlight similarities and differences. For future research, it recommended exploring the relationship between asset base and performance over longer periods using advanced analytical methods such as Generalized Estimating Equations (GEE), Generalized Method of Moments (GMM), and dynamic panel analysis.

Khanal (2019) employed descriptive and analytical research methods to investigate the determinants of liquidity in Nepalese commercial banks using secondary data from 2009 to 2017, sourced from annual reports, websites, and economic surveys. The data were analyzed through ratio analysis, descriptive statistics, correlation analysis, and multiple regression using MS-Excel and E-VIEWS 8. Key independent variables included capital adequacy ratio (CAR), non-performing loans (NPL) to total loans, return on assets (ROA), return on equity (ROE), firm size, GDP growth rate, and inflation. The regression analysis revealed that ROA positively and significantly influences the loan-to-deposit ratio, while ROE, firm size, and inflation negatively and significantly affect liquidity. In contrast, CAR and GDP had a negative but statistically insignificant impact on the loan-to-deposit ratio, and NPL showed a positive but insignificant effect. The study concludes that ROA, ROE, firm size, and inflation are the major factors determining bank liquidity in Nepal.

Saleh & Afifa (2020) conduct a research work entitled “the effect of credit risk, liquidity risk and bank capital on bank profitability”. This study employed Secondary data being gathered between 2010 and 2018 from 13 commercial banks by examining empirical evidence in Jordan . Data were sourced from the Amman Stock Exchange and analyzed with panel data econometric methods, including Generalized Method of Moments (GMM), fixed effects, and random effects models. The study found that credit risk, liquidity risk, and

bank capital significantly influence bank profitability. The authors recommend that banks maintain higher liquidity and capital levels to better withstand future challenges affecting profitability. The study also emphasizes the importance of implementing Basel guidelines to improve bank efficiency and risk management. The findings provide valuable insights into the relationship between key bank-specific risks and profitability, aiding both local and international bank managers. Furthermore, the research encourages more in-depth studies on liquidity risk monitoring and suggests expanding empirical models to include additional factors influencing liquidity risk.

Eljelly (2023) investigated the relationship between profitability and liquidity among Saudi Arabian companies using the current ratio and the cash conversion cycle (referred to as the cash gap). Employing correlation and regression analyses, the study found a significant negative correlation between profitability and liquidity. Specifically, firms with higher current ratios and longer cash conversion cycles tended to experience lower profitability. The cash conversion cycle was deemed a more critical liquidity measure at the industry level than the current ratio. The study concluded that efficient management of receivables and careful planning of current assets and liabilities are essential to minimize the risk of failing to meet short-term obligations and to avoid excessive investment in current assets.

Huston (2023) defines liquidity as the ease with which an asset can be converted into cash, emphasizing its importance in a firm's ability to meet short-term obligations without disrupting daily operations. Effective liquidity management involves coordinating various funding sources and their use to ensure timely payment of liabilities without harming the company's financial health. As a vital indicator of an organization's short-term strength, liquidity management guarantees that cash—often called the "lifeblood of business"—is available when needed. By managing liquidity effectively, managers can reduce risk exposure and avoid the costs associated with both cash shortages and holding excessive cash. Ratios play a crucial role in liquidity management by helping assess the relationships between financial variables to guide decision-making.

2.2.2 Review of Previous Thesis

Koirala (2014), conducted a study entitled on “Liquidity management of Nepalese commercial banks” with reference to EBL and SBI to explore the liquidity position of the commercial bank, to explore the deposit and investment trend of the bank, and to analyze the relationship between liquidity and net profit. For the purpose of this study, data were collected through public sources, concerned banks’ website and other sources. To complete this study, various financial and statistical tools such as ratio analysis, standard deviation, coefficient of variance, correlation of coefficient and trend analysis study were used. From this study, researcher found liquidity management is still in developing phase in Nepal. Most of the banks have maintained liquidity fund just to fulfill the mandatory requirement only. According to this condition, commercial bank in Nepal feels such mechanism as burden rather than responsibility towards the financial system of the country. On this study, researcher recommends to the sample banks to prepare and submit quarterly basis to NRB within stipulated time period, an effort should be made on human resource development on the risk analysis management and liquidity management, and to manage the liquidity effectively the existing regulation should be effectively put in practice properly.

Adhikari, P. (2011) conducted a research study entitled “Liquidity management of commercial banks in Nepal” with reference to Everest Bank Ltd and Standard Chartered Bank Ltd to analyze the liquidity management, deposit and investment position of the banks, to find out the relationship between deposit, investment, loans and advances and net profit, to find out the trend analysis of deposit, investment, loans and advances and net profit, and to recommended for the improvement based on findings. To achieve the objective of this study, analytical and descriptive research designs have been used. This study includes secondary data in nature that consists of annual reports of the concerned banks, related books, magazine, journals, articles, reports, and bulletins, data from Nepal Stock Exchange and Nepal Rastra Bank, Central Bureau of statistics, related website etc. as well as other supplementary data and various economic surveys. Based on this study, researcher concluded that the both the banks are able to maintain adequate liquidity position to meet the short term or even instant obligations in that period. The liquid ratio of both SCBNL and EBL are below the normal standard ratio of 2:1. However, the liquidity position of SCBNL is slightly better than that of EBL. That means EBL is more efficiently using its

total assets (funds) to earn interest income. On the basis of his conclusion, researcher recommends to the banks to develop an innovative approach to bank marketing and formulate new strategies of serving customers in a more convenient and satisfactory way by optimally utilizing the modern technology and offering new facilities to the customers at competitive prices. The bank is also required to explore new market areas to form a strong market department in its central level, which deals with the banking products, places, price and promotion.

Joshi, R. (2013) conducted research study entitled “ Working capital management of commercial banks in Nepal” with Special Reference to NIBL, HBL, EBL & NABIL to examine the major factors affecting the management of working capital, to evaluate the working capital financing policy adopted by the banks, to analyze the liquidity maintenance and the efficiency in equity management to generate profit of the banks, to show the relationship of net profit with the working capital, and debt of the banks, and to provide appropriate suggestions. The research design followed for this study is basically a historical, empirical and descriptive-cum-analytical. Under this study, financial as well as statistical tools have been used to analyze the gathered data and information. This study is conducted on the basis of both primary and secondary data relating to working capital. The secondary data have been extracted mainly through the annual report of NIBL, HBL, and EBL & NABIL. Likewise, the primary data have been collected by distributing questionnaire to the employees and the shareholders of the sample banks. Findings of this study reveal that an organization, which is not willing to take more financial risks, can go for more short-term liquidity and It can be inferred that the observed banks are risk takers since the short term financing to working capital is higher in each banks.

Koirala (2014), conducted a study entitled on “Liquidity management of Nepalese commercial banks” with reference to EBL and SBI to explore the liquidity position of the commercial bank, to explore the deposit and investment trend of the bank, and to analyze the relationship between liquidity and net profit. For the purpose of this study, data were collected through public sources, concerned banks’ website and other sources. To complete this study, various financial and statistical tools such as ratio analysis, standard deviation, coefficient of variance, correlation of coefficient and trend analysis study were used. From this study, researcher found liquidity management is still in developing phase in Nepal.

Most of the banks have maintained liquidity fund just to fulfill the mandatory requirement only. According to this condition, commercial bank in Nepal feels such mechanism as burden rather than responsibility towards the financial system of the country. On this study, researcher recommends to the sample banks to prepare and submit quarterly basis to NRB within stipulated time period, an effort should be made on human resource development on the risk analysis management and liquidity management, and to manage the liquidity effectively the existing regulation should be effectively put in practice properly.

Sharma (2018) conducted a research study entitled “A study on liquidity analysis of commercial banks” with reference to HBL and SBI Bank Ltd in order to analyze whether or not commercial banks are able to maintain adequate liquid assets, to study its liquidity and profitability position of HBL and SBI Bank Ltd, to analyze the growth of total deposits, total investment, total loans and advances and net profit of the sample banks, and to examine the trend of total deposit, total loans and advances and net profit. A researcher has used various financial, statistical and accounting tools to accomplish the objectives of this research study. This study includes only secondary data that consists of annual reports of the concerned banks and the collected data were analyzed by using financial as well as statistical tools.

Based on the findings, correlation coefficient of the variables selected for the statistical analysis shows that HBL and SBL has significant relationship with cash and bank balance and liquid liabilities and government securities and total deposits but insignificant relationship with loan and advances and net profit and loan and advances and total deposit. Therefore, from above all, researcher concluded those banks are not of much in different condition.

Karki (2020), had conducted a study on " A Comparative Analysis of Financial performance of NABIL and SCBNL". The major findings were SCBNL has efficiently operated its long-term fund, deposit and assets to generate more profits. Liquidity position of NABIL bank is favorable in many cases it seems excessive. The proposed recommendation for these banks are to reduce its excessive non-performing assets (Cash and bank balance) and invest on the income generating current assets (Treasury bills), while SCBNL must strength the liquidity position. Comparatively SCBNL's profit ability position is better than that of NABIL.

2.3 Research Gap

Research gap introduces to the gap between previous research and this research. In the process of reviewing several articles and journals, it has been found many research studies have been done on the analysis of liquidity risk management; however, those studies have included fewer variables and less sample size and data with maximum five years in Nepalese context. So that a researcher determined to conduct further research study on liquidity risk management on profitability of the commercial banks in Nepal by including several other independent variables those are excluded from the previous studies i.e. CAR, CRR & LDR. A researcher has added three leading commercial banks as a sample banks from all the sectors, and finally adopted secondary data of 10 fiscal years to analyze the management of liquidity risk in commercial banks, which is the most important aspect of the banking sector. Hence the researcher attempted to fill this gap by measuring the liquidity risk management and profitability of HBL, ADBL and NABIL by studying their liquidity management system. This study also aims to find out the organizational structure of HBL, ADBL and NABIL for the proper implementation and compliance of NRB Directives and to manage the liquidity. This research work will assist acquire knowledge regarding tools and techniques used and extra knowledge for the further researcher who is going to study in the same topic. Furthermore, this research study is trying to continue the finding of previous research studies conducted by various researchers as well as it will be helpful or fruitful to those interested person , scholars , students , teachers , stakeholders , business as well as policy perspectives.

CHAPTER III

RESEARCH METHODOLOGY

Research methodology is a technique to conduct a research study in order to find out the answers of the unanswered research questions through the analysis and interpretation of primary or secondary data. In this sense, research methodology is a scientific and systematic process of solving the existing problems and finding their solutions to eliminate the negative emerging issues systematically and scientifically. It refers to the overall research process, which a researcher conducts during their study. In this study, all the data are analyzed with using appropriate financial tools. The objective of research methodology is to achieve the basic objectives and goals of the research study. The major contents of research methodology followed in course of this study are as follows

3.1. Research design

Research design serves as the framework guiding the collection and analysis of data, outlining the research instruments and sampling methods to be used. It acts as a blueprint for gathering, measuring, and analyzing information. This study employs a combination of descriptive, explanatory, correlational, and causal research designs to explore the relationship between liquidity risk management and the profitability of commercial banks in Nepal. The descriptive research design is used for fact-finding and to gather sufficient information about how liquidity management indicators impact the profitability of Nepalese commercial banks. It helps to accurately depict results and describe the characteristics of the sample. Additionally, a causal-comparative research design is adopted to examine the effects of liquidity management indicators — such as current ratio, liquid ratio, capital adequacy ratio, cash-to-deposit ratio, loan-to-deposit ratio, bank size, and leverage — on the profitability of these banks. This design is suitable for investigating causal relationships by observing existing outcomes and identifying potential causes that affect liquidity risk management and profitability. Statistical tools, particularly correlation measures like the Pearson correlation coefficient, are extensively used to assess the relationships between dependent variables (bank profitability indicators such as return on

assets, return on equity, and net interest margin) and the independent variable (liquidity risk).

3.2 Population and sample

A population consists of all elements (individuals, objects, or events) that meet the criteria for inclusion in a study. As of fiscal year 2078/79, there are 20 commercial banks operating across Nepal, with more than ten thousand branches. However, due to limited time and resources, the researcher selected only three commercial banks—Nabil Bank Limited, Agriculture Development Bank Ltd., and Himalayan Bank Ltd.—as the sample, using a random sampling method. In this study, the population refers to industries offering similar services and products. It represents the entire set of objects or results relevant to the research. A sample, on the other hand, is a representative subset randomly chosen from the population to investigate its characteristics. The selected banks are among the largest in Nepal and manage significant liquid assets in their daily operations. Therefore, the researcher aims to analyze the impact of liquidity risk management on the profitability of these commercial banks.

3.3 Nature and sources of data collection

This study is based on secondary data collected from balance sheets, profit and loss accounts, financial statements, annual reports, unpublished official documents of the selected banks, and the Nepal Rastra Bank (NRB) website, which provides a comprehensive and high-quality database that would be challenging for an individual researcher to gather through primary data. Additionally, the study utilizes NRB's unified directives, periodic economic surveys, economic journals, managerial and economic magazines, bulletins from various authorities, domestic and international case studies, newspapers, and other reliable published and unpublished reports. The research process involves collecting relevant data, organizing and analyzing it using MS Excel and the Statistical Package for Social Sciences (SPSS). The data will be examined through descriptive statistics, correlation, and regression analyses, including measures such as mean, standard deviation, minimum, and maximum values of the variables.

3.4 Methods of analysis

This research study employs both financial and statistical tools to analyze the data collected on liquidity management practices of the selected commercial banks. Tools such as ratio analysis, standard deviation, coefficient of variation, Karl Pearson's correlation analysis, and trend analysis have been used. The analysis is based on annual reports published by the respective banks, as well as relevant prior studies on the impact of liquidity management in Nepal and other countries. Data concerning capital adequacy and other regulatory requirements were obtained from the official websites of the Nepal Rastra Bank (NRB) and the selected banks. The findings derived from financial, accounting, and statistical tools are presented systematically in tabular form under various headings and compared to provide meaningful interpretations. The financial and statistical tools applied in this study include:

Financial Tools

Financial tools are employed to assess the financial strengths and weaknesses of a bank by establishing relationships between elements of the balance sheet and the profit and loss account. Among these tools, Ratio Analysis stands out as one of the most widely used and effective techniques for evaluating a bank's financial statements. It provides a simple yet meaningful way to measure efficiency, assess financial health, and evaluate managerial performance. Financial analysis typically relies on annual or quarterly financial statements and supports decision-making by systematically using ratios to interpret these documents. This helps identify a firm's strengths, weaknesses, historical performance, and current financial condition. In this study, the following ratios are used to analyze the liquidity risk and profitability of the selected commercial banks:

Liquidity ratio

Liquidity ratios are financial metrics used to assess a firm's ability to meet its short-term obligations, providing insight into its liquidity position and overall financial health. These ratios represent a margin of safety by evaluating how quickly a bank can convert its assets into cash to meet withdrawal demands and settle other current liabilities. As part of the

financial analysis, the following liquidity ratios will be employed in this study to evaluate the liquidity risk of the selected commercial banks:

a.) Cash Reserve Ratio

Cash Reserve Ratio (CRR) represents the mandatory percentage of a commercial bank's total deposits or liabilities that must be maintained as a cash reserve with the central bank—in Nepal's case, the Nepal Rastra Bank (NRB). This requirement is intended to ensure that banks maintain a sound liquidity position and are able to meet short-term obligations.

As per NRB regulations, commercial banks are required to maintain 5.5% of their total deposits as CRR on a weekly basis. The CRR serves as a key indicator of whether banks are complying with the prescribed liquidity standards. Failure to maintain the required CRR results in penalties and exposes the bank to potential liquidity shortfalls, which could affect its stability and solvency. The Cash Reserve Ratio is calculated using the following formula:

$$\text{Cash Reserve Requirement} = \frac{\text{Total Cash Reserve}}{\text{Total Deposit}} * 100\%$$

b.) Current Ratio

Current ratio depicts the quantitative relationship between current assets and current liabilities while it also indicates the liquid short term solvency position of bank. Higher liquid ratio reveals better liquidity position which represents a margin of safety i.e. a cushion of protection for creditors and the highest the liquid ratio, greater the margin of safety, large the amount of liquid assets in relation to liquid liabilities, more the bank's ability to meet its liquid obligations.

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

c.) Cash and Bank Balance to Total Deposit Ratio

Cash and bank balances are the most liquid current assets which measures the percentage of most liquid fund with the bank to make immediate payment or obligations to the depositor. Higher ratio represents the higher capacity of firms to satisfy the cash demand.

This ratio can be computed by dividing cash and bank balance by total deposit and can be presented as:

$$\text{Cash and balance to total deposit ratio} = \frac{\text{Cash and bank balance}}{\text{Total deposits}}$$

Cash and bank balance include cash in hand, foreign cash in hand, cheques and other cash items, balance with domestic and foreign banks. The total deposit includes deposits made by customers through different accounts like current, saving, fixed, call and other deposit accounts.

d.) Total Investment to Total Deposit Ratio

Investment is one of the major forms of credit creation to earn income. This implies the utilization of firm's deposit on investment on government securities, shares and debentures of other companies and banks. This ratio can be calculated by total investment divided by total deposit as:

$$\text{Total investment to total deposit ratio} = \frac{\text{Total Investments}}{\text{Total deposits}}$$

e.) Loan and Advances to Total Deposit Ratio:

This ratio is also called credit- deposit ratio (C D ratio) which measures the portion of loans and advances such as loans , advance ,bills purchase , cash credit , loan and foreign bills and bills discounted on total deposit.. It is computed to find out how successfully the bank is able to utilize its total deposits on loan and advances for profit generating purpose. Greater ratio shows better utilization or mobilization of collected deposits and vice versa . This ratio can be obtained by dividing loan , advances and Bills purchased by total deposit as under;

$$\text{Loan and Advances to total deposit ratio} = \frac{\text{Loans and Advances}}{\text{Total deposits}}$$

f.) Capital Adequacy Ratio

Capital adequacy ratios are a measure of the amount of a bank's capital expressed as a percentage of its risk weighted credit exposures. In other words, it is the ratio of a bank's capital in relation to its risk weighted assets and current liabilities. The financial model of the bank's CAR can be expressed as under:

$$\text{CAR} = \text{Tire 1 capital} + \text{Tire 2 capital} / \text{Risk weighted assets}$$

Profitability Ratios:

Profitability ratios express the combined effects of liquidity, assets management and debt on operating results. These ratios are used to indicate and measure the overall efficiency of a firm in terms of profit and financial performance. Profitability ratios are computed and evaluated in terms of the relationship between net profit and assets. For better performance, profitability ratios of a firm should be higher. Under this, the following profitability ratio will be computed.

g.) Return on Total Asset Ratio (ROA)

This ratio measures the overall profitability on all financial invested in a bank's assets each year. It is also known as return on assets (ROA) which depicts how to generate income from assets of the bank. A higher return on assets ratio indicates the efficiency of the bank's assets in its regular operation. This ratio is computed by dividing net profit (loss) by total working funds. This can be presented as;

$$\text{Return on Total Asset Ratio} = \frac{\text{prof. after taxes}}{\text{Total assets}}$$

h.) Return on Equity (ROE)

Return on equity displays the relationship between net income and shareholders' funds that explain how efficiently the bank has used funds of the shareholders. It reflects the ability of a bank to use its own funds to generate profits. Net worth refers to the owner's claim on a bank. The excess amount of total assets over total liabilities is known as net worth. This ratio can be figured out by dividing net profit by total equity capital (net worth). This can be calculated as

$$\text{Return on Equity (ROE)} = \frac{\text{Net profit}}{\text{Own equity}}$$

i.) Interest income to total loans and advances

This ratio reflects the extent to which the banks are successful in mobilizing these total loans and advances to acquire income as interest. This ratio reveals the earning capacity of commercial banks by utilizing its deposits. Deposits should be invested as loans and

advances effectively and generate sufficient interest income for the long term sustain of organization. Higher the ratio higher will be the income as interest. We have,

$$\text{Total interest earned to total loans and advances ratio} = \frac{\text{Total interest earned}}{\text{Total loan and advance}}$$

j.) Earning per share (EPS)

Earning per share reflects the performance of the company as per the investment made by investors or shareholders which gives the strength of the share in the market. The profitability of bank from the point of view of the ordinary shareholders is earning per share. The ratio explains net income for each unit of share. It shows how much of the total earnings belong to the ordinary shareholders. The higher the EPS leads the better performance of any banks. Earnings per share indulge us to compare different companies' power to make profit per share. EPS is calculated as:

$$\text{Total interest earned to total loans and advances ratio} = \frac{\text{Net Income}}{\text{Outstanding shares}}$$

k.) Book value per share (BVPS)

Net worth per Share is a measurement of the net worth of the company for each share of stock that has been issued. The book value per share formula is applied to measure the per share value of a company based on its equity available to common shareholders. The term "book value" is a company's assets minus its liabilities and is sometimes referred to as stockholder's equity, owner's equity, shareholder's equity, or simply equity. Common stockholder's equity, or owner's equity, can be found on the balance sheet for the company. In the absence of preferred shares, the total stockholder's equity is adopted. It can be calculated as follows;

$$\text{BVPS} = \frac{\text{Shareholders' equity}}{\text{Total number of shares}} * 100\%$$

l.) Return on Loans and advances ratio

Return on loan and advances ratio explained that how efficiently the banks have utilized their resources to earn good return from provided loan and advances. This ratio is calculated dividing net profit (loss) by the total amount of loan and advances and can be mentioned as,

$$\text{Return on Loans and advances ratio} = \frac{\text{Net profit /loss}}{\text{Loans and advances}}$$

Statistical tool

Some important statistical tools will be utilized to achieve the objective of this study . It also helps us to analyze the relationship between two or more variables. In this study statistical tool such as mean, standard deviation, coefficient of variation, coefficient of correlation and trend analysis will be used.

Mean

A mean is the average value or the sum of all the observation divided by the number of observations which is most popular and widely used measure of representing the entire data by the one value and it is given by the following formula:

$$\text{Mean } (\bar{X}) = \frac{\Sigma X}{N}$$

Where

\bar{X} = Mean of the values

ΣX = Summation of the values

N = No. of Observations

Standard Deviation (S.D.)

Standard Deviation is the most important and usual measure of dispersion where the greater the value of dispersion leads greater the standard deviation. A small standard deviation reflects a high degree of uniformity of the observation however a large standard deviation reflects the opposites. It represents the square root of the variance of a group of numbers, i.e. the square root of the sum of the squared differences between a group of numbers and their arithmetic mean. Generally, it is denoted by small Greek letter σ (read as sigma) and is obtained as follows;

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\Sigma(X - \bar{X})^2}{n - 1}}$$

Where,

\bar{X} = mean

n = Number of items in the series.

X = Variable

Coefficient of variation

The coefficient of variation is the ratio of standard deviation to mean for a given sample used to measure spread which can be thought of as the measure of relative risk. The calculated standard deviation shows absolute measure of dispersion. Hence where the mean value of the variables is not equal, it is not appropriate to compare two pairs of variables based on standard deviation only. The coefficient of variation (C.V.) is given by the following formula in the percentage basis:

Coefficient of variation (C.V) = σ/Mean

IV) Coefficient of Correlation:

The correlation between the different variables of a bank is compared to measure the performance of these commercial banks. Correlation measures the degree of relationship between variables that has been utilized by the researcher. Increase or decrease in one variable may causes increase or decreases in other variables, then such variables are correlated and vice versa. It interprets whether variables are correlated positively or negatively or zero. This statistical instrument examines the relationship between those variables which helps to make appropriate investment policy for profit minimization. The Karl Pearson coefficient of correlation (r) is given by following formula:

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

For the purpose of decision making, interpretation is based on following term.

When $r = 1$, there is perfect positive correlation

When $r = -1$, there is perfect negative correlation

When $r = 0$, there is no correlation

Regression Analysis

Regression analysis is a set of statistical methods used for the estimation of relationships between a dependent variable and one or more independent variables. It can be used to assess the strength of the relationship between variables and for model the future relationship between them. Regression analysis includes several variations, such as linear, multiple linear, and nonlinear. The most common models are simple linear and multiple linear. Nonlinear regression analysis is commonly used for more complicated data sets in which the dependent and independent variables show a nonlinear relationship.

Regression analysis offers numerous applications in various disciplines, including finance. Simple linear regression is a model that assesses the relationship between a dependent variable and an independent variable. The simple linear model is expressed using the following equation:

$$Y = a + bX + \epsilon$$

Where:

Y – dependent variable

X – independent (explanatory) variable

a – intercept

b – slope

ϵ – residual (error)

Multiple linear regression analysis is essentially similar to the simple linear model, except that multiple independent variables are used in the model. The mathematical representation of multiple linear regressions is:

$$Y = a + bX_1 + cX_2 + dX_3 + eX_4 + fX_5 + gX_6 + \epsilon$$

Where:

Y – Dependent variable (MPS)

X₁ = EPS

X₂ = DPS

X₃ = P/E ratio

X₄ = BVPS

X₅ = DY

X_6 = Bank size (S)

Independent (explanatory) variables

a – Intercept

b, c, d, e, f, g – Slopes

ϵ – Residual (error)

CHAPTER-IV

DATA PRESENTATION AND ANALYSIS

4.1: Data Presentation

In this section, a researcher presented collected data in the tables as prescribed by APA 6th edition to extract the meaning of these data that will be helpful in analyzing, interpreting and discussion to drive towards the conclusion.

a.) Cash Reserve Ratio

High cash reserve ratio indicates high liquidity with high ability to meet unexpected demand of the bank meanwhile the low cash reserve ratio indicates low liquidity that banks might face liquidity crisis while paying its short term obligations.

Table 4.1:

	Cash Reserve Ratio (CRR)			(%)
Fiscal Years	NABIL	HBL		
2012/13	4.9	5.75	7.42	
2013/14	8.6	8.72	7.59	
2014/15	9.32	6.08	11.3	
2015/16	11.32	8.72	6.33	
2016/17	14.15	8.32	7.68	
2017/18	6.77	6.50	5.34	
2018/19	10.02	6.61	9.98	
2019/20	10.05	5.21	7.94	
2020/21	4.78	4.46	4.20	
2021/22	11.2	9.91	8.75	
Mean	9.11	7.03	7.66	
S.D.	2.96	1.78	2.09	
C.V.	0.33	0.25	0.27	

(Source: Annual reports of sample banks from FY 2012/13 to FY 2021/22)

Table 4.1 presents the Cash reserve ratio of NABIL (Nabil Bank Ltd.), HBL (Himalayan Bank Limited) and ADBL (Agriculture Development Bank Ltd) over the past ten fiscal years of the study period . The table depicts that the average mean value of NABIL is 9.11 % which is higher than the other two commercial banks i.e 7.03 and 7.66. This higher average ratio of NABIL shows that the bank has maintained higher cash reserve ratio at Nepal Rastra Bank of loans during the study period. In addition, HBL has maintain its consistency in keeping cash reserve as it has less CV than other two commercial banks.

b.) Current Ratio

Current ratio identifies the quantitative relationship between current asset and liabilities as well as the liquid short term solvency position of bank. Higher liquid ratio indicates better liquidity position of the bank's ability to meet its liquid obligations.

Table 4.2:

Fiscal Years	Current Ratio			(Times)
	NABIL	HBL	ADBL	
2012/13	1.07	0.93	2.24	
2013/14	1.09	0.93	1.09	
2014/15	1.08	1.02	1.08	
2015/16	1.13	1.04	1.22	
2016/17	1.10	0.99	1.11	
2017/18	1.08	1.16	1.09	
2018/19	1.11	1.12	1.11	
2019/20	1.16	1.06	1.16	
2020/21	1.14	1.09	1.14	
2021/22	1.14	1.06	1.14	
Mean	1.11	1.04	1.24	
S.D.	0.03	0.75	0.35	
C.V.	0.03	0.72	0.28	

(Source: Appendix A)

Table 4.2 shows Current ratio (CR) of NABIL (Nabil Bank Ltd.), HBL (Himalayan Bank Limited) and ADBL (Agriculture Development Bank Ltd) over the past ten fiscal years of the study period. The table shows that NABIL, HBL and ADBL have maintained the highest current ratio of 1.16 times, 1.16 times and 2.24 times and the lowest of 1.07 times, 0.93 times and 1.08 times respectively. The table shows that the average mean value of ADBL is 1.24 times which is higher than that of other two commercial banks i.e. Nabil with 1.11 and HBL with 1.04. . This higher average ratio of ADBL explains that the bank has highest liquidity fund to meet its short-term liabilities during the study period. In addition, NABIL has less Coefficient of variation (CV) with 0.03 than other two commercial banks. It depicts the bank's consistency in maintaining current ratio hence NABIL has better liquidity position among other commercial banks. Current ratio of HBL is slightly lower than NABIL and ADBL in FY 2012/13 AND FY 2013/14 and has increased gradually up to FY 2021/22, it has continuously increased; however in final year of the study period it has decreased slightly. On the other hand, current ratio of NABIL and ADBL has continuously increased in the fiscal years of the study period and has decreased in the final year of the study period. The table shows that ADBL has maintained higher level of current ratio in FY 2012/13 and from FY 2015/16 to FY 2021/22 . However, all these sample banks are unable to touch the standard of current ratio i.e. 2:1, yet these banks are able to meet their short-term liabilities in time .

c.) Cash to Total Deposit Ratio

Cash and bank balances are the most liquid current assets. This ratio measures the percentage of most liquid fund with the bank to make immediate payment to the depositors. Higher ratio indicates high liquidity and able to satisfy unexpected demand of fund made by depositor of the bank however lower ratio shows that the bank might face liquidity crisis while meeting its short term obligations.

Table 4.3:
Cash to total deposit ratio (%)

Fiscal Years	NABIL	HBL	ADBL
2012/13	4.95	7.24	4.61
2013/14	8.60	13.33	4.76
2014/15	20.83	6.87	4.39
2015/16	17.18	8.57	4.12
2016/17	17.89	11.41	3.80
2017/18	9.52	9.02	3.81
2018/19	11.01	9.61	12.31
2019/20	5.91	8.82	10.77
2020/21	7.66	7.25	9.67
2021/22	10.04	12.84	5.91
Mean	11.36	9.51	6.42
S.D.	5.41	2.31	3.22
C.V.	0.48	0.24	0.50

(Source: Appendix B)

Table 4.3 shows Cash to total deposit ratio of NABIL (Nabil Bank Ltd.), HBL (Himalayan Bank Limited) and ADBL (Agriculture Development Bank Ltd) over the past ten fiscal years of the study period. The table shows that the highest cash and bank balance to total deposit ratio of NABIL, HBL and ADBL are 20.83% , 13.33% and 12.31% respectively. Similarly, the lowest cash and bank balance to total deposit ratio maintained by NABIL, HBL and ADBL are 4.95% 7.24% and 3.80% respectively. The table shows that the average mean value of NABIL is 11.36 % which is higher than that of HBLs 9.51% and ADBLs 6.42 % . This higher average ratio of NABIL explains that the bank has highest liquidity fund to meet its immediate liabilities during the study period. In addition, HBL has CV of 0.24 which is lower than that of NABIL’ s 0.48 and ADBL’ s 0.50 . It indicates the bank’s consistency in meeting immediate liabilities during the study period. Cash and bank balance to total deposit of three commercial banks are in

fluctuating trend during the 10 years study period .. NABIL has been able to maintain higher cash and bank balance to total deposit in average during past ten fiscal years where NABIL is in good position to meet cash demand from the depositors at the time as it has maintained higher cash and bank balance to total deposit ratio in the past ten fiscal year duration the study period. This demonstrates that NABIL has been able to maintained sound liquidity as compared to other banks.

d) Loan and Advances to Total Deposit Ratio

LDR ratio measures how successfully the bank is able to utilize its total deposits on loan and advances for generating profits .Greater ratio shows better utilization or mobilization of total deposits and vice versa . This ratio can be obtained by dividing loan and advances by total deposit;

Table 4.4
Loan and Advances to Total Deposit Ratio

Fiscal Years	NABIL	HBL	ADBL
2012/13	78.29	80.57	117.38
2013/14	77.91	75.36	104.06
2014/15	74.90	77.36	100.81
2015/16	74.55	71.82	94.80
2016/17	64.43	75.37	93.77
2017/18	70.49	79.12	95.46
2018/19	65.38	83.10	92.90
2019/20	82.66	88.31	95.64
2020/21	81.96	87.37	93.62
2021/22	79.72	82.31	85.84
Mean	75.03	80.07	97.43
S.D.	6.44	5.34	8.50
C.V.	0.09	0.07	0.09

(Source: Annual reports of selected banks from FY 2012/13 to FY 2021/22)

Table 4.4 demonstrates loans and advances to total deposit ratio of NABIL (Nabil Bank Ltd.), HBL ten fiscal years of the study period. It shows the highest loan and advances to total deposit ratio maintained by NABIL , HBL and ADBL is 82.66% , 87.37% and 117.38 % respectively

whereas lowest CD ratio maintained by sample banks is 64.43% , 71.82% and 85.84% respectively The table shows that the average mean value of ADBL is 97.43% which is highest among sample banks. This higher average ratio of ADBL shows that the bank has mobilize huge amount as loans and advances out of total deposited fund during the study period. In addition, There is less variation in loan and advance to total deposit ratio maintained by HBL than other two commercial banks which signifies HBL has low risk on loan and advance to total deposit of HBL . It indicates the bank is mobilizing deposited fund efficiently in various securities. Therefore, as per the data, HBL has efficiently mobilized its deposited fund among other commercial banks during the study period.

e) Interest income to total loans and advances

This ratio actually reveals the earning capacity of commercial banks by mobilizing its deposit as well as to measure how effective the banks have been able to utilize its deposits in terms of loans and advances.

Table 4.5
Interest income to total loans and advances

Fiscal Years	NABIL	HBL	ADBL	($\bar{X} = \frac{\sum X}{n}$) (%)
2012/13	12.50	13.12	15.49	13.70
2013/14	12.85	13.14	15.47	13.82
2014/15	11.64	11.27	13.72	12.21
2015/16	10.16	10.21	13.04	11.13
2016/17	8.50	8.35	11.86	9.57
2017/18	8.08	7.26	12.09	9.14
2018/19	9.44	8.52	12.55	10.17
2019/20	11.36	11.64	13.93	12.07
2020/21	11.41	11.67	13.85	12.31
2021/22	10.98	10.79	11.74	11.17
Mean	10.69	10.61	13.37	
S.D.	1.61	2.00	1.37	
C.V.	0.15	0.19	0.10	

(Source: Annual reports of selected banks from FY 2012/13 to FY 2021/22)

Table 4.5 shows interest income to total loans and advances of NABIL (Nabil Bank Ltd.) HBL (Himalayan Bank Limited) and ADBL (Agriculture Development Bank Ltd) past ten fiscal years of the study period. It shows the highest level of interest income to loan and advances ratio maintained by NABIL, HBL and ADBL is 12.85%, 13.14% and 15.49% respectively whereas lowest CD ratio maintained by sample banks is 8.08%, 7.26% and 11.74% respectively. The table depicts that the average mean value of ADBL is 13.37% which is higher than that of other two commercial banks i.e. HBL and NABIL. This higher average ratio of ADBL shows that the bank has been receiving high interest income and helps to utilize its loan and advance to achieve interest income effectively during the study period. In addition, ADBL also has less CV, which indicates the bank is in more profitable and consistency in providing loans and advances to generate interest income than other commercial banks.

g.) Return on Loans and advances

Return on loan and advances ratio shows how efficiently the banks have utilized their resources to earn good return from provided loan and advances as well as financial condition of the banks. This ratio is computed dividing net profit (loss) by the total amount of loan and advances and can be mentioned as

Table 4.6:
Return on loans and advance

Fiscal Years	NABIL	HBL	ADBL
2012/13	3.73	2.83	5.86
2013/14	4.14	2.74	4.09
2014/15	5.04	2.38	4.17
2015/16	4.54	2.12	2.43
2016/17	3.31	2.08	4.99
2017/18	4.13	2.80	3.17
2018/19	4.28	2.89	2.91
2019/20	3.99	2.13	3.65
2020/21	3.38	2.78	3.75
2021/22	2.33	2.37	2.70
Mean	3.88	2.51	3.77
S.D.	0.75	0.33	1.06
C.V.	0.19	0.13	0.28

(Source: Annual reports of sample banks from FY 2012/13 to FY 2021/22)

Table 4.7 shows return on loans and advances of NABIL (Nabil Bank Ltd.), HBL (Himalayan Bank Limited) and ADBL (Agriculture Development Bank Ltd) over the past ten fiscal years of the study period. it shows the highest return on loan and advances ratio of maintained by NABIL , HBL AND ADBL is 5.04% , 2.89% and 5.86% respectively whereas lowest level loan and advances ratio maintained by sample banks is 2.33%,2.08% and 2.43% respectively .the above table shows that nabil has return on loan and advances are 3.88% in average, which is higher than HBL and ADBL. this shows that NABIL has been able to utilize its capital as loan and advances to generate sufficient profit. similarly, c.v. of return on loan and advances of hbl is 0.13%, which is lower than other two sample banks likewise NABIL and ADBL. this shows HBL’s consistency in generating return on loan and advances.

g.) Capital Adequacy Ratio

Capital adequacy ratio measures the amount of a bank's capital expressed as a percentage of its risk weighted credit exposures. In other words, it is the ratio of a bank’s capital in relation to its risk weighted assets and current liabilities.

Table 4.7:
Capital Adequacy Ratio

Fiscal Years	NABIL	HBL	ADBL
2012/13	10.58	10.68	19.49
2013/14	11.01	11.02	18.84
2014/15	11.59	11.55	16.34
2015/16	11.18	11.23	15.09
2016/17	11.57	11.14	13.90
2017/18	11.73	10.84	17.16
2018/19	12.90	12.15	20.41
2019/20	13.00	12.46	19.66
2020/21	12.50	12.60	20.37
2021/22	13.07	14.89	19.33
Mean	11.91	11.86	11.06
S.D.	0.91	1.26	2.31
C.V.	0.08	0.11	0.21

(Source: Annual reports of the sample banks from FY 2012/13 to FY 2021/22)

The table shows that the average mean value of NABIL is 11.91% which is higher than that of other two commercial banks likewise ADBL and HBL. This higher average ratio of NABIL shows that the bank has been maintaining high amount of a bank's capital expressed as a percentage of its risk weighted credit exposures during the study period. In addition, NABIL has less CV, which indicates the bank consistently in maintaining amount of a bank's capital expressed as a percentage of its risk weighted credit exposures

Return on Total Asset Ratio (ROA)

This ratio is known as return on assets (ROA) which measures the efficiency of company assets in generating its net income. Higher ratio reveal the higher efficiency in utilization of total assets and vice versa. This ratio is calculated by dividing net profit (loss) by total working funds.

Table 4.8:**Return on Total Assets****(%)**

Fiscal Years	NABIL	HBL	ADBL
2012/13	2.43	1.91	3.99
2013/14	2.80	1.76	2.90
2014/15	3.25	1.54	2.97
2015/16	2.65	1.30	1.76
2016/17	2.06	1.34	3.57
2017/18	2.32	1.94	2.32
2018/19	2.69	2.19	2.15
2019/20	2.61	1.67	2.71
2020/21	2.11	2.21	2.77
2021/22	1.58	1.79	1.86
Mean	2.45	1.77	2.70
S.D.	0.46	0.31	0.72
C.V.	0.18	0.18	0.27

(Source: Annual reports of the sample banks from FY 2012/13 to FY 2021/22)

The table 4.8 depicts that the highest return on total assets of NABIL, HBL and ADBL are 3.25%, 2.21% and 3.99% respectively. Similarly, the lowest ratio of return on total assets of NABIL, HBL and ADBL are 1.58%, 1.30% and 1.76% respectively. The table shows that mean value of ADBL is 2.70 which is higher than rest of other banks. This indicates that ADBL has been utilizing its total assets to generate profit effectively than other sample banks. Similarly, C.V. of return on total assets fund NABIL AND HBL is 0.18, which lower than ADBL which represents both bank's consistency in maintaining return on total assets ratio. .

j.) Return on Equity (ROE)

Net worth refers to the owner's claim of a bank. The excess amount of total assets over total liabilities is known as net worth. This ratio measures how efficiently the bank has used funds of the shareholders where the promoters are guided by this ratio to decide about their investment. This ratio can be computed by dividing net profit by total equity capital (net worth).

Table 4.9:

Fiscal Years	Return on Equity (%)		
	NABIL	HBL	ADBL
2012/13	29.02	22.35	17.93
2013/14	30.25	20.71	16.26
2014/15	32.78	17.81	16.11
2015/16	27.97	15.77	13.36
2016/17	22.73	15.98	25.78
2017/18	25.61	21.94	17.81
2018/19	22.41	21.58	12.60
2019/20	20.94	14.17	13.01
2020/21	17.76	18.34	14.71
2021/22	13.61	15.40	11.70
Mean	24.31	18.41	15.93
S.D.	5.95	3.05	4.09
C.V.	0.24	0.17	0.26

Table 4.10 shows return on equity of NABIL (Nabil Bank Ltd.), HBL (Himalayan Bank Limited) and ADBL (Agriculture Development Bank Ltd) over the past ten fiscal years of the study period. The table shows that the average mean value of NABIL is 24.31% which is higher than that of other two commercial banks. This higher average ratio of NABIL shows that the bank has been returning high income to its shareholders during the study period. Similarly, the coefficient of variation of HBL is 0.17 which is less than that of NABIL's 0.24 and ADBL's 0.26 during the study period, which indicates the bank consistently earning profit at same rate and is more profitable.

k.) Earning per share (EPS)

Earnings per share are considered to be the single most important variable to determining a share's price however the profitability of bank from the point of view of the ordinary shareholders is earning per share. The ratio explains net income for each unit of share. Earnings per share of an organization give the strength of the share in the market.

Table 4.10:
Earnings per share **(Rs)**

Fiscal Years	NABIL	HBL	ADBL
2012/13	65.91	44.66	77.88
2013/14	83.23	39.94	60.57
2014/15	91.05	34.19	71.54
2015/16	76.12	33.10	47.17
2016/17	57.24	33.37	78.83
2017/18	59.27	43.03	52.79
2018/19	59.86	33.15	31.59
2019/20	51.84	23.11	36.91
2020/21	50.57	32.44	42.88
2021/22	36.16	27.60	31.45
Mean	63.13	34.46	53.16
S.D.	16.44	6.60	18.27
C.V.	0.26	0.19	0.34

(Source: Annual reports of the sample banks from FY 2012/13 to FY 2021/22)

Table 4.11 shows that during ten years of study period the highest EPS of NABIL , HBL and ADBL is Rs 91.05 ,44 .66 and 78.83 and the lowest is Rs 36.16, 23.11 and 31.45. As per above table, the highest mean value of NABIL is 63.13, which is higher than other mean value of two sample banks. This shows the better performance of NABIL as compared to others commercial banks. The coefficient of variation of EPS for HBL’s 0.19 which is lower than that of NABIL and ADBL which represents more consistency of EPS of HBL.

1.) Book value per share (BVPS)

Net worth per Share is a measurement of the net worth of the company for each share of stock that has been issued. If this value is negative, it indicates the company’s liabilities exceeds its ability to pay them.

Table 4.11:
Book Value per Share **(RS)**

Fiscal Years	NABIL	HBL	ADBL
2012/13	225.00	199.77	410.29
2013/14	269.00	193.00	433.67
2014/15	275.00	192.02	444.47
2015/16	251.00	209.92	404.28
2016/17	259.00	208.81	509.23
2017/18	244.00	196.12	296.91
2018/19	270.00	189.91	230.88
2019/20	256.00	174.24	305.31
2020/21	257.00	187.73	314.49
2021/22	256.00	187.67	297.92
Mean	256.20	191.62	339.50
S.D.	14.41	13.19	97.62
C.V.	0.06	0.07	0.29

(Source: Annual reports of the sample banks from FY 2012/13 to FY 2021/22)

Table 4.12 illustrates that during ten years of study period, the highest BVPS of NABIL, HBL and ADBL is Rs 275, 209.92 and 509. Similarly, lowest BVPS of NABIL, HBL and ADBL is Rs 225, 174.24, and 230.88 respectively. The highest mean value of ADBL is Rs 339.5, which is greater than that of HBL's 191.62 and NABIL's 256.20. This shows that the bank is, comparatively, more able to meet its liabilities. In addition to that the NABIL has bank has low coefficient of variation of BVPS of 0.06, which is lower than that of ADBL's 0.29 and HBL's 0.07. This represents more consistency of BVPS of NABIL as compared to ADBL and HBL.

4.2: Statistical Analysis

In this section, a researcher applied statistical tools to analyze the relationship and impact of independent variables on dependent variable.

Table 4.12:

		Correlation Analysis of NABIL					
	ROA	CR	CRR	CAR	CDR	LDR	
ROA	1						
CR	-.363	1					
CRR	-.091	.263	1				
CAR	-.357	.730*	.205	1			
CDR	.313	-.192	.613	-.187	1		
LDR	-.077	.434	-.472	.119	-.522	1	

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

(Source: Annual reports of selected banks and results are drawn from SPSS – 16)

Table 13 demonstrates the relationship between dependent variable ROA and independent variables CR, CRR, CAR, CDR and LDR of NABIL . It shows that CRR has a negative and insignificant relationship with ROA as shown by correlation coefficient of -.091 which presents that bank has maintain high cash reserve as a liquidity risk management variable risk a deterioration in ROA since CRR do not generate any return to the bank and thus holding more of them deprives the bank an opportunity to invest the money elsewhere resulting to lower returns in commercial banks in kenya because the idle liquid assets are not generating income to offset the interest to be paid onn customer depositts (Mwangi,2014). There is significant positive correlation with CR of .263 which suggests that the bank has maintain high level of CRR as liquidity risk management results in a significant improvement in CR . It explains that independent variables have negative and positive relationship with dependent variable but a researcher finds no evidence of significant relationship between dependent and independent variables. Hence liquidity management has statistically insignificant relationship with profitability

of Nabil Bank Limited. However, CAR has positive and statistically significant relationship with C R of the bank ($r = .730$)

Table 4.13:
Regression Analysis of NABIL

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.520 ^a	.270	-.642	.59295

a. Predictors: (Constant), LDR, CAR, CDR, CRR, CR

The model summary table above outlines the overall fit of the model. R represent correlation and R Square represent coefficient of determination. R Square value indicates the amount of variance in the dependent variable; LDR , CAR , CDR , CRR,CR . Here, R indicates that independent variables have moderate degree of positive relationship with dependent variable. R square indicates that independent variables effect dependent variable profitability by 27% and rest of 73% by unknown variables.

ANOVA Test

Table 4.14:
ANOVA Test

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	330.451	5	66.090	6.202	.001
Residual	309.021	29	10.656		
Total	639.472	34			

a. Dependent Variable: ROE

b. Predictors: (Constant), Liquidity, Operational Efficiency, Income Diversification, Asset Quality, CAR

The F value is 6.202, with corresponding P value of 0.001 which is less than level of significance ($\alpha = 0.05$), signifying that there is significant relationship between ROE and other independent variables of the regression equation.

Table 4.15:
Correlation Analysis of HBL

		ROA	CR	CRR	CAR	CDR
ROA	Pearson	1				
CR	Correlation	.404	1			
CRR	Pearson			1		
CAR	Correlation	-.493	-.244		1	
CDR	Pearson	.223	.321	.225		1
LDR	Correlation					
	Pearson	-.157	-.206	.798**	.306	1
	Correlation	.675*	.402	-.632*	.524	-.244
	Pearson					
	Correlation					
	Pearson					
	Correlation					

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

Table 15 demonstrates the relationship between dependent variable ROA and independent variables CR, CRR, CAR, CDR and LDR. The table indicates that correlation coefficient between CRR and CDR is positive ($r = .798$) and significant ($p - \text{value} < 0.000$) at 5%. ., Therefore it implies that an increase (or decrease) in CRR would be accompanied by an increase (or decrease) CDR. The results further shows that the correlation between CRR an LDR is negative ($r = -.632$.) and significant ($p - \text{value} < 0.000$) at 5% .. Similarly, this indicates that an increase (or decrease) in CRR would be accompanied by a decrease (or increase) in LDR . It shows that independent variables have negative and positive relationship with dependent variable but a researcher finds no evidence of significant relationship between dependent and independent variables. Hence liquidity management has statistically insignificant relationship with profitability of Himalayan Bank Limited. However, CDR and LDR have positive and negative and statistically significant relationship with CRR of the bank.

Table 4.16:
Regression Analysis of HBL

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.729 ^a	.532	-.054	.32237

b. Predictors: (Constant), LDR, CAR, CDR, CRR, CR

In model summary, R represent correlation and R Square represent coefficient of determination. Here R indicates that independent variables have moderate degree of positive relationship with dependent variable. R square indicates that independent variables effect dependent variable profitability by 53.20% and rest of % by unknown variables.

Table 4.17:
Correlation Analysis of ADBL

		ROA	CR	CRR	CAR	CDR	LDR
ROA	Pearson	1					
	Correlation						
CR	Pearson	.583	1				
	Correlation						
CRR	Pearson	.029	-.080	1			
	Correlation						
CAR	Pearson	-.077	.209	-.035	1		
	Correlation						
CDR	Pearson	-.236	-.179	.086	.710*	1	
	Correlation						
LDR	Pearson	.733*	.793**	.030	.089	-.301	1
	Correlation						

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

Table 17 demonstrates the relationship between dependent variable ROA and independent variables CR, CRR, CAR, CDR and LDR. It shows that independent variables have negative and positive relationship with dependent variable. Specially, LDR has positive and statistically a significant relationship with ROA and a researcher finds no evidence of significant relationship between dependent variable and rest of independent variables. Furthermore, LDR has positive and

statistically significant relationship with CR and CDR has positive and statistically significant relationship with CAR.

Table 4.18:
Regression Analysis of HBL

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.729 ^a	.532	-.054	.32237

c. Predictors: (Constant), LDR, CAR, CDR, CRR, CR

In model summary, R represent correlation and R Square represent coefficient of determination. Here R indicates that independent variables have moderate degree of positive relationship with dependent variable. R square indicates that independent variables effect dependent variable profitability by 58.30% and rest of % by unknown variables.

Table 4.19:
Descriptive Analysis

	Variables					
	ROA	CR	CRR	CAR	CDR	LDR
Mean	2.31	1.13	7.93	11.61	9.09	84.18
S.D.	0.48	0.10	1.06	0.48	2.49	11.57
Max	2.70	1.24	9.11	11.91	11.36	97.43
Min	1.77	1.04	7.03	11.06	6.42	75.03
N	3	3	3	3	3	3

Table 19 describes the descriptive statistics which consist of the mean ,standard deviation , minimum and maximum values of all selected variables during the study period from FY 2012/13 to FY 2021/22 of three selected commercial banks i.e. Himalayan Bank Limited, Nabil Bank Limited and Agriculture Development Bank Limited. This table reports the mean and standard deviation of all the variables for the determination of liquidity risk over the sample period. In the table, it shows that the banks have managed ROA in average 2.31. Maximum ROA is 2.70 and minimum ROA is 1.77, which indicates the banks highest and lower return on total assets. The

banks have managed current ratio over the study period is 1.13 to meet its short-term liabilities. During this time period, highest and lowest CR is 1.24 and 1.04. It means that all banks can meet their short-term liabilities when it became due yet they are advised to maintain current ratio equals to 2. Maximum and minimum CRR maintained by all the banks is 9.11 and 7.03 over the study period and in average the bank manage CRR 7.93, which is good sign as all the banks have maintained reserve ratio as prescribed by NRB i.e. <3%. Maximum and minimum CAR maintained by all the banks is 11.91 & 11.06 and in average 11.61. It is also a good sign to the bank as it shows that the bank has maintained minimum level of capital fund as mandated by Directives No. 1 issued by NRB i.e. 11%. CDR shows that the bank once maintained 11.36 percentages of cash against total deposited fund and lowest is 6.42 and in average 9.09. It shows that how much cash banks have out of total deposited fund. Similarly, maximum and minimum LDR maintained by all the banks is 97.43 and 75.03 and in average, the banks maintained 84.18 LD Ratio, it indicates that the banks have extended credit up to 84.18% of total deposited fund. In other words, all three commercial banks have mobilized 84.18 % of total deposited fund as loans and advances during the study periods. In the table, S.D. of all variables indicates the variability of mean value of the banks.

4.3 Major Finding

- The Cash reserve ratio of NABIL (Nabil Bank Ltd.), HBL (Himalayan Bank Limited) and ADBL (Agriculture Development Bank Ltd) over the past ten fiscal years of the study period. The table depicts that the average mean value of NABIL is 9.11 % which is higher than the other two commercial banks i.e 7.03 and 7.66.
- Current ratio (CR) of NABIL (Nabil Bank Ltd.), HBL (Himalayan Bank Limited) and ADBL (Agriculture Development Bank Ltd) over the past ten fiscal years of the study period. The table shows that NABIL, HBL and ADBL have maintained the highest current ratio of 1.16 times, 1.16 times and 2.24 times and the lowest of 1.07 times, 0.93 times and 1.08 times respectively. The table shows that the average mean value of ADBL is 1.24 times which is higher than that of other two commercial banks i.e Nabil with 1.11 and HBL with 1.04. . This higher average ratio of ADBL explains that the bank has highest liquidity fund to meet its short-term liabilities during the study period. In addition, NABIL

has less Coefficient of variation (CV) with 0.03 than other two commercial banks .

- Cash to total deposit ratio of NABIL (Nabil Bank Ltd.), HBL (Himalayan Bank Limited) and ADBL (Agriculture Development Bank Ltd) over the past ten fiscal years of the study period. The table shows that the highest cash and bank balance to total deposit ratio of NABIL, HBL and ADBL are 20.83% , 13.33% and 12.31% respectively. Similarly, the lowest cash and bank balance to total deposit ratio maintained by NABIL, HBL and ADBL are 4.95% 7.24% and 3.80% respectively.
- It shows the highest loan and advances to total deposit ratio maintained by NABIL , HBL and ADBL is 82.66% , 87.37% and 117.38 % respectively whereas lowest CD ratio maintained by sample banks is 64.43% , 71.82% and 85.84% respectively The table shows that the average mean value of ADBL is 97.43% which is highest among sample banks. This higher average ratio of ADBL shows that the bank has mobilize huge amount as loans and advances out of total deposited fund during the study period.
- The average mean value of NABIL is 11.91% which is higher than that of other two commercial banks likewise ADBL and HBL. This higher average ratio of NABIL shows that the bank has been maintaining high amount of a bank's capital expressed as a percentage of its risk weighted credit exposures during the study period.
- The highest return on total assets of NABIL, HBL and ADBL are 3.25%, 2.21% and 3.99% respectively. Similarly, the lowest ratio of return on total assets of NABIL, HBL and ADBL are 1.58%, 1.30% and 1.76% respectively. The table shows that mean value of ADBL is 2.70 which is higher than rest of other banks. This indicates that ADBL has been utilizing its total assets to generate profit effectively than other sample banks.
- The relationship between dependent variable ROA and independent variables CR, CRR, CAR, CDR and LDR. The table indicates that correlation coefficient between CRR and CDR is positive ($r = .798$) and significant ($p - \text{value} < 0.000$) at 5%. .. Therefore it implies that an increase (or decrease) in CRR would be accompanied by an increase (or decrease) CDR. The results further shows that the correlation between CRR an LDR is negative ($r = - .632$.) and significant ($p - \text{value} < 0.000$) at 5% .. Similarly, this indicates that an increase (or decrease) in CRR would be accompanied by a decrease (or increase) in LDR .
- The relationship between dependent variable ROA and independent variables CR, CRR,

CAR, CDR and LDR. It shows that independent variables have negative and positive relationship with dependent variable. Specially, LDR has positive and statistically a significant relationship with ROA and a researcher finds no evidence of significant relationship between dependent variable and rest of independent variables.

- The descriptive statistics which consist of the mean ,standard deviation , minimum and maximum values of all selected variables during the study period from FY 2012/13 to FY 2021/22 of three selected commercial banks i.e. Himalayan Bank Limited, Nabil Bank Limited and Agriculture Development Bank Limited. This table reports the mean and standard deviation of all the variables for the determination of liquidity risk over the sample period. In the table, it shows that the banks have managed ROA in average 2.31. Maximum ROA is 2.70 and minimum ROA is 1.77, which indicates the banks highest and lower return on total assets. The banks have managed current ratio over the study period is 1.13 to meet its short-term liabilities.

CHAPTER V: SUMMARY AND CONCLUSION AND RECOMMENDATION

In this section, researcher provides an overview of the study, cover a very brief introduction and justification of the study. It gives the general objective of the study and describes the methods followed in the research process and report the key findings based on the analysis and discussion section. It organizes the findings in a purposeful manner so that they answer the research questions and lead to conclusion.

5.1 Summary

This research study focused to analyze and measure the impact of liquidity risk on the profitability position of the commercial banks in Nepal. For this course of action, a research has classified this study into five for the clear understanding. In the first chapter, background of the study is discussed in briefly including problem of statement, research questions, objective of the study, rationale of the study and limitation of the study. In the second chapter, a researcher has reviewed various theories that are related with the topic of this research study. Similarly, as a part of empirical review, various national and international journals and articles. This chapter has provided a research blue print to follow to conduct a research on this topic. In addition, adequate and appropriate research gap has been found and tries to fulfill such gaps. In three chapter, suitable research designs were adopted to analyze the data. Furthermore, a researcher has also explained the statistical and financial tools that are used to analyze the collected data. In the fourth chapter, a research has presented collected data in the tables as prescribed by APA 6th edition and letter the results derived from these tables are discussed by comparing the major findings of the other journals and articles written by the various authors or scholars. And in the final chapter, a researcher has summarized the research study along with appropriate conclusion and implications.

5.2 Conclusion

This study is conducted to measure the impact of liquidity risk management in commercial banks of Nepal. In this study, current ratio, cash reserve ratio, capital adequacy ratio, cash to deposit ratio and loans and advances to deposit ratio. On the other hand, return on assets (ROA) has been

selected as dependent variable. The finding of the study reveals that the relationship between liquidity risk management and profitability of NABIL, HBL is positive and negative with the level of profitability but statistically insignificant. However, LDR has positive and significant relationship with ROA of ADBL. Further, regression analysis shows that dependent variable insignificantly impacted by the independent variables as significance level is higher than 5%. Thus, a researcher has concluded that profitability of the commercial banks is not affected by selected independent variables that has been adopted in this study but other variables such as Loan recovery process, efficient management, organizational structure, Variation on sample size, length of data, business environment, accessibility of authentic data, in depth study, etc. also impact the profitability of the commercial banks. Comparatively HBL has better liquidity position than other two commercial banks but that doesn't mean other two commercial banks are in phase of liquidity risk. Including HBL, NABIL and ADBL can meet their short-term financial obligations in time. As shown by cashreserve ratio, all three banks are properly following the directives issued by Nepal Rastra Bank to maintain the adequate level of liquidity fund. A researcher also concluded that the banks might face liquidity risk in future, especially ADBL, so that they are suggested to systematically classifying short-term assets and liabilities, maintaining CD Ratio within 90% and should formulate contingency fund plan. Furthermore, NABIL, HBL and ADBL are all one of the biggest commercial banks of Nepal and has huge amount of funds and skillful employees hence these commercial banks are not facing liquidity risk. So, if any researcher wants to conduct a research in the same topic in near future, they are advice to choose commercial banks that are financially weak, same level of capital structure and instable.

5.3 Recommendation

This study is conducted to analyze the liquidity management and its impact on the profitability position of NABIL, HBL and ADBL. Based on the conclusion, the following suggestions and implications are forwarded.

- The findings of this study contribute to existing literature on liquidity risk management of the commercial banks.
- This study also will useful to investors for getting information about the liquidity management of those banks before investment.
- This is also useful to the banks to understand their actual liquidity management system.

- This study facilitates to customers to understand the credit worthiness; and to accumulate required information associated with liquidity management of banks.
- Findings of this study facilitate to management team to amend the principles and policies of the banks related to liquidity management.
- This study also will be useful to the longer term researcher for conduct new project work on related topics because it will provide proper guidelines to them.
- Lending loan and advance to various lenders is major function of commercial banks. Here both NABIL and ADBL have not lent its deposit as loan and advances in compare to ADBL. So, both the banks can increase the lending proportion so that the profit of the bank may increase.
- NABIL and ADBL need to enhance the amount of loan and advance in total assets.
- Trend analysis shows that the loan and advance amount of NABIL, HBL & ADBL will increase in future so bank has to train its employee to make efficient and professional in credit appraisal, monitoring and proper risk management.
- The activity ratio measuring the efficiency achievement towards the income generating activities of the NABIL, HBL & ADBL The bank needs to invest all the excess balance of liquid fund in income generating sector.
- All three banks' return on equity has decreased in recent years. They have to work on to magnify the profits and assets.

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