

LIQUIDITY RISK MANAGEMENT AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN NEPAL

Prasant Bashyal

Email:Prasannabashyal1@gmail.com

Abstract

This study has examined the effect of liquidity risk on financial performance of commercial banks in Nepal. The descriptive and causal comparative research design has been adopted for the study. The pooled data of 11 commercial banks for the period 2016/2017 to 2021/2022 have been analyzed using the regression model. The regression result revealed that cash to asset and cash to deposit has the negative and insignificant effect on financial performance whereas, credit to deposit ratio, liquidity ratio and nonperforming loan ratio has significant and positive effect on the bank financial performance. In order to improve their performance in liquidity analysis and liquidity management and to lessen the high influence and negative effects on financial performance, Nepali commercial banks must develop suitable, effective rules on liquidity risk management.

I. INTRODUCTION

The liquidity of an organization is considered as most important component for it to pay its current liabilities. It involves paying off debt and other expenses that are seen as short-term in nature. The commercial bank's liquidity, which comprises promises for lending and investing, withdrawals, deposits, and accrued liabilities, shows the ability of the party to fund its obligations at maturity (Amengor, 2010). Liquidity is the ability to immediately meet one's financial obligations. There are two main ways that liquidity management can be defined. The first one refers to the capability of trading various asset classes at their current market value. Financial organizations use another standard, such as the ability to fulfill cash and collateral obligations without suffering a substantial loss (Shrestha, 2012).

The capacity of an asset to convert quickly into cash when needed is known as liquidity. Banks must control liquidity to lower reputational and liquidity risk. The term liquidity relates to a bank's capacity to fulfill obligations, particularly those owed to depositors. The profitability of the bank is directly correlated with

sufficient levels of liquidity. Three goals liquidity, profitability, and productivity are carefully taken into account by good commercial bank management.

According to the research by Kamande (2017), a rise in liquidity significantly improves bank performance. As a result, banks are advised to maintain the appropriate levels of liquidity in order to meet consumer demand for deposits and prevent bank runs and market panic. Bank managers should be encouraged to invest in more liquid assets because banks are less profitable when their assets are less liquid. This will increase bank profitability and make it possible for banks to pay their short-term debts as they become due.

It is clear that liquidity and liquidity risk are important and rapidly evolving topics. As a result, banks and regulators are motivated to maintain control over the liquidity position of banks. However, there is efficiency in this fragility as well. According to Diamond and Rajan (2001), the financial intermediation structure is effective in that it imposes rules on banks when they carry out their lending function. Therefore, effective liquidity risk management helps ensure a bank's ability to meet cash flow obligations, which are uncertain as they are affected by external events and other agents' behavior and to keep their optimal profitability. Every company's ultimate goal is to increase profitability, and each one makes an effort to reach maximum profitability. The firm must maintain an ideal level of liquidity because there is a strong correlation between liquidity and profitability (Khan& Ali, 2016). Bank managers should be encouraged to invest in more liquid assets because banks are less profitable when their assets are less liquid. This will increase bank profitability and make it possible for banks to pay their short-term debts as they become due.

Rationale of the study

The study's results help to better understand and quantify those exposures to liquidity risk as well as to lessen the financial system's impact from the financial crisis. At the conclusion of this research, it is anticipated that the study will be helpful to many people, particularly those who work in the banking sector, such as bankers, financial analysts, the top management of commercial banks, and investors. The research will increase public awareness of the banking sector and the researcher's grasp of liquidity risk management. Researchers and academicians will benefit from the findings of this study since they will provide a theoretical and empirical framework for understanding about how liquidity risk factors affect financial performance of commercial banks in Nepal.

Research Gap

There has been few research on the factors influencing the profitability of commercial banks in Nepal. For instance, Karki (2004) concluded that capital adequacy and profitability have a positive relationship. Joshi (2004) discovered that banks' loan levels and liquidity were positively correlated with their profitability, while Maharjan (2007) showed a similar correlation between capital adequacy and liquidity. The major purpose of the study is to examine effect of bank liquidity on banking performance in Nepalese commercial banks. The overall objective of the study is to investigate the effect of liquidity risk on the financial performance of 11 commercial banks.

Banks should be effective at accepting deposits and making loans. A bank may experience major financial problems due to inadequate liquidity. Consequently, managing the bank's liquidity position aids in generating a sizable profit. Earlier, the Bank was unable to gather the funds and allocate them to effective and efficient sectors. The effectiveness and flaws in the analysis of financial statements have an impact on the bank's financial performance. It displays how poorly liquidity management is done. As a result of their inability to pay off short-term debts and other financial obligations, banking sectors are having a difficult time sustaining their liquidity positions. This has a negative influence on their financial performance.

No studies have looked at the impact of several liquidity risk variables on financial performance using new data, despite the fact that numerous studies have shown the impact of liquidity risk on the financial performance of Nepal's commercial banks. Consequently, the goal of this work is to close this knowledge gap.

Research Questions

- i. Is there any relationship between liquidity risk and financial performance of commercial banks in Nepal?
- ii. Do cash to asset ratio, cash to deposit, credit to deposit ratio, Liquidity ratio and non-performing loan ratio have any effect on financial performance (ROA) of commercial banks in Nepal?

Research Objectives

- i. To analyze the relationship between liquidity risk management and financial performance of commercial banks in Nepal.

- ii. To assess the effect of cash to asset, cash to deposit, credit to deposit ratio, Liquidity ratio and non-performing loan ratio have any effect on financial performance (ROA) of commercial banks in Nepal.

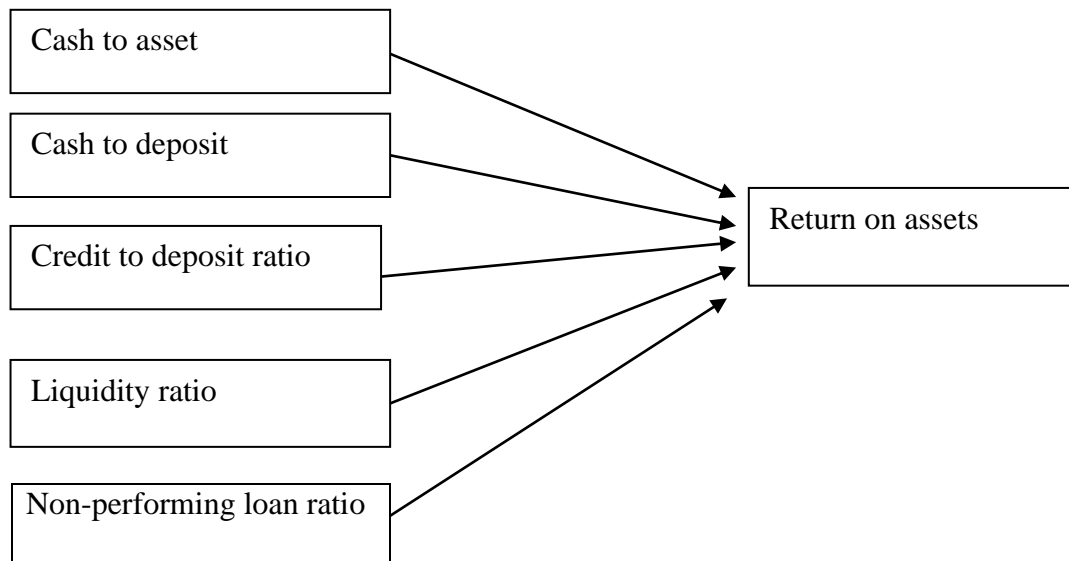
II. REVIEW OF LITERATURE

Research Framework

Figure 1

Independent Variables

Dependent Variables



Definition of the variables and justification

Dependent Variable

The financial performance of the commercial banks is measured by ROA. These variables are used as dependent variables in this study.

Return on Assets (ROA)

The amount of profit generated by a business per dollar of its assets is measured by the return on assets, a crucial profitability ratio. Net profit after tax is divided by the total assets to arrive at this percentage. Based

on the company's generated profits divided by its total assets, this ratio represents the operating efficiency for the business.

$ROA = \text{Net profit} / \text{total assets}$

Return on Assets is the ratio of an institution's net income to total assets.

Independent Variables

Cash to asset ratio

The cash asset ratio is a financial statistic that assesses a company's capacity to settle its short-term liabilities with cash and cash equivalents in order to ascertain its liquidity. The cash asset ratio is determined by dividing the total assets by the sum of cash and cash equivalents. Sathyamoorthi, et al.,(2020) observed a insignificant and positive relationship with the ROA.

Cash to deposit ratio

Cash to Deposit Ratio refers to the ratio of total deposits to cash held by banks (Mishra &Pradhan, 2019). It measures how much a financial organization lends in relation to the deposits it has raised. A larger ratio demonstrates the banks' greater liquidity position, which is more beneficial for brand-new investment opportunities. Shrestha (2012) has reported no significant impact of Cash and bank balance to deposit ratio on profitability.(Mishra &Pradhan, 2019) identified insignificant impact on the ROA.

Credit to deposit ratio

The ratio of outstanding credit to total bank deposits is known as the credit to deposit ratio (Mishra &Pradhan, 2019). A bank's liquidity is assessed by dividing the entire amount of loans it has distributed by the total amount of deposits it has received. According to Shrestha and jha (2020) observed that there is a significant relationship between Profitability of commercial banks and Credit to Deposit Ratio. If the ratio is too high, the bank may not have sufficient liquidity to meet any unforeseen funding needs, whereas a smaller CD ratio suggests cost of capital.

Liquidity ratio

Cash and equivalents, the cash reserve at the central bank, short-term bank deposits, and other government- and non-government-guaranteed securities are all considered liquid assets as a percentage of total bank assets. Divide the acid liquid ratio by the total assets to get the liquid ratio. Pradhan & Shrestha (2018) identified insignificant effect on ROA of financial performance of commercial banks in Nepal.

Liquidity ratio = Total loans / Total deposits (Gautam, 2016)

Non-Performing Loan ratio

Loans that have been in default for a long time, in terms of both principal and interest, are referred to as non-performing loans. Large numbers of non-performing loans may cause depositors and international investors to lose faith in the banks, which could cause liquidity issues. Greater NPL decreases cash flow and increases the risk of not having enough cash on hand to pay bills or fulfill commitments in a timely and economical manner, which in turn affects liquidity management and consequently impacts bank profitability (Acharya, 2020). Likewise, Khatri (2020) observed a negative and significant relationship with Financial performance of banks (ROA).

Hypothesis

H1: There is significant effect of cash to asset on financial performance.

H2: There is significant effect of cash to deposit on financial performance.

H3: There is significant effect of credit to deposit ratio on financial performance.

H4: There is significant effect of liquidity ratio on financial performance.

H5: There is significant effect of Nonperforming loan ratio on financial performance.

Empirical Review

Abdullah and Jahan (2014) attempted to investigate the impact of liquidity and profitability of the private commercial banks in Bangladesh by focusing over a period of five years. Five private commercial banks have

been selected to undertake the research. Profitability measures ROA and ROE are dependent variables and liquidity measures credit to Deposit Ratio, Deposit Asset Ratio and Cash to Deposit Ratio are selected as independent variables. However, the null hypothesis is accepted in this study indicating that there is no significant relationship between liquidity and profitability.

Shrestha and Jha (2020) had assessed the Impact of Liquidity on Profitability in Foreign Joint Venture Commercial Bank in Nepal in which 3 foreign joint venture commercial banks in Nepal HBL, EBL and NBB are selected and analyzed for the current study over the period 2014/15 to 2018/19. The study concluded that the Credit to deposit ratio has significant impact in ROA as cash reserve ratio has weak significant impact on ROA of all sample banks. Cash to deposit ratio has significant effect on ROA. Current asset to total assets has significant effect on ROA.

Ojha (2018) examined the form and pattern of liquidity, Non-Performing Loan, return on assets, Capital Adequacy Ratio, Return on equity, Gross Domestic Product, inflation, and interbank rate in Nepalese commercial banks. The major conclusion of the study is the return on equity, return on assets, non-performing loans, Inter-bank rates have a negative impact on the liquidity of Nepalese commercial banks. The study also concludes that CAR, GDP, and inflation have a positive impact on the liquidity of Nepalese commercial banks.

Mishra and Pradhan (2019) used Cash to Deposit Ratio, Credit to Deposit Ratio and cash to asset ratio as independent variables to denote the liquidity management of the banks, while Return on Assets and Return on Equity have been used as dependent variables for the profitability of the banks. Result reveals that there is a significant negative effect of credit to deposit ratio and cash to asset on ROA while cash to deposit was insignificant on ROA and liquidity taking all the variables for the period from 2013 to 2017.

Sathyamoorthi, et al., (2020) conducted on the impact of liquidity management on the financial performance of commercial banks in Botswana. The study used Return on Assets to measure financial performance. The results from regression analysis show statistically significant positive relationships for Loans to total assets ratio and Liquid assets to total assets ratio with return on assets. Credit to deposits ratio and Liquidity ratio had statistically significant negative relationships with return on assets. Cash to total assets ratio had

statistically insignificant positive relationship with return on assets while cash to deposits ratio had statistically insignificant negative relationship with return on assets.

Pradhan & Shrestha (2018) investigated on the topic Impact of Liquidity on Bank Profitability in Nepalese Commercial Banks. This study examined the effect of liquidity on the performance of Nepalese commercial banks. Non-performing loan ratio, liquidity ratio, capital ratio and quick ratio are the independent variables used in this study. The dependent variables are and return on assets (ROA). The findings conclude that capital ratio and liquidity ratio has insignificant effect on ROA likewise, credit to deposit ratio and quick ratio has significant effect on ROA.

Acharya (2020) Conducted research on the topic Impact of Liquidity on Profitability of Nepalese Commercial Banks. The study sought to find out the relationship between the liquidity and the profitability of commercial banks in Nepal. The researcher has taken sample of 8 commercial banks from the period from 2014 to 2019. The study concluded that the nonperforming loan ratio has significant effect on ROA while, credit to deposit ratio, interest expenses to deposit ratio and inflation has insignificant impact on ROA of commercial banks in Nepal.

Khatri (2020) investigated on the topic Impact of Liquidity on Profitability of Nepalese Commercial Banks. The result showed that nonperforming loan ratio has negative and significant relationship with return on assets likewise, Cash to deposit ratio and credit to deposit ratio has positive and insignificant relationship with return on assets.

III. Research Methodology

Research Design

This study examines the effect of liquidity risk on the financial performance of commercial banks in Nepal over the period of 6 years (2016/2017-2021/2022). The reason behind choosing the latest six years data is to include a fresh and updated data in the analysis as the data are from pool of cross sectional and time series, thus it seems effective to generate the data for the analysis purpose. This study has adopted Descriptive and

causal comparative research design. Cash to Asset Ratio, Cash to Deposit Ratio, Credit to Deposit Ratio, Liquidity Ratio and Non-Performing Loan Ratio are the independent variables in this study, while Return on Asset (ROA) is the dependent variable.

There are altogether 26 commercial banks as per the annual report of Nepal Rastra Bank 2022. Therefore, the population of the study is all 26 commercial Banks of Nepal. Out of them, 66 observations from 11 commercial banks whose six fiscal year i.e. 2016/2017 to 2021/2022 has been taken as sample for the study sample purpose. The banks selected for the study are: Standard Chartered Bank, Himalayan Bank, Siddhartha Bank, Nepal SBI Bank, Everest Bank Ltd, Kumari Bank, Citizen Bank International Ltd, Prime Bank, NMB Bank, Rastriya Banijya Bank and Nepal Bank Ltd. The sampling method used in this study is Judgemental Sampling method for the given study.

Methods of Data Analysis

Normality of the data is necessary in analysis, so Jarque- Bera test is done for the normality of the data. For the regression analysis, it employs pooled ordinary least square regression technique to examine the impact of liquidity risk on financial performance on ROA. Further to test its validity of the panel regression model, Breush Pagan LM test has been used. The collected data has been statistically analyzed using the software such as Eviews12.

The model for this study:

$$ROA = \beta_0 + \beta_1 CTAR + \beta_2 CTDR + \beta_3 CDR + \beta_4 LR + \beta_5 NPLR + \epsilon$$

Where,

CTAR= Cash to Total Assets Ratio

CTDR= Cash to Total Deposit Ratio

CDR= Credit to deposit Ratio

LR= Liquidity Ratio

NPLR= Non-performing loan ratio

β_0 = Constant term, $\beta_1, \beta_2, \beta_3, \beta_4$, = Intercept of respective independent variables, ε = Error term

IV. Result and Analysis

Descriptive Statistics

The statistical mean, median, maximum, minimum values and number of observations reveal the feature of the variable. The following table summarizes the descriptive statistics for both the dependent and independent variables.

Table 1: Descriptive data summary of variables

Particulars	ROA	Cash to asset	Cash to deposit	Credit to deposit ratio	Liquidity ratio	NPLR
Mean	1.5778	6.2174	7.8700	80.3748	10.9887	1.5233
Median	1.6400	4.6044	5.9762	83.2800	8.9650	1.2100
Maximum	3.2200	33.7034	41.3004	95.6100	31.3900	5.3500
Minimum	0.1500	0.2571	0.3473	48.9200	3.2200	0.1000
Std.dv	0.5895	6.1462	7.8173	10.4699	6.8302	1.3118
Observations	66	66	66	66	66	66

Source: Author's calculations from E-views 12 SV, 2022

From table 1, it can be seen that the sample of commercial banks had a positive mean of return on assets (ROA) of 1.5778 with a standard deviation of 0.5895 for the fiscal year 2016/2017 -2021/2022. Moreover, there is less variation in the values (minimum = 0.1500 and maximum = 3.2200) of ROA.

ROA ranges from 0.1500 to 3.2200 with an average of 1.5778. The standard deviation of ROA is 0.5895. Likewise, Cash to assets ranges from 0.2571 to 33.7037. The mean value of cash to assets is 6.2174 and standard deviation is 6.1462. Cash to deposit ranges from 0.3473 to 41.3004 with average of 7.8700 and with standard deviation of 7.8173. Credit to deposit ratio range from 48.9200 to 95.6100. The mean value of credit to deposit ratio is 80.3748 and standard deviation is 10.4699.

Similarly, Liquidity ratio ranges from 3.2200 to 31.3900. The mean value for it is 10.9889 and standard deviation for it is 6.8302. Non -performing loan ratio ranges from 0.1000 to 5.3500 with an average of 1.5233. The standard deviation of non- performing loan ratio is 1.3118.

Normality Test

Table 2: Normality Test of variables

Normality test	Obs.R2	P value	Decision
Jarque-Bera	2.1309	0.3445	Regression are normally distributed

Source: Author's computation from E-views 12 SV, 2022

Here, Jarque- Bera Test is used to check the normal distribution of data. The probability of the Jarque- Bera $0.3445 > 0.050$ proved that the data are normally distributed.

Correlation Analysis

Correlation analysis is a statistical method used to ascertain the degree of relationship between two variables in order to explain the direction of a variable in the event that the original data should change or not. The correlation coefficient uses a number between -1 and +1. The larger the implication regarding the relationship, the closer it is to +1 or -1. A value that is nearer to 0 denotes a weaker association in either direction. No presumed relationship between the provided variables exists when the value is 0.

Table 3: Correlation Matrix of Variables

Correlation probability	ROA	Cash to asset	Cash to deposit	Credit to deposit ratio	Liquidity ratio	Non- performing loan ratio
ROA	1.0000					
Cash to asset	-0.4983 (0.0000)	1.0000				
Cash to deposit	-0.4975 (0.0000)	0.9981 (0.0000)	1.0000			
Credit to deposit ratio	0.2653 (0.0313)	-0.2780 (0.0238)	-0.2695 (0.0286)	1.0000		
Liquidity ratio	0.1297 (0.2990)	0.0834 (0.5053)	0.0695 (0.5790)	-0.1432 (0.2511)	1.0000	
Non- performing loan	0.3452 (0.0045)	-0.3518 (0.0038)	-0.3530 (0.0036)	-0.2370 (0.0553)	-0.1373 (0.2714)	1.0000

Source: Author's computation from E-views 12 SV, 2022

The Correlation Coefficient presented in the table 3 based on the data from 11 commercial banks for the period of 2016/2017 to 2021/2022. The variables i.e. cash to asset, cash to deposit, credit to deposit ratio, liquidity ratio, Non-performing loan ratio were taken as dependent variables and return on assets were taken as dependent variables.

The table 3 shows positive relationship of ROA with credit to deposit ratio, liquidity ratio and non performing loan ratio whereas negative relationship with cash to asset and cash to deposit. Similarly, cash to asset is seen to have positive relationship between cash to deposit and liquidity ratio whereas, negative relationship with credit to deposit ratio and non-performing loan ratio. Also, cash to deposit has positive relationship with liquidity ratio whereas negative relationship with the credit to deposit ratio and non performing loan ratio. Similarly, credit to deposit ratio has negative relationship between liquidity ratio and non-performing loan ratio. Finally, Liquidity ratio has negative relationship with non-performing loan ratio.

Breusch Pagan test

A parametric test called the Breusch Pagan test is used to decide whether or not the pooled OLS model is adequate. While the regression is carried out, the Breusch-Pagan test is used to determine which methodology is appropriate to utilize based on the value of the data. The purpose of regression analysis is to predict and estimate the effect of the independent variables on the dependent variable.

Table 5: Breusch Pagan langrange Multiplier Test

	Cross Section	Time	Both
Breusch Pagan	0.5183	0.0323	0.5506
Prob.	(0.4715)	(0.8574)	(0.4581)

Source: Author's computation from E-views 12 SV, 2022

Bresuch –Pagan Langrange Mutiplier Test is used to select the suitable model for the panel data analysis.

The test has the following hypothesis:

H0: Pooled OLS method is better than fixed Effect and Random Effect Model

H1: Pooled OLS method is not better than fixed Effect and Random Effect Model

Here, the p value is 0.4715 which is higher than the 0.05 so, null hypotheses is accepted. It means the Pooled OLS method is better than the Fixed Effect and Random Effect Model.

Panel OLS Regression Analysis

Following the execution of several statistical tests, pool ordinary least square regression was performed. Return on assets (ROA) is regarded as a dependent variable in the regression model. The independent factors or explanatory variables include the cash to asset ratio, cash to deposit ratio, credit to deposit ratio, liquidity ratio, and non-performing loan ratio.

Table6: Pooled OLS Regression

Panel regression results of Nonperforming loan (NPL)

Variable	Coefficient	Std. Error	T Statistics	Prob.
Cash to Asset	-0.0730	0.1643	-0.4446	0.6582
Cash to Deposit	0.0333	0.1288	0.2585	0.7969
Credit to deposit ratio	0.0162	0.0065	2.4818	0.0159
Liquidity ratio	0.0215	0.0091	2.3478	0.0222
Non-performing loan ratio	0.1509	0.0532	2.8346	0.0062
C	-0.0005	0.6238	-0.0009	0.9993
Model Summary				
R-squared	0.3846	Adjusted R-squared	0.3334	
F-statistic	7.5019	Durbin-Watson stat	1.4263	
Prob (F-statistic)	0.0000			

Source: Author's computation from E-views 12 SV, 2022

For 66 observations, 11 commercial banks from 2016-2021, as illustrated in the table 6 for the financial performance, among the explanatory factors:

Credit to deposit ratio, liquidity ratio and non performing loan ratio were found to be statistically significant and positive effect on ROA, whereas cash to asset and cash to deposit were found to be statistically insignificant effect on ROA.

The null form of the test is $DW > R^2$, which states that the Durbin- Watson result should not be greater than the R- squared figure. As seen in the analysis results, $DW = 1.4263$ and $R^2 = 0.3846$, rejecting the null hypothesis, indicating that the regression estimate result is valid. R-squared for the regression is 0.3846 which implies that the variables in the current study can explain by 38.46 percent of the variations in the ROA can be explained by the explanatory variables and remaining 61.54 percent of the variations of the ROA under investigation can be explained by other factors not included in the model. Furthermore, regarding the statistical significance of the model it's p value = 0.0000 is less than 5% level, indicating that the estimated model has a high statistical significance, which increases the model's reliability and validity of the given data.

Summary of hypothesis

The effect of independent variables on the dependent variables has been analyzed, and the results of hypothesis testing have been determined.

Table7: Summary of Hypothesis

Hypothesis	P value	Remarks
H_1 : There is significant impact of cash to asset ratio on return on assets	0.6582	reject
H_2 : There is significant impact of cash to deposit ratio on return on assets	0.7969	reject
H_3 : There is significant impact of credit to deposit ratio on return on assets	0.0159	accept
H_4 : There is significant impact of liquidity ratio on return on assets	0.0222	accept
H_5 : There is significant impact of non- performing loan ratio on return on assets	0.0062	accept

Source: Author's Own Calculation

V. Conclusions

In this study, different liquidity risk variables are employed to determine the effect on financial performance of commercial banks in Nepal. This study uses the Pooled OLS methods to determine whether there is significant effect exist between cash to asset ratio, Cash to deposit ratio, credit to deposit ratio, Liquidity ratio, non performing loan ratio and financial performance (ROA). Based upon the major findings, Correlation analysis is used to check the existence of relationship between cash to asset ratio, cash to deposit ratio, credit to deposit ratio, liquidity ratio, non performing loan ratio and financial performance (ROA). Likewise, it has used Breusch- Pagan LM test for making the decision on which method is applicable for the data employed and Jarque- Bera to check the normality distribution of the data.

The findings of this study indicate that the sample commercial bank have poor liquidity risk management practices. This is evidenced by the insignificant result of cash to asset and cash to deposit which is also found to be negative coefficient. The insignificant result of cash to asset indicates that the cash to asset could not be regarded as the influencing variable for the bank performance.

Moreover, the negative coefficient of cash to deposit confirms the negative effect on the bank performance. Cash to deposit in particular, indicates how banks manage their liquidity risk because it defines the proportion

of total cash in relation to total deposit amount of the banks. All these evidences support that Nepalese commercial banks have poor liquidity risk management.

References

- Acharya, M. (2020). Impact of Liquidity on Profitability of Nepalese Commercial Banks. *Global Scientific Journals*, 8 (10), 438-449. Available at www.globalscientificjournal.com
- Abdullah, M. N. (2014). *The Impact of liquidity on profitability in banking sector of Bangladesh: A case of Chittagong Stock exchange*. Vol - 2 Issue- 10. www.epratrust.com
- Amengor, E. C. (2010). Importance of liquidity and capital adequacy to commercial banks. A Paper Presented at Induction Ceremony of ACCE, UCC Campus.
- Sathyamoorthi, C. R., Mapharing, M., & Dzimir, M. (2020). Liquidity Management and Financial Performance: Evidence From Commercial Banks in Botswana. *International Journal of Financial Research*, 11(5), 399–413. <https://doi.org/10.5430/ijfr.v11n5p399>
- Diamond, R., and J. Rajan (2008). The procyclical effects of Basel II. *Journal of Economic Policy*, 2(4). 12-32
- Khan, R. A. & Ali, M. (2016). Impact of Liquidity on Profitability of Commercial Banks in Pakistan: An Analysis on Banking Sector in Pakistan. *Global Journal of Management and Business Research*, 16(1), 53-59.
- Khatri, M. P. (2020). Impact of Liquidity on Profitability of Nepalese Commercial Banks. *IOSR Journal of Economics and Finance*, 11(5), 26–33. <https://doi.org/10.9790/5933-1105012633>
- Kamande, E. G., The Effect Of Bank Specific Factors On Financial Performance Of Commercial Banks In Kenya. Kenya., (2017).
- Mishra, S., & Pradhan, B. B. (2019). Impact of Liquidity Management on Profitability: An Empirical Analysis in Private Sector Banks of India. *Revista ESPACIOS*. ISSN 0798 1015, 40(30) , 1-14.
- Ojha, P. R., Macroeconomics And Bank-Specific Factors Affecting Liquidity: A Study Of Nepali Commercial Banks. *Journal of Business and Social Sciences*, 2(1) (2018) 79-87.

- Pradhan, R. S., & Shrestha, D. (2018). Impact of Liquidity on Bank Profitability in Nepalese Commercial Banks. *SSRN Electronic Journal*. 1(1), 1-14. <https://doi.org/10.2139/ssrn.2793458>
- Rasiah, D. (2010). Theoretical framework of profitability as applied to commercial banks in Malaysia. *European Journal of Economics, Finance & Administrative Sciences*, 19(19), 75-97
- Shrestha, B. (2018). Liquidity Management and Profitability of Commercial Banks in Nepal O. *Proceedings of ARSSS International Conference*, (pp. 13-17). New Delhi, India.
- Shrestha, B.P., 2012. Liquidity association of Commercial Banks in Nepal. *People's Journal of Management*, 1(1), pp.1-8.
- Shrestha, S., & Kant Jha, U. (2020). Impact of Liquidity on Profitability of Joint Venture Commercial Banks in Nepal (With Reference to EBL, HBL and NBB). *LBEF Research Journal of Science, Technology and Management*, 2(3), pp. 73-88.