

Factors Affecting the Liquidity Risk of Commercial Banks in Nepal

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ABSTRACT

Level liquidity is an important factor that helps the growth and survival of commercial banks. This research aims to show the factor affecting the liquidity risk of commercial banks in Nepal. The panel data were used to analyze and find the results from the period 2017 to 2021. Secondary data are collected from the annual report of commercial banks. Banks' internal factors bank size, capital adequacy ratios, non-performing loans, return on assets, return on equity, and external factor gross domestic product was used as independent variables. The dependent variable of the research is the liquidity ratio. A descriptive research design has been used to explain the data. A convenient sampling technique was used to select the 16 commercial banks as a sample from the population of 26 banks. Various statistical methods are used to describe the data and to find the result from the 80 observations. The result shows that there is a significant and negative relationship between bank size and non – performing loans with the liquidity of commercial banks in Nepal, but GDP, ROA, and ROE have significant positive effects on liquidity. To maintain the liquidity level commercial banks, need to minimize the non – performing loans. It is crucial to take into account the size of the bank, the nature of the crisis, the regulatory environment, the interconnection of the financial sector, market perception, and contagion risk when large banks have a negative impact on liquidity. Knowing these elements will make it easier to find suitable answers to the liquidity issue and lessen the effects it has on the larger financial system.

SARI PATI

Tingkat likuiditas merupakan faktor penting yang membantu pertumbuhan dan kelangsungan hidup bank komersial. Penelitian ini bertujuan untuk menunjukkan faktor yang mempengaruhi risiko likuiditas bank-bank komersial di Nepal. Data panel digunakan untuk menganalisis dan menemukan hasil dari periode 2017 hingga 2021. Data sekunder dikumpulkan dari laporan tahunan bank-bank komersial. Faktor internal bank seperti ukuran bank, rasio kecukupan modal, pinjaman bermasalah, return on assets, return on equity, serta faktor eksternal seperti produk domestik bruto digunakan sebagai variabel independen. Variabel dependen dari penelitian ini adalah rasio likuiditas. Desain penelitian deskriptif digunakan untuk menjelaskan data. Teknik sampling yang digunakan adalah convenient sampling dengan memilih 16 bank komersial sebagai sampel dari populasi 26 bank. Berbagai metode statistik

	<p>digunakan untuk menggambarkan data dan menemukan hasil dari 80 observasi. Hasil penelitian menunjukkan adanya hubungan yang signifikan dan negatif antara ukuran bank dan pinjaman bermasalah dengan likuiditas bank komersial di Nepal, namun GDP, ROA, dan ROE memiliki efek positif yang signifikan terhadap likuiditas. Untuk menjaga tingkat likuiditas bank komersial, perlu untuk meminimalkan pinjaman bermasalah. Penting untuk mempertimbangkan ukuran bank, sifat krisis, lingkungan regulasi, interkoneksi sektor keuangan, persepsi pasar, dan risiko penularan ketika bank-bank besar memiliki dampak negatif terhadap likuiditas. Memahami elemen-elemen ini akan memudahkan untuk menemukan solusi yang tepat terhadap masalah likuiditas dan mengurangi dampaknya terhadap sistem keuangan yang lebih besar.</p>
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INTRODUCTION

A commercial bank's liquidity ratio serves as a measure of how well it can use its liquid assets to satisfy its short-term obligations. In the Nepalese context, liquidity refers to an overall financial institution's performance to maintain or achieve enough cash or its equal in timely conduct at a rational cost to meet its commitment as they fall due and to fund new business opportunities. A high liquidity position gives a low profit because it's not invested in efficient areas. Indecision concerning liquidity needs is classified into two types. Which are each bank is faced with liquidity risk. The position of low liquidity is termed debt and high liquidity in the market results in low profitability if liquidity is not generated sufficiently.

Diamond & Dybvig (2008). There should be equality between cash inflow and cash outflow of the cash, which is openly indicated by bank liquidity. Liquidity risk occurs if the banks are unable to maintain the balance. When the present demands of the customers are unable to be fulfilled by banks that is called liquidity risk arises. There is a high risk of bankruptcy with an enhanced liquidity risk.

Bonner (2013). In the present condition liquidity is a serious concern for banking and financial institution after the economic

crisis of 2008. The basic causes of the crisis and ongoing disorder of the world financial system are caused by not enough liquidity buffering, improving liquidity risk analysis, and supervision of crucial issues.

Commercial banks faced liquidity risk- the risk that a bank might not meet its obligations because depositors could withdraw money before the maturity period when commercial banks were unable to balance their capital rapidly. They could not pay their depositors. Besides, these types of risks could also reduce the profitability of banks and financial institutions. Liquidity risk would be when a company has assets over its debts but cannot easily convert those assets to cash and cannot pay its debts because it does not have sufficient current assets. When the asset is illiquid and must be sold at a price below the market price. Liquidity risk in economics is the capability of a company to meet its short-term debts, based on its current liquid assets. Liquidity is the capability of an asset to be transformed immediately into cash without producing a loss in its time. Current assets are liquid assets that can be converted into cash within one year.

Liquidity risk is measured by various sectors such as indicates a company's ability to meet upcoming debt payments with the most liquid part of its assets. This ratio is between current

assets and current liability. Which ratio standard measurement are two. Similarly, the acid test ratio ignores the inventory and prepaid because of their low capacity to be converted into cash in the short term. Which ratio standard measurement a one? The cash ratio only used cash and marketable securities. The optimum ratio is one.

The liquidity policy should be designed according to the specific characteristics of each bank, establishing a contingency plan for possible crises. Basically, highlight the following practices to reduce liquidity risk. Maintain sufficient cash and bank, able to access loans and diversify funding sources, and able to convert liquid assets into cash quickly. Liquidity risk affects not only the profitability but also the reputation of the banks. It is most challenging for banking and financial institutions.

Brunnermeier & Yogo (2009) found that there were several other risks that a bank had to face such as credit risk, operating risk, and interest rate risk, which could vary in the form of liquidity risk.

This study is conducted to add to the group of empirical studies on the effect of factors affecting the liquidity risk of commercial banks. Four main risks can threaten the sustainability of banks namely credit risk, market risk, operational risk, and liquidity risk. Risk is uncertainty or unstable but not every uncertainty was called a risk. Commercial banks find ways to meet their liquidity needs in many different ways. Which are: 1 borrowing money in the interbank monetary markets. 2. Selling assets in the financial market. 3. Performing foreign exchange swaps. 4. Refinancing operations from the central bank. The research aims to analyze the factor affecting the liquidity risk of commercial banks in Nepal from 2017 to 2021. Thus, there exists

a conceptual gap on whether liquidity risk positively or negatively affects the financial performance of commercial banks by using size as a moderating variable.

Review of Literature

Pradhan & Shrestha (2017) studied on impact of liquidity on bank profitability in Nepalese commercial banks to examine the effect of liquidity on financial performance. Only sixteen commercial banks were taken for sample. The researcher collected secondary data from the annual report of selected commercial banks from 2005/06 to 2013/14. A descriptive research design was used to interoperate the result. Data were analyzed and interpreted by using descriptive and inferential statistics. The dependent variable was ROA and ROE and the independent variables were IR, LR, CR, and QR. The result of the study showed IR, LR, and CR was positively related to ROA and IR, CR, and QR were also positively related to ROE other variable were negatively related to ROA and ROE. IR, LR, and CR were significant at a 5% level with ROE, and IR and CR were significant at a 5% level with ROA.

Cetinkaya & Incekara (2019) found that liquidity risk management was a comparative analysis of panel data between Islamic & Conventional banking in Turkey. The research used secondary data from 2014 to 2018 only five years period. All data was collected from annual reports of sample banks. Descriptive as well as inferential research design was used. To show the relationship between the independent and dependent variables by using correlation and the impact of the independent variable on the dependent variable was shown using multiple regression analysis. The dependent variable is LR and the independent variables were Size, NPL, ROE, CAR, ROA, LA, and the external variables were GDP and INF. The result of the study showed NPL, LA, GDP, and INF were a significant impact on LR but

other variables were insignificant impacts on liquidity risk.

Nguyen (2020) examined the effect of liquidity risk of joint venture Commercial Banks with a view to studying the effect of factors on the liquidity risk of commercial banks. The total population of the study was 26 commercial banks and the research used only secondary data from 2008- 2018. A descriptive research design was used to interpret. Data were analyzed and interpretation statistics to show the relation between both the variable correlation and impact of independent and dependent variables were shown using multiple regression analysis. Results of the studies show DEPO has a negative hurt. LTA, LIQ, CRD, EFD, and LLP have a positive impact on liquidity risk. Inflation, money supply, and economic growth of GDP affect the liquidity risk.

Effiong & Ejabu (2020) evaluated liquidity risk management and financial performance: Are consumer goods companies involved? With a view, to examining liquidity risk management and the financial performance of consumer goods companies. The total sample of the research was only ten companies selected. The study period from 2013 to 2017 was only 5 years. Descriptive as well as inferential research design was used to interpret. The dependent variables were ROE, ROA, and EPS and the independent variables were CR, CDI, QAR, and LTDBT. Correlation showed the relationship between the dependent and independent variables and regression showed the cause and effect of the independent variable and to dependent variables. The study's major findings showed that CR and ROE were significant, QAR and ROA were significant, and CDT and QAR were also significant with EPS but other variables were insignificant in the 5% level.

Ahamed (2021) explained the determinants of liquidity risk in commercial banks in Bangladesh. Viewed to analyze the relationship between liquidity risks in commercial banks. The sample was taken from 17 commercial banks out of 23 banks. The study period was only fourteen years from 2005 to 2018. Descriptive as well as inferential research design was used to interpret. The dependent variable was LR and the independent variables were Size, ROE, CAR, INF, GDP, DC, and CA. The major finding of this study was that size, GDP, and LA shows a positive correlation with LR but ROE, CAR, INF, and DC show a negative correlation with LR.

Wanjiru & Jagongo (2022) investigated the liquidity and financial performance of deposit-taking saving and credit cooperative societies in Kenya. Viewed on to investigate the effect of liquidity risk on financial performance. The sample was taken from 175 saving and credit cooperatives. The study period from 2016 to 2020 was only five years. Panel data was taken from selected saving and credit cooperative societies in Kenya. The study was adopting a descriptive research design. The dependent variables were ROA and the independent variables were PR, LR, LA, and size. These all-independent variables were affecting the financial performance of saving and credit cooperatives.

Kinyua & Fredrick (2022) evaluated the liquidity risk and financial performance of manufacturing firms listed at the Nairobi securities exchange. The total population of the research was 12 but all manufacturing company was taken for sample. The study period from 2016 to 2020 was only 5 years. Penal data was used for analysis. Descriptive as well as inferential research design was used. The dependent variable was financial performance and the independent variable was assets tangibility, capital adequacy, inflation

rate, and financial leverage. The major finding of the study was no multi-collinearity problem all variable value was less than ten. R square was good. Assets tangibility, capital adequacy, inflation rate, and financial leverage were a 5% level of significant impact on the financial performance of Nairobi manufacturing firms. The following research framework has been developed on the basis of the review of the literature for this study.

METHODS

This research is based on descriptive and causal-comparative research design. The specific variables are returned on assets (ROA), return on equity (ROE), capital adequacy ratio (CAR), non-performing loan (NPL), gross domestics product (GDP), and bank size (BS) are taken as independent variables and liquidity risk (LR) is outcome variable. The study is based on secondary data selected from sixteen commercial banks from the year 2017 to 2021. The samples are selected based on convenience sampling. All data were collected from published annual reports of banks. The data were analyzed and interpreted by descriptive and inferential statistics like mean, standard deviation, coefficient of variance, correlation, and multiple regression using SPSS version 25 and Microsoft Excel 10.

The Model

The econometric model is expressed for the study:

$$y = \alpha + \beta x + \varepsilon$$

Where:

y is the outcome variable; α is constant; β is the explanatory variable coefficient; x is the explanatory variable vector; and ε is the error term. The regression model can be shown as:

$$LR_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 CAR_{it} + \beta_4 NPL_{it} + \beta_5 GDP_{it} + \beta_6 BS_{it} + \varepsilon_{it} \dots\dots I$$

Where,

LR_{it} = liquidity risk for the bank during the t period.

ROA_{it} = Return on assets for the bank during the t period.

ROE_{it} = Return on equity for the bank during the t period.

CAR_{it} = Capital adequacy ratio for the bank during the t period.

NPL_{it} = Non-performing loan for the bank during the t period.

GDP_{it} = Gross domestic product during t period. BS_{it}= Bank size during t period.

ε_{it} = Error terms β₀ = Intercept

β₁- β₆ = Coefficient parameters

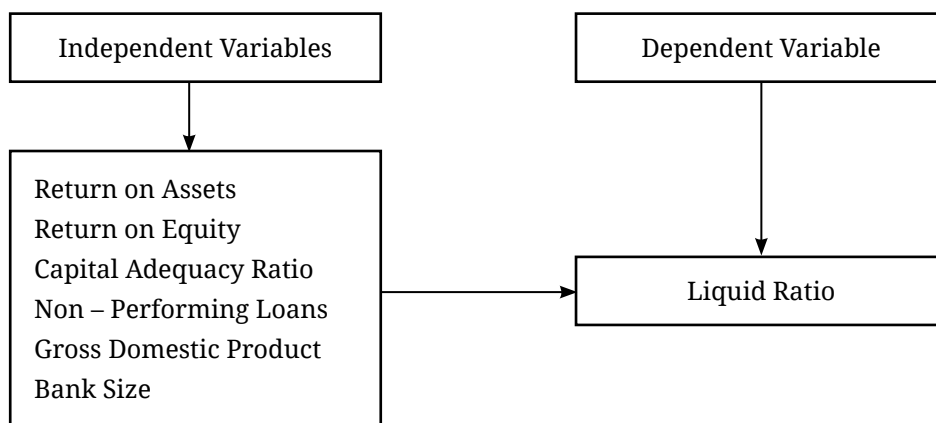


Figure 1. Research Framework

RESULTS AND DISCUSSION

The direction between the selected variable can be shown with the help of correlation and the impact of independent variables on the dependent variables is measured through the multiple regression analysis. The relation and the impact of BS, CAR, NPL, ROA, ROE, and GDP on the liquidity of commercial banks in Nepal have been analyzed and interpreted using correlation and regression coefficients in the following tables.

Table 1 shows the correlation between the variables. There is a positive relation between the size of banks and liquidity ratio at a 5% level of significance. Increases in the investment of

fixed assets of commercial banks increase the liquidity ratio in a positive direction. Moreover, gross domestic production and the liquidity ratio also have a positive correlation i.e., 0.224 at a 1% significance level. Similarly, the credit deposit ratio has a negative correlation to the liquidity ratio (i.e., -0.154) which means an increase in the liquidity ratio in the commercial banks in Nepal adversely affects the credit deposit ratios. Other variables (CRR, INF, ROA, and ROE) have a low correlation with the liquidity ratios.

In Table 2 regression coefficient between the dependent and independent variables has been presented. The table shows that there

Table 1. Correlation Coefficient Between the Variables

Variables	LR	Size	CAR	GDP	NPL	ROA	ROE
LR	1						
Size	-0.235*	1					
CAR	0.165	-0.142	1				
GDP	0.224*	-0.398**	0.088	1			
NPL	-0.160	-0.053	-0.060	0.008	1		
ROA	-0.075**	0.011	0.029	0.086	-0.020	1	
ROE	-0.181*	-0.159	0.013	0.286**	0.118	0.618**	1

Note: *. Correlation is significant at the 0.05 level (2-tailed).
 **. Correlation is significant at the 0.01 level (2-tailed).

Table 2. Regression Analysis of Dependent and Independent Variables

Variables	Unstd. B	SE	Std. B	t	Sig.	VIF
(Constant)	2.132	.604	-	3.528	.001	-
Size of the Banks	-.038	.023	-.189	-1.616	.011	1.225
Capital Adequacy Ratios	.002	.002	.113	1.049	.297	1.029
Gross Domestic Product	.006	.003	.223	1.870	.055	1.277
Non-Performing Loans	-.010	.009	-.124	-1.156	.051	1.036
Return on Assets	.022	.030	.104	.757	.051	1.688
Return on Equity	.006	.003	-.326	-2.267	.026	1.849
Adj R² = 0.429,	F. Stat. = 2.744,	F. Sig. = 0.018,	DW = 1.876			

Note Dependent Variable: - Liquidity Ratio.

is no multicollinearity between the variables because the variance inflation factors (VIF) of all the variables are lower than 10. The multiple regression model for the study is fit with F. sig. 0.018 and there is positive autocorrelation between the variables (DW = 1.876). there is a rule of thumb, it is clear that there's no autocorrelation when DW = 2. A value higher than 2 denotes a negative serial correlation, and a value less than 2 denotes a positive autocorrelation. If DW exceeds the upper critical value, there is neither statistical support for a positive correlation between the data.

The result shows there is a significant and negative effect of the size of banks and non-performing loans on the liquidity of commercial banks in Nepal with $p = 0.01, 0.05$, and unstandardized beta -0.038 and -0.01 respectively. It confirmed that, as the increase of the size of the banks, they are unable to maintain the liquidity level, and increases in NPL decrease liquidity in the commercial banks. A similar result has been founded in the research (Atoi, 2019). Consequently, GDP, ROA, and ROE have significant and positive effects on the liquidity of commercial banks in Nepal. Increases in GDP, ROA, and ROE positively increase the liquidity of the banks. The consistent result has been explained in the research (AL-Qudah, 2020; Ekinici & Poyraz, 2019). Other variables in the study have a nominal effect on the liquidity of commercial banks in Nepal.

CONCLUSION

The results of the study reveal an increase in the non – performing loans of commercial banks in Nepal corresponding decrease in the liquidity position. Therefore, every commercial bank must be focused to minimize the non – performing loans to make a sound solvent position of liquidity. When large banks have a negative influence on liquidity, it is critical to consider the size of the bank, the type of crisis, the regulatory environment,

the interconnectedness of the financial sector, market perception, and contagion risk. Finding appropriate solutions to the liquidity problem and reducing the impact it has on the larger financial system will be simpler if these factors are understood. Moreover, gross domestic product, return on assets, and return on equity have a significant positive impact on the liquidity of commercial banks in Nepal. An increase in GDP increases the banking transaction as well as the liquidity of the banks. Increases in the profitability of commercial banks translated to a positive increase in liquidity. The outcome of the research is suitable to maximize liquidity and minimize the financial risks of commercial banks in Nepal.

MANAGERIAL IMPLICATION

The empirical evidence and theoretical framework of the previous research help to explain the factors affecting liquidity risks in commercial banks in Nepal. This study collects information relating to ROA, ROE, GDP, CAR, BS, and NPL only for five years period from 2017 to 2021 among the 16 commercial banks out of a total of 26 banks as factors affecting liquidity risks but further research can also consider the variable like the loan to total assets, term deposit, inflation, financial crisis, interest rate, equity to total assets, and credit growth ratio to examine the liquidity. Now, the number of commercial banks came down to 20 due to mergers and acquisitions which also differentiate the liquidity position of Nepalese commercial banks. The descriptive research design and a convenient sampling technique have been used in this study but analytical and explanatory research design and quota sampling techniques can also apply. This study uses statistical tools to explain and interpret the data, the future researcher can use other mathematical and financial tools for the explanation of the variables. ▽

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