LIQUIDITY MANAGEMENT AND PROFITABILITY OF COMMERCIAL BANKS IN NEPAL

BINAY SHRESTHA
Ph.D. Scholar, Birgunj Public College
E-mail: binay273@gmail.com

Abstract - Liquidity management is one of the essential determinants of firms’ market value because it directly affects the profitability. This study investigates the relationship between Liquidity management and profitability of commercial banks in Nepal. The objective of the study is to identify the relationship between the Liquidity management and profitability and its impact on profitability. The relation between the Liquidity management and profitability is examined using Pearson correlation analyses. The effects liquidity on profitability is analyzed using the regression analyses. The data has found to be covering period 2012-2016 commercial Banks in Nepal. The Liquidity management represents the variables of the current Reserve ratio (CRR), Credit Deposit Ratio (CDR) and the profitability including return on equity (ROA). The result reveals that liquidity does not have its significant impact on profitability in Nepalese commercial banks.

Keywords - Liquidity, capital, short term assets, short term liabilities, profitability

I. INTRODUCTION

The term liquidity is often used in multiple contexts. An asset’s liquidity can be used to describe how quickly, easily and costly it is to convert that asset into cash (Berger & Bouwman, 2008). Liquidity can also be used to describe a company by the amount of cash or near cash assets a company has; the more liquid assets, the higher a company’s liquidity. Financial ratios that measure liquidity are referred to as a company’s liquidity ratios. One such ratio is the current ratio which determines a company’s ability to pay short term debts as they come due (Van Ness, 2009). Liquidity risk has many definitions but the one that can be derived from the ratio is the probability that a company will not be able to pay its short term obligations as they come due. This inability can lead a company to face serious financial problems. In addition to this, liquidity risk can also be defined in terms of the counterparty to a transaction. In this sense the term means the risk inherent in the fact that the counterparty may not be able to pay or settle the transaction even if they are in good financial standing, because of a lack of liquidity (Petria & Petria, 2009). The liquidity in the commercial bank represents the ability to fund its obligations by the contractor at the time of maturity, which includes lending and investment commitments, withdrawals, deposits, and accrued liabilities (Amengor, 2010).

In every system, there are major components that feature paramount for the survival of the system. This is also applicable to the financial system. The banking institution had contributed significantly to the effectiveness of the entire financial system as they offer an efficient institutional mechanism through which resources can be mobilized and directed from less essential uses to more productive investments (Wilner,2000). Banks should be equipped to deal with the changing monetary policy that shapes the overall liquidity trends and the banks’ own transactional requirements and repayment of short term borrowing (Akhtar, 2007). There are a number of other risks faced by banks such as credit risk, operational risk and interest rate risk, which may culminate in the form of liquidity risk (Brunnermeier and Yogo, 2009). Practically, profitability and liquidity are effective indicators of the corporate health and performance of not only the commercial banks (Eljelly,2004), but all profit-oriented ventures. These performance indicators are very important to the shareholders and depositors who are major publics of a bank. As the shareholders are interested in the profitability level, the depositors are concerned with liquidity position which determines a bank’s ability to respond to the withdrawal needs which are normally on demand or on a short notice as the case may be Stable Macroeconomic Environment to enhance liquidity management and ensure macroeconomic stability, there is the compelling need to insulate monetary policy from the pressure of financing the government fiscal deficit. Also, the monetary authorities should have freedom in the management of interest rate in order to sufficiently influence transactions in the intervention securities and enhance the effectiveness of instruments for liquidity management. Uncontrolled financing of the deficit by the CBN, either through ways and means advances or the absorption of unsubscribed government debt issues, increase bank liquidity thereby constraining the effectiveness of instruments for liquidity management (Amarachukwu Ona,2003)

As a developing country, Nepal is striving to develop and modernize economy rapidly on rational and socially desired footings but the structure of the economy is largely dominated by agriculture with very small industry base, so to divert and modify agro-based economy, Nepal adopted mixed economic model with implicit objective to help the state and
private sector economy that complement each other in the development process from very inception of economic planning process back in 1956. The primary goal of the developing country like Nepal is to develop economy rapidly and to promote the welfare of the people and nation. So, very recently, Nepal has adopted the path of economic liberalization for the sake of the economic growth of the nation. After the restoration of the democracy, the concept of liberalization policies has been incorporated as directive principal and state policies (The Constitution of the Kingdom of Nepal, 1990: 14-17).

II. REVIEW OF LITERATURE

Almazari (2014) investigated the internal factors that have an effect on profitability in Saudi and Jordanian banks. He found that there is a positive correlation between profitability measured by ROA of Saudi and Jordanian banks with some liquidity indicators, as well as there is a negative correlation with other liquidity indicators between profitability measured by ROA of Saudi and Jordanian banks. Rocheteau and Rodriguez-Lopez (2013) has a spillover from liquidity needs in a OTC market to the labor market where firms are issuing loans to hire workers. Like us, they use these frameworks to study the liquidity effects of different monetary policy tools. Al-Tamimi and Obeidat (2013) identified the most important variables which affect the Capital Adequacy of Commercial Banks of Jordan in Amman Stock Exchange for the period from 2000 – 2008. The study shows that there is a statistically significant positive correlation between the degree of capital adequacy in commercial banks and the factors of liquidity risk, and the return on assets, and there is an inverse relationship not statistically significant between the degree of capital adequacy in commercial banks and factors of the capital risk, credit risk, and the rate of force-revenue. Ibe (2013) examined the effect of liquidity management on the profitability of banks in Nigeria. He found that liquidity management is indeed a critical issue in the banking sector of Nigeria. Larney et al. (2013) sought to find out the relationship between the liquidity and the profitability of banks listed on the Ghana Stock Exchange. It was found that for the period 2005-2010, both the liquidity and the profitability of the listed banks were declining. Again, it was also found that there was a very weak positive relationship between the liquidity and the profitability of the listed banks in Ghana. Moen et al. (2013) investigated the relationship between modern liquidity indices and stock return in companies listed on Tehran Stock Exchange. Results indicated that there was a positive and significant relationship between comprehensive liquidity index and stock returns while there was no significant relationship between the index of cash conversion cycle as well as net liquidity balance and stock returns. Brunnermeier and Sannikov (2012) introduce inside money and outside money into a dynamic macro model with financial intermediaries. Their focus is on the real effects of monetary policy through the redistributive effects of inflation. In contrast, in our setup outside money are central bank reserves which only serve a role as an instruments to hedge illiquidity risks. This maturity mismatch problem explains why monetary policy affects bank lending. Our paper is also related to Corbae and D’Erasmo (2013) who study a model of the banking industry’s dynamics featuring rich heterogeneity.

Aref (2012) tested liquidity risk factors and assessed their impact on (22) of Pakistani banks during the period (2004-2009). Findings of the study indicate that there is a significant impact of liquidity risk factors on the banks profitability, where an increase in deposits lead to increasing in the bank’s profitability in terms of reducing dependence on the central bank in meeting the customers’ obligations, and profitability is negatively affected by the allocation of non-performing loans and liquidity gap. Charity (2012) examined the impact of liquidity performance in commercial using First Bank of Nigeria Plc as case study. Findings indicate that there was a positive relationship between liquidity management and the existence of any banks. Adebayo et al. (2011) examined liquidity management and commercial banks’ profitability in Nigeria. Findings of this study indicate that there is significant relationship between liquidity and profitability. That means profitability in commercial banks is significantly influenced by liquidity and vice versa. Sawada (2010) investigated that in the times of crises, due to the liquidity shock persuaded by the depositors, banks increase their cash holdings by selling their securities in the financial market, not by liquidating their loans. As they adjust their portfolio dynamically through selling and buying their securities in financial market. Ojo (2010) emphasized on the significance of risks all the way through a position to the vital role engaged by capital adequacy. On the basis of Accord principles the study observed that beside substantial development, a lot work is yet to be done specifically relative to liquidity risk. Vaihekoskia (2009) investigated that in the period of systematic liquidity risk (illiquidity) of those stocks which provides high rate of return were negatively related to the price of liquidity risk. Therefore, systematic liquidity risk is not priced as an asset-specific risk but as market-wide systematic risk as it is enough to occupy all liquidity related risks.

III. RESEARCH METHODOLOGY

Data Analysis
The data collected is analyzed using the computer software known as Statistical Package for Service Solution (SPSS) version 21.0. Descriptive, correlations and regression analysis was applied to

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study and compare the effect of independent variables on the dependent variable.

The dependent variables used in this research Return on Assets (ROA), Current Reserve Ratio (CRR) and Credit deposit ratio (CDR) are taken as independent variables. Based on the dependent variable, multiple regression models have been formulated as follows:

\[ \text{ROA} = \alpha_1 + \beta_1 \text{CRR} + \beta_2 \text{CDR} + \epsilon t \]

### Descriptive Analysis

The descriptive statistics of the explanatory and explained variables in this study are presented in Table 1. It is based on a panel data set organized from nine commercial banks operating in the Nepalese financial market during the period from 2012 to 2016. Looking at them, generally, the statistics indicate a wide variability exist in the indicators of liquidity management and profitability of commercial banks.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>5</td>
<td>1.60</td>
<td>2.04</td>
<td>1.7787</td>
<td>.16426</td>
</tr>
<tr>
<td>CDR</td>
<td>5</td>
<td>72.01</td>
<td>77.12</td>
<td>73.7013</td>
<td>2.01996</td>
</tr>
<tr>
<td>CRR</td>
<td>5</td>
<td>10.79</td>
<td>15.48</td>
<td>14.2896</td>
<td>1.96922</td>
</tr>
</tbody>
</table>

### Regression Analysis

The R² is a measure of the goodness of fit of the working capital management variables in explaining the variations in profitability of commercial banks in Nepal. The regression analysis of NPM, ROA and ROE on Working capital management has been separately analyzed below:

#### Regression Analysis of ROA on LM

Similarly on the basis of the study, correlation coefficient (r) was .517 and the coefficient of determination (r²) was .267 indicating that 26.7% of the profitability of commercial banks in terms of Return on Assets (ROA) can be predicted by the LM variables identified in the study. Since the correlation of .267 is positive it can be concluded that the correlation is statistically significant, hence there is a positive relationship between working capital management and profitability of commercial banks in Nepal.

### ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.129</td>
<td>2</td>
<td>.63</td>
<td>15.75</td>
<td>.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>.079</td>
<td>2</td>
<td>.040</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.108</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA  
b. Predictors: (Constant), CRR, CDR

### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-12.146</td>
<td>16.338</td>
<td>-.743</td>
<td>.535</td>
</tr>
<tr>
<td>CDR</td>
<td>.159</td>
<td>.186</td>
<td>1.950</td>
<td>.853</td>
</tr>
<tr>
<td>CRR</td>
<td>.157</td>
<td>.191</td>
<td>1.878</td>
<td>.822</td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA

### Result Overview

The results are the findings of the research on the basis of observations and analysis. This chapter includes the major results extracted from the analysis of data to determine the relationship between Profitability of Commercial banks and working capital management in the Nepalese banking sector from 2012 to 2016. The various results from the descriptive, correlation and regression analysis are discussed in this chapter.

### Descriptive Analysis Result

The ROA has a mean value of 1.7787% with standard deviation of 0.16426%. Credit Deposit Ratio (CDR) variable has the mean value of 73.7013%. Standard deviation of CDR is 2.01996. Cash Reserve Ratio (CRR) has a mean of 14.2896%. It has standard deviation of 1.96922% which also show there was low variability than all other variables used in the study.
Correlation Analysis Result
Return on Assets (ROA) is positively correlated with all the variables of working capital such as Current Reserve Ratio (CRR) and Credit Deposit Ratio (CDR) has insignificant relation with them.

Regression Analysis Result
The result of regression analysis shows the goodness of fit of the working capital management variables in explaining the variations in profitability of commercial banks in Nepal.

Result of Regression Analysis of ROA on LM
The findings of the analysis is based on the significance level (alpha) of 0.05 (95%), degrees of freedom (df) of 2, and two-tailed test indicated. The result show a positive coefficient of determination (R2) indicating that: Return on Assets is influenced by Current Reserve Ratio (CRR) and Credit Deposit Ratio (CDR). In addition, the computed t-values: Credit Deposit Ratio (CDR) (t= 0.853) and Cash Reserve Ratio (CRR) (t=0.822); are higher than the significance threshold of 1.96 (0.05). This then indicate that there is a significant relationship between Profitability of commercial banks and Credit Deposit Ratio (CDR) and Cash Reserve Ratio (CRR).

CONCLUSION
Liquidity management and profitability in commercial banks are two sensitive issues in the operations of commercial banks and of which information on them are seriously hoarded. The major concern of this study was to reconcile the conflicting requirements of bank liquidity and bank profitability arising from the conflicting desires of the two major providers of the bank resources namely the shareholders and the depositors. The shareholders desire maximum profitability as a return on their capital, while the depositors opt for a maximum liquidity as a guarantee for safety and ability to pay their money on demand. From the study, we can rightly conclude that both illiquidity and excess liquidity are "financial diseases" that can easily erode the profit base of a bank as they affect bank's attempt to attain high profitability-level. The pursuit of high profit without consideration to the liquidity level can cause great illiquidity, which reduces the customers' patronage and loyalty. Therefore, any bank that has the aim of maximizing its profit level must adopt effective liquidity management. Effective liquidity management also requires adequate liquidity level which will help commercial banks to estimate the proportion of depositor's funds that will be demanded at any period and arrange on how to meet the demand. The findings of the analysis is based on the significance level (alpha) of 0.05 (95%), degrees of freedom (df) of 2, and two-tailed test indicated. The result show a positive coefficient of determination (R2) indicating that: Return on Assets is influenced by Current Reserve Ratio (CRR) and Credit Deposit Ratio (CDR). In addition, the computed t-values: Credit Deposit Ratio (CDR) (t= 0.853 and Cash Reserve Ratio (CRR) (t=0.822); are higher than the significance threshold of 1.96 (0.05). This then indicate that there is a significant relationship between Profitability of commercial banks and Credit Deposit Ratio and Cash Reserve Ratio. The conclusion of the study is that CRR has great impact on ROA than other components which are influenced by other factors such as savings, interest rates other than CRR and CDR.

REFERENCE
Liquidity Management and Profitability of Commercial Banks in Nepal


