The Influence of Liquidity Management on Banks' Profitability

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The Influence of Liquidity Management on Banks' Profitability

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Abstract

The main objective for this study is to examine the relationship between liquidity management and profitability of commercial banks in Malaysia. A sample of top 5 commercial banks listed in Bursa Malaysia has been used to examine the relationship between the liquidity and profitability for the period of 10 years from 2011-2020. The data has been taken from the annual financial statements of the banks. In order to analyze data, the current ratio (CR), cash deposit ratio (CDR), loan to total deposit (LTD), capital to asset ratio (CAR) and non-performing loan (NPL) were used as a proxy for liquidity as an independent variable while the return on assets (ROA) was used as proxies for banks' profitability as dependent variables. The study concluded that current ratio (CR) is positively related to return on asset (ROA). This indicates that higher the current ratio (CR), higher would be the return on assets (ROA). However, the study reveals that non-performing loan (NPL) is negatively related to return on assets (ROA). This indicates that higher the non-performing loan (NPL), lower would be the return on assets (ROA). The study therefore recommended that banks keep liquidity as needed to meet up defined liabilities and not needlessly keeping too much liquidity as it erodes banks' profits.

Keywords: Commercial Banks, Current Ratio, Cash Deposit Ratio, Loan to Total Deposit, Capital to Asset Ratio, Non-Performing Loan

Introduction

The banking industry contributes significantly to the effectiveness of the entire financial system.

Profitability and liquidity are most important part of the banking sector. Otekunrin et al (2019) stated that banks are the primary providers of liquidity in the financial system, controlling the required liquidity position and reducing liquidity risk is crucial for day-to-day operations. 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). Liquidity is defined as the ability to convert assets or securities into cash without difficulty. One of the first signs that a financial institution is in serious financial trouble is a lack of liquidity. According to Khati (2020), liquidity is a vital when it comes to determine a company's income level and sustaining liquidity is a key element when it comes to consumer convenience and satisfaction. Bassey et al (2016) stated that liquidity is always a critical aspect in meeting daily withdrawal requests. As a result, cash is a

need for banks and the banking system to survive, as it is one of the criteria considered when assessing a firm's liquidity condition and capacity to pay its financial commitments (Umobong, 2015).

Liquidity management is a critical requirement that any business must adhere to satisfy its obligations, which include short-term financial and organizational expenses. Mishra and Pradhan (2019) stated that the primary role of liquidity management is to assess the needs for funds to meet obligations and ensure the availability of cash or collateral. A well-managed liquidity involves a daily analysis and detailed estimation of the size and timing of cash inflows and outflows. It also limits fewer or more of the bank's liquidity choices in order to avoid loss and to minimize the risk that savers will be unable to access their deposits in the moment of their need.

Profitability is an important determinant of future financial disasters. The profitability of the banking industry determines the financial and banking sector's consistency and reliability. Profitability is sometimes described as the difference between spending and revenue during a specific time period, generally a financial year. This is required for banks to generate sufficient income in order to continue to develop and expand. According to Eljelly (2004), profitability and liquidity are effective indicators of the corporate health and performance of not only the commercial banks 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.

The aim of this study is to investigate the effect of independent variables namely, current ratio, cash deposit ratio, loan to total deposit, capital to asset ratio and non-performing loan on the dependent variable which is return on asset. The study provides useful references for Malaysian commercial banks to manage their liquidity, which may be classed as internal factors that affect commercial bank profitability, especially after the banking sector's financial crisis in 2007.

Literature Review
Return on Asset (ROA)
ROA is used to examine the profitability of banking organizations since it focuses on measuring the efficiency of a banking company in managing its assets to generate profits (Swandewi & Purnawati, 2021). According to Suardana et al (2018), ROA is a collection of financial ratios connected to profitability that are used to assess a company's potential to earn profits or profit (profitability) at the level of income, assets, and capital stock. On the other hand, Malik et al (2016) believed that ROA reflects the potential of a bank's assets to generate profit, though this estimate might be biased due to off-balance-sheet activities. ROA is also a proxy measure used to determine the ability of the company to produce income from the assets. Higher ROA showed that performance of the bank is good the management is efficient in making profits by utilizing the assets. Moreover, it is proven by Golin and Delhaise (2013) that ROA is the most important measure for bank profitability.

Current Ratio (CR)

Current ratio is one of the most often utilised liquidity management metrics. The current ratio is a liquidity ratio that demonstrates a firm's capacity to satisfy both short and long-term obligations. Senan et al (2021) stated that the current asset value is divided by the current obligation value to get the ratio value. The current ratio determines how short-term assets and liabilities are related. A high current ratio shows a company's ability to repay short-term debts, whereas a low current ratio indicates a company's ability to fulfil long-term liabilities (Ezekwesili, 2021). Previous studies conducted by Dzapasi (2020), Damayanti and Chaerudin (2021) discovered that current ratio also have a positive and significant effect on return on assets.

Cash Deposit Ratio (CDR)

Alta'ani and Dali (2021) defined cash to deposit ratio as the total balance of cash in hand, and it evaluates how much fund the bank has available for borrowing. According to Edem et al. (2018), the cash deposit ratio is beneficial since it indicates if a firm has enough cash resources to pay off short-term debt or whether it is likely to have cash flow challenges in the future. According to Goel and Kumar (2016), they concluded that the cash deposit ratio did not exhibit any significant results in the study on the cash deposit ratio and credit deposit ratio of five public sector banks in India. Another study on impact of liquidity on banks in Bangladesh by Chaudhury (2018), also found that cash to deposit ratio has no significant relationship with the bank profitability. In addition, Khati (2020) did research on the relationship between liquidity and commercial bank profitability in Nepal, found that the cash-deposit ratio has a positive but insignificant relationship with bank profitability when measured by the return on assets determinants (ROA).

Loan to Total Deposit (LTD)

LTD is a common measure for assessing a bank's liquidity. It is calculated by dividing the bank's total loans by its total deposits. Banks may not have enough liquidity to manage any unforeseen financial requirements if the ratio is too high (Hacini et al. 2021). The loan to total deposit ratio is another measure of liquidity that may be used to analyse the profitability of a commercial bank. LTD measures a bank's capacity to deliver loans to its borrowers using both bank capital and public funding (Sari & Septiano, 2020). Previous study by Cuandra and Setiawan (2020) found that the loan to total deposit has no impact on the company's financial performance. Their findings were supported by Hacini et al (2021) who studied the impacts of liquidity risk management on the financial performance of Saudi Arabian banks and discovered that LTD has a negative impact on financial performance.

Capital to Asset Ratio (CAR)

Capital to asset ratio also known as capital adequacy ratio, is a measurement of a bank's available capital expressed as a percentage of risk-weighted credit exposures. Efficient funding will occur when companies have optimal capital. Optimal capital structure is a capital structure that can minimize the cost of capital use, thereby maximizing the value of the company. Bank with more capital tends to be more profitable (Garcia-Herrero et al., 2009). Previous research conducted by Pinasti and Mustikawati (2018); Suhandi (2019) which concluded that CAR has no significant effect on ROA. Jati (2021) conducted a study on the effect of capital adequacy ratio on return on assets in Bank Victoria International also found that there is a negative impact and insignificant relationship with return on assets. However, this finding is

inconsistent with Brastama and Yadnya (2020), on the influence of capital adequacy ratio and non-performing loans on banks stock prices using profitability as an intervening variable who discovered that CAR has a positive and significant effect on bank profitability.

Non-Performing Loan (NPL)

Non-Performing Loan (NPL) indicates the portion of uncollectible loans or problematic loans out of the total loan distributed. According to Jolevski (2017), higher problematic or uncollectible loans refrained banks on lending and thus further will impact the bank's profitability. The gradually decreasing non-performing loan followed by a constant increment of loan distributed caused NPL value and risk loan decreasing.; causing increment in loan distributing which then followed by the increment ROA itself due to the profit earned from the loan interest (Clarence et al., 2021). Study by Saleh and Winarso (2021), NPL showed significant negative impact on the bank's performance, implying that the amount of bank credit risk has an impact on the bank's performance. In addition, Brastama and Yadnya (2020) found that NPLs has a negative and significant effect on banking profitability.

Conceptual framework and Hypotheses

Figure 1 displays the proposed research framework which consists of dependent variable (return on asset) and five independent variables (current ratio, cash deposit ratio, loan to total deposit, capital to asset ratio and non-performing loan).
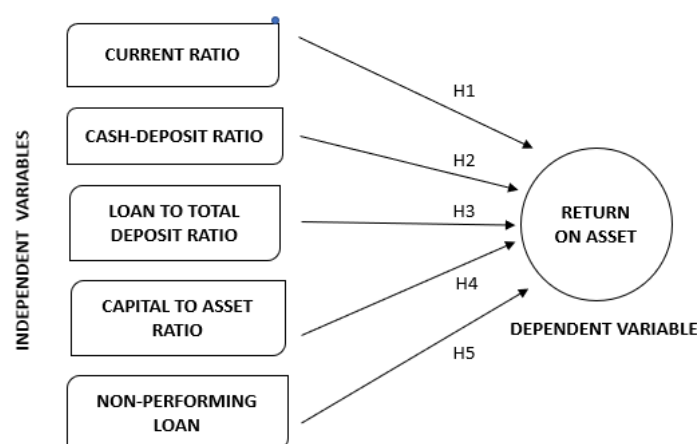

Figure 1. Research Framework

Based on the framework, research hypotheses have been developed as follows:

H1: There is a significant relationship between current ratio and retun on asset.

H2: There is a significant relationship between cash deposit ratio and retun on asset.

H3: There is a significant relationship between loan to total deposit ratio and return on asset.

H4: There is a significant relationship between capital to asset ratio and return on asset.

H5: There is a significant relationship between non-performing loan and return on asset.

Methodology

Data and Methodology

The study based on liquidity management and profitability in commercial banks was carried out through descriptive research design. The banks selected have a wide branch network and timely published financial statement that are readily available in their website and posted on the internet. 5 commercial banks were chosen from the Bursa Malaysia stock exchange which

are Malayan Banking Berhad (MAYBANK), CIMB Group Holdings (CIMB), Public Bank Berhad, RHB Bank Berhad (RHB) and Hong Leong Bank (HLB). Financial statements of the above banks were used from (2011-2020), on variables such as liquidity (CR, CDR, LTD, CAR and NPL) and profitability (ROA) of the banks. The data is run using the EViews 10 software and employing the methods of descriptive statistics analysis, Pearson correlation analysis and multiple linear regression analysis.

Descriptive analysis will be the first analysis used to describe the basic features of this study's data. It provides simple summaries about the sample and the measures. Next, the correlation test is also conducted to examine the correlation among the variables studied. Lastly, multiple regression analysis provides a means of objectively assessing the degree and the character of the relationship between the independent variables and the dependent variable. The regression coefficient indicates each independent variable's relative importance in predicting the dependent variable (Bougie & Sekaran, 2013). The multiple regression model used in this study to find the relationship between variables is as follows:

$$ROA_i = \alpha + \beta_1 CR_i + \beta_2 CDR_i + \beta_3 LTD_i + \beta_4 CAR_i + \beta_5 NPL_i + \varepsilon_i$$

Empirical Results and Discussion
Descriptive Statistics Analysis
Table 1 shows the results of the descriptive statistics. The table summarizes the mean, maximum, minimum data including the standard deviation, skewness and kurtosis of each variable tested for the period from 2011 to 2020.

Table 1
Descriptive Statistics

	ROA	CR	CDR	LTD	CAR	NPL
Mean	1.1094	1.3819	10.7206	87.0460	16.6068	1.7742
Median	1.1150	1.1545	9.9150	88.9500	16.4350	1.6800
Maximum	1.5600	4.0190	26.0300	95.6000	19.3900	5.1100
Minimum	0.2000	0.4620	2.2700	73.9000	13.4800	0.3600
Std. Dev.	0.2646	0.7750	5.1839	5.3730	1.5664	1.1146
Skewness	-0.8165	1.5727	0.5058	-0.7134	0.1396	0.7257
Kurtosis	4.1003	5.4580	2.9398	2.5807	2.1816	2.9015
Observations	50	50	50	50	50	50

In view of the outcomes appearing in Table 31, the mean for all variables is positive ranging from 1.1094 to 87.0460. This indicates that the distribution of data for all the variables appears to be skewed to the left. The dispersion of the data is reflected by the measure of standard deviation. All the variables are spread within the range of 0.2646 to 5.3730. Loan to total deposit ratio (LTD) variable recorded the highest at 5.3730 while the return on asset (ROA) has the lowest at 0.2646. In terms of skewness, return on asset and loan to total deposit ratio are negatively skewed at 0.8165 and 0.7134 respectively while for the other variables they are positively skewed. The Kurtosis result for the cash deposit ratio, loan to total deposit ratio, capital to asset ratio and non-performing loan shows that the variables are measured as a platykurtic distribution with a value of less than 3, at kurtosis values of 2.9398, 2.5807, 2.1816 and 2.9015 respectively. The platykurtic distribution is represented with less peaked in the

mean and thinner tails compared to the normal distribution. Meanwhile, the leptokurtic distribution was reflected in the return on asset and current ratio with the values of 4.1003 and 5.4580 respectively, which is more than 3. This indicates that the distribution of the data has fatter tails and sharper peak compared to the normal distribution.

Correlation Analysis
Correlation may be defined as the linear relationship between two variables and the evaluation of the strength of the linear relationship using available statistical data.

Table 2
Results of Pearson's Correlation Test

Variables	Correlation	Probability
ROA,CR	0.275580	0.0527
ROA,CDR	-0.048157	0.7398
ROA,LTD	-0.15667	0.2772
ROA,CAR	-0.308721	0.0292*
ROA,NPL	-0.427717	0.0019*
*Denotes 5% significant level		

Table 2 showed that return on asset is positively correlated with the current ratio despite the strong correlation between the two. Meanwhile, return on asset has negative correlations with the cash deposit ratio, loan to total deposit ratio, capital to asset ratio and non-performing loan, respectively, where the correlation is seen quite weak. From the observation, the probability value between capital to asset ratio (CAR) and return on asset (ROA) was 0.0292 means that there is a significance as the value was below 0.05. We also concluded that the probability value of 0.0019 indicates that there is a relationship between nonperforming loans (NPLs) and return on assets (ROAs) because the value is less than 0.05.

Multiple Regression Analysis
In the current study, multiple regression analysis was performed in order to evaluate the relationship between the independent variables to justify the dependent variable.

Table 3
Results of Multiple Regressions

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	0.322856	0.853423	0.378307	0.7070
CR	0.188789	0.080409	2.347847	0.0234*
CDR	-0.009360	0.010121	-0.924804	0.3601
LTD	0.016254	0.009492	1.712463	0.0939
CAR	-0.038358	0.024082	-1.592791	0.1184
NPL	-0.085601	0.035541	-2.408494	0.0203*
*Denotes 5% significant level				

Based on the regression analysis result shown in Table 3, the current ratio has a positive and significant relationship with the return on asset with less than 0.05 critical values. The non-performing loan has a negative and significant relationship with the return on asset with less than 0.05 critical value. As a result, the null hypothesis must be rejected, and changes in the

current ratio will affect asset returns significantly. However, the cash deposit ratio, loan to total deposit ratio and capital to asset ratio are found to be an insignificant determinant in influencing the return on asset as the p-value is more than 0.05. As a result, the null will not be rejected, and changes in those variables are not influencing the return on asset.

Table 4
Multicollinearity Results

Variable	Centered VIF
CR	3.663605
CDR	2.597084
LTD	2.454031
CAR	1.342632
NPL	1.480731

In addition, a multicollinearity test was conducted since correlation analysis results show some extent of correlation between independent variables. However, there was no serious multicollinearity problem among predictor variables as shown in Table 4. The value of all Variance Inflationary Factor (VIF) is less than 10 and the tolerance values are greater than 0.1 for all variables (Hair et al., 1998).

Conclusion
The purpose of this study is to ascertain the relationship between liquidity management and commercial bank profitability in Malaysia. The empirical results showed that the current ratio has a positive relationship with return on asset, proxy for banks' profitability in Malaysia, thus H1 is supported. This finding supports Dzapasi (2020); Damayanti and Chaerudin (2021) whose noted that current ratio also has positive significant relationship with return on asset. The results also reveal that non-performing loan has a negative and significant relationship with the return on asset. This finding is in line with study done by (Saleh and Winarso, 2021). Therefore, H5 is also supported.

The current study found that cash deposit ratio has insignificant relationship with return on asset. Thus, H2 is not supported. This result is similar with the previous study from Chaudhury (2018), who found that there is no significant relationship between cash deposit ratio and banks' profitability. On the other hand, the results also showed that there is no significant relationship between loan to deposit ratio and return on asset. It was consistent with findings of (Hacini et al., 2021). Apart from that, capital to asset ratio showed a negative relationship with return on asset. Our finding is consistent with (Jati, 2021).

From the study, we can rightly conclude that current ratio and non-performing loan are the most influencing variables to determine the profitability of Malaysia commercial banks. Therefore, we recommended that banks keep liquidity as needed to meet up defined liabilities and not needlessly keeping too much liquidity as it erodes banks' profits.

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