

THE IMPACT OF LIQUIDITY RISK AND MACROECONOMIC FACTORS ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN MALAYSIA

Masturani Anak Stephen, Ting Mei Fei, Irene Ng Wen Hui, Bakri Abdul Karim, Nurul Syuhada Zaidi and Farah Dipah binti Khalid

Faculty of Economics and Business
Universiti Malaysia Sarawak, Kota Samarahan, Sarawak
Corresponding author: znsyuhada@unimas.my

ABSTRACT

This study aims to examine the impact of liquidity risk and macroeconomics factors on the financial performance of commercial banks in Malaysia. This study uses secondary data from 20 commercial banks in Malaysia from 2019 to 2023 and panel data estimation. The empirical results show that the loan-to-deposit ratio has a significant negative impact on return on assets. Interest rates and GDP also shows significant positive effects on bank performance, highlighting the role of macroeconomic conditions in influencing profitability. In contrast, capital adequacy ratio and current ratio had insignificant effects on profitability. This study provides practical insights for policymakers, investors, and bank managers in enhancing risk management and decision-making processes.

Keywords: *Liquidity Risk, Financial Performance, Commercial Banks, Macroeconomic Factors, Malaysia*

INTRODUCTION

In today's complex and highly regulated financial environment, maintaining optimal liquidity while achieving strong financial performance is a central challenge for commercial banks. In simple terms, liquidity risk refers to a bank's ability to meet its short-term obligations without incurring significant losses. It has become increasingly significant, particularly following global financial crises that exposed the vulnerabilities of the banking system. This study aims to examine the impact of liquidity risk and macroeconomics factors on the financial performance of commercial banks in Malaysia.

The banking sector plays an important role in economic development of emerging economies through financial intermediation (Akhter, 2023). Banks mobilize savings and channel them into investments, thereby stimulating economic activity. By offering demand deposits and credit, banks are ensuring liquidity in the market and supporting business growth. Their stability is important for the protection of stakeholders and the health of the broader economy. Thus, the banks are closely monitored by national regulators like BNM and international institutions to ensure their soundness and effective functioning.

According to Cakmak & Sunal (2024), liquidity is a fundamental measure of a bank's financial health, which reflects its ability to meet short-term obligations without incurring losses. Liquidity risk often arises when a bank fails to do so, which will lead to instability and loss of confidence among depositors. Based on research conducted by Can & Bocuoglu (2022), effective risk management involves the balance of cash inflows and outflows and disruptions to this balance,

which can trigger serious liquidity problems. This can be seen from the previous case of the 2007 Global Financial Crisis, which revealed the severe consequences due to poor liquidity risk management. For instance, the real example is the collapse of major institutions such as “Northern Rock” and “Lehman Brothers”. These kinds of failures present the vulnerability of banks that heavily depend on short-term funding and inadequate liquidity buffers.

Some researchers have examined the relationship between liquidity risk and bank performance by using financial ratios such as Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM), Current ratio (CR), Quick ratio (QR), Cash ratio, Capital adequacy ratio (CAR) and Loan-to-deposit-ratio (LDR). However, the findings across studies have been inconsistent. Some researchers reported that reducing liquidity risk leads to improved bank performance (Akinselure et al., 2025; Malulu et al., 2024; Eyalsalman et al., 2024; Meliza & Saputri, 2024; Mashamba & Chikutuma, 2023), suggesting that effective liquidity management enhances profitability and operational efficiency. Conversely, others have found a negative relationship (Kasraoui et al., 2023; Jamal et al., 2023; Kalimashi et al., 2022), while some studies concluded that there is no strong connection between liquidity risk and bank performance (Utami et al., 2024).

Our research addresses the limited empirical evidence on the impact of specific liquidity indicators—such as the loan-to-deposit ratio, current ratio, and capital adequacy ratio—and macroeconomic variables like interest rates and GDP on bank performance (ROA). The lack of localized studies in this area may hinder the development of effective liquidity risk management frameworks tailored to the Malaysian banking sector. By incorporating both bank-specific and macroeconomic variables, this study contributes to the scarce empirical literature on liquidity risk and bank performance in Malaysia. Furthermore, only a few prior studies have examined GDP and interest rates within similar research contexts. The findings of this study will also offer practical insights for policymakers, investors, and bank managers to strengthen risk management and support informed decision-making.

LITERATURE REVIEW

Financial Intermediation Theory posits that banks play a central role as intermediaries by channeling funds from surplus to deficit units, effectively managing and transforming risk to promote economic stability and growth. Marty (1961), expanded by Diamond (1984), emphasized the efficiency of banks in mitigating transaction costs, information asymmetries, and liquidity mismatches between depositors and borrowers. According to Ogundele and Nzama (2025), "The financial intermediation theory underscores the role of banks as intermediaries that allocate financial resources efficiently, manage risk, and ensure stability in financial markets". Financial Intermediation Theory supports the examination of credit and liquidity risk management, as these functions are core to banks' intermediation role. As banks manage risks associated with lending and funding operations, their effectiveness in doing so determines their financial performance.

Harry Markowitz created the Modern Portfolio Theory (MPT) in 1952. It suggests that diversification can maximize expected returns for a given degree of risk, allowing investors to build optimal portfolios. This approach encourages asset management and loan portfolio diversification in the banking industry to reduce unsystematic risk. According to Onyenwe and Egbunike (2025), "MPT offers a framework for striking a balance between risk management and profit maximization in a volatile economic environment." This theory is important in examining how strategic risk diversification helps Nigerian commercial banks manage a high-risk

macroeconomic environment and how this affects financial performance indicators like return on equity (ROE) and return on assets (ROA).

Decision-making can be impacted by the information asymmetry that exists between banks and external stakeholders, as explained by signaling theory. The thesis, which has its roots in Spence's work from 1973, contends that companies utilize financial disclosures and metrics as "signals" to the market about their fundamental quality. Meliza et al. (2024) state that "the relationship between risk and profit levels is described by the application of signaling theory... increased banking risk reflects a bad signal for banks and can reduce the level of income and profitability." Regarding disclosures of credit risk and liquidity, this theory is important. Banks can reduce moral hazard and adverse selection issues, boost stakeholder trust, and possibly improve financial performance by openly communicating these concerns. Furthermore, a high Capital Adequacy Ratio (CAR) indicates a bank's resilience to shocks, which may lessen the effect of risk on profitability.

Liquidity risk, which remains an important part of bank risk management across a range of economic conditions, affects the operational and financial performance of commercial banks. Multiple studies have examined this relationship and discovered that liquidity risk has both positive and negative effects on bank performance. According to a number of empirical research, financial performance and liquidity risk are positively correlated, indicating that, in some circumstances, higher liquidity risk may boost profitability. Samarasinghe and Lakmal (2025), for example, who studied commercial banks in Sri Lanka, discovered that the capital adequacy ratio and the current ratio had a beneficial effect on the performance of the banks (as indicated by ROA). Their results highlight that when liquidity risk is managed prudently alongside capital adequacy, banks can benefit from improved performance. Similarly, Meliza, Hasan, and Saputri (2024) analyzed Indonesian banks and found that the loan-to-deposit ratio (LDR) had a positive influence on profitability. This indicates that efficient utilization of deposit funds through lending can drive better returns. Additionally, Bohara (2024), analyzing commercial banks in Nepal, found that liquidity risk had a positive and statistically significant effect on ROA, attributing the result to the productive use of internal liquidity resources.

On the contrary, other studies demonstrate a negative relationship between liquidity risk and financial performance, especially when excessive liquidity is unproductively held or when liquidity problems co-occur with other risks. Onyenwe and Egbunike (2025), in their study of Nigeria banks, revealed that capital adequacy ratio had a negative and significant impact on performance indicators. This suggests that conservative liquidity positions may reduce earning potential if not actively deployed. Jamal et al. (2023), analyzing Afghanistan's commercial banks, found a negative relationship between banks' financial performance and liquidity risk, as measured by the current ratio. Likewise, loan to deposit ratio (LDR) is significantly and negatively correlated with profitability, which suggests that higher lending relative to deposits may adversely affect bank performance (Rathnayake et al., 2022). The LDR was also found to have a negative and significant impact on ROA in both India and Bangladesh (Yuan et al., 2022).

The study by Saleh and Winarso (2021) found that the loan to deposit ratio (LDR) has no influence on the profitability (ROA) of rural banks in Bandung. The capital adequacy ratio and the size of the banks also had no significant effect on financial performance. The regression results showed an insignificant negative relationship between loans to deposits and both ROA and ROE, suggesting that the banks' liquidity position was not a major factor influencing financial performance. According to Ayoub, Hanif and Iqbal (2024), nonperforming loan (NPL) to gross advances (GA), liquidity risk (LCR), and operational risk (CIR) had a negative but significant

relationship with ROA, while CAR had a positive but insignificant effect on financial performance of commercial banks in Pakistan.

Besides, interest rate and GDP growth are critical macroeconomic indicators that significantly influence banking profitability (Razermiera et al., 2024). Eltweri et al. (2024) found that increases in interest rates were associated with improvements in ROA, suggesting enhanced profitability. Similarly, Ghosh and Mondal (2024) reported a positive relationship between GDP growth and bank performance. However, the study conducted by Ogundele and Nzama (2025) reported a negative and statistically significant effect of GDP growth on ROA, suggesting that economic contraction occurred during the observation period. Likewise, Rathnayake et al. (2022) found that in Pakistan, interest rates are inversely related to the return on assets (ROA) of commercial banks, indicating that higher interest rates may reduce profitability. Furthermore, the study conducted by Islam (2023), indicated that real GDP growth rate had a negative significant effect on the profitability of commercial banks as measured by ROA and ROE, while interest rates in the context of UK banks showed an insignificant positive relationship with both profitability indicators. Razermiera et al. (2024) also found that both GDP growth and lending interest rates had a positive relationship with ROA and ROE but insignificant among South African commercial banks.

In summary, the literature presents a nuanced understanding of liquidity risk's influence on financial performance. On the one hand, better profitability may result from the efficient use of liquidity, particularly through productive lending. However, excessive or poorly managed liquidity can negatively impact financial results, especially when combined with other risks. This contradiction emphasizes how important it is to manage liquidity risk strategically, taking into account institutional capacity and market conditions.

METHODOLOGY

This section discusses the methodology used in this study, including the data sources, variables, and statistical techniques. The research method used in this study is in line with previous researchers who have studied the impact of liquidity risk on the performance of banks including Riyadi et al. (2024), Hasan & Saputri (2024) and Jamal et al. (2023). The variables used in this research are financial performance and liquidity risk. Liquidity risk is measured by using Loan-to-Deposit Ratio (LDR), Current Ratio (CR), and Capital Adequacy Ratio (CAR). The study further includes macroeconomic factors such as GDP growth (GDP) and Interest Rate (IR). Then, the return on assets (ROA) is applied as a financial performance measure as has been widely used in studies to measure the banks performance. The study used data from the published annual reports of 20 Licensed Commercial Banks (LCBs) listed in Bank Negara Malaysia and the Orbis database from 2019 to 2023. Statistical analyses were performed with the EViews version 12 and Stata version 18 statistical software. A panel regression model was conducted to examine the impact of liquidity risk and macroeconomics factors on the financial performance of commercial banks in Malaysia. The Lagrange Multiplier (LM) test and the Hausman test were used to choose the most suitable model for the data among Pooled OLS, Fixed Effects, and Random Effects models. The validity of the model is further evaluated by classical assumption tests such as diagnostic tests in the study.

Dependent Variable

In this study, return on assets (ROA) is used as the primary financial performance indicator. It measures how effectively a bank generates income from its assets. As defined by Abdullah et al. (2025) and Malalu et al. (2024), the formula for ROA is:

$$ROA = \frac{\text{Net Income}}{\text{Total Assets}}$$

Independent Variables

a) Loan to Deposit Ratio

The LDR evaluates the proportion of a bank's total loans to its total customer deposits, indicating how efficiently the bank uses its deposits for lending purposes. The formula according to Haris et al. (2024) and Razermiera et al. (2024) is as follows:

$$LDR = \frac{\text{Total Loans}}{\text{Total Deposits}} \times 100$$

b) Capital Adequacy Ratio

The capital adequacy ratio (CAR) measures a bank's capital level with its risk-weighted assets. It is an essential indicator of a bank's ability to absorb potential losses and maintain financial stability. According to Eltweri et al. (2024) and Ayoub et al. (2024), this ratio is calculated as follows:

$$CAR = \frac{\text{Tier 1 Capital} + \text{Tier 2 Capital}}{\text{Risk - Weighted Assets}} \times 100$$

c) Current Ratio

The current ratio measures the capability of the bank to pay off the short-term obligation and is calculated by dividing the current assets by current liabilities, which in line with the approach adopted by Jamal et al. (2023).

$$CR = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

d) Interest Rate

An interest rate is a percentage that a lender charges a borrower in addition to the principal amount of the loan. It is also the interest earned on savings or investments. Typically, the interest rate is an annual percentage of the principal. This variable was adopted in the research of Akinselure et al. (2025) and Eltweri et al. (2024).

e) Gross Domestic Product

Gross Domestic Product (GDP) is another variable that measures the sum value of all final goods and services produced for a given time period in a country. A growing GDP often signals an expanding economy, which can result in more borrowing, better loan performance, and higher profitability for banks. This variable has been employed as part of the analytical framework in the studies by Razermiera et al. (2024) and Ben-Ahmed et al. (2023).

Empirical Model

The study adopted a panel regression model to examine the relationship between liquidity risk management and financial performance of commercial banks in Malaysia. The regression equation used in the analysis is presented as follows:

$$ROA_{it} = \beta_0 + \beta_1 LDR_{it} + \beta_2 CAR_{it} + \beta_3 CR_{it} + \beta_4 IR_{it} + \beta_5 GDP_{it} + \varepsilon_{it}$$

Where:

β_0 = Constant term

β_1 to β_3 = Beta coefficient

ROA = Return on assets

LDR = Loan to deposit ratio

CAR = Capital adequacy ratio

CR = Current ratio

IR = Interest rate

GDP = Gross domestic product

ε = Error term

i = Commercial banks (i = 20)

t = Time variable (t = 5years)

RESULTS AND DISCUSSIONS

Descriptive Statistics

Table 1: Descriptive Statistics

Variables	Obs	Mean	Stdv	Min	Max
roa	100	2.9472	0.5805	0.27	4.7
ldr	100	69.8035	18.5744	17.39	90.76
car	100	23.6341	9.6574	15.51	68.37
cr	100	0.7044	0.2354	0.3125	1.2698
ir	100	6.174	0.4238	5.64	6.8
gdp	100	11.98	7.4064	0.8	22.8

Table 1 presents the descriptive statistics for the variables used in this study. The statistics are based on 100 observations for each variable. The mean value of ROA is 2.9472, with a standard deviation of 0.5805. This indicates that, on average, banks in the sample have a moderate level of profitability with relatively low variation across institutions. The minimum and maximum values range from 0.27 to 4.7, suggesting some banks perform better than others in terms of asset returns.

For LDR, the average is 69.8035, showing that approximately 70% of customer deposits are extended as loans. The standard deviation of 18.5744 indicates a high variation among banks in terms of lending practices, with values ranging from 17.39 to 90.76. The CAR has a mean of 23.6341 and a standard deviation of 9.6574, which suggests that most banks maintain a strong capital buffer, well above minimum regulatory requirements. The range spans from 15.51 to 68.37, indicating varying levels of capital adequacy. The mean value of CR is 0.7044, with a standard

deviation of 0.2354. This reflects moderate credit risk levels across banks, with values ranging from 0.3125 to 1.2698. Although the variation is not extreme, it shows differences in risk exposure among institutions.

IR has a mean of 6.174 and a relatively low standard deviation of 0.4238, suggesting a stable interest rate environment during the period observed. The values range from 5.64 to 6.8. Lastly, GDP shows a mean of 11.98 with a standard deviation of 7.4064. This indicates significant fluctuations in economic growth across the sample period, with values ranging from a low of 0.8 to a high of 22.8.

In summary, the descriptive statistics indicate that while profitability (ROA) and interest rates are relatively stable across the sample, variables such as LDR and GDP show considerable variation, reflecting differences in bank behavior and macroeconomic conditions.

Correlation Analysis

Table.2: Correlation Analysis

Variables	roa	ldr	car	cr	ir	gdp
roa	1.0000					

ldr	-0.2905***	1.0000				
	0.0034	-----				
car	-0.1736*	-0.3698***	1.0000			
	0.0840	0.0002	-----			
cr	0.0767	-0.8280***	0.6537***	1.0000		
	0.4479	0.0000	0.0000	-----		
ir	0.1905*	-0.0202	-0.0555	-0.0096	1.0000	
	0.0576	0.8423	0.5837	0.9245	-----	
gdp	0.0537	-0.0488	0.0757	0.0334	-0.4562	1.0000
	0.5958	0.6294	0.4540	0.7417	0.0000	-----

Table 2 presents the results of the correlation analysis among the variables used in the study. The correlation coefficients measure the strength and direction of the linear relationship between variables, with significance levels indicated by asterisks (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$). The analysis reveals a significant negative correlation between ROA and LDR ($r = -0.2905$, $p < 0.01$), indicating that an increase in loan-to-deposit ratio is associated with a decline in bank profitability. Similarly, CAR shows a weak negative correlation with ROA ($r = -0.1736$, $p < 0.1$), suggesting that higher capital adequacy may slightly reduce profitability, possibly due to a more conservative lending approach.

A positive but weak correlation is found between ROA and IR ($r = 0.1905$, $p < 0.1$), implying that an increase in interest rates might slightly improve profitability. However, ROA has no statistically significant relationship with CR or GDP, as their correlation values are low and not significant. Among the other variables, a strong and highly significant negative correlation exists between LDR and CR ($r = -0.8280$, $p < 0.01$), indicating that as banks lend more relative to their deposits, credit risk tends to decrease. Furthermore, CAR and CR are positively and significantly correlated ($r = 0.6537$, $p < 0.01$), suggesting that banks with higher capital buffers may also face higher credit risk, possibly due to increased lending capacity.

Lastly, the interest rate is negatively correlated with GDP ($r = -0.4562$, $p < 0.01$), consistent with economic theory that higher interest rates may slow down economic growth. In summary, the correlation analysis identifies several important relationships, particularly the negative association between LDR and ROA, and the strong relationship between LDR and CR. These findings highlight the interplay between bank-specific variables and macroeconomic factors in influencing bank performance.

Regression Results

Table 3: Regression Results

Variables	POLS			REM			FEM		
	Coeff.	t-value	p-value	Coeff.	z-value	p-value	Coeff.	t-value	p-value
LDR	-0.0179	-3.25	0.002***	-0.0106	-1.87	0.062*	-0.0046	-0.65	0.519
CAR	-0.0128	-1.64	0.105	-0.0168	-1.69	0.091*	-0.0100	-0.62	0.537
CR	-0.6440	-1.21	0.230	0.0575	0.10	0.922	1.1212	1.15	0.256
IR	0.3247	2.33	0.022**	0.3366	3.13	0.002***	0.3507	3.24	0.002***
GDP	0.0124	1.56	0.123	0.0133	2.15	0.031**	0.0126	2.02	0.047**
Constant	2.8017	2.44	0.017	1.8078	1.73	0.083	0.3994	0.29	0.770
R2 (overall)	0.2373			0.2221			0.0866		
F-test	5.85		0.0001				3.13		0.0128
Wald Chi2				20.62		0.0010			
LM Test	0.0000								
Hausman Test	0.5754								
Final Model	Random Effect Model								
Mean VIF	2.85								
Autocorrelation	0.8629								
Heteroskedasticity	0.0000								

Note: ***Significant at 1%; **Significant at 5%; *Significant at 10%

According to Table 3 above, the most appropriate model for the analysis is determined by comparing the results of the Breusch-Pagan LM Test and the Hausman Test. These tests are useful in identifying whether the Pooled Ordinary Least Squares (POLS), Random Effects Model (REM), or Fixed Effects Model (FEM) is most suitable. Panel data regression analysis, an extension of simple linear regression, is employed to investigate the relationship between multiple variables. In this study, the independent variables are analyzed to assess their impact on the dependent variable.

To determine the most suitable regression model between the Pooled OLS and Random Effects Model, the Lagrange Multiplier (LM) test is initially conducted to evaluate whether the data can be pooled. The significant result ($p = 0.0000$) indicates the existence of panel effects, thereby favoring the use of the Random Effects Model over the Pooled OLS. Subsequently, the Hausman test is applied to identify any potential endogeneity and to assess whether the Fixed Effects Model or Random Effects Model is more appropriate. Given the non-significant p-value ($p = 0.5754$), the test supports the selection of the Random Effects Model over the Fixed Effects Model.

For the regression analysis on return on assets (ROA), the R-squared values are 0.2373 for the Pooled Ordinary Least Squares (POLS), 0.2221 for the Random Effects Model (REM), and 0.0866 for the Fixed Effects Model (FEM). Diagnostic tests further support the validity of the

model. The mean Variance Inflation Factor (VIF) is 2.85, indicating no multicollinearity concerns, which aligns with the findings of Kalam (2020).

The autocorrelation test presents a p-value of 0.8629, which is greater than the 0.05 or 5% significance level. Thus, do not reject the null hypothesis, which means there are no autocorrelations problems that occur among the variables. However, the heteroskedasticity test yielded a p-value of 0.0000, indicating that the model suffers from heteroskedasticity. As this value is below the 0.05 of significance level, the null hypothesis of homoskedasticity is rejected, providing strong evidence of non-constant variance in the error terms. This violation of classical regression assumptions may compromise the efficiency of the estimates and the validity of statistical inferences. Hence, by using a robust standard error or applying heteroskedasticity consistent estimators can help to solve this issue.

Robustness Test Result for Random Effect Model

Table 4: Robustness Test Result for Random Effect Model

Independent Variables	Return on Assets		
	Coefficient	z-value	p-value
LDR	-0.0106	-2.60	0.009***
CAR	-0.0168	-1.56	0.118
CR	0.0575	0.09	0.930
IR	0.3366	2.96	0.003***
GDP	0.0133	2.46	0.014**
Constant	1.8078	2.47	0.013**
R2 (Overall)	0.2221		
Wald Chi2	18.19		0.0027

Note: ***Significant at 1%; **Significant at 5%; *Significant at 10%

As can be observed from Table 4, loan to deposit ratio (LDR) reports a negative and statistically significant relationship with return on assets, which means that the higher lending to deposits contributes to lower profitability. This implies that the banks will be at higher credit risk if they are lending more money, as a larger loan portfolio might lead to higher default rates, forcing banks to make additional provisions or write off bad debts, which then lowers their net income. In this study, the local banks depend largely on traditional lending as their main income and are probably more sensitive than foreign banks to these risks. The results are consistent with Rathnayake et al. (2022) and Yuan et al. (2022), who also found that a high LDR can reduce profitability due to increased credit risk and inefficiencies.

Capital adequacy ratio (CAR) was found to have an insignificant negative relationship with return on assets. This could be due to the CAR levels of all the commercial banks in the sample being rather similar, generally in the range of 20% to 30%, which reflects strong capital buffers. However, such consistently high capital levels suggest that banks are not fully deploying all of their assets toward lending or investing activities. This underutilization limits the potential for generating higher returns, thereby making CAR less effective in improving financial performance, which is similar to the findings of Ayoub et al. (2024) and Muthoharoh & Pambekti (2024). The result also indicates that the current ratio has a positive but non-significant relationship with return on assets. Since banks primarily generate income through lending and investment activities rather

than holding excess liquid assets, the current ratio may not strongly reflect their financial performance. These findings are consistent with those of Haliru et al. (2024), who also concluded that the current ratio has an insignificant effect on bank profitability.

The macroeconomics variable of interest rate has a strong and positive relationship with return on assets (ROA) at the 1% significance level. This means that higher interest rates make banks more profitable. This effect is likely due to improved lending margins, as banks typically benefit from wider net interest margins when the rates they charge on loans rise faster than the rates they pay on deposits. These results correlate with those of Razermara et al. (2024) and Eltweri et al. (2024) found. Similarly, gross domestic product (GDP) demonstrates a positive and significant relationship with ROA, suggesting that economic growth positively influences bank performance. When GDP goes up, demand for credit typically rises, allowing banks to generate more interest income through expanded lending. At the same time, stronger economic conditions lower the risk of loan defaults, enabling banks to set aside fewer provisions for loan losses. This implies that a higher GDP can enhance bank performance by lowering credit default. The findings align with the findings of Ghosh & Mondal (2023) and Abdelmoneim & Yasser (2023).

CONCLUSION

This study examines the impact of liquidity risk and macroeconomics variables on the financial performance of commercial banks in Malaysia, using Return on Assets (ROA) as the key performance measure. The analysis incorporated three liquidity indicators Loan-to-Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), and Current Ratio (CR) alongside two macroeconomic variables, Interest Rate (IR) and Gross Domestic Product (GDP). The research utilized panel data from 20 licensed commercial banks over the period from 2019 to 2023. After conducting model selection tests, the Random Effects Model (REM) was determined to be the most appropriate for the analysis. This model was selected based on the significant results of the LM test and the non-significant Hausman test, which indicated that REM offered a better fit over both the Pooled OLS and Fixed Effects Model.

The empirical results show that the LDR has a significant negative impact on financial performance (ROA). For macroeconomics variables such as Interest rates (IR) and Gross Domestic Product (GDP) had a significant and positive effect on ROA. This suggests that the macroeconomics conditions are contributing to improving profitability in the banking sector. Besides, the other two independent variables such as capital adequacy ratio (CAR) and current ratio (CR) had an insignificant effect on profitability. For the diagnostic test, it's confirmed that the model did not suffer from multicollinearity or autocorrelation problem, which indicated by the low mean of VIF and a high p-value in the serial correlation test for this study. However, the presence of heteroskedasticity was detected due to a significant test result. It required the use of robust standard errors to ensure valid statistical inference and solve this issue. In summary, the findings highlight the crucial of both internal liquidity management and the external economic conditions in determining the financial performance of commercial banks in Malaysia. Thus, this study's results provide useful insights and great information especially for policymakers, investors, and bank managers that aim to improve risk management practices and also enhance financial sustainability.

The findings of this study present some important implications for several key stakeholders. For government and regulatory bodies, especially the Bank Negara Malaysia (BNM), the significant impact of the macroeconomics variables such as interest rates and GDP on the bank

performance underscores the need for macroeconomic management and an effective regulatory framework. While policies aimed at maintaining the stability of the economy and enhancing liquidity requirements can help to strengthen the resilience of the banking sector. Besides, investors and the financial industry need to understand the negative impact of high LDR and CAR on bank profitability, which will provide a valuable basis for risk assessment and investment decision-making. The investor usually uses these indicators to accurately evaluate the operational efficiency and the financial health of a commercial bank. However, for business managers and banking institutions, the results represent the crucial importance of maintaining optimal liquidity levels without compromising profitability. Bank executives should focus on efficient asset-liability management, particularly balancing lending activities with deposit levels, to enhance overall financial performance. These insights can guide strategic planning, regulatory compliance, and internal risk management efforts within commercial banks.

Our study has several limitations. First, the sample only included 20 Malaysian commercial banks, which may affect the representativeness of the findings. The second limitation is that the study only looked at a few financial and macroeconomic data, while other important determinants of bank profitability such as exchange rates, inflation volatility, and technological adoption were not considered. The third limitation is the data covered only a five-year period (2019 to 2023), which may not be enough to show long-term trends or the effects of economic cycles. Additionally, the study did not distinguish between local and foreign banks, which could have provided further insights into structural differences in performance.

In further research, it is recommended to expand the scope of the study to all banks and extend the research time frame to more accurately present the long-term impact. Researchers explore other performance measures besides bottom-line indicators measurements to study the impact of liquidity risk factors on profitability. Future studies could also include other financial institutions like non-banking financial institutions (NBFIs) and add other variables such as non-performing loans, capitalization, exchange rate and operating efficiency, all of which may influence bank performance. It is also recommended that Malaysian commercial banks should avoid excessive lending and prioritize issuing quality loans that enhance profitability. Besides, since capital adequacy ratio and current ratio were found to have no significant influence on financial performance in this study, future research could explore alternative liquidity metrics such as the liquidity coverage ratio and the net stable funding ratio to guide banks to manage liquidity and risk. Regular assessment, monitoring, and review of liquidity are essential to maintaining financial stability in financial institutions.

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