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The Impact of Liquidity Strategy on Banking Performance in the ASEAN Region

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A B S T R A C T

Banking as one of the financial institutions in Indonesia is required by its owners and shareholders to have good performance to increase company value on an ongoing basis. To improve performance, companies must be able to analyze risks that may occur by implementing risk management. The population in this study are banking companies in 6 ASEAN countries, namely, Indonesia, Singapore, Malaysia, Thailand, Vietnam, and the Philippines during the 2019-2022 period. The sample selection technique in this study was purposive sampling of 120 samples with a total of 30 companies. The analysis tool used is SEM-PLS with the WarpPLS 7.0 application. The research results show that the liquidity variable measured using the Liquidity Coverage Ratio (LCR) has a significant effect on the company's performance as measured using Tobin'Q. Furthermore, the capital adequacy variable which is measured using the Capital Adequacy Ratio (CAR) as a moderating variable explains that CAR is not significant/weakens the relationship between LCR and Tobin's Q. This can be explained that liquidity and capital adequacy are two key components that determine the stability and sustainability of operations bank.

INTRODUCTION

The Association of Southeast Asian Nations (ASEAN) varies, but there are concerted efforts to develop a more uniform and comprehensive framework for risk management. ASEAN countries have generally developed a working regulatory framework for risk management in the financial sector, including banking, insurance, and capital markets. These include capital requirements, disclosing risks, and good corporate governance. Several ASEAN countries have experienced financial crises in the past, such as the 1997 Asian Financial Crisis. This experience has strengthened awareness of the importance of effective risk management. Banking and Finance: The banking and financial sectors in ASEAN countries are committed to complying with international standards in terms of risk management, including Basel III and requirements for minimum capital. Basel Regulations: Many ASEAN countries have adopted the Basel III Agreement for their banking sectors. Basel III sets stricter capital requirements and regulates other aspects of management risk (del Carmen Valls Martínez et al., 2020).

The Liquidity Coverage Ratio (LCR) is a financial regulatory requirement that measures a bank's ability to meet its short-term liquidity needs under stress conditions. It is a key component of Basel III, a global regulatory framework for banks aimed at enhancing their resilience and stability. The LCR is designed to ensure that banks have sufficient high-quality liquid assets (HQLA) on hand to cover their short-term cash outflows during a 30-day stress period. The stress scenario is intended to simulate a period of financial distress, during which a bank may face difficulties in accessing funding from the market(MacChiavelli & Pettit, 2021).

Here are the key components and requirements of the Liquidity Coverage Ratio: 1. High-Quality Liquid Assets (HQLA): Banks are required to maintain a stock of high-quality liquid assets, such as cash, central bank reserves, and certain government securities. These assets are considered highly liquid and can be easily converted into cash without significant loss of value. 2.Net Cash Outflows: Net cash outflows are calculated by considering expected cash outflows (such as customer withdrawals and operational expenses) and expected cash inflows (such as customer deposits and maturing assets) over the 30-day stress period. The LCR requires that the outflows be fully covered by the HQLA. 3.Liquidity Coverage Ratio Requirement: The LCR is expressed as a ratio, calculated by dividing the stock of HQLA by the net cash outflows over the 30-day period. The minimum LCR requirement is set by regulatory authorities, and banks are required to maintain a ratio above this minimum. 4. Minimum LCR Requirement: The minimum LCR requirement varies from country to country but generally ranges from 100% to 110%, meaning that a bank must hold HQLA equal to or greater than its expected net cash outflows over the 30-day stress period. 5. Reporting and Disclosure: Banks are required to report their LCR to regulatory authorities regularly. Public disclosure of the LCR is also common to enhance transparency and investor confidence (Bech & Keister, 2017).

The primary objective of the Liquidity Coverage Ratio is to ensure that banks maintain a sufficient buffer of liquid assets to withstand a short-term liquidity crisis without relying on government bailouts or causing systemic disruptions. It is part of a broader effort to enhance the stability and resilience of the global banking system following the financial crisis of 2008. It is important to note that the specific rules and requirements related to the Liquidity Coverage Ratio may vary by jurisdiction, as each country's banking regulator may have its own implementation and monitoring mechanisms. Studying the relationship between the Liquidity Coverage Ratio (LCR) and bank performance is a relevant and important research area, especially in the context of financial stability and regulatory compliance. Research Gap: Limited Empirical Studies on the Impact of LCR on Bank Performance.

Research Question: To what extent does the Liquidity Coverage Ratio (LCR) influence the performance of banks, and how does this relationship vary across different banking environments? The research objective of this study is to test and analyse the relationship between the influence of liquidity as measured using the liquidity coverage ratio on bank performance as measured by Tobin's q which is moderated by capital adequacy as measured by the capital adequacy ratio.

THEORETICAL REVIEW

The Liquidity Coverage Ratio (LCR) is a regulatory requirement developed as part of the Basel III framework in response to the global financial crisis of 2008. It is designed to ensure that banks maintain an adequate level of high-quality liquid assets (HQLA) to cover their short-term liquidity needs during times of financial stress. Several theories underpin the LCR:

Financial Stability Theory

The primary objective of the LCR is to enhance the financial stability of banks and the broader financial system. It is based on the theory that a sufficient buffer of liquid assets can help banks withstand liquidity shocks, reduce the risk of bank runs, and prevent systemic crises. Financial Stability Theory is a multidisciplinary field that draws from economics, finance, and regulatory studies. It seeks to strike a balance between promoting financial innovation and ensuring that the financial system remains resilient and capable of withstanding shocks and crises. Financial stability is considered a public good and is essential for sustainable economic growth (Diamond, 1984).

Liquidity Risk Management Theory

The LCR is rooted in the concept of liquidity risk management. It acknowledges that banks face liquidity risks due to the maturity transformation they engage in (borrowing short-term to lend long-term). The theory suggests that banks must hold enough highly liquid assets to meet unexpected cash outflows. Liquidity Risk Management Theory is a framework and set of principles that guide financial institutions in managing and mitigating the risks associated with liquidity. Liquidity risk refers to the risk that a bank or financial

institution may not be able to meet its short-term financial obligations when they come due without incurring unacceptable losses. Liquidity risk is defined as the risk that arises when a bank's cash flows from assets do not match its cash flows from liabilities and off-balance-sheet activities. In other words, it is the risk of being unable to meet short-term funding needs without suffering significant losses (Tursoy, 2018). Liquidity Risk Measurement: Financial institutions use various metrics to measure liquidity risk, including the Liquidity Coverage Ratio (LCR), Net Stable Funding Ratio (NSFR), and various liquidity stress tests. These tools help quantify and assess liquidity vulnerabilities. Liquidity Risk Management Theory is integral to the safety and soundness of financial institutions and the overall stability of the financial system. Effective liquidity risk management ensures that banks can meet their obligations, maintain market confidence, and contribute to financial stability, even in challenging economic conditions (Ratnovski, 2013).

Regulatory Capital Theory

The LCR complements regulatory capital requirements (such as the Basel III capital adequacy standards) by focusing on a different dimension of risk. While capital requirements address solvency risk (the risk of insolvency), the LCR addresses liquidity risk (the risk of not being able to meet short-term obligations). Regulatory Capital Theory is a framework that underlies the regulation of financial institutions, especially banks, by focusing on the amount of capital that must be owned to ensure its safety and soundness (Roberts et al., 2018). This theory plays an important role in shaping the regulatory environment for financial institutions and is aimed at protecting depositors, investors, and the stability of the financial system. Overall, Regulatory Capital Theory aims to strike a balance between the need for financial institutions to remain competitive and innovative while ensuring they have sufficient capital to protect customers, absorb losses, and contribute to the stability of the financial system. This is a basic concept in financial regulation and plays an important role in maintaining the integrity of the banking industry (Adesina, 2019).

Capital Adequacy Ratio

The Capital Adequacy Ratio (CAR), also known as the Capital Adequacy Ratio (CAR), is a financial metric that measures a bank's capital adequacy and its ability to absorb potential losses. It is a crucial indicator of a bank's financial stability and solvency. The CAR is typically expressed as a percentage and is used to ensure that banks maintain an adequate level of capital to cover their risk exposure, including credit risk, market risk, and operational risk. The CAR is primarily governed by international banking standards, including the Basel III framework, which sets out minimum capital requirements for banks. The minimum CAR requirements are set by banking regulators and may vary from country to country. For example, under Basel III, the minimum CAR requirement is typically 8%, with a minimum Tier 1 capital requirement of 4.5% (Harkati et al., 2020).

The purpose of the Capital Adequacy Ratio is to ensure that banks have a sufficient capital buffer to absorb losses and maintain the confidence of depositors and creditors. It helps safeguard the stability of the banking system and reduce the risk of bank failures. Banks that do not meet the minimum CAR requirements may be required to raise additional capital or take other corrective actions. Regulators also conduct stress tests to assess how well banks would perform under adverse economic conditions, which helps ensure that banks have enough capital to weather severe financial shocks. The CAR is a critical tool for both regulators and investors in evaluating the financial health and risk profile of banks (Anshika, 2016).

Influence of LCR on Tobin's Q

The purpose of the liquidity ratio is to measure the company's ability to pay obligations that are due immediately or when they are billed. The higher the value of the liquidity ratio, the better a company's ability to pay its short-term debt, aka the debt is current, which means the better the value of the Liquidity Ratio, the greater the financial performance, especially the ability to fulfill its short-term obligations (Sidhu et al., 2022). According to (MacChiavelli & Pettit, 2021) for banks with a high savings-loan ratio (LCR), this reflects the bank's ability to carry out its intermediation function well and increase profits from the difference between credit interest received and interest paid on deposits. Therefore, if all the funds collected by a bank can be distributed, the bank will gain large profits which will affect the bank's performance.

H1: Liquidity influences bank performance

Bank Performance (Tobin's Q)

Financial ratio that measures the market value of a company's assets relative to the replacement cost of those assets. It is often used as a proxy for the efficiency and performance of a firm, including banks (Roberts et al., 2018). In the context of banks, Tobin's Q can provide insights into how well a bank is utilizing its assets and whether it is creating value for shareholders. Here's how Tobin's Q relates to bank performance: 1. Definition of Tobin's Q: Tobin's Q is calculated as the market value of a firm's assets (typically the market capitalization of equity plus the market value of debt) divided by the replacement cost of those assets. In essence, it answers the question of whether the market values a bank's assets more or less than it would cost to recreate them. Management Performance: Bank managers may be incentivized to increase Tobin's Q, as it is a measure of their ability to create value for shareholders. Strategies that improve asset utilization and profitability can have a positive impact on Tobin's Q. 2. Risk Considerations: A high Tobin's Q does not necessarily indicate good bank performance in all aspects. It is important to consider the bank's risk profile and whether the bank is taking excessive risks to achieve a high Q. Tobin's Q is just one of many financial metrics used to assess bank performance. Analysts and investors typically consider them along with financial ratios and other qualitative factors to form a comprehensive view of a bank's health and prospects (Gharaibeh, 2018).

The effect of LCR is moderated by CAR on LCR

The effect of liquidity moderated by capital adequacy on bank performance can be an interesting topic in the context of financial and banking analysis. Liquidity and capital adequacy are two key factors that influence bank stability and performance (Golubeva et al., 2019). Liquidity Refers to the bank's ability to meet its obligations that mature within a short period without experiencing significant losses (Berger et al., 2020). A high level of liquidity can give account holders confidence that the bank can fulfill their fund withdrawal requests easily. Capital Adequacy Is the amount of capital a bank must cover potential losses that may occur due to the risks it faces, such as credit risk, market risk, and others. Adequate capital adequacy will help banks to continue operating even in difficult market conditions (Harkati et al., 2020).

H2: Capital adequacy strengthens the relationship between liquidity and bank performance.

After the hypothesis section, if your study is quantitative, please provide the contextual framework here, or your mind maps, if it is qualitative.
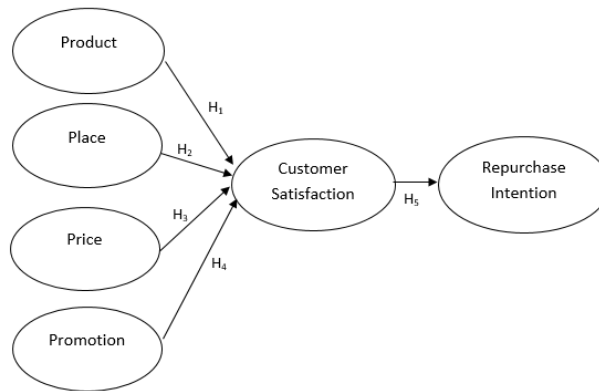

Figure 1. Conceptual Framework (**The image has to be in good quality**)

METHODOLOGY

This research uses quantitative methods, the types and data in this research use secondary data. The form of data is financial reports (precisely annual reports) of banking institutions for 2019-2022, the type of data is secondary data and the data sources are the Indonesian Stock Exchange and Bloomberg. Data related files were downloaded from www.idx.co.id and Bloomberg. The data specification is panel data (pooled data) which is a combination of data consisting of time series data and cross-sectional data.

Operational Definition of Variables and Variable Measurement.

1. Independent Variable (X)

    Liquidity Ratio or Liquidity Coverage Ratio, hereinafter abbreviated to LCR, is a comparison between High Quality Liquid Assets and total net cash outflow. The formula is shown as:

$$LCR = \frac{HQLA}{NET\ CASH\ OUTFLOWS}$$

2. Dependent Variable (Y)

Tobin's q is an indicator for measuring company performance, especially company value, which shows a management pro forma in managing company assets. The formula is shown as:

$$TOBIN'S\ Q = \frac{MARKET\ VALUE\ EQUITY+DEBT}{BOOK\ VALUE\ EQUITY+DEBT}$$

3. Moderating Variable (M)

The capital adequacy level is a ratio to measure the adequacy of capital owned by a bank to support assets that generate risk in banking companies. The indicator used in this research is the Capital Adequacy Ratio (CAR), where the formula is shown as:

$$CAR = \frac{CAPITAL}{ATMR}\ X\ 100\%$$

Data Analysis Techniques

In this research, the data analysis technique uses Partial Least Squares (PLS) - Structural Equation Modeling (SEM) with the WarpPLS 7.0 application. Based on that, this research is predictive and exploratory. The use of PLS-SEM considers several advantages, including; SEM PLS can work efficiently with small sample sizes and complex models, the data distribution assumptions in SEM-PLS are relatively looser than other methods such as CB (Covariance-based) -SEM (Sholihin and Ratmono, 2013).

RESULTS

Structural Model Evaluation Test (Goodness of fit)

Table 1. Research Model Fit

Provisions	Conclucion
Average path coefficient (APC)=0.108, P=0.002	FIT
Average R-squared (ARS)=0.041, P=0.0132	FIT
Average adjusted R-squared (AARS)=0.030, P=0.273	FIT
Average block VIF (AVIF)=1.407,	FIT

acceptable if <= 5, ideally <= 3.3	
Average full collinearity VIF (AFVIF)=1.185, acceptable if <= 5, ideally <= 3.3	FIT
Tenenhaus GoF (GoF)= 0.202, small >= 0.1, medium >= 0.25, large >= 0.36	FIT

Source: WarpPLS 7.0 data processing

Based on the results of the fit model presented in the table, it can be concluded that this research model is fit. This is also supported by the AVIF value of 1,407 and the AFVIF value of 1,185, which is less than 3.3, thus indicating that there is no multicollinearity problem between indicators and between exogenous variables. The model's predictive power is shown by the GoF value of 0.202, so it can be concluded that the model prediction is very large because it is greater than 0.36.

Full Colinnearity VIF Test, Adjusted R Squared and R Squared

Table 2. Full Colinnearity VIF, Adjusted R Squared dan R Squared

	TOBIN'S	LCR	CAR
Full collinearity	1.047	1.210	2.465
R-Squared	0.041		
Adj R Squared	0.030		

Source: WarpPLS 7.0 data processing

Based on the table above of the test results, the construct in this study is in the very good category because based on the rule of thumb it is <3.3, which means the model is free from problems of vertical, lateral collinearity and common method bias.

Effect Size Test and Variance Factor Test (VIF)

Table 3. Effect Size Test and Variance Factor Test (VIF)

Path Description	Effect Size	VIF
LCR → TOBIN'S	0.036	1.407
LCR→CAR	0.005	1.407

Source: WarpPLS 7.0 data processing

The test results show a VIF value which provides an explanation of whether there is a vertical collinearity problem in this research model. The results presented in the table above show that overall, all variables have VIF values below 3.3 so they can be categorized as having no vertical multicollinearity relationship problems.

Full Model Testing

Table 4. Path coefficient and P-Value results

Path Description	Path Koefisien	P-Value
LCR → TOBIN'S	0.180	0.007
LCR→CAR	0.037	0.235

Source: WarpPLS 7.0 data processing

In table 4 above it can be explained that the first hypothesis is significant with a p-value of 0.007, so this hypothesis is accepted, but for the second hypothesis the p-value is 0.235 so this hypothesis is rejected.

Testing Moderating Effects

Ferdinand (2014), explains the moderation model as a conditional model or "conditional model" as a model where one variable or several independent variables influence a dependent variable, with the condition that the influence will become stronger or weaker. In this study, testing was carried out using the moderation effect,

Table 5. Indirect Effect and Total Effect

Indirect effect	Path coefficient	P-value
LCR → TOBIN'S	0.073	0.036
LCR→CAR	0.051	0.005
Total effect	**Path coefficient**	**P-value**
LCR → TOBIN'S	0.180	0.007
LCR→CAR	0.037	0.235

Source: WarpPLS 7.0 data processing

Based on the results of the moderating influence test in the table above, the indirect influence coefficient for testing the LCR → TOBIN'S mediation hypothesis with a Path Coefficient value of 0.073 and a P-value of 0.036 (p<10%) these results explain that the CAR value can moderate/strengthen the LCR influence relationship against TOBIN's significantly. In testing the direct path/path relationship LCR→CAR is significant at 0.0235, which means that CAR weakens the relationship between LCR and TOBIN'S.
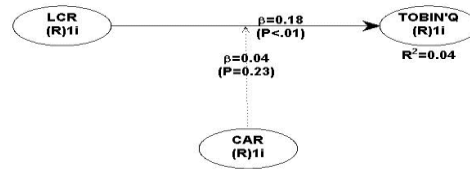
Figure 1. Full Model Testing

DISCUSSION

Testing the results of the first hypothesis, namely the influence of liquidity on bank performance which is proxied by LCR and TOBIN'S, is accepted, where the direct influence is shown by the P-value of 0.007. This can be explained that when liquidity gets better the value of the Liquidity Ratio, the Financial Performance gets better. increased, especially the ability to meet short-term obligations. This is explained by (Polizzi et al., 2020) that managing liquidity is very important for banks because it will affect profitability and sustainability for the development of a bank. Given the important role of liquidity, it is a form of risk that needs to be managed very well by banks.

Next, testing the second hypothesis where the influence of liquidity on bank performance which is moderated by capital adequacy is not accepted or weakens the relationship between the two. This can be explained as meaning that the higher the level of capital adequacy, the lower the bank's performance. The level of capital adequacy is one of the internal determinants of bank performance. The level of capital adequacy in this research is measured by the Capital Adequacy Ratio (CAR) because CAR is an indicator of the health of bank capital, to measure the adequacy of capital owned by the bank to support assets that contain or generate risk, for example the financing provided (Ezike & Oke, 2013).

In accordance with Financial Services Authority regulation no. 11/POJK.03/2016, banks have an obligation to provide minimum capital of 8% of risk-weighted assets (RWA). The higher the capital adequacy ratio (CAR), the greater the bank's profits. And the decline in CAR reflects weakening bank capital, and when banks weaken, they are unable to provide optimal services to their communities. This fact contradicts the theory that CAR is the capital adequacy ratio. When this ratio increases, bank performance also increases, or vice versa.

CONCLUSIONS AND RECOMMENDATIONS

To improve performance, companies must be able to analyse risks that may occur. One of them is by implementing risk management. Risk Management is a series of methodologies and procedures used to identify, measure, monitor and control risks arising from all bank business activities (POJK Number 18/POJK.03/2016). Risk management is expected to be able to detect maximum losses that may arise in the future as well as the need for additional capital if the impact of projected losses could result in the amount of capital being below the minimum requirements required by the Financial Services Authority. It is important to note that the influence of liquidity moderated by capital adequacy on bank performance can depend greatly on the economic context, risk management, internal bank policies, and other factors. Careful and detailed analysis needs to be carried out to understand the dynamics of the relationship between liquidity, capital adequacy and bank performance in more depth.

Recommendations

Banks need to develop policies and strategies that enable them to manage liquidity efficiently. This includes careful monitoring of cash flows, use of predictive models to estimate future liquidity needs, and optimal management of liquid assets.

FURTHER STUDY

Comparative study of how liquidity affects bank performance in ASEAN countries or across other countries. This makes it possible to understand differences in policy, market structure, and their impact on bank liquidity and performance.

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