

The Effect Of Liquidity Risk, Capital Buffer, And Income Diversification On Financial Stability Of Banks In Indonesia

**Empirical Study on Conventional Commercial Banks Listed on the Indonesia
Stock Exchange for the Period 2019-2023**

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ABSTRACT

Bank financial stability is one of the important aspects in maintaining economic health, given the vital role of banks as financial intermediaries. This study aims to analyze the effect of liquidity risk, capital buffer, and income diversification on bank financial stability. The unit of analysis in this study is conventional commercial banks listed on the Indonesia Stock Exchange during the period 2019-2023. The sampling technique used is purposive sampling, so that 20 conventional commercial banks were obtained. The data analysis technique used is panel data regression using Eviews 13 software. The results showed that, partially, liquidity risk, as measured by Liquidity Coverage Ratio (LCR) has a significant negative effect on bank financial stability, while Net Stable Funding Ratio (NSFR) has no significant effect on bank financial stability. Capital buffer has a significant positive effect on bank financial stability, while income diversification has a significant negative effect on bank financial stability. This study also shows that LCR, NSFR, capital buffer and income diversification simultaneously affect banks' financial stability.

Keywords: *Bank Financial Stability, Liquidity Risk, Capital Buffer, Income Diversification*

ABSTRAK

Stabilitas keuangan perbankan merupakan salah satu aspek penting dalam menjaga kesehatan perekonomian, mengingat peran vital bank sebagai lembaga intermediasi keuangan. Penelitian ini bertujuan untuk menganalisis pengaruh risiko likuiditas, capital buffer, dan diversifikasi pendapatan terhadap stabilitas keuangan bank. Unit analisis dalam penelitian ini adalah bank umum konvensional yang terdaftar di Bursa Efek Indonesia selama periode 2019–2023. Teknik pengambilan sampel yang digunakan adalah purposive sampling, sehingga diperoleh 20 bank umum konvensional sebagai sampel penelitian. Metode analisis data yang digunakan adalah regresi data panel dengan bantuan perangkat lunak EViews versi 13. Hasil penelitian menunjukkan bahwa secara parsial risiko likuiditas yang diukur dengan Liquidity Coverage Ratio (LCR) berpengaruh negatif signifikan terhadap stabilitas keuangan bank, sedangkan Net Stable Funding Ratio (NSFR) tidak berpengaruh signifikan terhadap stabilitas keuangan bank. Capital buffer terbukti berpengaruh positif signifikan terhadap stabilitas keuangan bank, sementara diversifikasi pendapatan berpengaruh negatif signifikan terhadap stabilitas keuangan bank. Selain itu, hasil penelitian juga menunjukkan bahwa LCR, NSFR, capital buffer, dan diversifikasi pendapatan secara simultan berpengaruh signifikan terhadap stabilitas keuangan bank.

Kata kunci: Stabilitas Keuangan Bank, Risiko Likuiditas, Capital Buffer, Diversifikasi Pendapatan.

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INTRODUCTION

In managing the economy, every country needs a stable financial system to anticipate potential financial crises and support economic growth. In Indonesia, the banking sector is one of the main pillars supporting the country's economic stability. The banking sector plays an important role in collecting and channelling public funds, as well as being a key indicator of economic development and growth (Gumanica, 2022; Pertiwi & Suhartini, 2022). The banking sector, with its crucial role, has a major impact on various aspects of economic and financial life in Indonesia.

In the Financial System Stability Assessment released in September 2023, bank financial system stability in the first semester of 2023 was maintained with the Financial System Stability Index (FSIS) at 0.07, indicating normal conditions. This was supported by stable banking conditions, with strong capital, sufficient liquidity, and a well-managed risk profile (Financial Stability Board, 2024).

However, Bank Indonesia (BI) stated that global economic conditions remain uncertain due to various geopolitical pressures, including tensions in the Red Sea, the Russia-Ukraine war, and elections in several key countries (Ramli & Djumena, 2024; Wibowo & Ermawati, 2024). This global situation may affect the liquidity and capitalization of banks in Indonesia. A decline in global liquidity or tight central bank policies in developed countries may limit lending funds and economic growth, while loose monetary policies may bring capital flows to Indonesia, which may increase funds for local banks, but also create volatility in exchange rates and asset prices (Samueldim, 2023). This may affect Indonesia's financial stability and increase the risk of crisis, requiring appropriate monitoring and policies from financial authorities.

Indonesia as an economically developing country cannot ignore the potential vulnerability of the banking sector to financial crises. The Governor of Bank Indonesia (BI) has stressed the need to stay alert to economic risks arising from both global and domestic sources. Although banking resilience is still maintained, caution is still required (Putri, 2022; Nisaputra, 2022). In the face of swift and unpredictable shifts in the global economy, ensuring the stability and sustainability of the banking sector has become an increasingly intricate challenge. The financial stability of banks, meaning their ability to perform their functions normally and sustainably, is crucial to maintain public confidence in the banking system and avoid financial crises.

Liquidity risk is a key factor impacting the financial stability of banks in Indonesia. The Financial Services Authority (OJK) has implemented Basel III standards, including the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR), to guarantee that banks maintain sufficient liquidity reserves to manage both short-term and long-term pressures (Shonhadji & Irwandi, 2023). In addition, the capital buffer required by banking regulations in Indonesia serves to increase the resilience of bank capital in the face of economic shocks. Banks are required to provide minimum capital and additional capital buffers to absorb potential losses that may occur (Tasman, 2020). There is also income diversification, which is an important strategy that banks must consider for reducing risks caused by dependence on one source of income. Banks must adapt to dynamic market conditions and expand non-interest income sources, such as fee-based income, to strengthen their financial stability (Lestari & Hersugondo, 2021; Subakti *et al.*, 2023).

Thus, the interplay between liquidity risk, capital buffers and income diversification is critical to maintaining banks' financial stability. Banks should ensure that they maintain thorough and balanced risk management and recognize the need to maintain diversified revenue streams to enhance their financial stability in times of economic uncertainty.

Previous research on the influence of these factors on bank financial stability has produced mixed findings. Sharma & Chauhan (2023) found that Liquidity Coverage Ratio (LCR) has a positive influence, while Alam *et al.* (2023) found a negative effect. Asghar *et al.* (2022) found that Net Stable Funding Ratio (NSFR) has a positive effect, while Sharma & Chauhan (2023) found a negative effect. Regarding capital buffers, Lestari & Suprayogi (2020) and Gumanica (2022) found a positive influence on bank stability. While regarding income diversification, Sarpong & Idun (2024) and Shahriar *et*

al. (2023) found a positive effect, while research by Lahouel *et al.* (2022) found a negative effect. From the description of previous research, there are inconsistencies in research results related to the effect of liquidity risk, capital buffers, and income diversification on bank financial stability. Therefore, this study was initiated due to the research gap identified from a number of previous studies.

By focusing on conventional commercial banks listed on the Indonesia Stock Exchange during 2019-2023, this study can provide a more specific understanding of how three factors interact on banks' financial stability, and provide deep and relevant insights to help regulators and bank management make better decisions for the future.

This study contributes to the banking and financial stability literature in several important ways. First, it provides empirical evidence on the combined effects of Basel III liquidity indicators—Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR)—together with capital buffers and income diversification on bank financial stability, an interaction that has received limited attention in prior studies, particularly in emerging markets. Second, this research offers contextual novelty by focusing on conventional commercial banks in Indonesia during the post-COVID-19 period (2019–2023), a critical phase marked by heightened liquidity risk, regulatory adjustments, and structural changes in banking operations. Finally, the findings provide practical insights for regulators and bank management by highlighting the trade-offs between liquidity regulation, capital strengthening, and income diversification strategies, thereby supporting more balanced policy formulation and risk management decisions aimed at enhancing the long-term stability of the banking sector.

LITERATURE REVIEW

Agency Theory

Agency theory highlights the potential conflicts of interest between principals and agents, as introduced by Jensen and Meckling in 1976. In this theory, managers tend to pursue individual goals that may not be in line with shareholder interests (Harsono, 2021). In banking, this theory emphasizes the importance of appropriate contracts, supervision, and incentives to ensure bank management acts in accordance with the interests of capital owners and regulatory policies, thereby maintaining the financial stability of the bank (Fajari & Sunarto, 2017).

Signalling Theory

The signal theory proposed by Spence (1973), discusses management actions that provide signals and investors who receive them. These signals are related to management's views about the firm's prospects (Brigham & Houston, 2013). In banking, signaling theory is important to provide investors with clues about the company's condition and prospects. Positive signals, such as strong and transparent financial statements, can increase investor confidence and the financial stability of the bank, while negative signals can create distrust and adverse risks for the bank (Pertiwi & Suhartini, 2022).

The Effect of Liquidity Risk as measured by Liquidity Coverage Ratio (LCR) on Bank Financial Stability

In agency theory, LCR can reduce the conflict of interest between shareholders and bank management by ensuring sufficient liquidity. In signaling theory, high LCRs positively signal banks' ability to manage liquidity risk to markets and regulators, thereby increasing confidence in banks' financial stability. Previous research by Asghar *et al.* (2022) and Sharma & Chauhan (2023) show that LCR has a positive effect on bank financial stability. However, the LCR has a negative effect on the financial stability of banks, as shown in studies by Alam *et al.* (2023) and Afrin & Johra (2022). Grounded in theory and previous research, the authors formulate the following hypothesis: **H1a** : Liquidity risk, as measured by the Liquidity Coverage Ratio (LCR), has an impact on the Bank's financial stability.

The Effect of Liquidity Risk as measured by Net Stable Funding Ratio (NSFR) on Bank Financial Stability

In agency theory, NSFR ensures adequate funding to reduce the risk of future funding difficulties. According to signaling theory, banks' compliance with the NSFR sends positive signals to the market about their financial stability and soundness, thereby strengthening the confidence of shareholders and investors in the financial stability of banks. Previous research by Alam *et al.* (2023), Asghar *et al.* (2022), and Abbas *et al.* (2022) show that liquidity risk as measured by NSFR has a positive effect on bank financial stability. However, research by Sharma & Chauhan (2023) shows that NSFR has a negative effect on bank financial stability. Grounded in theory and previous research, the authors formulate the following hypothesis: **H1b** : Liquidity risk, as measured by the Net Stable Funding Ratio (NSFR), has an impact on the Bank's financial stability.

The Effect of Capital Buffer on Bank Financial Stability

In agency theory, capital buffers serve to reduce the risk of management taking actions that are detrimental to capital owners, while in signaling theory, capital buffers provide positive signals to the market regarding the credibility and stability of the bank. Previous research by Gumanica (2022) and Lestari & Suprayogi (2020) showed that capital buffers have a positive influence on bank financial stability. Based on the theory and previous research, the authors formulate the following hypothesis: **H2** : Capital buffer has an impact on the Bank's financial stability.

The Effect of Income Diversification on Bank Financial Stability

Income diversification can improve banks' stability by mitigating the risk of reliance on a single source of revenue. This concept is consistent with signaling theory, where banks that successfully diversify their income send positive signals about their ability to manage risk well. This theory is supported by previous research from Sarpong & Idun (2024) and Shahriar *et al.* (2023) which showed a positive effect of income diversification on bank financial stability. However, research by Lahouel *et al.* (2022) shows that income diversification has a negative effect on bank financial stability. Grounded in theory and previous research, the authors formulate the following hypothesis: **H3**: Income Diversification has an impact on the Bank's financial stability.

The Effect of Liquidity Coverage Ratio (LCR), Net Stable Funding Ratio (NSFR), Capital Buffer, and Income Diversification on Bank Financial Stability

Liquidity risk as measured by LCR and NSFR indicates the bank's ability to deal with liquidity pressures in the short and long term. Capital buffers reflect the bank's ability to bear risk. Meanwhile, income diversification reduces dependence on a single source of income, thereby reducing the risk of large losses. Simultaneously, these factors are crucial in preserving the financial stability of banks. Based on this explanation, the authors formulate the following hypothesis: **H4** : Liquidity Coverage Ratio (LCR), Net Stable Funding Ratio (NSFR), Capital Buffer, and Income Diversification simultaneously affect the Bank's Financial Stability.

RESEARCH METHODS

This study employs a quantitative methodology utilizing secondary data sourced from the annual reports of conventional commercial banks spanning from 2019 to 2023. The data is acquired from the official website of the Indonesia Stock Exchange (IDX) related companies. The study's population consists of 42 conventional commercial banks listed on the Indonesia Stock Exchange (IDX). The sampling method employed is non-probability sampling, specifically using the purposive sampling technique. The sample criteria include conventional commercial banks listed on the IDX throughout the 2019-2023 duration, banks consistently publishing accessible annual reports on their official websites during this period, banks without recorded losses from 2019 to 2023, and banks providing complete data for the research variables. Following these criteria, a sample of 20 conventional commercial banks was selected for the years 2019- 2023, resulting in 100 observation data.

Table 1. Operational Definition of Variables

Variable	Measurement	
Liquidity Coverage Ratio (X_{1a}) (Maria & Eleftheria, 2016)	$LCR = HQLA / NCO$	HQLA = High Quality Liquid Assets NCO = Net Cash Outflow
Net Stable Funding Ratio (X_{1b}) (Flotyński, 2017)	$NSFR = ASF \cdot RSF$	ASF = Available Stable Funding RSF = Required Stable Funding
Capital Buffer (X_2) (Danarsari <i>et al.</i> , 2018)	$BUFF = CAR - KPMM$	CAR = Capital Adequacy Ratio KPMM = Minimum Capital Adequacy Requirement
Income Diversification (X_3) (Abuzayed <i>et al.</i> , 2018)	$HHI = (1 - NON^2 / NOI) + (NON^2 / NOI)$	HHI = Herfindahl-Hirschman Index NII = Net Interest Income NON = Non-Interest Income NOI = Net Operating Income
Bank Financial Stability (Y) (Laeven & Levine, 2009)	$Z\text{-Score} = (ROA + Eq / TA) / \sigma ROA$	ROA = Return on Assets Eq = Total equity TA = Total assets σROA = Standard deviation of ROA

Source: Data processed by the author, 2024

The data analysis method used in this research is panel data regression analysis, using Eviews software version 13 as a statistical tool to analyze the data. The use of panel data was chosen because this study combines time series data and cross section data. The time series data in this study covers a research period of 5 years, from 2019 to 2023. Meanwhile, cross section data includes conventional commercial banks listed on the Indonesia Stock Exchange as research samples.

To ensure the validity of the classical assumption tests, logarithmic transformation was applied to the research variables. This transformation aims to improve data normality, reduce heteroscedasticity, and stabilize variance across observations, thereby enhancing the reliability and robustness of the panel data regression results.

RESULTS

Descriptive Statistics Analysis

The following are the results of the test for the descriptive statistical analysis:

Table 2. Descriptive Statistical Test Results

	Z SCORE	LCR	NSFR	BUFF	HHI
Mean	52.67835	2.192991	1.327067	0.177838	0.320203
Median	45.36514	2.086200	1.306250	0.144178	0.341733
Maximum	120.3370	3.963000	1.904421	0.961038	0.491486
Minimum	14.47472	1.231100	0.977000	0.009604	0.045913
Std. Dev.	27.17410	0.593138	0.209206	0.139154	0.099014
Observations	100	100	100	100	100

Source: Eviews 13 output, 2024

Determination of Panel Data Estimation Model

In this study, three tests were conducted to determine the most appropriate panel data estimation model, namely the Chow Test, Hausman Test, and Lagrange Multiplier Test. The results of these three tests will help determine whether the Common Effect Model (CEM), Fixed Effect Model (FEM), or Random Effect Model (REM) is more suitable for managing panel data in this study.

Table 3. Panel Data Regression Model Selection Conclusion

Test		Results	Model
Chow Test	CEM vs FEM	Probability value (0,0000) < Significance value (0,05)	FEM
Hausman Test	FEM vs REM	Probability value (0,5462) > Significance value (0,05)	REM
LM Test	REM vs CEM	Probability value (0,0000) < Significance value (0,05)	REM

Source: Data processed by the author, 2024

The conclusion from selecting the panel data regression model shows that the most appropriate model for this study is Random Effects Model (REM).

Classical Assumption Test

In this study, data transformation was carried out to fulfill the requirements of the classical assumption test if there were violations in the test. The transformation applied in this study is to convert data into logarithms.

From Figure 1, it is known that the probability value of Jarque Berra is greater than the value of significance ($0.385051 > 0.05$). Therefore, H_0 is accepted and H_1 is rejected. This allows us to conclude that the REM model with log transformation is normally distributed.

From Table 4, it can be seen that all correlation values between the independent variables are below 0.90. Therefore, it can be concluded that there is no multicollinearity problem.

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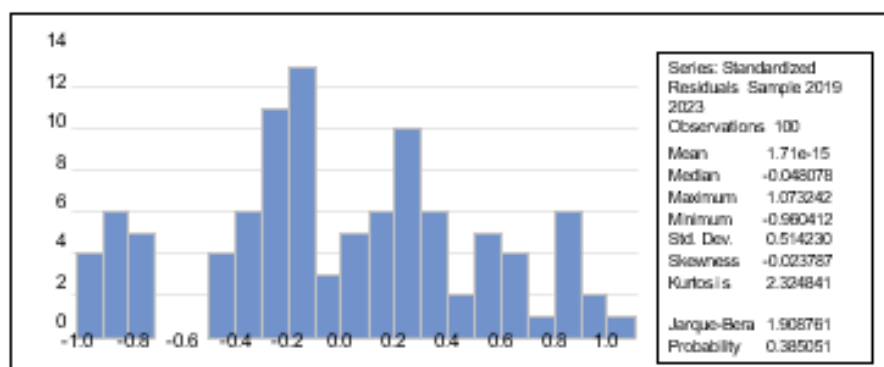


Figure 1. Normality Test Results

Source: Eviews 13 output, 2024

Table 4. Multicollinearity Test Results

	LOG_LCR	LOG_NSFR	LOG_BUFF	LOG_HHI
LOG_LCR	1.000000	0.572842	0.313557	0.027750
LOG_NSFR	0.572842	1.000000	0.098566	-0.079035
LOG_BUFF	0.313557	0.098566	1.000000	0.128275
LOG_HHI	0.027750	-0.079035	0.128275	1.000000

Source: Eviews 13 output, 2024

Table 5. Heteroscedasticity Test Results

Dependent Variable: RESABS				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.17645	3.097630	5.222203	0.0064
LOG_LCR	4.083199	3.307263	1.234616	0.2845
LOG_NSFR	-7.206928	6.855660	-1.051238	0.3525
LOG_BUFF	-1.521020	0.753662	-2.018173	0.1137
LOG_HHI	-1.486243	1.244229	-1.194509	0.2983

Source: Eviews 13 output, 2024

The probability value of each independent variable exceeds 0.05, which indicates the absence of heteroskedasticity.

Table 6. Autocorrelation Test Results

R-squared	0.432484	Mean dependent var	0.233346
Adjusted R-squared	0.408589	S.D. dependent var	0.096018
S.E. of regression	0.073841	Sum squared resid	0.517982
F-statistic	18.09906	Durbin-Watson stat	1.376855
Prob(F-statistic)	0.000000		

Source: Eviews 13 output, 2024

From Table 6, it is known that the DW value is 1.376855. This shows that the DW value lies between -2 and +2 ($-2 < 1.376855 < +2$), so it can be concluded that there is no autocorrelation problem.

Data Regression Analysis

Table 7. Panel Data Regression Test Results with Random Effect Model (REM)

Dependent Variable: LOG_Z_SCORE				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.242261	0.134873	31.45386	0.0000
LOG_LCR	-0.111167	0.012926	-8.600142	0.0010
LOG_NSFR	-0.111655	0.079959	-1.396409	0.2351
LOG_BUFF	0.203680	0.028074	7.255110	0.0019
LOG_HHI	-0.075817	0.023259	-3.259638	0.0311
R-squared	0.432484	Mean dependent var		0.233346
Adjusted R-squared	0.408589	S.D. dependent var		0.096018
S.E. of regression	0.073841	Sum squared resid		0.517982
F-statistic	18.09906	Durbin-Watson stat		1.376855
Prob(F-statistic)	0.000000			

Based on the panel data regression test results, the following regression equation can be obtained:

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$$Z\text{-Score} = 4.242261 - 0.111167LCR - 0.111655NSFR + 0.203680BUFF - 0.075817HHI$$

Determination Coefficient Test (R Squared/R²)

From Table 7, the Adjusted R-Squared value is 0.408589, indicating that about 41% of the variation in Bank Financial Stability (Z-Score) can be explained by the factors studied, including Liquidity Risk (LCR and NSFR), Capital Buffer (BUFF), and Income Diversification (HHI). Meanwhile, about 59% of the variation is still influenced by other factors not included in this study.

Statistical Test t (Partial Test)

From Table 7, the t-test results can be concluded as follows:

- The Liquidity Coverage Ratio (LCR) variable has a probability value (0.0010) < significance value (0.05), with a coefficient value of -0.111167. This means that H₀ is rejected and H₁ is accepted or it can be stated that Liquidity Risk as measured by LCR has a significant negative effect on Bank Financial Stability.
- The Net Stable Funding Ratio (NSFR) variable has a probability value (0.2351) > significance value (0.05), with a coefficient value of -0.111655. This means that H₀ is accepted and H₁ is rejected or it can be stated that Liquidity Risk as measured by NSFR has no significant effect on Bank Financial Stability.
- The BUFF variable has a probability value (0.0019) < significance value (0.05), with a coefficient value of 0.203680. This means that H₀ is rejected and H₁ is accepted or it can be stated that Capital Buffer has a significant positive effect on Bank Financial Stability.
- The HHI variable has a probability value (0.0311) < significance value (0.05), with a coefficient value of -0.075817. This means that H₀ is rejected and H₁ is accepted or it can be stated that Income Diversification has a significant negative effect on the Financial Stability of Commercial Banks.

F Statistical Test (Simultaneous Test)

From Table 7, the F-statistic value is 18.09906 with a value of Prob(F-statistic) < the significance value (α), which is 0.000000 < 0.05. So, it can be concluded that the Liquidity Coverage Ratio (LCR), Net Stable Funding Ratio (NSFR), capital buffer, and income diversification together (simultaneously) affect the financial stability of banks.

Table 8. Summary of t-test and F-test Results

Variable	Hypothesis	Analysis
LCR to Z-Score	H _{1a} accepted	Significant negative effect
NSFR to Z-Score	H _{1b} rejected	No significant effect
BUFF to Z-Score	H ₂ accepted	Significant positive effect
HHI to Z-Score	H ₃ accepted	Significant negative effect
LCR, NSFR, BUFF, HHI to Z-Score	H ₄ accepted	Significant effect

Source: Data processed by the author, 2024

DISCUSSION

The Effect of Liquidity Risk as measured by Liquidity Coverage Ratio (LCR) on Bank Financial Stability

The findings showed that Liquidity Coverage Ratio (LCR) has a partly negative and significant impact on the financial stability of conventional commercial banks in Indonesia.. When the LCR increases, banks must hold more high-quality liquid assets to meet liquidity standards, which may result in a decrease in the bank's financial stability due to a reduction in credit facilities to other banks. This study is in line with the research of Alam *et al.* (2023) and Afrin & Johra (2022) which state that LCR has a negative effect on bank financial stability, because limited access to high- quality liquid assets can result in difficulties for banks in maintaining adequate liquidity levels. However, the results of this study are not in line with research conducted by Asghar *et al.* (2022) and Sharma & Chauhan (2023), which show that LCR has a positive and significant effect on bank financial stability.

In agency theory, an increase in LCR can be understood as an attempt by bank managers to reduce liquidity risk, even though it may result in a decrease in profitability and financial stability of the bank in the long run. In the context of signaling theory, a decrease in a bank's financial stability caused by an increase in LCR may provide a negative signal to investors about the risks faced by the bank. Therefore, a deeper understanding of these dynamics may help banks manage risk and maintain their financial stability in a changing business environment.

The Effect of Liquidity Risk as measured by Net Stable Funding Ratio (NSFR) on Bank Financial Stability

The findings showed that Net Stable Funding Ratio (NSFR) partially has no significant effect on the financial stability of conventional commercial banks in Indonesia. Although NSFR encourages the use of more stable sources of funds, such as long-term deposits or equity capital, this does not guarantee an automatic increase in financial stability. Banks may still take high risks by expanding lending in shorter maturities to meet stable funding requirements, which may sacrifice long-term financial stability. External factors such as monetary policy, macroeconomic conditions, and other risks also affect the financial stability of banks (Harjoni & Rahmawati, 2020). The results of this study are inconsistent with research conducted by Alam *et al.* (2023), Asghar *et al.* (2022), and Abbas *et al.* (2022) which show that NSFR has a significant positive effect on bank financial stability.

From an agency theory perspective, the results of this study suggest that bank managers are more likely to prioritize short-term profits over long-term financial stability. From a signaling theory perspective, NSFR fails to provide strong signals to investors about the condition and prospects of the firm. Although NSFR does not directly contribute to banks' financial stability, the long-term approach adopted by NSFR is still important in building banks' resilience to liquidity risk over a longer time horizon, as well as supporting innovation and change in risk practices that are more effective and adaptive. Therefore, the NSFR remains a valuable tool in the supervision and management of banks' liquidity risk.

The Effect of Capital Buffer on Bank Financial Stability

The findings showed that capital buffers partially have a positive and significant effect on the financial stability of conventional commercial banks in Indonesia. This study supports previous findings by Gumanica (2022), Lestari & Suprayogi (2020), Asghar *et al.* (2022), and Subakti *et al.* (2023), which state that an increase in capital buffers will significantly improve the financial stability of banks. Capital buffers play a role in absorbing potential future losses and mitigating risks, thus ensuring that banks can meet the minimum capital requirements set by regulators. Agency theory explains that capital buffers reduce the conflict of interest between bank management and capital owners, while signal theory emphasizes the importance of capital buffers as a positive signal to investors about the bank's ability to manage risk.

The results of this study provide important implications for the overall stability of the banking system in Indonesia, as increasing capital buffers can be an effective strategy in maintaining stability and confidence in the banking system, as well as reducing potential risks that may affect the overall stability of the banking system.

The Effect of Income Diversification on Bank Financial Stability

The findings showed that income diversification partially had a negative and significant effect on the financial stability of conventional commercial banks in Indonesia. This finding is in line with research by Lahouel *et al.* (2022), which shows that income diversification can increase the complexity of bank operations and introduce higher risks, such as management, operational, and reputational risks. As a result, banks become more vulnerable to market changes and financial difficulties, especially in situations of economic uncertainty. This study is not in line with the findings of Sarpong & Idun (2024) and Shahriar *et al.* (2023), which showed a positive effect of income diversification on bank financial stability. Signaling theory explains that too much reliance on income from diversified sources can give negative signals to investors, leading to decreased market confidence and increased financial risk for banks. Investors are likely to withdraw investment or tighten credit terms, which can reduce the financial stability of the bank. On the whole, the diversification of income, although in theory it can increase the sources of income, in practice, it can create new challenges and risks that threaten the financial stability of the banks. Therefore, it is important for banks to have robust risk management strategies and effective supervisory systems in place when diversifying their sources of income.

The Effect of Liquidity Coverage Ratio (LCR), Net Stable Funding Ratio (NSFR), Capital Buffer, and Income Diversification on Bank Financial Stability

The results show that Liquidity Coverage Ratio (LCR), Net Stable Funding Ratio (NSFR), capital buffers, and income diversification simultaneously significantly affect the financial stability of conventional commercial banks in Indonesia. When taken together, improvements in these indicators provide assurance of adequate liquidity reserves, stable funding, and resilience to economic pressures, while income diversification reduces risks related to income fluctuations. The results of this study support signaling theory, where banks use these signals simultaneously to create a clear picture for investors, ultimately increasing confidence and maintaining the bank's financial stability in the long run.

The findings of this study highlight an important trade-off between liquidity regulation and bank profitability that ultimately affects financial stability. While Basel III liquidity requirements such as the Liquidity Coverage Ratio (LCR) are designed to enhance resilience against short-term liquidity shocks, excessively high liquidity holdings may constrain banks' intermediation function by reducing funds available for lending and other income-generating activities. This trade-off is particularly relevant in emerging markets, where banks rely heavily on interest-based income and credit expansion as primary drivers of profitability. In the Indonesian banking context, maintaining high-quality liquid assets in response to regulatory pressure may therefore weaken short-term profitability, which in turn negatively affects the Z-score as a measure of financial stability.

In addition, the negative effect of income diversification on bank financial stability can be explained through a risk-complexity perspective. Although diversification is theoretically expected to reduce income volatility, expanding into non-interest income activities often increases operational, managerial, and reputational complexity. Indonesian banks, especially those with limited technological capabilities and risk management maturity, may face difficulties in effectively managing diversified business lines. As a result, diversification may introduce new sources of risk that outweigh its potential stabilizing benefits, thereby increasing vulnerability rather than resilience.

These findings must also be understood within the institutional and regulatory structure of Indonesia's banking system. The Indonesian banking sector is characterized by heterogeneous bank sizes, varying levels of capital adequacy, and strong regulatory oversight by the Financial Services Authority (OJK) following the adoption of Basel III standards. Post-COVID-19 regulatory adjustments have emphasized prudential stability, sometimes at the expense of operational flexibility. Consequently, banks are required to balance regulatory compliance with profitability and risk-taking behavior. This study suggests that while capital buffers serve as an effective stabilizing mechanism, liquidity regulation and income diversification strategies should be calibrated carefully to align with banks' structural capabilities and the broader regulatory environment in Indonesia.

CONCLUSION

This study concludes that liquidity risk as measured by Liquidity Coverage Ratio (LCR) has a negative and significant effect on banks' financial stability, while the effect of Net Stable Funding Ratio (NSFR) is not significant. Capital buffer was found to have a positive and significant effect on banks' financial stability, suggesting that increasing capital buffer can increase banks' risk resilience. Income diversification was found to have a negative and significant impact on banks' financial stability, suggesting that too much diversification can increase risk and reduce financial stability. At the same time, LCR, NSFR, capital buffer and income diversification have a significant impact on banks' financial stability. These results indicate the importance of managing liquidity risk, increasing capital buffer, and diversifying income judiciously to ensure the financial stability of conventional commercial banks in Indonesia.

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The authors declare no conflict of interest. if you want to customize it is welcome

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