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Monetary Policy, Liquidity, and the Risk Profitability Nexus: Evidence From Indonesian State and Private Banks

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Abstract :
This study aims to analyze the nexus between liquidity, credit risk, capital adequacy, and profitability in the banking sector under varying macroeconomic conditions. A quantitative approach is employed using panel data with a sequential modeling strategy. In the first stage, the effects of policy interest rates and inflation on liquidity, proxied by the Loan-to-Deposit Ratio (LDR), are examined. The second stage analyzes the influence of LDR and the Capital Adequacy Ratio (CAR) on credit risk, as measured by Non-Performing Loans (NPL), using a fixed-effects model. The third stage evaluates the impact of LDR, CAR, and NPL on profitability, proxied by Return on Assets (ROA), using a random effects model. Dummy variables and interaction terms are included to capture structural differences across bank types, with robust standard errors applied to ensure reliability. The results indicate a significant risk–return trade-off: higher liquidity and stronger capital adequacy contribute to improved profitability, while increased credit risk adversely affects financial performance. The findings imply that effective liquidity and capital management are essential for maintaining financial stability and optimizing bank profitability, particularly during periods of economic uncertainty.

INTRODUCTION

Bank stability and performance are critical not only for financial institutions but also for the broader economy, as banks play a central role in allocating resources, supporting investment, and maintaining economic stability. From a societal perspective, inefficient bank management can trigger systemic risks, disrupt credit flows, and ultimately hinder economic growth. The reason lies in the interconnected nature of banking activities, where liquidity decisions influence credit distribution and risk exposure. Empirical evidence shows that fluctuations in liquidity and credit conditions significantly affect financial stability and macroeconomic resilience (Ozili & Iorember, 2024; Ullah et al., 2024). Furthermore, instability in the banking sector often leads to reduced public trust and economic contraction. Therefore, understanding how banks manage liquidity, credit risk, and capital structure is essential for ensuring sustainable financial systems. In conclusion, research on bank financial management is highly relevant for society, as it provides insights into maintaining financial stability and preventing systemic crises through effective managerial decision-making.

From a theoretical perspective, bank financial management is grounded in several interrelated frameworks, including the risk-taking channel of monetary policy, bank

capital theory, and liquidity management theory. The risk-taking channel explains how changes in interest rates influence banks' asset allocation and risk-taking, thereby affecting portfolio composition and credit expansion (Gürkaynak et al., 2022; Wang, 2025). At the same time, liquidity management theory emphasizes that ratios such as the Loan-to-Deposit Ratio (LDR) reflect strategic decisions that balance funding availability and lending activities (Bianchi & Bigio, 2022; Omri, 2022). Bank capital theory further posits that capital adequacy (CAR) serves as both a buffer against losses and a determinant of risk-taking incentives (Le et al., 2023; Olawale, 2024). These theoretical perspectives collectively explain how liquidity decisions influence credit risk, measured by Non-Performing Loans (NPL), and ultimately affect profitability, proxied by Return on Assets (ROA). Thus, integrating these theories provides a comprehensive framework for analyzing bank performance dynamics.

Despite the theoretical advancements, banking systems continue to face significant challenges in managing liquidity, credit risk, and profitability, particularly in emerging economies. One of the main problems is the trade-off between aggressive credit expansion and rising credit risk, where higher lending activity increases income potential but also elevates default probabilities. This issue becomes more pronounced during periods of economic uncertainty, such as financial crises or global shocks, when banks must simultaneously maintain liquidity and manage deteriorating asset quality. Recent studies indicate that liquidity pressures and macroeconomic instability significantly increase credit risk and reduce financial performance (Ayinuola & Gumel, 2023; Saliba et al., 2023). Additionally, differences in institutional frameworks and governance structures further complicate risk management practices. As a result, banks often struggle to maintain an optimal balance between growth and stability. This problem highlights the need for a deeper understanding of how liquidity, risk, and capital interact within bank financial management.

Previous studies have extensively examined the relationships among liquidity, credit risk, and bank performance, yet most focus on these variables in isolation rather than as an integrated system. For instance, research on liquidity risk emphasizes its impact on financial stability and performance, showing that excessive liquidity exposure can increase vulnerability to shocks (Ben Lahouel et al., 2024; Yahaya et al., 2022). Similarly, studies on credit risk highlight the role of macroeconomic and bank-specific factors in determining non-performing loans (Annas et al., 2024; Naili & Lahrichi, 2022b, 2022a). Meanwhile, research on capital adequacy demonstrates its importance in enhancing resilience and reducing risk exposure (Hastuti et al., 2024; Zheng et al., 2022). Although these studies provide valuable insights, they often treat liquidity, credit risk, and capital as separate dimensions. Consequently, the dynamic interactions among these variables remain underexplored, particularly in the context of emerging markets like Indonesia.

Further limitations in the literature arise from the lack of comprehensive models that simultaneously examine liquidity, credit risk, and profitability within a unified framework. While some studies incorporate multiple variables, they often neglect the sequential transmission mechanism linking liquidity decisions to credit risk and financial performance. Additionally, empirical evidence on ownership structure suggests that state-owned and private banks exhibit different risk-taking behaviors and performance outcomes (Boachie, 2023; Panizza, 2023). However, comparative analyses that integrate ownership effects into the liquidity–risk–profitability relationship are still limited.

Moreover, existing studies rarely consider long observation periods that capture different economic phases, such as pre-crisis, crisis, and recovery periods. This gap is particularly relevant for Indonesia, where banking dynamics are influenced by both macroeconomic conditions and institutional factors (Anwar et al., 2023; Widarjono et al., 2022). Therefore, a more integrative and context-specific approach is needed to address these shortcomings.

This study introduces a novel integrative framework, the liquidity–risk–profitability nexus, that positions liquidity decisions as the starting point in the chain of bank financial management. Unlike previous approaches that treat variables independently, this framework conceptualizes liquidity as an active strategic decision influencing both risk exposure and financial performance. It highlights the role of capital adequacy as a moderating mechanism that shapes the transmission of liquidity into credit risk. Additionally, the study incorporates ownership structure to capture heterogeneity in financial management strategies, providing a more nuanced understanding of bank behavior. By examining these relationships over multiple economic phases, the study offers a dynamic perspective on how banks adjust their strategies in response to changing conditions. This integrative approach represents a significant advancement in the literature, offering a more comprehensive and realistic depiction of banking operations and performance.

Based on the identified gaps, this study seeks to answer how liquidity management influences credit risk and bank profitability, and how capital adequacy and ownership structure shape these relationships. The main argument is that liquidity decisions are not merely operational choices but strategic determinants of risk and performance outcomes. Specifically, higher liquidity, as reflected in LDR, is expected to increase credit risk through aggressive lending, while capital adequacy mitigates this effect by providing a financial buffer. Furthermore, differences in ownership structure are hypothesized to create variations in risk-taking behavior and profitability dynamics. By employing panel data analysis over the 2015–2024 period, this study contributes to the literature by integrating key variables into a single empirical framework, examining heterogeneity across bank types, and providing practical implications for bank management. Ultimately, the study aims to enhance understanding of how banks can achieve sustainable performance through optimal financial management strategies.

RESEARCH METHODS

This study employs a quantitative research design using panel data regression to examine the relationship between monetary policy, liquidity, credit risk, and bank profitability within the liquidity–risk–profitability nexus framework. The quantitative approach is selected because it enables hypothesis testing and the analysis of causal relationships among variables using numerical data (Kumar et al., 2023; Rana et al., 2023). The study is conducted in the context of conventional commercial banking and covers the 2015–2024 period, including the pre-pandemic phase, the COVID-19 crisis, and the period of monetary policy normalization. This time frame is chosen to capture variations in bank financial management behavior across different economic conditions. The population consists of all conventional commercial banks. At the same time, the sample is determined using purposive sampling based on data availability, consistency of financial reporting, and completeness of required variables during the observation period (Magnone & Yezierski, 2024; Obilor, 2023).

Data are collected from secondary sources, including banks' annual financial statements and the monetary authority's official publications (Jaswadi et al., 2024; Polishchuk, 2023). The variables used in this study include the BI Rate (policy interest rate), inflation, Loan to Deposit Ratio (LDR) as a proxy for liquidity, Capital Adequacy Ratio (CAR), Non-Performing Loans (NPL) as a proxy for credit risk, Return on Assets (ROA) as a measure of profitability, and an ownership dummy variable distinguishing state-owned and private banks. The use of secondary data ensures objectivity and reliability, while also allowing for longitudinal analysis across multiple periods and institutions (Lusa et al., 2024; Primerano et al., 2025).

The data analysis technique applies a sequential panel modeling approach to capture the transmission mechanism of monetary policy (Camara et al., 2025; Oyadeyi, 2024). In the first stage, the BI Rate and inflation are regressed on LDR while controlling for unobserved heterogeneity. In the second stage, LDR and CAR are analyzed with respect to NPL using a Fixed Effects model based on Hausman test results. In the third stage, NPL, LDR, and CAR are regressed on ROA using a Random Effects model to account for broader variation in profitability. The Chow and Hausman tests are used for model selection, while robust standard errors are applied to address heteroskedasticity and autocorrelation. Additionally, ownership dummy and interaction terms are included to examine differences in financial management strategies between state-owned and private banks.

RESULTS AND DISCUSSION

Results

This section presents the empirical analysis results, beginning with descriptive statistics to provide an overview of the data characteristics and the distribution of each research variable over the 2015–2024 period. These statistics serve as an initial basis for understanding the dynamics of macroeconomic conditions, liquidity, capitalization, credit risk, and banking profitability prior to the subsequent panel model estimations.

Table 1. Descriptive Statistics

Variabel	N	Mean	Median	Std. Dev	Min	Max
BI Rate (%)	110	5.12	5.25	1.25	3.5	7
Inflasi (%)	110	3.75	3.6	1.1	1.5	6
LDR (%)	110	88.5	87	12.3	60.2	115.8
CAR (%)	110	21.2	20.8	3.4	14.5	29
NPL (%)	110	3.8	3.5	1.2	1	7
ROA (%)	110	2.1	2	0.8	0.4	4.5

Table 1 indicates that during the 2015–2024 period, Indonesia's macroeconomic conditions were relatively stable, as reflected in moderate fluctuations of the BI Rate (mean 5.12%) and inflation (mean 3.75%). Both variables exhibit low dispersion and relatively symmetric distributions, suggesting controlled monetary conditions and maintained price stability throughout the observation period.

From a banking perspective, the average LDR of 88.5% suggests generally prudent liquidity management, though its wide range (up to 115.8%) highlights differences in banks' lending strategies and potential liquidity risks. Meanwhile, CAR remains high (mean 21.2%), indicating strong capital resilience across banks. Credit risk, as measured by NPL (mean 3.8%), is relatively manageable despite some variation, while profitability

(ROA mean 2.1%) appears stable overall, although a few banks experienced temporary performance pressures. Building on this descriptive overview, the following figure illustrates how these variables evolve.

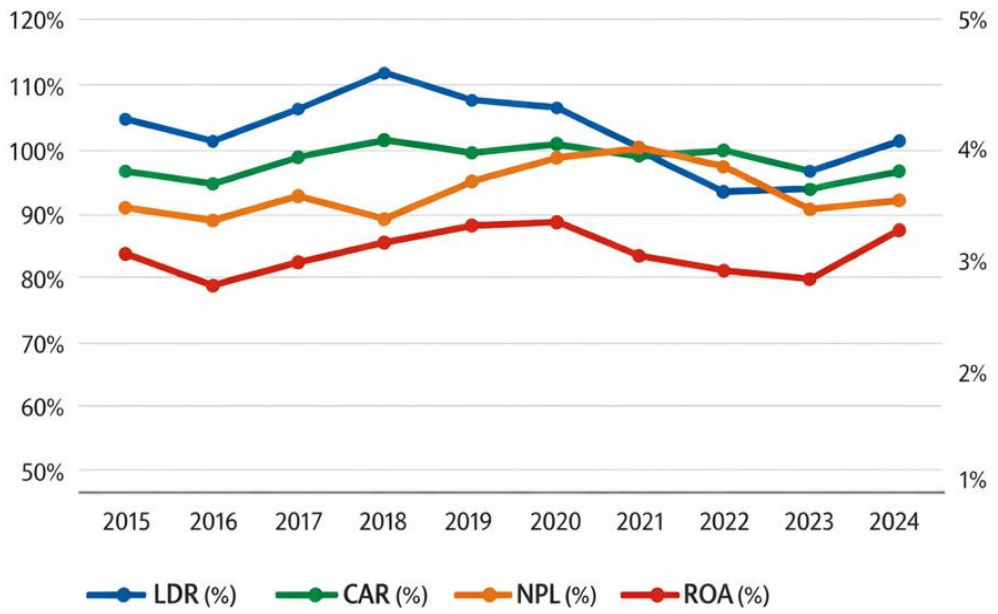

Figure 1. presents the trends of the Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), Non-Performing Loans (NPL), and Return on Assets (ROA) over the 2015–2024 period

Figure 1 illustrates the dynamic interaction between liquidity, capital strength, credit risk, and profitability in Indonesia's banking sector over the 2015–2024 period. The LDR trend shows an expansion phase through 2018, followed by a notable contraction during 2021–2022, and then a gradual recovery by 2024. This pattern reflects a typical intermediation cycle, where banks initially expand lending, then adopt more cautious liquidity management during periods of heightened uncertainty, and eventually resume intermediation as conditions stabilize. In contrast, CAR remains consistently high and stable throughout the period, indicating that banks maintained strong capital buffers, which played a crucial role in preserving resilience and absorbing potential shocks.

On the risk and performance side, NPL ratios increased during 2020–2021, signaling a deterioration in asset quality, likely driven by macroeconomic pressures, before declining as economic conditions improved. The movement of ROA closely mirrors this pattern in the opposite direction—declining when NPL rises and recovering afterward—highlighting the inverse relationship between credit risk and profitability. Overall, the figure suggests that while the banking sector remained structurally sound due to strong capitalization, fluctuations in liquidity and credit risk were key factors influencing profitability dynamics. Following this trend analysis, the study proceeds to examine the determinants of bank liquidity through panel estimation.

Table 2. The Impact of Monetary Policy on Bank Liquidity (LDR)

Variable	Coefficient (Std. Error)
BI Rate	-1.850*** (0.550)
Inflation	-0.720** (0.310)
Bank Size (Log of Assets)	0.950** (0.450)

Market Liquidity	0.210** (0.100)
Intercept	102.300*** (5.200)

R^2 (within) = 0.420
Observations = 110

Table 2. shows that monetary policy and macroeconomic conditions play a significant role in shaping bank liquidity behavior, as reflected in the Loan-to-Deposit Ratio (LDR). The BI Rate has a negative and highly significant effect, indicating that a 1 percentage point increase in the policy rate reduces LDR by 1.85 points. This suggests that tighter monetary policy discourages lending and encourages banks to adopt more conservative liquidity management practices. Similarly, inflation negatively affects LDR, suggesting that higher prices may increase uncertainty and reduce banks' willingness to extend credit.

On the other hand, bank-specific and market factors contribute positively to liquidity expansion. Larger banks tend to exhibit higher LDR, reflecting their greater capacity to intermediate funds and absorb risk. Market liquidity also has a positive and significant effect, indicating that more favorable financial market conditions support lending activities. Overall, the model explains a substantial portion of within-bank variation (R^2 = 0.420), highlighting that both macroeconomic tightening and institutional characteristics are key determinants of bank liquidity dynamics. Given these liquidity dynamics, the next analysis explores how liquidity and capital affect credit risk.

Table 3. Liquidity, Capital Adequacy, and Credit Risk (NPL) – Fixed Effects Model

Variable	Coefficient (Std. Error)
LDR	0.045*** (0.012)
CAR	-0.060*** (0.018)
BUMN × LDR	0.030*** (0.010)
BUMN × CAR	-0.025** (0.012)
Bank Size	-0.012** (0.005)
Intercept	2.100*** (0.700)

R^2 (within) = 0.380
Observations = 110

Table 3 demonstrates that both liquidity and capital adequacy are key determinants of credit risk (NPL) in the banking sector. The positive and highly significant coefficient of LDR indicates that higher lending intensity increases credit risk, suggesting that more aggressive intermediation tends to weaken asset quality. In contrast, CAR shows a negative and significant effect on NPL, confirming that stronger capital buffers enhance banks' resilience and reduce the likelihood of non-performing loans. Additionally, bank size is negatively associated with NPL, suggesting that larger banks benefit from stronger risk management and greater diversification, resulting in lower credit risk.

The interaction terms reveal important differences for state-owned banks (BUMN). The positive coefficient of BUMN × LDR suggests that the risk-increasing effect of high lending is stronger in state-owned banks, potentially reflecting policy-driven lending or less stringent credit selection. Meanwhile, the negative effect of BUMN × CAR indicates that capital strength plays an even more critical role in mitigating credit risk within these banks. Overall, the model (R^2 = 0.380) highlights that while liquidity expansion can elevate risk, adequate capitalization remains a key stabilizing factor,

particularly in the context of ownership structure. Subsequently, the analysis turns to how these factors translate into bank profitability.

Table 4. Panel Regression Results of ROA on NPL, LDR, and CAR

Variable	Koefisien
NPL	-0.420*** (0.110)
LDR	0.018** (0.007)
CAR	0.032** (0.012)
Bank Size	0.140*** (0.050)
Intercept	0.350*** (0.120)

R^2 (within) = 0.410
Observations = 110

Table 4 indicates that bank profitability (ROA) is significantly influenced by credit risk, liquidity, and capital strength. The coefficient of NPL is negative and highly significant, implying that an increase in non-performing loans substantially reduces profitability, confirming that deteriorating asset quality directly erodes bank earnings. In contrast, LDR has a positive effect on ROA, suggesting that higher lending activity contributes to greater income generation, although this must be balanced against the associated credit risk. Similarly, CAR shows a positive, significant relationship with profitability, indicating that well-capitalized banks are better positioned to sustain performance, likely due to greater stability and lower funding costs. Bank size also positively affects ROA, reflecting economies of scale and more efficient resource utilization in larger banks. Overall, the model explains a considerable proportion of within-bank variation (R^2 = 0.410), highlighting that the interaction between risk, liquidity, and capital is central to understanding bank profitability. To deepen this analysis, the study further compares these relationships across different ownership structures.

Table 5. Comparison of Responses between State-Owned Banks and Private Banks

Relationship	State-Owned Banks (SOEs)	Private Banks
LDR → NPL	0.075***	0.038**
CAR → NPL	-0.085***	-0.052**
LDR → ROA	0.015*	0.020***
NPL → ROA	-0.480***	-0.390***

Table 5 highlights notable differences in how state-owned banks (SOEs) and private banks respond to liquidity, capital, and credit risk dynamics. The positive effect of LDR on NPL is stronger in SOEs (0.075) than in private banks (0.038), suggesting that aggressive lending in state-owned banks tends to increase credit risk, potentially reflecting less stringent credit allocation or policy-driven lending. Conversely, the negative impact of CAR on NPL is also more pronounced in SOEs, suggesting that capital buffers play a more critical role in mitigating risk within these banks. In terms of profitability, LDR positively affects ROA in both groups, but the effect is stronger and more significant in private banks, implying more efficient intermediation. Meanwhile, NPL has a consistently negative and stronger impact on ROA in SOEs, indicating that credit risk is more detrimental to their profitability. Overall, the results suggest that private banks manage the risk–return trade-off more efficiently. At the same time, SOEs are more sensitive to both the adverse effects of credit risk and the stabilizing role of capital. These differences are further illustrated through the following comparative trends.

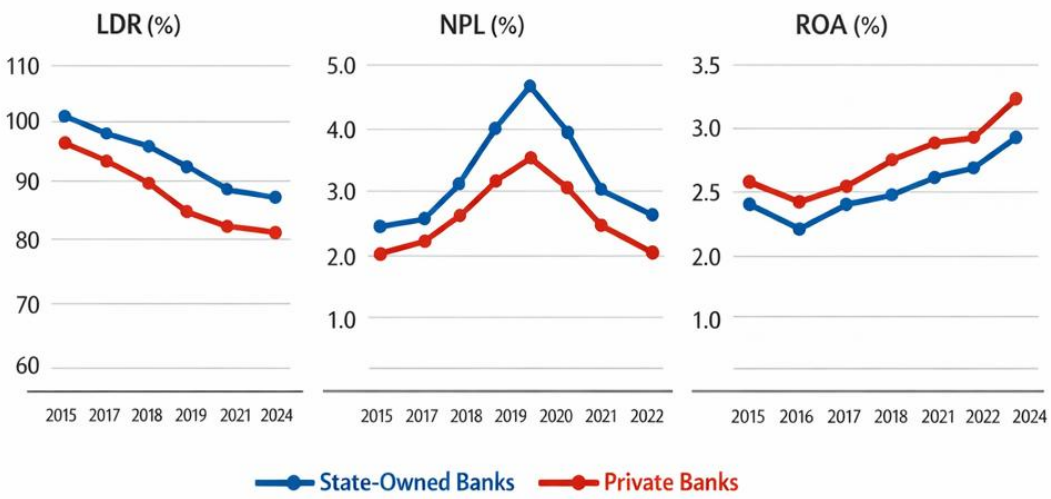

Figure 2. presents a comparison of the trends in LDR, NPL, and ROA between state-owned banks and private banks

Figure 2 highlights clear differences in the behavior of state-owned and private banks across liquidity, credit risk, and profitability dimensions. State-owned banks consistently exhibit higher LDR levels, indicating a stronger emphasis on credit expansion, which aligns with their broader intermediation role. However, this is accompanied by higher, more volatile NPL ratios, particularly during periods of economic stress, suggesting that more aggressive lending is associated with greater credit risk. In contrast, private banks maintain relatively lower LDRs and more stable NPL trends, reflecting a more cautious, risk-sensitive lending approach.

In terms of profitability, private banks consistently outperform state-owned banks, as reflected in higher and steadily increasing ROA levels over time. This suggests that private banks are more efficient in managing the trade-off between risk and return, benefiting from better asset quality and more disciplined lending practices. Overall, the figure reinforces the idea that ownership structure plays a crucial role in shaping how liquidity translates into risk and profitability: state-owned banks are more growth-oriented but risk-prone, while private banks are more efficient and resilient. Finally, to ensure the reliability of these findings, robustness checks are conducted using alternative model specifications.

Tabel 6. Robustness Check: Dynamic and Alternative Profitability Specification

Variable	Baseline Model (ROA)	Lagged Model (ROA)	Alternative Model (ROE)
NPL	-0.420*** (0.110)	—	-1.850*** (0.520)
NPL(t-1)	—	-0.390*** (0.100)	—
LDR	0.018** (0.007)	0.016** (0.006)	0.072** (0.025)
CAR	0.032** (0.012)	0.030** (0.011)	0.110** (0.040)
Bank Size	0.140*** (0.050)	—	0.480** (0.180)
Intercept	0.350*** (0.120)	0.330*** (0.110)	4.120*** (1.250)

Table 6 confirms the robustness of the main findings across different model specifications, including a dynamic approach and an alternative profitability measure (ROE). The negative and significant effect of NPL remains consistent, both contemporaneously and with a lag, indicating that credit risk not only reduces current

profitability but also has a persistent adverse impact over time. Meanwhile, LDR and CAR retain their positive and significant effects across all models, suggesting that lending activity and strong capital buffers consistently support bank profitability. The magnitude of these effects is even larger when profitability is measured using ROE, reinforcing the economic significance of liquidity and capitalization. Additionally, bank size continues to show a positive contribution when included, highlighting scale advantages in generating returns. Overall, the consistency in sign, significance, and magnitude across models demonstrates that the relationship between risk, liquidity, capital, and profitability is stable and not sensitive to model specification.

Discussion

The empirical findings of this study confirm that monetary policy significantly influences bank liquidity through the lending channel, as reflected in the negative relationship between the BI Rate and LDR. This result is consistent with the risk-taking channel theory, which posits that tighter monetary conditions reduce banks' incentives to expand credit and increase risk exposure (Boutfssi & Quamar, 2026; Wang, 2025). It also aligns with (Zhao & Han, 2025), who show that interest rate cycles affect leverage and credit quality. Furthermore, the findings align with those of Wang (2025) and Anderson & Cesa-Bianchi (2024), who emphasize that monetary tightening increases funding costs and compresses lending capacity. However, this study extends the existing literature by demonstrating that the effect of monetary policy is transmitted through liquidity decisions as an intermediate mechanism within the broader liquidity–risk–profitability nexus. Theoretically, this reinforces the integration of monetary transmission theory with financial management perspectives. At the same time, practically, it implies that bank managers must actively adjust liquidity strategies in response to macroeconomic signals to maintain optimal intermediation performance.

The positive relationship between LDR and NPL indicates that aggressive liquidity expansion is associated with higher credit risk, supporting the fundamental trade-off between credit growth and asset quality. This finding is consistent with Bianchi & Bigio (2022), who highlight funding frictions and liquidity risk in credit markets, as well as Naili & Lahrichi (2022a) and Saliba et al. (2023), who emphasize the importance of bank-specific and institutional factors in determining non-performing loans. While prior studies often treat credit risk as a consequence of macroeconomic shocks, this study shows that internal liquidity management decisions play a more central role in shaping risk exposure. Theoretically, this finding contributes to the literature by positioning liquidity as a primary driver of credit risk within bank financial management. Practically, it suggests that banks must balance credit expansion with prudent risk assessment to prevent excessive deterioration in asset quality, particularly during periods of economic uncertainty.

The negative effect of CAR on NPL confirms the role of capital adequacy as a critical buffer against financial instability, in line with bank capital theory (Arhinful et al., 2025; Olawale, 2024). This finding is consistent with Olawale (2024), who demonstrates that stronger capital buffers enhance bank resilience, and with the macroprudential perspective of Edge and Liang, which highlights the effectiveness of capital regulation in mitigating credit cycles. Additionally, the interaction effects found in this study support the arguments of Boamah et al. (2023) and Rafique et al. (2025), who show that capital effectiveness is closely linked to liquidity risk management. Compared to previous research, this study provides a more integrated view by showing that capital not only

directly reduces credit risk but also moderates the impact of liquidity on risk. Theoretically, this strengthens the role of capital within the liquidity–risk–profitability nexus, while practically, it underscores the importance of maintaining adequate capital buffers to sustain financial stability.

The results further demonstrate a clear risk–return trade-off: credit risk negatively affects profitability, while liquidity and capital positively contribute to financial performance. This finding is consistent with Tran & Nguyen (2025), who show that NPLs reduce bank profitability through increased loan loss provisions, and with Ayinuola & Gumel (2023), who highlight the interaction between liquidity and risk in shaping financial stability. The positive impact of CAR also aligns with Alamsyah et al. (2025) and Olawale (2024), who emphasize that capital adequacy enhances profitability by improving resilience and reducing funding costs. However, this study contributes by empirically validating these relationships within a unified framework, demonstrating that profitability is not determined by a single factor but by the interaction between liquidity, risk, and capital. In practice, this implies that banks should avoid excessive credit expansion without adequate risk controls, as this may undermine long-term profitability.

The comparative analysis of state-owned and private banks reveals significant differences in financial behavior, supporting the findings of Jin et al. (2025) and Panizza (2023), who argue that state-owned banks tend to exhibit distinct risk preferences due to their developmental roles. The results also align with Alfawareh et al. (2025) and Boachie (2023), who highlight the importance of governance and efficiency in shaping bank performance. This study finds that state-owned banks exhibit greater sensitivity of credit risk to liquidity expansion and a stronger negative impact of NPLs on profitability. In contrast, private banks exhibit more stable risk–return dynamics. Theoretically, this reinforces the importance of ownership structure as a moderating variable within the liquidity–risk–profitability nexus. In practice, this suggests that regulatory policies and financial management strategies should be tailored to institutional characteristics to enhance efficiency and stability across different bank types.

Finally, the robustness of the results across alternative model specifications confirms the stability and reliability of the estimated relationships, supporting the broader literature on banking performance and risk management (Dai et al., 2025; Wu et al., 2023). The consistent negative effect of NPL and positive effects of LDR and CAR across baseline, dynamic, and alternative models indicate that the liquidity–risk–profitability nexus is a robust framework for understanding bank behavior. Compared to previous studies that often rely on single-model approaches, this study provides stronger empirical evidence by incorporating dynamic specifications and alternative profitability measures. Theoretically, this enhances the model's generalizability. At the same time, practically, it provides more reliable guidance to policymakers and bank managers in designing strategies to manage liquidity, risk, and capital effectively in response to changing economic conditions.

CONCLUSION

This study highlights that within the liquidity–risk–profitability nexus, liquidity functions as the central transmission channel linking monetary policy to bank performance. The findings reveal an important insight: while liquidity expansion strengthens intermediation and enhances profitability, it simultaneously increases credit risk if not accompanied by adequate capital buffers. In this regard, the study confirms the

empirical relevance of the risk–return trade-off mechanism in the Indonesian banking context over the 2015–2024 period. The results also demonstrate that monetary policy variables—namely the BI Rate and inflation—negatively affect liquidity, while liquidity increases credit risk but also improves profitability, and credit risk ultimately suppresses profitability. Furthermore, capital adequacy plays a stabilizing role by mitigating risk exposure. A comparative perspective shows that state-owned banks exhibit greater sensitivity to liquidity dynamics than private banks, indicating structural differences in risk management and intermediation behavior.

From a scholarly perspective, this study contributes to the literature by integrating monetary policy, liquidity, credit risk, and profitability into a unified empirical framework using panel data analysis, thereby enriching the liquidity–risk–profitability nexus, particularly in emerging market settings. The robustness of the findings across alternative model specifications further strengthens its empirical validity. However, several limitations should be acknowledged. The analysis is limited to conventional banks, excludes a broader range of macroeconomic and institutional variables, and may be subject to potential endogeneity issues inherent in panel data estimation. Additionally, the observation period, although covering pre- and post-pandemic phases, remains relatively constrained. Future research is therefore encouraged to incorporate Islamic banking institutions, extend the time horizon, include more comprehensive macro-financial indicators, and apply advanced estimation techniques such as dynamic panel models to better address endogeneity and capture long-term dynamics.

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