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Government Liquidity Placement and Bank Financial Performance: Evidence from Indonesian State-Owned Banks

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ABSTRACT

This study examines the relationship of government liquidity placements on the financial performance of state-owned banks (SOEs) in Indonesia during the post-pandemic economic normalization period. Although government funds are intended to enhance intermediation capacity and financial system stability, empirical evidence regarding their relationship on bank profitability remains limited. This study employs a quantitative research design using panel data regression with a fixed effects model (FEM). The analysis is conducted on four major state-owned banks over the period 2020–2024. The model controls for bank-specific variables, including the loan-to-deposit ratio (LDR), non-performing loans (NPL), operational efficiency (BOPO), and third-party funds (DPF). The results indicate that the direct relationship of fund placements on return on assets (ROA) is weak, while net interest margin (NIM) declines significantly, reflecting a trade-off between additional liquidity and interest income. However, the lagged relationship on ROA is positive and marginally significant, suggesting that banks require time to channel liquidity into productive lending. This study provides empirical contributions to the understanding of government liquidity dynamics in state-owned banks and their implications for managerial decision-making and fiscal policy.

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INTRODUCTION

During the post-pandemic economic normalization phase, the banking sector has once again assumed a central role in supporting the transmission of fiscal policy and government liquidity. In the Indonesian context, this role is predominantly carried out by state-owned banks (Himpunan Bank Milik Negara/Himbara), which serve as the primary channels for government fund placements aimed at strengthening financing capacity and maintaining financial system stability. Conceptually, these liquidity placements are expected to reinforce the banking intermediation function, namely channeling funds to households and micro, small, and medium enterprises (MSMEs) through increased credit distribution.

However, balance sheet dynamics during the recovery period indicate that rising liquidity is not always accompanied by a commensurate acceleration in credit growth. National banking data show that the growth of third-party funds (DPF) has tended to outpace credit growth, while intermediation ratios such as the loan-to-deposit ratio (LDR) have increased gradually but remain within a relatively conservative range (BPS, 2023; OJK, 2025). This pattern suggests that additional liquidity may affect banks' asset structures differently, depending on risk preferences, credit portfolio quality, and the institutional characteristics of each bank.

The financial intermediation literature emphasizes that banks function not only as fund distributors but also as risk managers and liquidity creators through a combination of

asset- and liability-side decisions. A number of empirical panel studies find that liquidity can be positively associated with bank profitability, particularly when it is productively utilized in intermediation activities, although the magnitude and direction of the relationship depend heavily on asset structure and bank risk profiles (Berger & Bouwman, 2009; Duan & Niu, 2020). Conversely, high liquidity levels may also encourage banks to increase holdings of low-risk liquid assets, which can potentially compress interest margins and asset returns.

The context of state-owned banks further enriches this discourse, as SOE banks do not operate solely with a profit-maximization orientation. The literature on state ownership in banking highlights potential tensions between public policy mandates and commercial objectives, which can influence managerial decision-making behavior, including liquidity allocation and credit distribution (Jensen & Meckling, 1976; Micco et al., 2007). Empirical studies in Indonesia also indicate that internal bank characteristics and ownership structures play a significant role in explaining variations in bank profitability (Amanda et al., 2020; Yunita, 2021).

Nevertheless, empirical evidence that directly links government liquidity placements to the financial performance of state-owned banks in Indonesia remains relatively limited. Most prior studies focus on the relationship of liquidity policies or stimulus measures from a macroeconomic perspective, such as aggregate credit growth or overall financial system stability. Such approaches may obscure how policy responses are reflected in bank-level financial performance indicators. Existing banking panel studies generally examine the determinants of profitability in a broad sense but rarely explicitly incorporate government fund placements as a factor influencing bank performance, particularly in the context of developing economies (Radovanov et al., 2023; Hayet et al., 2024).

Building on this gap, this study aims to analyze the relationship between government liquidity placements and the financial performance of state-owned banks in Indonesia using a panel data approach. By exploiting cross-bank and intertemporal variation, and controlling for unobserved bank-specific characteristics through a fixed-relationships model, this study evaluates whether government fund placements are associated with changes in bank profitability as reflected in return on assets (ROA) and net interest margin (NIM), as well as their implications for the banking intermediation function.

The contribution of this study is twofold. Academically, it enriches the literature on financial intermediation and bank profitability by providing empirical evidence from the context of state-owned banks in Indonesia, which remains relatively underexplored. Methodologically, the use of a fixed-relationships approach allows for the control of unobserved bank heterogeneity, thereby yielding more accurate estimates of the relationship between government liquidity and bank financial performance. From a practical perspective, the findings are expected to offer more nuanced insights for bank management and regulators regarding how government liquidity placements interact with asset allocation strategies and bank financial performance at the institutional level.

The structure of this article is organized as follows. The next section reviews the relevant literature and develops the research hypotheses. The third section describes the data and research methodology. The fourth section presents the empirical results and discussion, and the final section concludes with the main findings and research implications.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The literature on banking liquidity and financial performance positions banks as key actors in the intermediation of funds from surplus units to deficit units. Within this framework, financial intermediation theory, agency theory, and the risk–return trade-off concept provide complementary theoretical foundations for explaining how government liquidity placements may affect bank performance, particularly in the context of state-owned banks.

Financial Intermediation Theory

Financial intermediation theory emphasizes that banks function as managers of external funds with the primary objective of channeling liquidity to productive sectors while mitigating information asymmetry and liquidity risk (Diamond, 1984; Gorton & Metrick, 2012). In performing this function, banks make asset allocation decisions that reflect a trade-off between profitability, risk, and liquidity. This theoretical framework provides a basis for the relevance of the variables used in this study.

The loan-to-deposit ratio (LDR) represents the intensity of financial intermediation, indicating how effectively banks transform deposits into loans. A higher LDR reflects more aggressive lending, which is expected to increase interest income and improve bank performance, although it may also elevate liquidity risk. Non-performing loans (NPL) capture credit risk arising from information asymmetry; higher NPL levels reduce income and increase provisioning costs, thereby negatively affecting bank performance. Operational efficiency, proxied by the BOPO ratio, reflects cost management efficiency, where higher BOPO indicates inefficiency and is expected to reduce profitability. Meanwhile, third-party funds (DPF) represent the bank's funding capacity, which supports credit expansion and is expected to have a positive effect on performance through enhanced intermediation.

The literature highlights an inherent trade-off in banks' asset allocation decisions. Credit expansion increases potential returns but also raises exposure to credit risk and capital constraints, whereas holding liquid assets—such as government securities—provides safety and flexibility but typically yields lower returns (Kashyap, et al, 2002). This trade-off becomes more pronounced when banks receive exogenous liquidity.

Government fund placements can be considered an exogenous liquidity shock because they are allocated through administrative mechanisms rather than market-based processes. Such liquidity inflows may alter banks' behavior by influencing how funds are allocated between lending and liquid assets (Allen & Gale, 2004; Acharya & Mora, 2015). An increase in liquidity may encourage credit expansion (increasing LDR), which can improve performance if credit quality is maintained, but may also lead to higher NPL if risk management is weak. Alternatively, banks may allocate funds to low-risk assets, reducing risk but limiting profitability. Therefore, government liquidity placements affect bank performance not only through increasing available funds (DPF), but also through their impact on intermediation behavior, risk exposure (NPL), and operational efficiency (BOPO), which together explain the expected empirical relationships.

Agency Theory in State-Owned Banks

The intermediation-based explanation becomes more complex when applied to state-owned banks. Agency theory explains that conflicts of interest arise from the separation between principals and agents, particularly when objectives and incentives are not fully aligned (Jensen & Meckling, 1976). In state-owned banks, this problem is amplified by the presence of multiple principals—including the government, regulators, and the public—each with distinct economic and non-economic objectives (Shleifer & Vishny, 1997). This condition provides a theoretical basis for understanding how bank-specific variables behave differently compared to private banks.

Unlike privately owned banks that primarily pursue shareholder value maximization, state-owned banks often carry broader mandates, such as maintaining financial system stability and supporting public policy objectives. As a result, managerial decisions tend to emphasize prudence, which affects key operational indicators. For instance, the loan-to-deposit ratio (LDR) may be relatively lower due to more cautious lending behavior, potentially weakening the positive impact of intermediation on performance. Similarly, non-performing loans (NPL) are closely monitored to maintain asset quality, implying that increases in NPL are expected to have a stronger negative effect on performance due to

stricter regulatory and reputational pressures. Operational efficiency (BOPO) may also be affected, as agency frictions and bureaucratic processes can lead to higher operational costs, thereby reducing profitability. Meanwhile, third-party funds (DPF), including government fund placements, reflect funding capacity but do not automatically translate into improved performance if not efficiently intermediated.

In this context, government liquidity placements may increase agency costs if bank management prefers to allocate funds to low-risk assets in order to signal prudence or regulatory compliance. This behavior weakens the intermediation function, as additional funds (DPF) are not fully converted into productive lending (lower LDR), thereby limiting income generation. Empirical evidence suggests that state-owned banks tend to hold higher liquidity buffers and exhibit weaker credit supply responses compared to private banks when facing additional liquidity (Micco et al., 2007). Consequently, while increased liquidity may reduce risk exposure (potentially stabilizing NPL), it may also suppress profitability due to lower returns on safe assets and persistent operational inefficiencies (BOPO).

Therefore, agency theory explains that the effect of government fund placements on bank performance is not solely determined by the availability of funds (DPF), but also by managerial incentives and governance structures that influence intermediation behavior (LDR), risk outcomes (NPL), and efficiency (BOPO). These mechanisms clarify why the empirical relationship between liquidity injections and bank performance may be weaker, conditional, or even negative in state-owned banks.

Risk–Return Trade-Off in Banking

Banks' asset allocation choices ultimately translate into financial performance through the risk–return trade-off mechanism. Loans represent higher-yielding assets and contribute directly to profitability indicators such as ROA and NIM, but they also increase exposure to credit and liquidity risk (Berger & Bouwman, 2009). In this context, the loan-to-deposit ratio (LDR) reflects the extent to which banks allocate funds into productive lending; a higher LDR is generally expected to improve performance through increased interest income, although it may also elevate risk. This risk dimension is captured by non-performing loans (NPL), where higher NPL levels reduce profitability due to credit losses and provisioning costs. At the same time, operational efficiency, proxied by BOPO, determines how effectively revenues are translated into profits, with higher BOPO indicating inefficiency and a negative impact on performance.

Conversely, liquid assets reduce risk exposure but generally yield lower returns. Third-party funds (DPF), including government fund placements, represent the availability of funds that can be allocated either to productive loans or to liquid assets. Empirical studies show that higher liquidity does not necessarily correspond to higher profitability. At certain levels, excess liquidity may even reduce financial performance due to the opportunity cost of funds that are not optimally deployed (Demirgüç-Kunt & Huizinga, 1999; Bordeleau & Graham, 2010). This indicates that the effect of DPF on performance is conditional on how effectively these funds are intermediated, particularly through lending activities (LDR).

Within this framework, government liquidity placements may affect bank performance by altering the balance between productive assets and liquid assets. If additional liquidity (DPF) is transformed into credit expansion (higher LDR) while maintaining asset quality (controlled NPL), financial performance is expected to improve. However, if banks adopt conservative strategies by allocating funds to low-risk liquid assets, the impact on profitability may be limited. Moreover, inefficient fund management (higher BOPO) may further weaken the positive effect of liquidity. Therefore, the relationship between liquidity and performance is not only determined by the volume of funds but also by intermediation effectiveness, risk management, and operational efficiency, which together explain the observed empirical outcomes.

Hypothesis Development

Based on the integration of financial intermediation theory, agency theory, and the risk–return trade-off framework, this study examines the relationship of government liquidity placements on the financial performance of state-owned banks using a fixed-relationships panel data approach. This approach allows for the analysis of within-bank performance variation over time while controlling for unobserved bank-specific heterogeneity.

H_1: Government liquidity placements have a significant relationship on bank financial performance.

This hypothesis is formulated in a non-directional manner to accommodate differing theoretical predictions. Additional liquidity may enhance intermediation capacity and profitability, yet it may also be constrained by agency considerations and more conservative asset allocation preferences.

H_2: Government liquidity placements affect the efficiency of bank intermediation.

This hypothesis is proposed when intermediation efficiency, proxied by ratios such as the loan-to-deposit ratio (LDR), is included in the empirical model. It reflects the expectation that government fund placements influence banks' ability to transform liquidity into productive lending.

Control variables such as LDR, non-performing loans (NPL), operational efficiency (BOPO), and third-party funds (DPF) are included to isolate the relationship of government liquidity placements on bank performance, consistent with standard practice in the empirical banking literature.

METHODS

Research Design

This study adopts a quantitative approach with a panel data design to analyze the relationship of government liquidity placements on the financial performance of state-owned banks in Indonesia. The panel data approach is employed because it captures both temporal variation and unobserved bank-specific heterogeneity, thereby producing more consistent estimates than single cross-sectional or time-series data (Greene, 2012; Wooldridge, 2010). The unit of analysis consists of state-owned banks that receive government fund placements during the observation period. Focusing on state-owned banks is theoretically relevant, as their governance structures, policy mandates, and agency dynamics differ from those of private banks (Gujarati & Porter, 2009).

Although the number of cross-sectional units in this study is relatively limited, focusing on four major Indonesian state-owned banks, this small-N panel setting is methodologically justified. These banks represent the entirety of the state-owned commercial banking segment (Himbara) and collectively account for a dominant share of national banking assets, government liquidity placements, and credit distribution. Consequently, the panel captures meaningful institutional variation over time rather than sampling variation across heterogeneous banks. Following the argument of Wooldridge (2010), fixed-effects estimation remains appropriate in small-N panels when the time dimension is sufficient and the research objective emphasizes within-bank dynamics. Therefore, the analysis prioritizes intertemporal changes in bank performance associated with government liquidity placements rather than cross-sectional generalization to the broader banking industry.

Data and Sample Selection

The data used in this study are obtained from secondary sources, including banks' annual financial statements, official publications of the Financial Services Authority (Otoritas Jasa Keuangan/OJK), and reports from the Ministry of Finance regarding government fund placements. The observation period covers 2020–2024, selected to capture the dynamics of government liquidity placements and their relationship on bank

performance under post-pandemic economic conditions. The research sample is determined using purposive sampling, with the criteria that banks (1) are state-owned, (2) receive government fund placements during the observation period, and (3) have complete and consistent financial data. This approach ensures that the analysis can accurately evaluate the relationship between government fund placements and bank financial performance while accounting for institutional characteristics and data suitability (Greene, 2012; Wooldridge, 2010).

Variable Measurement

Bank financial performance, as the dependent variable, is measured using Return on Assets (ROA), which reflects a bank's ability to generate profits from its total assets. The use of ROA is consistent with the banking literature, as this indicator is sensitive to changes in asset structure and intermediation strategies. The key independent variable is government liquidity placement (Government Liquidity Placement / GovFund), measured as the value of government funds placed in the bank or as a proportion of total assets or third-party funds (DPF), depending on the model specification. This variable is treated as an exogenous source of liquidity because its allocation does not arise from market-based mechanisms.

To isolate the relationship of government fund placements on bank performance, several control variables are included: the loan-to-deposit ratio (LDR) as a proxy for intermediation efficiency, non-performing loans (NPL) to capture credit risk, the operating expenses to operating income ratio (BOPO) as an indicator of operational efficiency, and third-party funds (DPF) as a measure of the bank's funding capacity. The selection of these control variables follows standard practice in empirical banking studies and is consistent with the risk–return trade-off framework, allowing the relationship of government funds on bank performance to be analyzed in a partial and more precise manner (Gujarati & Porter, 2009).

Model Specification

To ensure consistency between the empirical strategy and the reported results, this study specifies three panel data regression models using a fixed effects model (FEM) to control for unobserved bank-specific heterogeneity.

Model 1 (ROA–FE) examines the contemporaneous effect of government fund placements on bank profitability measured by return on assets (ROA):

$$ROA_{it}=\alpha+\beta_1 GovFundit+\beta_2 LDR_{it}+\beta_3 NPL_{it}+\beta_4 BOPO_{it}+\beta_5 DPF_{it}+\mu i+\varepsilon it$$

where $GovFund_{it}$ represents government liquidity placements, while LDR, NPL, BOPO, and DPF are control variables capturing intermediation, risk, efficiency, and funding capacity, respectively. This model tests the immediate (contemporaneous) effect of government funds on asset profitability.

Model 2 (NIM–FE) evaluates the effect of government fund placements on net interest margin (NIM), reflecting banks' intermediation returns:

$$NIM_{it}=\alpha+\beta_1 GovFund_{it}+\beta_2 LDR_{it}+\beta_3 NPL_{it}+\beta_4 BOPO_{it}+\beta_5 DPF_{it}+\mu i+\varepsilon it$$

This model captures how government liquidity influences banks' interest-based income generation, particularly through lending and pricing behavior.

Model 3 (ROA–FE with lagged GovFund) incorporates a one-period lag of government fund placements to capture delayed effects on bank performance:

$$ROA_{it}=\alpha+\beta_1 GovFund_{i,t-1}+\beta_2 LDR_{it}+\beta_3 NPL_{it}+\beta_4 BOPO_{it}+\beta_5 DPF_{it}+\mu i+\varepsilon it$$

The inclusion of $GovFund_{i,t-1}$ is motivated by the assumption that the impact of liquidity injections may not be immediate, as banks require time to adjust their asset allocation and lending strategies.

Across all models, μi captures unobserved, time-invariant bank-specific effects, while εit is the idiosyncratic error term.

Hypothesis Testing Strategy

The hypotheses are tested based on the statistical significance and the direction of the estimated coefficients of the key variables. Hypothesis testing follows a two-tailed significance test using p-values and predefined significance levels. A hypothesis is accepted if the estimated coefficient has the expected sign and its p-value is less than the chosen significance level (α = 0.01, 0.05, or 0.10). Conversely, a hypothesis is rejected if the coefficient is not statistically significant (p-value ≥ α) or if the sign of the coefficient is inconsistent with the expected theoretical relationship (Wooldridge, 2010; Gujarati & Porter, 2009).

Specifically, H_1 is tested using the coefficient β_1, which captures the effect of government liquidity placements on bank financial performance. H_1 is accepted if β_1 is statistically significant ($p < \alpha$) and has the expected direction; otherwise, it is rejected. H_2 is tested by examining the relationship between government liquidity placements and intermediation efficiency, proxied by the loan-to-deposit ratio (LDR). Similar decision criteria apply, where statistical significance and consistency with theoretical expectations determine whether the hypothesis is accepted or rejected.

Statistical significance is evaluated at the 1%, 5%, and 10% levels, corresponding to confidence levels of 99%, 95%, and 90%, respectively. The empirical analysis employs panel data regression with a fixed effects model (FEM) to control for unobserved heterogeneity across banks. The choice of the fixed effects model is based on its ability to account for time-invariant characteristics that may bias the estimated relationships All estimations are conducted using R statistical software (R Core Team, 2023).

RESULTS AND DISCUSSION

Fixed-relationships panel data analysis is employed to evaluate the relationship of Government Fund Placements (GovFund) on the financial performance of state-owned banks. The model controls for time-invariant cross-bank heterogeneity as well as annual fluctuations through year fixed relationships, with robust standard errors (HC1) applied to address potential heteroskedasticity. The control variables include LDR, NPL, DPF, BOPO, and NIM (for the ROA model), allowing the relationship of GovFund to be analyzed in a partial manner. The panel dataset covers four major state-owned banks over the 2020–2024 period, incorporating the variables GovFund, ROA, NIM, LDR, NPL, DPF, and BOPO. This period is sufficient for testing the hypotheses using a fixed-relationships approach, although the number of banks and the length of the observation period are relatively limited, and external macroeconomic variables are not yet included.

Tabel 1. Fixed Relationships Estimation Results

Variable	ROA (FE)	NIM (FE)	ROA (FE – Lag GovFund)
GovFund	−0.0044	−0.0122**	0.0023*

LDR	0.0144**	−0.0562***	0.0151***
NPL	−0.0133	−0.0276	−0.0421**
NIM	−0.0102	—	−0.1374***
BOPO	−0.0002	0.0782	0.0099
DPK	0.0007***	0.0007	0.0010***
Bank FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Robust SE	Yes	Yes	Yes

Source: Data processed by researchers (2025)

Model 1 (ROA–FE): The GovFund coefficient is small and negative (−0.0044, $p > 0.10$), indicating that government fund placements do not immediately enhance asset profitability within the same period. This finding is consistent with Nguyen et al. (2022) and Ivashina et al. (2022), who show that liquidity stimulus strengthens credit momentum but does not necessarily expand the overall loan portfolio.

Model 2 (NIM–FE): The coefficient is negative and statistically significant at the 5% level (−0.0122, $p < 0.05$), suggesting that increases in government funds compress net interest margins. This result aligns with Robatto (2023) and Sapriza and Temesvary (2024), who emphasize that banks with higher NPL ratios tend to hoard liquidity and restrain credit expansion.

Model 3 (ROA–FE with GovFund t−1): The coefficient is positive and marginally significant at the 10% level (0.0023, $p < 0.10$), indicating a lagged relationship of government funds on asset profitability. This supports the findings of Amin et al. (2021a) showing that banks with higher LDRs respond more aggressively to government fund placements, as well as Berger and Bouwman (2009) and Figueiredo et al. (2024), who document that credit responses vary across banks depending on balance sheet conditions and risk profiles.

The panel data regression results from Model 3 (ROA–FE with lagged GovFund) show that the coefficient of government fund placements at t−1 is positive and marginally significant ($\beta_1 = 0.0023$, $p < 0.10$). This indicates that government liquidity placements have a delayed positive effect on bank profitability, as measured by ROA.

This lagged relationship suggests that the benefits of government funds do not materialize immediately but emerge after banks adjust their lending strategies and portfolio allocation. In other words, banks require time to transform additional liquidity into productive assets, particularly through credit expansion. This finding supports the credit channel mechanism proposed by Bernanke and Gertler (1995), which emphasizes that monetary or liquidity shocks influence real outcomes through gradual adjustments in bank lending behavior.

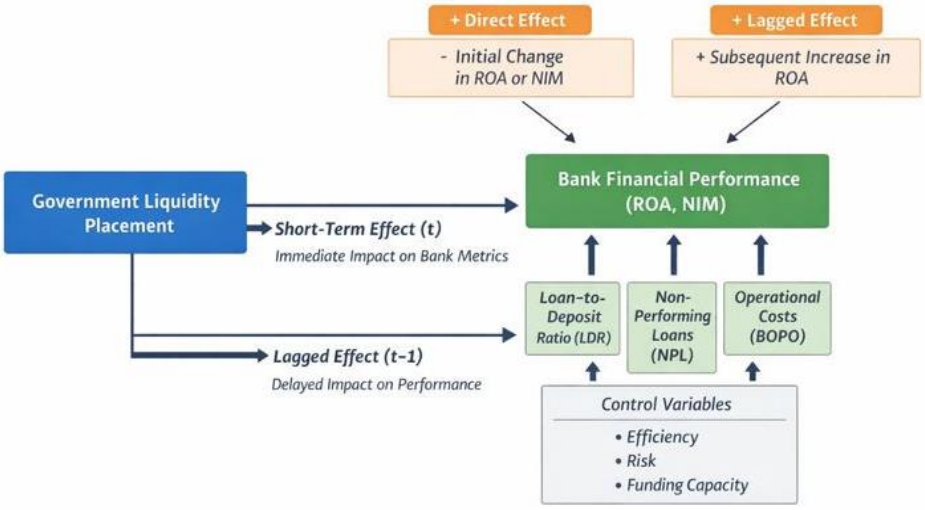

Figure 1. Conceptual Framework of Government Liquidity Placement and Bank Financial Performance
Source: Data processed by researchers (2025)

Figure 1. Conceptual Framework of Government Fund Placement and Bank Financial Performance illustrates the relationship between GovFund and bank financial performance. Government funds provide an exogenous source of liquidity that can affect ROA and intermediation efficiency (LDR) both directly and with a lag. Control variables such as NPL, BOPO, and DPF capture bank-specific characteristics that moderate the response to additional liquidity. The framework emphasizes the dual nature of liquidity relationships: additional funds may accelerate credit growth and enhance profitability, yet the realized relationship depends on internal bank policies, risk management practices, and the bank's ability to transform liquidity into productive lending.

Visualization of Coefficient Relationships

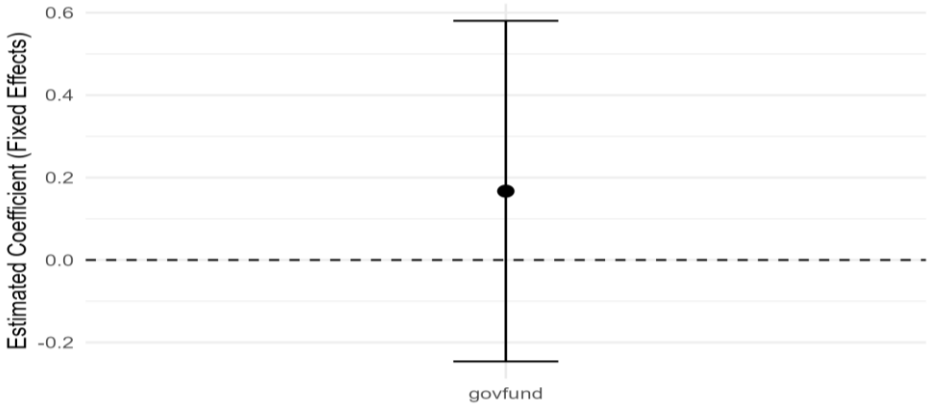

Figure 2. Coefficient Plot of Government Fund Placement
Source: Data processed by researchers (2025)

Figure 2. Coefficient Plot of Government Fund Placement reinforces the numerical findings presented in Table 1. In the model without a lag, the GovFund coefficient is located close to the zero line, indicating an insignificant contemporaneous relationship, whereas the lagged coefficient (t−1) shifts in a positive direction and approaches statistical significance, signaling the presence of a delayed relationship of government fund placement. This visualization facilitates a clear distinction between immediate and lagged responses, while emphasizing that the benefits of government funds materialize only after

banks adjust their asset allocation and intermediation strategies. These findings are consistent with prior studies highlighting both short-term and delayed liquidity relationships on bank performance (Acharya & Mora, 2015; Wray, 2023a). Accordingly, Figure 2 visually supports the numerical interpretation of Table 1, enabling readers to grasp the dynamics of GovFund relationships without repeatedly referring back to the table.

Robustness Check of GovFund Relationships

Model Specification	Dependent Variable	Govfund Coefficient	Significance	Direct of relationship
Model 1	ROA	Small Negative	Not significant	Weak
Model 2	NIM	Negative	Significant (5%)	Moderate
Model 3	ROA (Govfund t−1)	Positive	Marginal (10%)	Lagged

Note: All models are estimated using fixed-relationships panel regression with robust standard errors (HC1).

Source: Data processed by researchers (2025)

To ensure the robustness of the main findings, Table 2 presents the results of robustness checks examining the relationship of GovFund on bank performance using alternative model specifications. The analysis indicates that the relationship of government fund placements varies across performance indicators and time horizons. For ROA (Return on Assets), the GovFund coefficient is negative but small and statistically insignificant, suggesting that government fund placements do not immediately enhance asset profitability within the same period. In contrast, for NIM (Net Interest Margin), the coefficient is negative and significant at the 5% level, indicating pressure on net interest margins due to additional liquidity, which implies that banks tend to retain part of the funds or adjust their lending strategies in ways that reduce NIM. The lagged analysis shows that ROA with GovFund in the previous period (t−1) yields a positive and marginally significant coefficient at the 10% level, indicating that the benefits of government fund placements materialize only after banks adjust their asset portfolios and intermediation strategies.

These findings confirm that the relationships of GovFund are dynamic and depend on both the performance indicator and the observation period. The contemporaneous relationship on ROA is weak, the relationship on NIM is moderate and significant, while the lagged relationship on ROA is positive, highlighting heterogeneous bank responses to additional liquidity. The results are consistent with prior studies (Amin et al., 2021; Koroleva et al., 2021) and support the recommendations of the Ministry of Finance (2025) that the effectiveness of government fund placements is enhanced when they are implemented in a targeted and selective manner, taking into account banks' balance sheet profiles, risk levels, and lending capacities.

Visually, the numerical findings in Table 2 are complemented by Figure 3 (Trends in ROA and NIM by bank versus GovFund), which illustrates the evolution of profitability and interest margins over time and distinguishes between contemporaneous and lagged relationships of government fund placements. Accordingly, the robustness checks reinforce the validity of the main results while strengthening the interpretation of liquidity dynamics in the context of Indonesian state-owned banks.

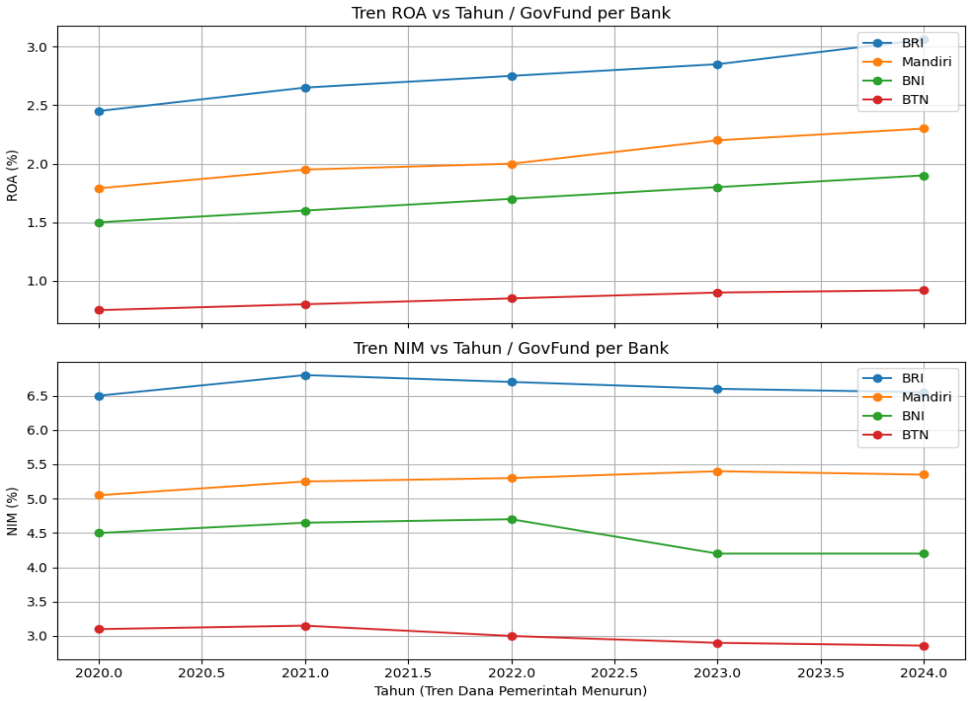

Figure 3. Trends in ROA and NIM by Bank versus GovFund (2020–2024)

Source: Data processed by researchers (2025)

Figure 3. Trends in ROA and NIM by Bank versus GovFund (2020–2024) illustrates the evolution of ROA and NIM across four major Indonesian state-owned banks—BRI, Mandiri, BNI, and BTN—during the observation period. ROA exhibits a gradual increase following periods of high government fund placement, indicating the presence of a lagged relationship on asset profitability, consistent with the findings of Garr and Awadzie (2021) and Ghani and Hossain (2023). In contrast, NIM declines as government fund placements decrease, reflecting pressure on interest margins. This pattern aligns with evidence reported by Bairagi and Muhammad (2021) and BPS (2023), which highlights constrained household purchasing power as a limiting factor for the relationshipive transmission of liquidity into lending activities. Overall, the figure reinforces the interpretation of GovFund as a dynamic liquidity instrument whose relationships materialize over time rather than as an instantaneous response in bank performance.

The synthesis of results indicates that the contemporaneous relationship of GovFund on ROA is relatively weak and statistically insignificant, in line with Nguyen et al. (2022) and Ivashina et al. (2022), while the direct relationship on NIM is negative and significant, signaling a trade-off between additional liquidity and intermediation margins (Robatto, 2023; Sapriza & Temesvary, 2024; Garr & Awadzie, 2021). The lagged relationship on ROA is positive and marginally significant, confirming that banks require time to adjust intermediation strategies and transform liquidity into productive assets (Amin et al., 2021a; Berger & Bouwman, 2009). These findings integrate insights from financial intermediation theory, agency theory, and the risk–return trade-off framework, as well as empirical literature on bank heterogeneity and the effectiveness of government fund placements (Bernanke & Gertler, 1995; Acharya & Mora, 2015; Ministry of Finance, 2025; Bairagi & Muhammad, 2021). Collectively, the results emphasize that fiscal effectiveness critically depends on banks' balance sheet readiness and credit absorption capacity, underscoring the need for more selective and targeted government fund placements to maximize credit relationship.

Accounting and Financial Policy Implications

These findings demonstrate that government fund allocation affects the financial performance of state-owned banks, particularly ROA and NIM, with lagged relationships on profitability. From an accounting perspective, this underscores the importance of transparent recognition and disclosure of exogenous liquidity sources. Banks should clearly report how government funds are transformed into productive assets and how they affect interest margins, enabling stakeholders to assess intermediation effectiveness and liquidity management strategies (Liu et al., 2025; Alslaibi et al., 2025). From a financial policy standpoint, the results highlight the need for fund placement planning that considers bank performance and financial system stability, rather than focusing solely on the volume of funds deployed (Alfrijat et al., 2025).

Academically, this study extends accounting and financial management theory by highlighting the linkage between government liquidity and bank performance. The findings underscore the importance of integrating liquidity-related information into profitability assessment and risk measurement, thereby making financial reporting practices more responsive to external factors that influence returns and the risk–return trade-off (Esha et al., 2025; Juanda et al., 2025).

Despite being limited to four state-owned banks over the 2020–2024 period, this study employs a fixed-relationships model with robust standard errors and key control variables (LDR, NPL, BOPO, and DPK) to mitigate bias arising from cross-bank heterogeneity and external influences. This strategy enhances the internal validity of the results, ensuring their relevance for accounting decision-making, risk management, and financial policy formulation, even with a relatively small sample size (Liu et al., 2025; Alslaibi et al., 2025).

CONCLUSION

Based on the research findings, government liquidity placements affect the financial performance of Indonesian state-owned banks in a dynamic manner: the contemporaneous relationship on asset profitability (ROA) is relatively weak, net interest margins (NIM) decline in the same period, and the positive relationship on ROA emerges only with a lag after banks adjust their asset allocation and lending strategies. These results indicate that additional government liquidity does not automatically enhance bank performance but instead requires time and strategic management to be transformed into productive credit. The study addresses its research objectives by confirming that government fund placements play a role in strengthening banks' intermediation capacity, influence profitability in the short and medium term, and carry important implications for bank management and fiscal policy formulation in maintaining financial system stability.

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