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BANK LIQUIDITY: THE RELEVANCE OF COMMERCIAL LOAN THEORY IN THE CONTEXT OF INDONESIAN BANKING INSTITUTIONS

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Abstract *This study investigated the effect of leverage, profitability, and firm size on the liquidity of banking firms listed on the Indonesia Stock Exchange (IDX), with a focus on the moderating role of firm size. A quantitative approach was employed, and the population consisted of banking companies listed on the IDX from 2020 to 2024. Purposive sampling produced a sample of 235 analysis units. Data were collected using documentation techniques and analyzed using panel data regression and moderated regression analysis (MRA). The findings revealed that leverage had a significant negative effect on liquidity, supporting the principles of Commercial Loan Theory, which emphasized maintaining liquidity through short-term, self-liquidating assets. The results also showed that firm size significantly enhanced liquidity, while profitability had no significant direct effect. Furthermore, firm size positively moderated the relationship between leverage and liquidity, suggesting that larger banks were more resilient to the liquidity risks associated with high leverage. In contrast, firm size negatively moderated the relationship between profitability and liquidity, indicating that larger banks may have reinvested profits into long-term, less liquid assets. This study contributed to the financial management literature by revisiting the relevance of Commercial Loan Theory within the context of Indonesian banking institutions. Also, it addressed a gap in the literature, where previous studies had largely overlooked the moderating role of firm size in the relationship between financial structure and liquidity, particularly in emerging markets. By including firm size as a moderating variable, this research provided a deeper understanding of how internal characteristics influence liquidity risk. Additionally, the use of the quick ratio as a measure of liquidity introduced a more conservative and less commonly used metric in banking studies, offering a methodological contribution to the field.*

Keywords: *Liquidity, Leverage, Size, Profitability, Commercial Loan Theory, Banking.*

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Introduction

In the dynamic landscape of financial institutions, bank liquidity remains a pivotal aspect of operational sustainability and economic stability (Pratama et al., 2023; Putri et al., 2025). Liquidity allows banks to meet short-term obligations and facilitates the smooth functioning of credit intermediation (Lalithchandra, 2021). However, maintaining optimal liquidity is often challenged by a bank's financial structure, particularly its level of leverage and profitability (Chen et al., 2018; Yahaya et al., 2022). These internal financial decisions are further influenced by firm-specific characteristics such as size, which shape a bank's capacity to absorb shocks. Understanding how these variables interact is vital for enhancing risk management and ensuring banking resilience.

Although numerous studies have examined the individual effects of leverage, profitability, and firm size on liquidity, limited attention has been devoted to the moderating role of firm size in these relationships, particularly within emerging markets such as Indonesia. For instance, (Ferreira & Vilela, 2004), in their study on EMU countries, found a negative relationship between leverage and liquidity. In contrast, Al-Homaidi et al. (2020); Opler et al. (1999) reported that increasing leverage ratios enhances liquidity. Similarly, Dang (2020) concluded that leverage positively influences liquidity.

Meanwhile, Shafana (2015) observed that higher profitability led to reduced liquidity, while Ismail (2016) argued that profitable banks tend to be more liquid. Regarding firm size, (Vodová, 2013a)Vodová (2013b) reported that larger bank size negatively affected liquidity. However, El Khoury (2015), in a study on commercial banks in Lebanon, found that larger banks require a greater proportion of liquid assets, suggesting a positive association between firm size and liquidity.

Most prior research has primarily focused on developed economies and relied on broad liquidity measures, which may not accurately capture a bank's capacity to meet short-term obligations. Moreover, the quick ratio, a more conservative and stringent proxy for liquidity, remains underutilized in banking studies. It indicates a methodological gap in the literature and underscores the need for more nuanced analysis, particularly in emerging financial systems.

This study investigates the effect of leverage, profitability, and firm size on bank liquidity, as well as the moderating role of firm size in influencing the relationship between leverage and liquidity, as well as between profitability and liquidity. Leverage is measured using the total debt ratio, while liquidity is captured through the quick ratio, a conservative measure focusing on the most liquid assets. Drawing from Commercial Loan Theory, which advocates for maintaining liquidity through short-term, self-liquidating loans (Diamond & Rajan, 2001). This study hypothesises that higher leverage adversely affects liquidity (Diaz & Pauchet, 2022; Ferreira & Vilela, 2004; Gomez & Vo, 2016). At the same time, profitability and firm size may enhance a bank's liquid asset base (Al-Harbi, 2017; Alagathurai, 2013; Ismail, 2016; Rashid et al., 2017).

The research employs a quantitative approach using secondary data from banking firms listed on the Indonesia Stock Exchange (IDX). A panel dataset is analyzed using multiple regression, enabling the identification of direct and interaction effects among the variables. Incorporating firm size as a moderating variable adds depth to the analysis by highlighting heterogeneity in financial behavior across banks of different scales. The methodological framework is designed to ensure robustness and applicability within emerging market contexts.

Hence, this research makes two key contributions. First, it fills a literature gap by examining the moderating role of firm size in the leverage–liquidity and profitability–liquidity relationships, an area that remains underexplored in emerging market settings. Second, it introduces the quick ratio as a liquidity measure in banking studies, offering a conservative and underutilised methodological approach. These contributions extend the application of Commercial Loan Theory and provide practical insights for bank

managers and regulators in formulating leverage policies, managing liquidity risk, and designing growth strategies.

Leverage plays a pivotal role in influencing a bank's financial flexibility and overall exposure to risk (Alter & Elekdag, 2020). Leverage is measured using the total debt ratio (Enekwe et al., 2014). The total debt ratio indicates the extent to which a bank's assets are funded by debt, thereby offering insights into the institution's capital structure. Although elevated leverage may enhance profitability under favourable economic conditions, it simultaneously intensifies financial vulnerability, particularly concerning liquidity. Ruozi et al. (2013) argue that banks with higher debt burdens are more susceptible to liquidity pressures owing to the continuous obligation to service both interest and principal repayments, which may impair their capacity to fulfil short-term liabilities.

Conversely, the quick ratio is a conventional liquidity indicator that measures a bank's ability to settle its short-term obligations using its most liquid assets, excluding inventories and other illiquid components. Although traditionally utilized in non-financial enterprises, the quick ratio remains pertinent in evaluating the short-term solvency of banking institutions. As Chen et al. (2022) noted, a low quick ratio indicates potential liquidity strain, particularly when a significant share of the bank's assets is allocated to long-term loans or illiquid investments. Consequently, institutions with high leverage may demonstrate reduced quick ratios due to diversifying liquid resources toward debt-servicing activities.

This dynamic is consistent with the framework of the Commercial Loan Theory, which advocates that banks should predominantly extend short-term, self-liquidating loans to preserve liquidity (Loo, 2007). The theory underscores banks' need to avoid excessive involvement in long-term lending or borrowing practices that could undermine their liquidity positions (Diamond & Rajan, 2001). Banks adopting a capital structure characterized by high debt ratios frequently invest in longer-maturity or less liquid assets, exacerbating the asset-liability mismatch. Such misalignments diminish liquidity reserves and result in a lower quick ratio, reinforcing the premise of an inverse association between leverage and liquidity.

Empirical evidence further substantiates the negative linkage between leverage and liquidity. Research by (Berger & Bouwman, 2009; Ferreira & Vilela, 2004; Gomez & Vo, 2016) demonstrates that banks with elevated levels of debt financing are more likely to encounter liquidity risk and, consequently, maintain lower liquidity ratios. These findings suggest that the repercussions of high leverage extend beyond heightened financial risk, encompassing diminished operational agility in meeting immediate financial obligations. Based on theoretical foundations and empirical insights, the total debt ratio negatively influences the quick ratio within the banking industry.

H1: Leverage has a negative effect on liquidity.

Firm size has been extensively examined as a key determinant in shaping a bank's financial performance, particularly concerning liquidity management. Larger banks are generally characterized by broader operational scale, more diversified asset portfolios, and greater access to external funding sources, which collectively enhance their capacity to meet short-term financial obligations. According to Vodová (2013), larger banking institutions are more likely to maintain higher levels of liquid assets, as their size affords them better access to interbank markets and funding flexibility. This dynamic suggests a positive association between firm size and liquidity.

The positive relationship between firm size and liquidity aligns with the principles of Commercial Loan Theory, which emphasizes the importance of issuing short-term, self-liquidating loans to preserve a bank's liquidity (Loo, 2007). Large banks, by their scale and institutional sophistication, are more capable of implementing this principle effectively. Their operational capacity enables them to originate and manage a higher volume of commercial loans with shorter maturities and predictable repayment schedules. As posited by the theory, such practices enhance liquidity

by ensuring a steady inflow of cash that can be used to meet short-term obligations (Diamond & Rajan, 2001).

Moreover, large banks benefit from reputational capital and perceived stability, which reduce information asymmetries and increase depositor and investor confidence (Nugraha & Syaichu, 2022). This facilitates more stable deposit inflows and favorable access to wholesale funding markets. According to Beck et al. (2008), larger firms have greater access to external financing and capital markets, enabling them to maintain adequate liquidity buffers even during financial stress. These institutions also tend to have more advanced internal risk management frameworks, enabling more effective monitoring of liquidity positions (Lim & Mei, 2018).

However, it is important to note that the relationship between firm size and liquidity may be context dependent. While some studies have argued that larger banks may take on more risks, potentially eroding liquidity buffers (Berger & Bouwman, 2009), others have found a consistently positive relationship between size and liquidity, especially in more regulated and conservative banking environments (Al-Harbi, 2017; Al-Homaidi et al., 2019; Rashid et al., 2017). Given the theoretical foundations and empirical support, it is reasonable to propose that firm size enhances a bank's ability to maintain short-term liquidity.

H2: Firm size has a positive effect on liquidity.

Profitability is one of the most fundamental indicators of a bank's financial health, often reflecting its capacity to generate internal funding and sustain operations (Soumadi & Aldaibat, 2012). A more profitable bank typically possesses greater flexibility in managing its resources, enabling it to build and maintain higher liquidity reserves (Ismail, 2016). According to Bekhet et al. (2020), more profitable banks can better withstand external shocks due to their ability to accumulate retained earnings, which can subsequently be allocated toward liquid asset holdings. Furthermore, (Ismail, 2016) argue that profitability facilitates the expansion of a bank's financial buffer, thereby supporting short-term solvency.

From the perspective of Commercial Loan Theory, a profitable bank is well-positioned to follow prudent lending practices by focusing on short-term, self-liquidating commercial loans that enhance liquidity (Loo, 2007). Since profitability indicates sound credit practices and effective asset utilization, banks are more likely to maintain a balanced maturity structure between their assets and liabilities. As (Diamond & Rajan, 2001) noted, banks that efficiently convert short-term loans into cash flows fulfil the principles of liquidity management under Commercial Loan Theory and improve their overall financial performance. In this sense, higher profitability reflects past performance and strengthens a bank's ability to generate future liquidity.

Empirical studies further support the notion that profitability positively affects liquidity. For instance, (Pasiouras & Kosmidou, 2007) found that profitable banks in the EU tend to hold more excellent liquidity buffers, particularly under stringent regulatory environments. Similarly, (Bordeleau & Graham, 2010) showed that banks with higher return on assets (ROA) are more capable of absorbing liquidity shocks. Banks that consistently generate strong earnings are more likely to have the discretion to maintain conservative liquidity positions, as evidenced by studies such as (Al-Khouri, 2012; Vodová, 2013b). Together, these findings provide a strong theoretical and empirical foundation for the hypothesis that profitability positively impacts bank liquidity.

H3: Profitability has a positive effect on liquidity.

The interaction between leverage and liquidity in the banking sector has long been a focus of financial stability research. High leverage often indicates increased financial risk, as banks with greater reliance on debt financing face heightened obligations to service interest and principal payments, which may compromise their liquidity (Berger & Bouwman, 2009). However, this negative relationship is not always uniform across banks, as institutional characteristics such as firm size may moderate the impact. Larger banks often possess more substantial

reputational capital and diversified funding sources, which can mitigate the adverse effects of leverage on liquidity (Roulet et al., 2012).

Within the framework of Commercial Loan Theory, banks are advised to maintain liquidity by issuing short-term, self-liquidating commercial loans that ensure predictable cash inflows (Loo, 2007). High leverage can constrain a bank's ability to adhere to this principle due to more significant debt servicing needs, especially when liquidity is tight. However, larger banks are more likely to sustain this traditional lending approach, even under leverage pressure, due to superior resource allocation, market access, and institutional infrastructure (Diamond & Rajan, 2001). Their ability to originate diversified short-term credit products and manage maturity mismatches more efficiently provides a structural buffer against the liquidity constraints imposed by high leverage (Claessens et al., 2013).

Empirical findings support the moderating role of firm size in the leverage–liquidity relationship. According to Vodová (2013), large banks demonstrate more resilience in managing liquidity during periods of financial stress, even when operating under high leverage. Al-Homaidi et al. (2019) show that firm size significantly mitigates the adverse impact of leverage on bank liquidity in emerging markets. In contrast, smaller banks often lack access to stabilising mechanisms, making them more susceptible to liquidity erosion under leverage pressure.

In the Indonesian banking context, this moderating relationship is particularly relevant. Indonesia's banking system is characterised by a duality between large state-owned or foreign-affiliated banks with strong capital buffers and smaller regional or rural banks that often operate with limited funding diversification and face tighter liquidity positions (OJK, 2022). Larger Indonesian banks generally enjoy greater public trust, easier interbank and capital markets access, and more sophisticated asset–liability management systems. These factors may allow them to manage the liquidity risks of high leverage more effectively than their smaller counterparts. Conversely, despite regulatory support, smaller banks remain vulnerable to liquidity shortfalls when exposed to elevated debt levels, especially during macroeconomic stress or volatile capital flows (Bank Indonesia, 2023). These structural differences underscore the importance of examining firm size as a moderating variable in the Indonesian context.

H4: Firm size moderates the effect of leverage on bank liquidity

The relationship between profitability and liquidity in banking is central to the financial stability of financial institutions. Profitability is typically seen as a primary driver of a bank's liquidity position, as higher profits enable banks to retain earnings, which can be used to build liquid asset buffers (Kaur & Silky, 2013). Banks that consistently generate profits are better positioned to meet their short-term liabilities and maintain operational flexibility. However, the strength of this relationship may be contingent on institutional characteristics such as firm size. Larger banks, with more extensive operational and financial infrastructures, are often better equipped to leverage profitability to enhance their liquidity (Pasiouras & Kosmidou, 2007).

Within the context of Commercial Loan Theory, profitability is seen as an indicator of a bank's ability to issue self-liquidating loans that facilitate liquidity management. Commercial Loan Theory suggests banks should engage in short-term, self-liquidating lending to ensure a steady cash inflow supporting liquidity. Larger banks are more likely to utilize profitable operations to extend these short-term loans and manage their liquidity, as they typically have access to broader markets and a diversified clientele (Diamond & Rajan, 2001). In contrast, smaller banks may face more challenges in utilizing profits to support liquidity, as they may lack the same level of market access, risk management tools, and financial scale.

Empirical studies suggest that firm size significantly moderates the effect of profitability on liquidity. As noted by (Vodová, 2013b), larger banks often have better liquidity management systems and greater capacity to convert profitability into liquid assets. Pasiouras & Kosmidou (2007) found

that profitability has a more substantial positive impact on liquidity in larger banks due to their ability to generate stable cash flows and manage liquidity buffers more effectively. On the other hand, smaller banks, which may have less diversified income sources and limited access to external funding, can leverage profitability to enhance liquidity, making them more vulnerable to liquidity pressures (Bordeleau & Graham, 2010).

In Indonesian banking, the moderating role of firm size on the profitability–liquidity relationship is particularly relevant. Indonesia's banking sector is marked by a dual structure consisting of large banks—often state-owned or foreign-affiliated—with strong profitability and market reach, and smaller regional or rural banks with more limited earning capacity and liquidity tools (OJK, 2022). Larger Indonesian banks are generally more capable of channelling their profits into diversified liquid assets, supported by better risk management infrastructure and access to the interbank market. Conversely, smaller banks may experience constraints translating profitability into improved liquidity due to narrower customer bases, higher operational costs, and vulnerability to market fluctuations (Bank Indonesia, 2023). These structural differences make it important to test how firm size moderates the profitability–liquidity linkage in the Indonesian context.

H5: Firm size moderates the effect of profitability on bank liquidity

Method

This study adopts a quantitative research design using panel data regression analysis to examine the relationship between leverage, profitability, bank liquidity, and the moderating role of firm size. The explanatory research aims to test hypotheses derived from theoretical frameworks and previous empirical studies, particularly within the context of Commercial Loan Theory.

This study uses secondary data from the annual financial reports of commercial banks in Indonesia for the period 2020 to 2024. The final sample includes 47 banks, selected using purposive sampling based on the following criteria: (1) banks consistently publishing audited financial statements during the study period, (2) banks with complete data for all variables, and (3) banks not involved in mergers or acquisitions during that time. This study uses a panel data regression model with either fixed or random effects, selected based on the Hausman test. The model specifications are as follows:

$$LIQ_{it} = \beta 0 + \beta 1\, LEV\_it + \beta 2\, PROF\_it + \beta 3\, SIZE\_it + \beta 4\, (LEV\_it \times SIZE\_it) + \beta 5\, (PROF_{it} \times SIZE_{it}) + \varepsilon\_it$$

Results and Discussion

Table 1 shows the hypothesis test results. Leverage (LEV) has a negative and statistically significant effect on liquidity (B = -15053.453, p < 0.001), confirming H1**.** It implies that higher debt ratios are associated with lower quick ratios, indicating that greater reliance on debt financing decreases the bank's liquidity position. Then, profitability (PROF) has a negative but insignificant effect on liquidity (B = -350.412, p = 0.967), suggesting H3 is not supported in this model. Although theoretically, profitability is expected to enhance liquidity, the empirical data do not confirm this relationship at the 5% significance level. Furthermore, firm size (SIZE) positively and significantly impacts liquidity (B = 443.167, p = 0.003), supporting H2. Larger banks have better liquidity positions due to greater financial flexibility and access to diversified funding sources. The interaction term LEV × SIZE **is** positive and significant (B = 848.685, p = 0.017), indicating that firm size moderates the effect of leverage on liquidity. This finding supports H4**,** meaning that the adverse effect of leverage on liquidity is weakened for larger banks. Afterwards, the interaction term PROF × SIZE is negative and significant (B = -29568.348, p < 0.001), suggesting that firm size moderates the relationship between profitability and liquidity but in a negative direction, contrary to the expectation in H5. This result implies that, for larger banks, the positive effect of profitability on liquidity may diminish or reverse, potentially due to different liquidity management practices or capital allocation strategies in large institutions.

Table 1. Hypothesis Test Results

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	848.302	239.901		3.536	.000
	LEV	-15053.453	2078.752	-.722	-7.242	.000
	PROF	-350.412	8478.424	-.003	-.041	.967
	SIZE	443.167	145.855	.529	3.038	.003
	LEV_SIZE	84.685	198.136	.071	.427	.017
	PROF_SIZE	-29568.348	4729.031	-.419	-6.253	.000

a. Dependent Variable: LIQ

Leverage and Bank Liquidity

The regression results reveal that leverage, as measured by the total debt ratio (LEV), significantly negatively affects bank liquidity, which is proxied by the quick ratio. The unstandardized coefficient for LEV is -15,053.453 with a p-value of 0.000, indicating strong statistical significance at the 1% level. This finding confirms Hypothesis 1 (H1), suggesting that an increase in a bank's reliance on debt financing significantly reduces its ability to meet short-term obligations using its most liquid assets.

This inverse relationship can be explained by the financial burden imposed by higher debt levels. Banks with greater leverage are subject to more frequent and larger debt servicing requirements, including interest and principal repayments (Isshaq & Bokpin, 2009). These recurring obligations constrain the bank's liquidity buffer and reduce the availability of liquid resources. As a result, highly leveraged banks may struggle to respond to short-term liquidity needs, particularly in periods of financial stress or market instability. This outcome is consistent with findings from previous studies Diaz & Pauchet (2022), Ferreira & Vilela (2004), and Gomez & Vo (2016) that highlight the liquidity risks associated with aggressive debt structures.

The empirical evidence also aligns with the foundational principles of Commercial Loan Theory**,** which advocates for conservative lending and financing practices to maintain liquidity. According to this theory, banks are expected to issue short-term, self-liquidating loans that mature quickly, enabling the bank to retain liquidity and remain flexible (Loo, 2007). High leverage, however, often requires banks to take on long-term or non-liquid asset positions to match funding structures, thus violating the core assumptions of Commercial Loan Theory. Consequently, banks deviating from this principle by increasing their debt ratios may compromise their liquidity management framework.

The findings underscore the trade-off between risk and return in bank financing decisions. While higher leverage may enhance profitability under favourable conditions, it simultaneously undermines the bank's short-term solvency (Gomez & Vo, 2016). Therefore, the results provide empirical support for Commercial Loan Theory and offer practical implications for risk-averse liquidity management, particularly in volatile financial environments. Banks aiming to preserve liquidity must carefully balance their capital structure to avoid excessive dependence on debt (Diaz & Pauchet, 2022).

Size and Bank Liquidity

The regression analysis reveals that firm size (SIZE) significantly and positively influences bank liquidity, with a coefficient of 443.167 and a p-value of 0.003. This result supports Hypothesis 2 and suggests that larger banks tend to maintain higher levels of liquidity. The positive relationship can be attributed to size's operational and financial advantages, such as diversified revenue streams, better access to capital markets, and enhanced risk management capabilities. This outcome is consistent with findings from Al-Harbi (2017); Al-Homaidi et al. (2019); Rashid et al. (2017).

Larger banks are more likely to have established relationships with wholesale and

retail funding sources, allowing them to secure funding more efficiently during liquidity shocks. Additionally, they may enjoy greater depositor confidence, which reduces the probability of sudden withdrawals and enhances funding stability. This structural advantage helps large banks maintain a consistent liquidity profile, even under fluctuating market conditions.

From the perspective of Commercial Loan Theory, which emphasizes the importance of short-term, self-liquidating commercial loans to preserve liquidity, firm size plays a facilitating role (Loo, 2007). Larger banks are typically more capable of adhering to the maturity matching principle and effectively managing asset-liability duration. Their scale enables them to balance their loan portfolios by offering more short-term credit while maintaining liquidity buffers to meet obligations as they fall due.

Therefore, this finding confirms the empirical role of firm size in enhancing liquidity and reinforces the theoretical foundation provided by Commercial Loan Theory. Large banks' ability to implement conservative liquidity practices and risk diversification aligns with the theory's core premise of maintaining liquidity through prudent lending strategies.

Profitability and Bank Liquidity

The regression model results indicate that profitability (PROF) has a negative but statistically insignificant effect on bank liquidity (B = -350.412, p = 0.967). This result does not support Hypothesis 3 and suggests that, within the context of this study, profitability does not significantly contribute to improving a bank's liquidity position This outcome is consistent with findings from (Akhtar et al., 2011; Patjoshi, 2016; Patrick, 2018). This unexpected outcome may reflect underlying strategic decisions about how banks utilize their profits.

Profitable banks may reinvest earnings into long-term projects, technological upgrades, or expansion plans, which can reduce the portion of profits available for enhancing short-term liquidity. In such cases, profitability may be associated with growth rather than liquidity preservation. This behaviour can limit the availability of liquid assets, even in financially sound institutions, resulting in a neutral or even negative impact on short-term solvency measures such as the quick ratio.

Commercial Loan Theory posits that banks should prioritize short-term, self-liquidating loans to preserve liquidity, and it assumes that financially strong banks are better positioned to do so. However, this assumption may not hold when profits are not reinvested in short-term assets or are allocated to riskier, long-term investment opportunities. This divergence from theory highlights the complexity of modern bank management, where profitability and liquidity are not always aligned.

In conclusion, while profitability is generally perceived as a strength, this study suggests that it does not guarantee enhanced liquidity. The findings imply that a bank's strategic orientation regarding asset composition and reinvestment of profits plays a crucial role in determining whether profitability translates into liquidity resilience, challenging a straightforward application of Commercial Loan Theory.

The Moderating Role of Firm Size on the Relationship Between Leverage and Liquidity

The interaction term between leverage and firm size (LEV_SIZE) is positive and statistically significant (B = 84.685, p = 0.017), indicating that firm size moderates the relationship between leverage and liquidity. Specifically, the adverse effect of leverage on liquidity is weaker in larger banks. It supports Hypothesis 4 and suggests that the scale-related advantages of size can offset the detrimental impact of debt on liquidity.

Larger banks are typically more equipped to manage high levels of debt due to their access to broader capital markets, diversified income streams, and superior reputational standing (Laeven et al., 2014). These factors enable them to absorb financial shocks more effectively than smaller institutions. As a result, even when they carry a significant debt burden, their liquidity position is less likely to

be compromised. This finding is aligned with the Commercial Loan Theory, which posits that banks should maintain liquidity by issuing short-term, self-liquidating loans. Larger banks in Indonesia, such as those categorised as BUKU 4 or KBMI 4 under OJK regulation, tend to exhibit more robust liquidity management frameworks and higher compliance with liquidity coverage ratio (LCR) and net stable funding ratio (NSFR) standards set by Bank Indonesia (OJK, 2023; Bank Indonesia, 2024). These institutions can also sustain high-quality liquid assets and manage maturity mismatches, even in high-leverage conditions.

This result contributes a novel insight to the existing literature by demonstrating that in the Indonesian banking context, firm size functions not only as a buffer against liquidity stress but also as a strategic enabler of regulatory alignment under high leverage. The moderating role of firm size thus reveals an important heterogeneity among banks in emerging markets, where regulatory architecture and market structure play a critical role in shaping liquidity dynamics. By incorporating this moderating variable, the study offers an enriched interpretation of Commercial Loan Theory tailored to the institutional reality of Indonesia's financial system.

The Moderating Role of Firm Size on the Relationship Between Profitability and Liquidity

The interaction term between profitability and firm size (PROF_SIZE) shows a significant adverse effect on liquidity (B = -29,568.348, $p < 0.001$), which is contrary to Hypothesis 5. Instead of strengthening the positive effect of profitability on liquidity, firm size appears to weaken it. This finding suggests that in larger banks, profitability does not necessarily lead to improved liquidity and may even reduce it.

One plausible explanation is that large, profitable banks are more likely to invest in capital-intensive or long-term strategic initiatives, such as international expansion or infrastructure upgrades. While beneficial for long-term growth, these investments may not enhance liquidity in the short run. Additionally, larger institutions may assume that their market position allows them to maintain lower liquidity buffers without immediate repercussions.

In the Indonesian banking landscape, this phenomenon may be influenced by the strategic behaviour of large banks classified under KBMI 3 and 4, which prioritise business model transformation and digital innovation funded by retained earnings or high profits (OJK, 2023). Rather than strengthening liquidity buffers, these profits are often redirected toward strategic investments, fintech partnerships, or inorganic growth, which do not immediately improve short-term liquidity. Furthermore, the current regulatory environment allows larger banks to operate with greater flexibility in liquidity management, especially those with historically strong reputational capital and systemic importance (Bank Indonesia, 2024).

This finding challenges a direct application of Commercial Loan Theory, which presumes that strong financial performance—particularly in larger institutions—will facilitate better liquidity management. In practice, however, profitability may be directed toward objectives not aligned with the theory's liquidity-conserving stance (Shafana, 2015). As such, the adverse moderating effect of size reflects a departure from the traditional liquidity norms promoted by the theory. The result contributes a novel insight by revealing that in emerging markets like Indonesia, firm size may dilute the expected benefit of profitability on liquidity, suggesting a misalignment between performance outcomes and liquidity expectations in large-scale banks.

Conclusion

This study examines the influence of leverage, profitability, and firm size on bank liquidity while exploring the moderating role of firm size. The findings reveal that leverage negatively affects liquidity, indicating that high debt levels reduce a bank's ability to meet short-term obligations. Firm size positively and significantly affects liquidity, reflecting the advantage of scale in maintaining liquid reserves. While profitability does not directly

impact liquidity, firm size moderates the effects of both leverage and profitability, showing that larger banks manage liquidity risks differently.These results are consistent with Commercial Loan Theory, which emphasises the importance of maintaining short-term liquid assets to ensure financial stability. The study contributes to the literature by integrating traditional theory with current banking conditions in an emerging market context. However, the study is limited to listed banks in Indonesia and relies on secondary financial data. Future research could include macroeconomic variables or qualitative analysis to enrich understanding liquidity management strategies.

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