THE IMPACTS OF LIQUIDITY ON FIRM EFFICIENCY AND PROFITABILITY: EVIDENCE FROM VIETNAMESE LISTED FIRMS

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Research purpose:

This study examines the impact of corporate liquidity on profitability and operational efficiency using a panel dataset of the 100 largest non-financial firms listed on the Ho Chi Minh City Stock Exchange (HoSE) over the period 2014–2023.

Research motivation:

The relationship between liquidity, profitability, and efficiency remains inconclusive in prior studies, particularly in emerging economies. Vietnam's dynamic but volatile market provides a unique setting to re-examine this linkage, thereby, offering empirical evidence and practical insights for optimizing liquidity management under macroeconomic uncertainty

Research design, approach, and method:

Panel regression techniques—specifically OLS, Fixed Effects, and Random Effects models—are employed in this study, drawing upon the Trade-off, Pecking Order, Signaling, and X-Efficiency theories. Liquidity is measured by current ratio (CR) and quick ratio (QR). Firm performance is measured by ROA, ROE, NPM and ATR.

Main findings:

While liquidity enhances profitability (ROA, ROE, NPM), it hinders operational efficiency (ATR), representing the costs of idle cash. Leverage has a detrimental impact on profitability while firm size diminishes asset efficiency of assets most likely due to increasingly complex operations.

Practical/managerial implications:

The management of liquidity is essential to enhance profitability, but too much cash may limit efficiency. This research contributes to the literature not only with data from a dynamic transition economy, but it can also help practitioners make informed decisions when operating in the highly volatile environment of an emerging market.

Keywords: *Firm liquidity, Firm profitability, Firm efficiency, Vietnam.*

1. INTRODUCTION

In a time of intense rivalry and fluctuations in the market, establishing a solid financial underpinning is inherently strategic to maintaining continuity and fostering lasting growth. Solvability and the equilibrium of prolonged positive development are determined by liquidity (Nguyen & Dinh Vu, 2017). Therefore, it is important for managers and financial analysts to understand how liquidity affects both efficiency and profitability.

Studies have explored and documented the links among liquidity, efficiency, and profitability, but the results have been inconclusive, and at times, contradictory. Some researchers claim that having enough liquidity contributes to a firm's profitability and overall market value. Gautama et al. (2024) found that higher liquidity improves profitability; Sudiyatno and Suwarti (2022) reported similar evidence for Indonesian firms while noting trade-offs with capital structure; and Samo and Murad (2019) identified positive effects in Pakistan's textile industry. Research on Thai firms during the pandemic (Phunnarungsi, 2024) posits that the effective management of liquid resources is a crucial factor for performance sustainability during such difficult periods. Conversely, other research shows that excess liquidity can reduce efficiency by locking resources into low-yield assets. Albulescu (2020) observed this in the Spanish wine industry, while Sudiyatno and Suwarti (2022) found weaker performance among highly liquid Indonesian manufacturers. These contrasting results underscore the importance of considering optimal, rather than maximum, liquidity.

The Vietnamese context offers a distinctive environment to re-examine this issue. Unlike many other emerging economies, Vietnamese enterprises are highly dependent on bank financing. In 2024, the credit-to-GDP ratio reached 135%, while the bond market remained dominated by commercial banks, which accounted for 70–80% of outstanding bonds. At the same time, alternative financing channels such as Fintech, peer-to-peer lending, and smart contracts remain underdeveloped due to the lack of a comprehensive legal framework. These structural features create significant challenges in managing liquidity risks and non-performing loans. In addition, the country's corporate landscape—comprising equitized state-owned enterprises, dynamic private corporations, and foreign-invested firms—reflects diverse ownership structures and working-capital practices that shape liquidity management in different ways.

Contradictory findings are previously reported from Vietnam as well. K.Q.T. Nguyen et al. (2024) found that liquidity hurt profitability in the post-COVID-19 recession, while T.T.C. Nguyen et al. (2013) found that liquidity and efficiency had positive influences on the profitability of listed companies. These inconsistencies call for an assessment within an institutional setting and to address why liquidity can be profitable and non-efficiency-promoting at the same time. This study adds to the literature by reconciling conflicting findings in previous studies and offering new evidence about how liquidity affects profit and efficiency under the specific institutional environment of Vietnam.

In the present work, the analysis centers on the interconnection between liquidity, efficiency, and profitability in the context of Vietnamese publicly listed corporations. Using the panel of the 100 largest corporations by market capitalization on the Ho Chi Minh Stock Exchange (HoSE) for the 2014-2023 period. Focusing on systemically significant entities, it sheds clear light on how large players in an emerging market deal with the trade-offs involved in liquidity, providing both theoretical development as well as practical outputs.

Theoretically, this research adds empirical evidence to frameworks such as the Trade-off, Pecking Order, Signaling, Cash Conversion Cycle, and X-Efficiency theories. It highlights liquidity's role in balancing costs, signaling strength, allocating capital efficiently, and shaping operational performance in a transition economy. The results reaffirm the vital importance of liquidity in maintaining firm performance while alleviating risks during volatile conditions, in line with Al-Najjar and Belghitar (2011) and Zaitoun and Alqudah (2020), and provide a further extension in the context of Vietnam's emerging market.

Liquidity is assessed via the current and quick ratios, while firm efficiency and profitability are represented by indicators such as ROE, ROA, NPM, and ATR. Results indicate that liquidity has a positive contribution to profitability ratios (ROE, ROA, NPM) but shows a negative relationship with efficiency ratios (ATR). The study emphasizes that liquidity management is important to balance profitability and efficiency of asset utilization.

The organization of the paper is as follows. Section 2 reviews prior literature and outlines the hypotheses. Section 3 describes the dataset, variables, and methodology. Section 4 presents and interprets the empirical findings. Finally, Section 5 summarizes the key conclusions, implications, and possible recommendations for future research.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Theoretical background

2.1.1 Definition of key concepts Firm's liquidity

Liquidity signifies a company's capacity to satisfy short-term obligations utilizing existing resources (Alarussi & Alhaderi, 2018). Liquidity indicators are very strongly correlated to overall financial success, as they signify the amount of available funds to keep the company active (Pattiruhu & Paais, 2020). A lack of sufficient liquidity not only creates issues with financial planning but also threatens the ongoing existence of the company (Madushanka & Jathurika, 2018). Liquidity is primarily assessed by indicators such as the Current Ratio, Quick Ratio, Cash Ratio, and Operating Cash Flow Ratio, where high levels are viewed by investors as positive (Amin et al., 2022). The Current Ratio and Quick Ratio,

in particular, are the most prevalent tools, both serving to indicate a firm's ability to repay short-term debt obligations using liquid assets (Ross et al., 2020). The Current Ratio measures how well a company can cover its short-term liabilities with its current assets, and larger ratios would indicate greater financial health (Dana and Ardianti, 2021). The Quick Ratio provides a more conservative assessment of liquidity because it excludes inventories (Azra et al., 2024). Evidence for this ratio comes from studies using Indonesian manufacturing firms, which found that it positively was a significant predictor of NPM and ROA (Pandeirot et al., 2022). In summary, these ratios demonstrate the value of liquidity to fulfill near-term financial obligations and continue operations.

Firm Efficiency

Efficiency is commonly described as the capability to attain desired results while using the least possible amount of resources. In its simplest form, it refers to the extent to which resources are effectively used in order to achieve a specific goal (Wilson et al., 2018). At the organizational level, efficiency relates to how an organization will use its inputs to produce desired outcomes while minimizing costs. While there are numerous financial ratios for evaluating efficiency, the literature suggests that total asset turnover is the most widely used metric, and is often defined as a measure of the extent to which a firm's assets generate sales (Afza and Adnan, 2007; Gitman, Flanagan, and Hirata, 2015; Tugas, 2012). A higher turnover typically indicates good efficiency, as it implies the organization is using its resources efficiently, and lower turnover would indicate a lack of management or operational efficiency (Alarussi, 2021). Additionally, having operational efficiency is particularly important, especially for organizations that are striving to become more sustainable and gain a competitive advantage in an organization characterized by a rapidly increasing population and scarce resources.

Firm profitability

Profitability demonstrates the earnings a firm generates from its operational activities, which include production and sales, during a specified period and is generally given as an indicator of financial performance and overall firm performance (Hossain & Alam, 2019; Madushanka & Jathurika, 2018; Panigrahi, 2019).

Profitability indicates how efficiently a firm can convert its resources into income over costs. Profitability can also stimulate the sustainability of performance and stability of finances (Alarussi & Alhaderi, 2018) while also enhancing investor confidence and adding value to the firm (Panigrahi, 2019). According to Alarussi & Alhaderi (2018), profitability is important in the interest of both the long-term financial stability of the firm, and organizational performance in the long run. Profitability can also enhance a firm's value through investor expectations, creating higher stock prices and ultimately resulting in the increased market value in total (Yanti & Darmayanti, 2019). Profitability has strong connections with other financial factors. While Zygmunt (2013) notes that excess liquidity may offset profitability through wasted resources, Hamid & Akhi (2016) suggest a balance of appropriate liquidity and sustainable profitability is critical to overall performance. Bibi & Amjad (2017) and Hossain & Alam (2019) state that profitability can be measured through ROA, ROE, or NPM. Beyond these metrics, it is important to protect profitability to sustain short-term efficiency and ensure ongoing support for the firm's operations.

2.1.2 Theoretical Frameworks

The theoretical basis for this study is based on various financial theories, which provide a foundation for understanding the effects of liquidity on firm efficiency and profitability.

Trade-off Theory

As per the trade-off theory (Modigliani & Miller, 1963; Miller, 1977), firms undergo constant trade-offs between liquidity and profitability, considering the advantages of additional debt and the trade-off between those benefits and the costs of financial distress. Likewise, when managing liquidity, firms will also seek a level of liquidity that will optimize their position to meet obligations and mitigate the cost of financial distress, while additionally weighing the profitability of liquid assets against excessive leverage, which would increase costs and limit flexibility (Orshi, 2016; Hossain & Alam, 2019). Efficient liquidity management boosts day-to-day operations and organizational performance, and contributes to sustainability (Raheman & Nasr, 2007).

Pecking Order Theory

As stated in the Pecking Order Theory (Myers, 1984; Myers and Majluf, 1984), firms have a certain order of preference for financing sources: first, they use internal funding; then, they employ debt; finally, they consider equity, as this reduces the costs of financing and the desire to reveal proprietary information (DeAngelo and DeAngelo, 2007). In less developed financial markets, where transparency is more limited, firms prefer to rely on internal finance more than external finance, which also reinforces the Pecking Order preference (Sheikh & Wang, 2011).

Signalling Theory

Based on Signaling Theory (Ross, 1977), companies can reduce information asymmetries by issuing signals that are observed and interpreted by investors as factors in their decision-making (Dana & Ardianti, 2021). Effective liquidity management is an important signal transparency and trustworthiness, attracting the attention of investors (Hapsoro & Falih, 2020), but excessive liquidity may indicate inefficiency in operations (Fajaria & Isnalita, 2018). The signals emitted

by corporations are influenced by firm size: larger corporations emit more positive signals, while the issuance of debt or equity for cash by smaller corporations is interpreted as a financial distress signal (Indrati & Aulia, 2022).

Cash Conversion Cycle Theory

The cash conversion cycle (CCC) assesses how effectively a company uses its working capital and refers to the time it takes for the business to change raw materials into cash generated by product sales (Gitman, 1974). Previous studies also exhibit that a longer CCC can increase the time it takes a business to recoup capital, cause the business to become less liquid, and reduce profitability; whereas a shorter CCC tends to improve liquidity, efficiency, and financial performance (Jose et al., 1996). The CCC is an important indicator of financial health (Asman et al., 2022) and helps businesses with cash flow, making the best use of assets, and financial consistency.

X-Efficiency Theory

Leibenstein (1966) introduced the X-efficiency theory - an approach to productivity. The theory emphasizes managerial competence and employee motivation as key factors affecting productivity while conceptualizing X-inefficiency as the difference between actual and optimal levels of cost (Leibenstein, 1978). Approaches used to measure X-efficiency are both non-parametric (i.e., Data Envelopment Analysis) and parametric methods (e.g., Stochastic Frontier Analysis) (Walid & Filfilan, 2023). Furthermore, empirical studies support the view that reducing inefficiencies is related to increased outputs while increasing organizational efficiency across various sectors such as banking, agriculture, and education (Tu, 2017; Le et al., 2018; Tran et al., 2023).

Together, these theoretical lenses convey the essential fact that liquidity management can be valuable for a firm's efficiency and potentially also for its profitability. The following theories focus on financing decisions and highlight the theoretical impact of liquidity: the trade-off theory and pecking order theory. The other theories focus specifically on operations: Cash Conversion Cycle Theory, Keynes's Liquidity Preference Theory, and X-efficiency Theory. Finally, signaling theory delves more into the information asymmetry and individual risk implications of liquidity management while helping to inform the framing of risk. In summary, these theoretical perspectives serve to frame the analysis of the efficiency and profitability of Vietnamese listed enterprises in terms of liquidity.

2.2 Firm's liquidity and firm efficiency

The connection between liquidity and efficiency has received more academic attention. High liquidity gives firms the ability to control capital, adjust finances, and act flexibly to increase their stability and profitability (Nguyen et al., 2024). Large cash reserves can hedge against corporate financial distress and can allow firms to remain operational during economic downturns, as proved by the pandemic (Almeida, 2021). While high liquidity can reduce crises, excessive liquidity can also lead to poor allocation of scarce resources, further agency problems, and lower levels of performance, especially in firms with weak corporate governance (Almeida et al., 2014; Agustina et al., 2022; Alarussi, 2021). Overall, the optimal liquidity decision supports the trade-off between financial flexibility and operational efficiency with respect to taking advantage of opportunities, while reducing inefficiencies.

2.3 Firm's liquidity and firm profitability

Numerous studies imply that profitability is associated with liquidity management, as sufficient liquid resources to cover short-term obligations could create the ability for firms to realize investment and expansion possibilities that improve profitability (Hossain & Alam, 2019; Panigrahi, 2019). In support of this view, Madushanka & Jathurika (2018) found that the current ratio positively influences firm profitability, but the relationship is not linear: although a sufficient level of liquidity mitigates risk and increases profitability, too much liquidity can lead to unutilized resources and, therefore, lower returns (Batra & Kalia, 2016; Dahiyat et al., 2021). Additionally, this relationship varies by industry, region, and the liquidity measure used; for instance, while the current ratio and the cash conversion cycle are often positively correlated, the quick and cash ratios are not (Rehman et al., 2015). In fact, several findings reveal that no significant link exists between a firm's liquidity and its profitability (Zaitoun & Alqudah, 2020). In brief, most findings highlight liquidity as vital for profitability when optimally managed, balancing solvency, investment opportunities, and the opportunity costs of idle resources.

2.4 Hypothesis development

Liquidity is a fundamental determinant of corporate operational efficiency, not only in theory but also in practice. Referring to Cash Conversion Cycle (CCC) Theory, effectively managing the cash cycle allows firms to optimize working capital, reduce the time it takes to convert cash out and receive cash back, and maintain ongoing operations. On the other hand, X-Efficiency Theory states that firms that are better at managing internal resources — cash, inventories, and receivables — will be more efficient than firms in similar situations.

These theoretical insights are supported by empirical research. Yazdanfar and Öhman (2014) reported that improved profitability among Swedish SMEs is significantly related to the shorter CCC. This indicates that firms may be able to enhance efficiency by managing working capital more efficiently. In the same way, Nam & Tuyen (2024); Nguyen & Dao (2022) suggested an overall positive effect of liquidity on asset utilization and cost efficiency when looking at manufacturing firms in Vietnam. Also, Li et al. (2020) found that liquidity management is effective and leads to short-

term solvency, reduced financial risk, and the ability to take advantage of a business opportunity when looking at their liquid asset management practices (i.e., accounts and working capital control). Consequently, the study puts forward the hypothesis below:

H1: Liquidity is positively related to firm efficiency

Multiple financial theories highlight the importance of liquidity in affecting a company's overall profitability. Trade-off Theory argues that firms must balance the benefits of holding liquid assets against the costs of potential foregone investment opportunities. Pecking Order Theory supports firms' internal funds as the preferred method of financing, decreasing the reliance on external financing sources, which often result in higher costs. Signaling Theory demonstrates that having sufficient liquidity encourages a signal to investors of the financial strength of the firm, thus raising value. These views are backed up by empirical studies; Vu (2024) focuses on the contribution of liquidity to financial stability, Jaworski & Czerwonka (2021) and Phunnarungsi (2024) highlight the risks of insufficient and excessive liquidity, Nguyen & Pham (2024) demonstrate that optimal liquidity levels, as measured by ROA and ROE, enhance performance during volatile markets, and Ajao and Small (2012) demonstrate that sound capital structure and internal liquidity management enhance profitability. Accordingly, the following hypothesis is proposed:

H2: Liquidity is positively related to firm profitability

3. DATA AND METHODOLOGY

3.1 Data

An empirical study was conducted to examine the influence of liquidity on the operational efficiency and profitability of 100 firms on HoSE listed in the VN100 Index during the period spanning from 2014 to 2023. The data are compiled from audited consolidated financial statements and annual reports, and are extracted from two financial platforms, namely Vietstock and CafeF. Since financial institutions are subject to specific regulations by the State Bank of Vietnam and the State Securities Commission, such as minimum capital requirements, capital adequacy ratios, and risk provisioning standards, the sample did not include financial institutions (banks and securities companies) resulting from their specific business designs, financial structures, and accounting standards, which are fundamentally different from those of non-financial organizations. In this case, the final dataset comprises 844 observations at the firm-year level, covering 100 companies within 10 non-financial industries over ten years.

Table 1. The formula for calculating values of variables

Variables	Index	Measurement	References
		Dependent variable	
Firm profitability	ROA	Net Profit /Total Assets	(Bibi and Amjad, 2017, Justyna, 2013)
	ROE	Net Profit /Owner's Equity	(Alarussi and Alhaderi, 2018, Nguyen et al., 2024a)
Firm efficiency	ATR	Net Sales/Total Assets	(Alarussi, 2021, Nguyen et al., 2024b)
		Independent Variables	
Liquidity	CR	Current Assets/Current Liabilities	(Hossain and Alam, 2019, Sudiyatno and Suwarti, 2022)
	QR	(Current Assets - Inventory)/Current Liabilities	(Masdupi et al., 2018)
		Control variables	
Firm size	Size	Natural logarithm of Total Assets	(Gharios et al., 2024, Alfar et al., 2023)
Leverage ratio	LEV	Total Liabilities/Total Assets	(Gharios et al., 2024, Awad et al., 2023)
Firm age	Age	Natural logarithm of The number of years since firm's equitization	(Nguyen et al., 2024b, Alfar et al., 2023)
GDP growth	GDP	GDP Growth Rate	(Nguyen et al., 2024b, Alfar et al., 2023)
CPI	CPI	Annual percentage of Consumer Price Index	(Nguyen et al., 2024a, Gharios et al., 2024)

Firm profitability is most often evaluated by employing three key measures: ROA, ROE, NPM. ROA reflects how effectively a firm utilizes its assets to produce earnings (Al-Matari et al., 2014), ROE represents the efficiency of a firm to use shareholders' equity to generate profits (Demirgüç-Kunt and Maksimovic, 1999), and NPM reflects the ratio of net earnings to revenue (Brigham and Houston, 2006). These metrics together offer a holistic view of firm profitability under varying operational and financial conditions.

Firm efficiency is proxied by the ATR, which assesses how effectively a company can convert its total assets into revenue. Higher ATR scores signify effective asset management and operational effectiveness.

In this study, the liquidity of firms—the main explanatory variable—is represented as the current ratio (CR) and quick ratio (QR), which are both generally accepted as standard measures of short-term financial health. Liquidity management, while recognizing the opportunity costs of holding cash, is important to the solvency of the firm. Firms will have more capacity to take advantage of investment opportunities and reduce risk exposure, as well as maintain steady cash flow (Baños-Caballero et al., 2014) when they have sufficient liquidity.

For the purpose of obtaining reliable estimates, this study includes a panel of firm-specific characteristics and macroeconomic control variables. Firm size (SIZE) is calculated as the natural logarithm of total assets, indicating the size of a firm in its operations and the potential cost efficiency enabled by economies of scale (Titman and Wessels, 1988). Firm age (AGE) is defined as the natural logarithm of years since the firm engaged in equitization.

Leverage ratio (LEV) - that is, the relationship of total liabilities to total assets - indicates the level of debt a company must take on. Under the trade-off theory, since borrowing has cash benefits, higher leverage entails a greater chance of bankruptcy and interest costs, which can negatively affect profitability (Frank & Goyal, 2009). Thus, controlling for LEV when analyzing the net effect of liquidity on firm efficiency is important.

The study includes macroeconomic indicators to further disentangle the effect of external environmental variables in addition to firm-level characteristics. GDP growth proxied for cyclical changes in aggregate demand, while CPI controlled for inflationary pressures that may influence input prices and consumer purchasing power (Fama & French, 1988). These controls help disentangle firm-specific effects from macroeconomic influences.

To capture time-specific shocks, particularly those induced by the COVID-19 pandemic, the study introduces period dummies corresponding to the pre-COVID-19 period (2014–2018) and the post-COVID-19 period (2019–2023). Segmenting the data in this manner allows for examining whether the liquidity-performance nexus varies across distinct economic conditions.

3.2 Methodology

Based on prior research, the econometric model is specified as follows:

$$\boldsymbol{Firm\ profitability_{it} = \beta_0 + \beta_1 LIQ_{it} + \beta_2 Z_{it} + \delta_1 Firm + \delta_2 Year + \delta_3 Industry + \varepsilon_{it}} \quad \textbf{(1)}$$

$$\boldsymbol{Firm\ efficiency_{it} = \beta_0 + \beta_1 LIQ_{it} + \beta_2 Z_{it} + \delta_1 Firm + \delta_2 Year + \delta_3 Industry + \varepsilon_{it}} \quad \textbf{(2)}$$

where $Firm\ profitability_{it}$ represents the profitability of firm *i* at time *t*, is measured at the firm-year level using ROA, ROE, and NPM. Similarly, $Firm\ efficiency_{it}$ denotes the operational efficiency of firm *i* at time *t*, proxied by ATR. The key independent variable, LIQ_{it}, captures the liquidity position of the firm, which is quantified through the CR and QR.

Furthermore, Z_{it} encompasses a set of control variables, including firm size, firm age, leverage ratio, GDP growth rate, and CPI, which help account for firm-specific characteristic and macroeconomic conditions influencing firm performance.

Additionally, the model incorporates firm, year, and industry fixed effects to to control for unobserved heterogeneity, temporal shocks, and sector-specific variations, thereby improving the consistency and reliability of the estimated coefficients. The disturbance term εit reflects unobserved firm-level characteristics as well as random errors.

The empirical analysis relies on three econometric models: ordinary least squares (OLS), random effects (REM), and high-dimensional fixed effects (HDFE) regressions to ensure robust and consistent estimation with OLS as the baseline, REM to control for unobserved heterogeneity that is not correlated with the regressors, and HDFE, which is the most stringent specification that accounts for multi-dimensional fixed effects, including firm- and time-specific factors, which would increase the robustness and generalizability of results to other emerging market contexts, such as Vietnam..

4. RESULTS AND DISCUSSION

4.1 Descriptive statistics

Table 2. Summary Statistics. This table displays descriptive statistics of the firms over the period 2014–2023, with incomplete data in the primary regression analysis. At the 1st and 99th percentiles, continuous variables are minimized. Definitions of variables are presented in the Appendix.

Variable	Obs	Mean	Median	Std. Dev.	Min	Max
CR	844	2.407	1.692	2.739	.28	37.2
QR	844	1.578	1.086	1.657	.152	11.422
ROA	844	.094	.06	.176	-.105	1.519
ROE	844	.542	.519	.263	.032	4.683
ATR	844	.768	.607	.678	-.126	4.083
Size	844	8.963	8.961	1.309	5.176	13.412

Age	843	2.494	2.565	.401	0	3.401
LEV	844	1.246	.927	1.523	.006	26.159
GDP	844	6.068	6.94	1.817	2.554	8.124
CPI	844	2.865	3.189	.954	.631	4.085

As seen in the descriptive statistics for the sample firms in Table 1, there are significant variations. The current ratio (CR) shows a mean of 2.407 and a median of 1.692, indicating clear differences in short-term solvency among firms. When excluding inventories from current assets, the quick ratio (QR) declines to a mean of 1.578 and a median of 1.086, showing weaker liquidity conditions under a stricter measure. With respect to profitability, the net profit margin (NPM) records an average of 0.232 and a median of 0.103, suggesting only modest levels of after-tax return. The return on assets (ROA) averages 0.094 with a central value of 0.06, indicating relative inefficiency in the use of assets. Comparatively, the return on equity (ROE) is significantly higher, with a mean of 0.542 and median of 0.519, potentially driven by financial leverage. Finally, in terms of operating efficiency, the asset turnover ratio (ATR), which shows a mean of 0.768 and median of 0.607, indicating limited effectiveness in using assets. Firm-level characteristics also show variation. Firm size (SIZE) is measured by the natural log of total assets, which averages at 8.963 and has a median of 8.9861, pointing to a fairly balanced distribution. Firm age (AGE) is measured by the natural log of the number of years since a firm was equitized and has mean and median values at 2.494 and 2.565, respectively, which range from zero to upwards of four for the sample includes recently equitized firms. The leverage ratio (LEV) is also measured at a mean value of 0.846 and a median of 0.927, reflecting wide firm-level variation, along with a relatively high level of debt financing among firms in Vietnam. Next, from a macroeconomic perspective, the gross domestic product (GDP) growth rate shows a mean of 6.068% with a median growth rate of 6.94%, which indicates a relatively stable growth pattern over the sample period. Conversely, the consumer price index (CPI) shows a mean of 2.865% with a median of 3.189%, implying inflation was at a modest level throughout the sample.

4.2 Correlation analysis

According to Table 3, a positive association is observed between liquidity indicators (CR and QR) and profitability measures (ROA and ROE). The association is particularly strong for QR, as shown by the coefficients ($r = 0.142$, $p < 0.01$ for ROA; $r = 0.442$, $p < 0.01$ for ROE). With respect to NPM, we do not observe any significant associations ($p > 0.1$). In contrast, negative associations are reported for liquidity ratios and ATR (CR: -0.088; QR: -0.079, $p < 0.05$), which suggests that firms, despite having strong liquidity ratios, generated fewer revenues from their assets than firms that had weaker liquidity ratios

Table 3. The Correlation Matrix. This table presents the correlation matrix for the main variables included in our econometric models. Variable definitions are listed in the Appendix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) CR	1.000											
(2) QR	0.844	1.000										
	(0.000)											
(3) ROA	0.084	0.142	1.000									
	(0.015)	(0.000)										
(4) ROE	0.356	0.442	0.162	1.000								
	(0.000)	(0.000)	(0.000)									
(5) ATR	-0.088	-0.079	0.112	0.028	1.000							
	(0.011)	(0.022)	(0.001)	(0.411)								
(6) Size	-0.233	-0.257	-0.081	-0.269	-0.178	1.000						
	(0.000)	(0.000)	(0.018)	(0.000)	(0.000)							
(7) Age	-0.103	-0.115	0.059	-0.037	-0.052	0.178	1.000					
	(0.003)	(0.001)	(0.087)	(0.280)	(0.134)	(0.000)						
(8) LEV	-0.214	-0.272	-0.105	-0.439	-0.005	0.223	0.005	1.000				
	(0.000)	(0.000)	(0.002)	(0.000)	(0.886)	(0.000)	(0.882)					
(9) Period	-0.103	-0.078	0.054	-0.055	-0.109	0.368	0.370	-0.001	1.000			
	(0.003)	(0.023)	(0.114)	(0.113)	(0.001)	(0.000)	(0.000)	(0.981)				
(10) Industry	-0.028	0.045	0.012	0.084	0.307	-0.154	-0.091	-0.067	-0.077	1.000		
	(0.411)	(0.188)	(0.731)	(0.015)	(0.000)	(0.000)	(0.008)	(0.051)	(0.026)			
(11) GDP	0.053	0.033	0.017	0.041	0.088	-0.144	-0.153	0.014	-0.642	0.030	1.000	
	(0.124)	(0.339)	(0.626)	(0.229)	(0.010)	(0.000)	(0.000)	(0.692)	(0.000)	(0.381)		
(12) CPI	-0.031	-0.008	-0.006	-0.018	0.013	0.036	0.047	0.015	-0.010	-0.015	0.132	1.000
	(0.373)	(0.805)	(0.866)	(0.601)	(0.704)	(0.297)	(0.175)	(0.660)	(0.765)	(0.671)	(0.000)	

4.3 Univariate Tests

The univariate analyses exhibited in Tables 4 and 5 provide initial evidence of how liquidity is associated with profitability and efficiency. In this analysis, the two primary liquidity measures, CR and QR, are of central interest, as well as whether their means differ by firms categorized by efficiency. Firms are categorized as high- or low-efficiency based on their respective measure of efficiency above or below the median. When the categorizations are established, mean CR and QR values are compared using t-statistics to evaluate whether any statistically meaningful differences exist. In this way, the initially univariate tests reveal some evidence for how liquidity is related to firm efficiency.

Table 4. Univariate Tests on Profitability. This table reports the outcomes of single-variable analyses of liquidity measures across firms classified by profitability level. Firms with profitability above (below) the sample median ROA and ROE are assigned to the high- (low-) profitability group. The corresponding p-values are obtained using t-tests under the assumption of unequal variances. Definitions for all variables are reported in the Appendix

	Indicators	High profitability	Low profitability	Difference	p-value
CR	ROA	2.640	2.175	-0.465	0.014
	ROE	3.299	1.515	-1.785	0.000
QR	ROA	1.861	1.295	-0.567	0.000
	ROE	2.277	0.879	-1.399	0.000

Table 4 summarizes the univariate test results for liquidity across firms grouped by profitability (ROA and ROE). Throughout the data, firms within the high-profitability category consistently display stronger liquidity, and most differences are statistically significant at the 1% level. The largest gap is found in ROE (–1.785), which seems to indicate that ROE is particularly sensitive to liquidity. One possible explanation is that greater liquidity reduces friction in financial decisions, allowing firms to deploy internal funds more effectively. The quick ratio also demonstrates clear discrepancies among the groups, highlighting the idea that firms with liquid resources tend to have better performance.

Table 5. Univariate Tests on Effciency. This table displays the results from univariate tests of liquidity measures classified as high and low efficiency using the asset turnover ratio (ATR) as the cutoff at the sample median. The p-values reported are based on t-tests of unequal variance. Variable definitions can be found in the Appendix.

	Indicator	High efficiency	Low efficiency	Difference	p-value
CR	ATR	2.217	2.597	0.380	0.044
QR	ATR	1.613	1.578	0.071	0.349

As reported in Table 5, univariate analyses were conducted to assess liquidity differences across firms, with relative efficiency determined by the asset turnover ratio (ATR). Low-efficiency firms have a significantly higher CR (2.597) than high-efficiency firms (2.217), suggesting that firms with large liquidity cushions (higher CR values) may not be more efficient at turning their assets into revenue ($p = 0.044$).

In contrast, the Quick Ratio (QR) exhibits little difference between the two groups (1.578 vs. 1.613), and the difference fails to reach statistical significance ($p = 0.349$). The finding further implies that inventory may partly account for the negative association observed between CR and ATR, since the CR incorporates inventories while the QR does not.

4.4 Main results

4.4.1 The relationship between firm liquidity and firm profitability

In this section, regression estimates are provided as the baseline results. We implemented three econometric models (OLS, HDFE, and RE) to assess the linearity of corporate liquidity and profitability. To measure profitability, we used ROA, ROE, the results of which are summarized in Tables 6, 7, and 8.

Table 6. Regression Result of ROA. In Table 6, regression estimates are reported to evaluate the link between liquidity and profitability, with ROA as the dependent variable. Liquidity is proxied by the CR and QR, which are incorporated individually in different model specifications. To help mitigate the risk of omitted-variable bias, controls are included for firm-specific characteristics (age, size, and leverage) as well as macroeconomic conditions (GDP growth and consumer price inflation), together with year, industry, and firm fixed effects. Robust standard errors are reported in parentheses below the coefficients, and clustered at the firm level, adjusted for heteroskedasticity. Across all regressions, ROA remains the dependent variable, and significance is indicated by ***, **, and * corresponding to the 1%, 5%, and 10% levels, respectively. The Appendix

provides detailed definitions of all variables.

	OLS		HDFE		RE	
	(1)	(2)	(3)	(4)	(5)	(6)
CR	0.004**		0.002		0.002	
	(0.049)		(0.398)		(0.288)	
QR		0.011***		0.003		0.008*
		(0.001)		(0.461)		(0.073)
Age	0.013	0.016	-0.012	-0.012	0.005	0.006
	(0.280)	(0.191)	(0.666)	(0.652)	(0.676)	(0.621)
Size	-0.012**	-0.011**	-0.023*	-0.024*	-0.015*	-0.014*
	(0.034)	(0.048)	(0.066)	(0.065)	(0.079)	(0.089)
LEV	-0.008***	-0.007***	-0.004	-0.004	-0.005**	-0.005*
	(0.007)	(0.022)	(0.177)	(0.178)	(0.059)	(0.083)
GDP	0.010	0.010	0.009	0.009	0.009	0.009
	(0.117)	(0.119)	(0.116)	(0.114)	(0.190)	(0.188)
CPI	-0.002	-0.003	-0.006	-0.006	-0.005	-0.005
	(0.631)	(0.587)	(0.298)	(0.293)	(0.350)	(0.341)
Constant	0.065	0.046	0.294***	0.295***	0.142*	0.131*
	(0.294)	(0.437)	(0.004)	(0.003)	(0.063)	(0.077)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	843	843	807	807	843	843
R-squared	0.0519	0.0575	0.4148	0.4148	0.0446	0.0500

Results presented in Table 6 suggest that higher levels of liquidity are, on average, connected with stronger profitability, as captured by ROA.The two liquidity indicators—current ratio (CR) and quick ratio (QR)—are introduced alternately in the OLS, HDFE, and RE models.

The OLS results reveal that the CR coefficient (0.004, p = 0.049) is both positive and significant at the 5% threshold , suggesting that higher liquidity levels contribute to improved profitability. Nonetheless, this effect becomes statistically insignificant under the HDFE and RE models, implying that the influence of CR may be sensitive to unobserved firm-level heterogeneity.

In comparison, QR persistently exhibits a positive association with ROA. Within the OLS specification (Column 2), QR attains significance at the 1% threshold (coefficient = 0.011, p = 0.001), underscoring that a greater proportion of liquid assets is associated with enhanced profitability. Although the QR coefficient remains positive in both the HDFE (Column 4) and RE (Column 6) models, its statistical significance weakens—being only marginally significant in the RE model at the 10% level (coefficient = 0.008, p = 0.073) and insignificant in the HDFE model, likely due to stricter controls for unobserved heterogeneity.

Overall, while all models point to a favorable association between liquidity and profitability, only selected results reach conventional levels of statistical significance—particularly those involving QR as the liquidity proxy, offering stronger support for the argument that that enterprises possessing higher levels immediately accessible liquid assets enjoy greater profitability. These results lend empirical support to several theoretical frameworks, including the Trade-off Theory, the Pecking Order Theory, and the Signaling Theory, which suggest that higher liquidity not only improves a firm's ability to rely on internal funds but also provides favorable signals of financial soundness and management quality to external stakeholders. Moreover, the evidence aligns with the empirical evidence by (Nguyen et al., 2024), (Hossain and Alam, 2019), and (Samo and Murad, 2019).

Regarding the control variables, firm age does not show statistical significance in any of the models, indicating a lack of

conclusive evidence for an association between firm maturity and profitability within this sample. Negative and significant at the 5% and 10% thresholds, the relationship between firm size and ROA appears consistently across all specifications, as would be consistent with the idea that larger firms encounter diminishing returns to scale or greater bureaucratic inefficiencies. Across the OLS and RE models, financial leverage (LEV) exerts a negative and significant influence, but is less pronounced in HDFE, confirming that debt financing undermines profitability in line with past findings. Meanwhile, macroeconomic indicators (GDP growth and CPI) are found to be statistically insignificant across all model specifications, suggesting that firm-level profitability during the period under study was driven more by internal financial metrics than by broad economic conditions.

Table 7. Regression Result of ROE. Displayed in Table 7 are the regression estimates examining the impact of liquidity—using CR and QR—on ROE. In other specifications, liquidity is included separately, firm-level controls (age, size, leverage), as well as macroeconomic variables (GDP growth, CPI), firm fixed effects, year, and industry fixed effects. Standard errors that are corrected for heteroskedasticity and clustered at the firm level are shown in parentheses below coefficients. Descriptions for the variables and notation for statistical significance can be found in the Appendix.

	OLS		HDFE		RE	
	(1)	(2)	(3)	(4)	(5)	(6)
CR	0.024***		0.013***		0.024***	
	(0.000)		(0.007)		(0.000)	
QR		0.051***		0.031***		0.051***
		(0.000)		(0.000)		(0.000)
Age	0.002	0.012	0.048	0.045	0.003	0.012
	(0.902)	(0.405)	(0.114)	(0.136)	(0.900)	(0.560)
Size	-0.026***	-0.024***	-0.037	-0.038	-0.027**	-0.024**
	(0.006)	(0.008)	(0.248)	(0.239)	(0.016)	(0.017)
LEV	-0.058***	-0.053***	-0.025***	-0.024***	-0.055***	-0.053***
	(0.001)	(0.001)	(0.006)	(0.007)	(0.001)	(0.001)
GDP	0.006	0.006	0.005	0.005	0.006*	0.006*
	(0.120)	(0.109)	(0.234)	(0.205)	(0.096)	(0.092)
CPI	-0.002	-0.003	-0.004	-0.004	-0.002	-0.003
	(0.855)	(0.719)	(0.733)	(0.711)	(0.845)	(0.714)
Constant	0.719***	0.671***	0.738**	0.732**	0.721***	0.671***
	(0.000)	(0.000)	(0.017)	(0.016)	(0.000)	(0.000)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	843	843	807	807	843	843
R-squared	0.3057	0.3380	0.5061	0.5089	0.3056	0.3380

Table 7 demonstrates a statistically significant positive linkage between liquidity and ROE, with CR coefficients ranging from 0.013 to 0.024 and QR coefficients ranging from 0.031 to 0.051. These findings are in line with theoretical expectations that higher short-term liquidity reduces financial risk, enhances operational flexibility, and improves ROE, and echo prior empirical findings reported by(Nguyen et al., 2024), (Amponsah-Kwatiah and Asiamah, 2021), and (Lim and Rokhim, 2021).

Compared with the estimates using ROA, the correlation between liquidity and ROE appears to be stronger and more consistent.

The strength derives primarily from the role of equity as the primary driver of profitability, because sufficient liquidity allows firms to operate without relying heavily on debt, which allows for the leverage of equity returns. In particular, high liquidity allows firms to absorb financial shocks, maintain operations, and protect shareholder value. By contrast, although liquidity also positively influences ROA, the strength and statistical relevance of the relationship are weaker, likely because asset

utilization is shaped by other determinants such as firm size, industry characteristics, or managerial efficiency.

In general, the regression findings suggest a positive relationship between liquidity and profitability, with the magnitude and stability of the relationship depending on the measure of profitability, with the ROE being the most stable and having the largest magnitude. These findings suggest that liquidity does not directly improve operational efficiency or profitability from sales, but primarily supports the company in maintaining financial stability and enhancing shareholder value.

4.4.2 The relationship between firm liquidity and firm efficiency

To examine whether firm liquidity and efficiency are linearly related, we conduct baseline regressions using three specifications: OLS, HDFE, and RE. The outcomes of these estimations are summarized in Table 8.

Table 8. Regression Result of ATR. This table estimates of the linkage between corporate liquidity and profitability, with ATR as the dependent variable, and CR and QR as the primary explanatory variables, entered alternately in the model specifications, alongside firm-specific factors (Age, Size, and Leverage) and macroeconomic variables (GDP growth and CPI), all of which are included in every model, with year, industry, and firm fixed effects but with the coefficient estimates not shown, with standard errors, heteroskedasticity-consistent and clustered at the firm level—are displayed in parentheses below coefficient estimates, and with statistical significance denoted by ***, *, and * at the 1%, 5%, and 10% thresholds, respectively. Definitions of the variables are available in the Appendix.

	OLS		HDFE		RE	
	(1)	(2)	(3)	(4)	(5)	(6)
CR	-0.026***		-0.015***		-0.017***	
	(0.000)		(0.003)		(0.005)	
QR		-0.050***		-0.028***		-0.035***
		(0.000)		(0.003)		(0.001)
Age	0.044	0.036	-0.046	-0.042	-0.001	0.001
	(0.368)	(0.458)	(0.408)	(0.445)	(0.985)	(0.986)
Size	-0.048**	-0.049**	-0.072**	-0.072**	-0.073***	-0.073***
	(0.022)	(0.019)	(0.017)	(0.017)	(0.008)	(0.008)
LEV	-0.024	-0.028*	-0.001	-0.002	-0.003	-0.004
	(0.148)	(0.087)	(0.870)	(0.834)	(0.738)	(0.679)
GDP	0.021	0.021	0.024***	0.023***	0.021**	0.021**
	(0.121)	(0.123)	(0.004)	(0.004)	(0.012)	(0.013)
CPI	0.010	0.011	-0.003	-0.003	-0.003	-0.002
	(0.674)	(0.618)	(0.776)	(0.807)	(0.801)	(0.843)
Constant	0.539**	0.561**	1.434***	1.429***	1.064***	1.060***
	(0.026)	(0.020)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	843	843	807	807	843	843
R-squared	0.3666	0.3688	0.9043	0.9044	0.3339	0.3353

The findings in Table 8 demonstrate a notable negative relationship between liquidity and asset turnover efficiency for each model specification. Current Ratio models report coefficients of –0.026 (OLS), –0.015 (HDFE), and –0.017 (RE), all statistically significant at the 1% level. The Quick Ratio is also negatively related to ATR with coefficients of –0.050, –0.028, and –0.035 all statistically significant at the 1% level. The results not only support the hypothesis but also echo previous research (Agustina et al., 2022; Alarussi, 2021), which argues that firms with an excess amount of liquidity will generally suffer from a lower efficiency of assets due to idle funds or poor cash control.

In terms of control variables, a persistent negative association is found between firm size and ATR across all specifications, with coefficients ranging from –0.048 to –0.073 and significance at the 5% or 1% levels, implying that larger firms might face diminishing returns from asset usage. Conversely, GDP growth is positively and significantly related to asset turnover, with coefficients between 0.021 and 0.024, which suggests that stronger economic performance boosts asset utilization.

To summarize, the findings from this study underscore a notable trade-off between corporate liquidity and asset turnover efficiency. While high liquidity can enhance financial stability, excessively high liquidity levels can constrain the effective use of asset turnover efficiency, suggesting underutilized assets or poor cash management practices. These findings expand the understanding of the liquidity–efficiency relationship in corporate finance and have implications for corporate financial policy design.

4.4.3 Heterogeneous effects of liquidity on firm profitability and efficiency across different periods

For robustness, the study re-estimates the models with data from 2014–2019, deliberately excluding 2020–2023. The disruptions, uncertainty, and structural changes associated with COVID-19 could bias firm-level decisions and outcomes. Restricting the investigation to the pre-pandemic years allows the study to determine if the principal relationships among liquidity, profitability, and efficiency of firms remain in a stable economic environment.

The regression outcomes presented in Table 9 (firm profitability) and Table 10 (firm efficiency) offer compelling evidence in support of the model's robustness. In Table 9, both the current ratio (CR) and the quick ratio (QR) demonstrate a positive and statistically significant association with return on equity (ROE) across all model specifications—namely, OLS, HDFE, and RE. For instance, in the OLS model, CR and QR are associated with coefficients of 0.021 and 0.049, respectively, both significant at the 1% level. This evidence implies that, absence of systemic shocks or heightened liquidity hoarding—as seen during the pandemic—firms with stronger liquidity positions were able to generate higher returns for shareholders. The consistency of these coefficients across models reinforces the argument that liquidity serves not only as a buffer against uncertainty but also as a strategic resource for capital allocation, investment execution, and risk mitigation.

Contrary to expectations, the regression outcomes in Table 10 regarding liquidity and operational efficiency (measured by ATR) are in the opposite direction: in all model specifications, both CR and QR both have negative coefficients (e.g., in the OLS model, the CR coefficient is –0.032 and QR is –0.070, and both are significant at the 1% level, and the coefficients and significance levels are similar in the HDFE and RE estimations), indicating that during relatively stable economic conditions, firms with higher liquidity had lower operational efficiency (perhaps because of the opportunity cost of idle funds, or because of conservative management that preferred to hold precautionary reserves).

Further support for the findings in both tables comes from the control variables. A negative linkage between firm size and ATR is consistently observed, implying a decreased operational efficiency in larger firms. However, the growth of GDP has a strong, positive, and significant effect, emphasizing the role of favorable states of the economy to firm efficiency. While leverage, firm age, and CPI inflation display expected directions with some mixed significance, they did not make substantial changes to the main liquidity–performance relationship.

When considered collectively, the pre-COVID-19 subsample validates the essential results: liquidity remains positively tied to profitability (Table 9), yet negatively linked to efficiency (Table 10), while both relationships are maintained during periods of more stable market conditions. These findings reinforce the interpretation that liquidity plays a dual role: while it enhances financial stability and profitability, it may also come at the cost of reduced operational efficiency when not actively deployed. Thus, maintaining an optimal liquidity balance remains critical for firm performance across economic cycles.

Table 9. Impact of Liquidity on Firm Profitability in the Pre-COVID-19 Period (2014–2019). This table shows regression analyses for examining the relationship between corporate liquidity (proxied by the Current Ratio and the Quick Ratio) and firm efficiency (measured by ROE) for a subsample for the pre-COVID-19 time period (2014–2019), where each model controls capturing firm – specific characteristics (Age, Size, and Leverage) and macroeconomic indicators (GDP growth and CPI), and where ROE is the dependent variable. Levels of statistical significance – 1%, 5%, and 10% - are indicated by ***, **, and, respectively. All variable definitions are included in the Appendix.

	OLS		HDFE		RE	
	Period 0	Period 0	Period 0	Period 0	Period 0	Period 0
	(1)	(2)	(3)	(4)	(5)	(6)
CR	0.021***		0.011**		0.021***	
	(0.000)		(0.044)		(0.000)	
QR		0.049***		0.027***		0.049***

		(0.000)		(0.007)		(0.000)
Age	0.010	0.021	0.025	0.018	0.010	0.021
	(0.637)	(0.262)	(0.667)	(0.749)	(0.724)	(0.401)
Size	-0.025*	-0.022	-0.033	-0.033	-0.025	-0.022
	(0.079)	(0.110)	(0.368)	(0.365)	(0.101)	(0.132)
LEV	-0.045***	-0.042***	-0.021**	-0.021**	-0.045***	-0.042***
	(0.003)	(0.003)	(0.038)	(0.040)	(0.004)	(0.004)
GDP	0.024	0.021	0.038	0.041	0.024	0.021
	(0.365)	(0.431)	(0.380)	(0.343)	(0.374)	(0.446)
CPI	-0.001	-0.003	-0.002	-0.002	-0.001	-0.003
	(0.929)	(0.758)	(0.883)	(0.878)	(0.928)	(0.756)
Constant	0.545***	0.519***	0.519*	0.497*	0.545***	0.519***
	(0.005)	(0.005)	(0.060)	(0.074)	(0.006)	(0.006)
Observations	524	524	497	497	524	524
R-squared	0.2219	0.7552	0.4499	0.4514	0.2219	0.2521

Table 10. The Impact of Liquidity on Firm Efficiency in the Pre-COVID-19 Period (2014–2019). This table provides regression results examining the relationship between corporate liquidity and firm efficiency, measured by the asset turnover ratio (ATR), based on a subsample of the pre-COVID-19 period (2014-2019). The main explanatory variables (CR, QR) are entered alternately across the model specifications; each regression controls for firm-level features (Age, Size, and Leverage) and macroeconomic conditions (GDP growth and CPI). ATR serves as the dependent variable throughout the models. Significance levels of 1%, 5%, and 10% are represented by ***, *, and, respectively.

	OLS		HDFE		RE	
	Period 0	Period 0	Period 0	Period 0	Period 0	Period 0
	(1)	(2)	(3)	(4)	(5)	(6)
CR	-0.032***		-0.016***		-0.018***	
	(0.000)		(0.004)		(0.005)	
QR		-0.070***		-0.038***		-0.042***
		(0.000)		(0.001)		(0.000)
Age	-0.007	-0.023	-0.127*	-0.118*	-0.071	-0.066
	(0.910)	(0.730)	(0.063)	(0.072)	(0.255)	(0.274)
Size	-0.072**	-0.076**	-0.035	-0.035	-0.039	-0.039
	(0.016)	(0.012)	(0.281)	(0.281)	(0.211)	(0.209)
LEV	-0.016	-0.021	-0.003	-0.004	-0.004	-0.005
	(0.406)	(0.247)	(0.711)	(0.680)	(0.676)	(0.633)
GDP	0.029	0.035	0.034	0.031	0.011	0.008
	(0.701)	(0.642)	(0.396)	(0.443)	(0.805)	(0.854)
CPI	0.010	0.013	0.004	0.004	-0.000	-0.000
	(0.697)	(0.603)	(0.738)	(0.722)	(0.972)	(0.997)
Constant	0.805	0.828	1.210***	1.233***	0.917***	0.930***
	(0.153)	(0.138)	(0.000)	(0.000)	(0.010)	(0.009)
Observations	524	524	497	497	524	524
R-squared	0.2906	0.3035	0.9288	0.9293	0.2648	0.2764

In short, the paper's results highlight the dual impact of liquidity on firm profitability and operating efficiency. An increase in the current and quick ratios leads to an increase in profitability (ROE, ROA, NPM); however, it is coupled with a decrease in operating efficiency (ATR). This tradeoff indicates that the Vietnamese firms are using liquidity as an extra measure against shocks, often due to mismanagement of otherwise productive assets. These highlights demonstrate that firms should adopt a liquidity strategy that maximizes profitability, while not sacrificing operating efficiency.

5. CONCLUSION

5.1 Conclusion and Implication

This research investigates how liquidity relates to profitability and firm efficiency, drawing on data from the 100 largest publicly listed companies in Vietnam between 2014 and 2023, which encapsulates the robust economic years and years of upheaval.Based upon 844 firm years, the implications of a two-way relationship between liquidity, profitability, and efficiency are noteworthy; liquidity appears to benefit profitability while simultaneously reducing operational efficiency. Specifically, the current ratio (CR) and the quick ratio (QR) show a clear and significant positive association with profitability, especially with respect to ROE, while the results remain significant with alternative profitability measures such as ROA and NPM. At the same time, liquidity has a significant negative relationship with asset turnover (ATR), suggesting that firms with additional liquidity often do not fully utilize their assets for revenue generation. The observed findings hold uniformly in the years prior to COVID effects and through all years of the sample period, suggesting the trade-off between profitability and efficiency is an ongoing feature of the Vietnamese corporate environment.

Supplementary findings corroborate the assertion that leverage undermines profitability and that firm size negatively correlates with both profitability and efficiency, meaning size does not equate to better performance. The evidence emphasizes the importance of managing liquidity prudently, especially in emerging economies where liquidity can be costly if it is too little or even too much.

Theoretically, the present study advances the corporate finance literature by reconciling inconsistent evidence from previous studies and extending frameworks such as Trade-off, Pecking Order, and X-Efficiency to the context of a transitional, bank-dependent economy. By highlighting the dual impact of liquidity, the study provides novel insights into how firms manage financial resources under both stable and volatile conditions.

From the viewpoint of corporate decision-making, the findings reveal that firms should avoid holding excessive liquidity, which can lock up resources in low-yielding assets and reduce revenues. Instead, managers should target an optimal level of liquidity to maintain profitability while preserving operating efficiency. The relatively weaker impact of liquidity on profitability in non-crisis periods further implies that liquidity policies should be aligned with growth-oriented strategies rather than relying solely on precautionary motives. For policymakers, these results underscore the urgency of developing capital markets and alternative financing channels to reduce reliance on bank credit and enhance corporate liquidity management.

This study underscores the twofold role of liquidity in Vietnam, hence adding to the corporate finance literature on transition economies and also offering practical implications for managers and policymakers in other emerging markets with similar structural constraints.

5.2 Limitations and future research

While this study offers valuable contributions, there are several limitations to consider. First, the research focuses exclusively on the 100 largest publicly listed companies on the Vietnamese stock exchange between 2014 and 2023. As such, the results may not fully capture the variations of small and medium-sized enterprises (SMEs). Second, the study primarily employs OLS, HDFE, and RE regression methods, which may not account for all potential underlying factors or unobserved variables, potentially overlooking important influences. Finally, while we have analyzed the factors affecting liquidity, internal aspects of companies, such as investment strategies and financial management practices, may not have been explored in sufficient depth.

Future research may also be expanded to include small and medium-sized enterprises in the sample and utilize more sophisticated methods, including approaches like dynamic panel estimation or structural equation modeling, to further understand the relationship between liquidity and financial efficiency, or blend quantitative assessments with qualitative inquiry, such as case studies or expert interviews, to capture the impact of non-measurable factors in corporate financial decision-making.

APPENDIX

Variables defination

Variables	Defination
CR	The ratio between current assets and current liabilities
QR	The ratio between current assets (excluding inventory) and current liabilities
ROA	The ratio between net profit and total assets
ROE	The ratio between net profit an owner's equity
ATR	The ratio between net sales and total assets
Size	Natural logarithm of total assets
Age	Natural logarithm of the number of years since firm's equitization
LEV	The ratio between total liabilities and total assets
GDP	The yearly percentage change in the gross domestic product of Vietnam
CPI	The yearly percentage change in the general price level of consumer goods and services

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