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The Impact of Liquidity and Corporate Efficiency on Profitability

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Abstract

This study aims to investigate and determine the trend and extent of the impact of a company's liquidity and efficiency on profitability. Research data is collected on the audited financial statements of Vietnam's top 100 listed companies. Regression models (pooled OLS, FEM, and REM) and necessary tests are used to select the appropriate analysis model. Model defects are overcome by GLS regression. The research results confirm the strong, positive impact of liquidity, company efficiency, and company growth rate on profitability. In addition, the research results also demonstrate a significant negative impact between financial leverage and profitability. This article is the first study to simultaneously address the effects of liquidity and corporate efficiency on profitability. Furthermore, it is the first empirical study applying GLS regression to analyze the impact of liquidity and corporate efficiency on the top 100 listed companies in the Vietnamese market. This market provides an ideal analytical framework because of its heterogeneity in terms of its history of origin and development and its political, cultural, social, and governance characteristics. To make the research results more general, future studies can expand the scope of the survey to all companies listed on the stock market.

Keywords:
Company Efficiency;
Liquidity;
Profitability;
Top 100 Listed Companies;
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1- Introduction

To promote the country's economic growth, in addition to developing small and medium-sized enterprises, most countries focus on developing large enterprises. The performance and competitiveness of a group of large companies can shape business models and economic growth. At the same time, it also impacts the identification of strategic issues such as technological innovation, participation in global value chains, environmental issues, and others. The use of the large enterprise index as a measure of the performance of an industry, field, and economic development, especially in the stock market, is widespread worldwide. Standard & Poor's 500, Fortune 500, Forbes Global 2000, Russell 1000 Index, and FTSE100 Index are examples of rankings of large businesses based on one or more criteria (revenue, profits, assets, or market value).

Profitability refers to an organization's ability to generate profits based on existing resources [1]. Improving business profitability helps create an excellent corporate image for investors, lenders, and state management agencies [2]. Therefore, studying profitability and factors affecting profitability has attracted much research attention. A series of studies have examined the impact of different factors on profitability across various industries, sectors, and countries.

Compared with previous studies, our study has specific differences. First, we investigate and examine the impact of liquidity and efficiency on a company's profitability. Earlier studies on factors affecting profitability, although quite diverse, often focused on the following four groups: (1) The group of studies deals with the impact of internal factors in the enterprise; (2) The group of studies deals with the impact of internal and external factors of the enterprise; (3) The

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group of studies deals with the impact of factors of a particular aspect of the relationship on profitability; and (4) The group of studies deals with factors affecting the profitability of a particular industry or business. Second, to date, there has been no research that simultaneously addresses the effects of liquidity and company efficiency on profitability. Several studies have addressed the individual relationships between each factor and profitability by studying the internal factors influencing financial performance. We hope this study will clarify the extent and trend of the impact of liquidity and corporate efficiency on profitability. Thereby helping managers properly evaluate and have practical solutions on liquidity and asset use to improve profitability. Third, this study was conducted in Vietnam, where there is an emerging economy. Although the Vietnamese economy has achieved specific achievements, the operating efficiency of businesses is not high, profitability is still low, and the efficiency of asset use and liquidity of the enterprise has not met expectations. Improving asset utilization efficiency and enhancing liquidity to improve profitability have recently received much attention from the Vietnamese government. Many seminars and conferences between the government and businesses, with the participation of leaders of the State Bank, ministries, branches, commercial banks, industry associations, and researchers, have been organized. All aim to find solutions to increase businesses' ability to access credit and absorb capital from the economy, enhancing liquidity and operational efficiency [3]. Fourth, our research is limited to Vietnam's top 100 listed companies. These companies play a leading role, leading the Vietnamese economy and contributing mainly to the economy's GDP. The experiences learned from these companies will be valuable and practical lessons for other companies in the economy. This is also reliable information for policy-making agencies.

This study aims to answer the question of whether liquidity and corporate efficiency affect the profitability of leading listed companies in Vietnam. If so, what will be the level and trend of the impact? If so, what will be the level and trend of the impact? To clarify this issue, we surveyed 100 listed companies with the most significant sales and service provision revenue on 2 Vietnam Stock Exchanges (HOSE & HNX) for six years, from 2016 to 2021. We see profitability (measured through Return on Assets - ROA) in companies with high liquidity (measured through Current Ratio - LIQ) and high asset utilization (measured through Total Asset Turnover (TAT) will be higher than the remaining companies. Similarly, we also find that companies with high levels of net working capital (NWC) and TAT have high returns on equity (ROE). Our empirical research results also document a positive, significant impact of the company's growth rate on profitability. At the same time, the study acknowledges the negative and significant impact of financial leverage and the number of years of listing the company on profitability.

Our article contributes to improving knowledge about profitability and its influencing factors. The motivation for the article comes from the context of Vietnam, a country that has just escaped from a command economy and bureaucracy with backward agriculture. Improving financial efficiency becomes even more critical. The Government of Vietnam has just issued Resolution 01/NQ-CP on primary tasks and solutions to implement socio-economic development plans, improve the business environment, promote growth, and improve productivity, quality, and efficiency [4].

Our paper is structured as follows: After the introduction, there is a literature review and hypothesis development. The following Section 3 presents the data, model, and research method. Section 4 includes experimental results and discussion. Finally, Section 5 contains conclusions and recommendations.

2- Literature Review and Hypothesis Development

A company's profitability is an essential condition for the company to survive and develop sustainably in a highly competitive environment. Because of the importance of profitability, it has attracted the attention of many audiences, from researchers, policymakers, and managers to analysts and workers. The topic of profitability and factors affecting profitability have been mentioned in many previous studies. Bidhandi & Valmohammadi [5] and Maaz & Ahmad [6] study the supply chain impact, while Yadav et al. [7] study the influence of company size and growth rate. Yazdanfar & Öhman [8] investigate the effects of the currency conversion cycle, while Essel [9], Dao & Ta [10], and Singh & Bagga [11] examine the impact of capital structure. Although there have been many different studies related to factors affecting profitability, there has hardly been any previous independent research on the effects of liquidity or company efficiency on its profitability.

For liquidity, Chandra et al. [12] asserted a strong and positive relationship between liquidity and profitability when they studied 117 listed companies in Indonesia over seven years (2010–2016). Consistent with this result, Lim & Rokhim [13] acknowledge a close and positive relationship between liquidity and profitability. Their study was conducted in ten pharmaceutical companies listed on the Indonesia Stock Exchange from 2014–2018. Similar results were found in a survey by Jolly Cyril & Singla [14] when they looked at 67 companies in Indonesia over 15 years (2003–2017).

Contrary to the above research results, Alsharari & Alhmoud [15] did not find the impact of liquidity on profitability when researching 28 Jordan Sharia-compliant corporations over the three years of 2013–2015. Similarly, Majumdar [16] and Pervan et al. [17] do not find a significant liquidity relationship to profitability.

Regarding the company's efficiency factor (measured by asset turnover - TAT), most studies have found a positive impact of this factor on profitability. When investigating the effect of factors on profitability at 73 listed construction companies in Vietnam during the period 2008-2015, Le et al. [18] confirmed that companies with high TAT profitability would be higher than companies with low TAT. This result was also found by Samo & Murad [19] when they investigated 40 companies in the textile industry of Pakistan from 2006 to 2016. However, Lim & Rokhim [13] found no significant relationship between TAT and profitability.

Although the results of a few studies are inconsistent, most empirical findings support the view that liquidity and company efficiency positively impact profitability. A company with high liquidity means it has cash and assets that are readily convertible into money. As a result, the company can invest in various profitable opportunities. This enables the company to strengthen its business operations and increase profits. The high level of liquidity also helps the company to conduct transactions more quickly and flexibly, better control financial matters, and maintain financial stability. As a result, the company will have more opportunities to increase its ability to generate profits.

Furthermore, a highly liquid company demonstrates reliability and the ability to meet payments and financial obligations. From there, the company will build trust from suppliers and customers, leading to better business relationships and new business opportunities. This trust and confidence can contribute to increased company profits.

Similar to liquidity, although a few studies do not find a significant impact between firm efficiency and profitability, most empirical studies have also shown a positive relationship between company efficiency and profitability. Company efficiency measures a company's ability to utilize its assets to generate revenue. A high asset turnover ratio indicates that the company uses its assets efficiently. This may include strengthening management and maximising existing assets to generate revenue. When a company uses its assets efficiently, its profitability increases. Asset turnover also reflects the company's business cycle speed. When a company can speed up its business cycle, meaning the time between investing in assets and earning revenue is shorter, it can quickly generate profits. In addition, a high asset turnover ratio is often associated with increased reliability and competitiveness of the company in the market. This could be because the company can create a better quality product or service, which leads to customer trust and increased sales.

Based on the above arguments, the following research hypotheses are proposed:

H_1: *Liquidity has a positive impact on profitability.*

H_2: *Firm efficiency has a positive effect on profitability.*

3- Research Design

3-1- Sample Selection and Measurement of Variables

Research data was collected for six years (2016 - 2021) from audited financial statements of 100 companies with Vietnam's most significant sales and service provision revenue. These are officially listed companies on the Ho Chi Minh City Stock Exchange (HOSE) and Hanoi Stock Exchange (HNX). These audited financial reports are collected directly from websites that ensure reliability, such as: *https://www.hnx.vn/vi-vn/, https://www.hsx.vn/, cophieu68.vn and https://finance.vietstock.vn/*. The collection of research data was carried out through the following steps:

Step 1: Collect financial data from 2016 to 2021 of all companies listed on HOSE and HNX on the database provided at reliable websites (with comparison with financial data published on each company's website). The total number of listed companies in Vietnam as of the time of research (December 31, 2021) is 731 (including 402 companies listed on HOSE and 329 listed on HNX). The initially collected raw data will be automatically transferred into an Excel spreadsheet.

Step 2: Exclude companies with incomplete or intermittent data from 2016 to 2021 and use an Excel command to filter out the 100 companies with the most significant sales and service revenue for inclusion in the study. This ensures that the research data (panel data) is strongly balanced.

Step 3: Use an Excel spreadsheet to calculate the value of ROE, ROA, SIZE, NWC, TAT, LIQ, LEV, AGE, and FRG factors of 100 companies in 06 years (2016-2021). Table 1 presents the formula for calculating the values of the variables.

Table 1. The formula for calculating values of variables

Variable	Calculation formula	Related research
Dependent variable		
Return on Equity (ROE)	Net Income/ Total Equity	[1, 18, 20]
Return on Assets (ROA)	Net Income/ Total Assets	[21–23]
Independent variables		
Current Ratio (LIQ)	Current Assets/ Current Liabilities	[9, 12, 20]
Net Working Capital (NWC)	Current Assets - Current Liabilities	[20, 24, 25]
Total Assets Turnover (TAT)	Total Sales/Total Assets	[9, 12, 20]
Control variable		
Firm's Size (SIZE)	Natural logarithm of Total Assets	[24, 26, 27]
Leverage Ratio (LEV)	Total Debt/Total Equity	[7, 24, 27]
Firm Age (AGE)	Number of years from listing to time of research	[14, 18, 27]
The Firm's Growth Rate (FGR)	(Total assets in $year_n$ - Total assets in $year_{(n-1)}$/ Total assets in $year_{(n-1)}$	[18, 28, 29]

3-2- Research Models

This study measures profitability through two dependent variables, ROA and ROE. Independent variables measuring liquidity include the current ratio (LIQ) and net working capital (NWC); a measure of company efficiency is the total assets turnover (TAT). 04 control variables include company size (SIZE), financial leverage (LEV), company age (AGE), and company growth rate (FRG). The model to measure the profitability of the 100 listed companies with the most significant revenue in Vietnam is determined as follows:

$$P_{it} = \beta_0 + \beta j IC_{it} + \varepsilon_{it} \quad (1)$$

where, P_{it} is represents the profitability (the dependent variable) of bank i at time t (ROA, ROE), IC*it* represents the firm's independent and control variables (LIQ, NWC, TAT, SIZE, LEV, AGE, FRG, IR, GDP), β_0 is a constant term, β_j (j = 1, 9) are correlation coefficients, and ε is an error.

From there, the research model is summarized in Figure 1 as follows:

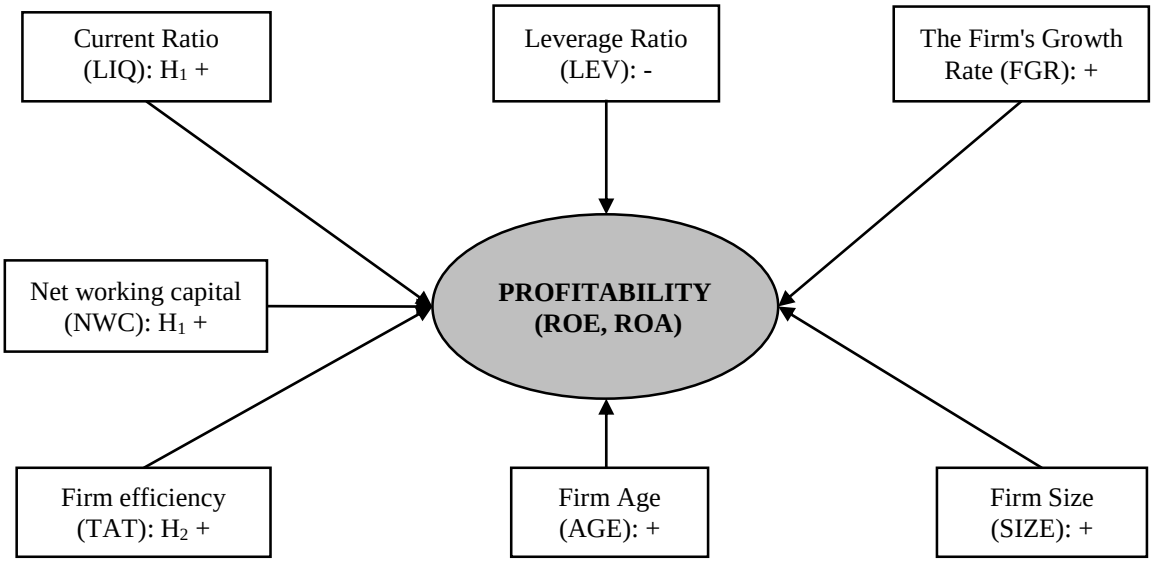

Figure 1. Empirical research model on the impact of liquidity and firm efficiency on profitability

4- Empirical Results and Discussions

4-1- Descriptive Statistics

Table 2 presents the results of descriptive statistics for 06 years, from 2016 to 2021. The results show that the mean ROE of enterprises is 0.1464 with a standard deviation of 0.1113, of which the largest is 0.4988, and the smallest is -0.4548. Similarly, the mean ROA is 0.0677 with standard deviations of 0.0612; the largest is 0.3381, and the smallest is -0.1215. The mean LIQ is 1.5509, of which the largest is 8.8385, and the smallest is 0.2072; the standard deviation is 0.9400. The mean NWC is VND 1,900,902 million; the largest is VND 34,800,000 million; the smallest is VND -23,400,000 million; the standard deviation is 4,505,037. The mean TAT is 1.4371; the largest is 8.2029; the smallest is 0.0238; the standard deviation is 1.1936.

Table 2. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROE	600	0.1464	0.1113	-0.4548	0.4988
ROA	600	0.0677	0.0612	-0.1215	0.3381
LIQ	600	1.5509	0.9400	0.2072	8.8385
NWC	600	1,900,902	4,505,037	-2.34e+07	3.48e+07
TAT	600	1.4371	1.1936	0.0238	8.2029
SIZE	600	15.6738	1.2100	11.9963	19.8730
AGE	600	10.71	3.8714	1	22
LEV	600	2.0719	3.1670	0.0566	27.6430
FGR	600	16.7004	90.9348	-55.7826	2119.316

4-2- Correlation Matrix

Table 3 presents the results of the correlation and multicollinearity tests of the variables in the research model. The correlation matrix results show that ROE has the strongest correlation with NWC (correlation coefficient is 0.1706) and the weakest with FRG (correlation coefficient is 0.0700). ROA has the strongest correlation with LIQ (correlation coefficient is 0.4486) and the lowest correlation with FGR (correlation coefficient is 0.0029). The independent variables have the highest correlation coefficient of 0.5624 (between TAT and SIZE), so multicollinearity is unlikely in the research model. However, the correlation coefficient indicates a two-way relationship between two variables. Regression analysis is performed in the following steps to check the impact of variables on ROE and ROA.

Table 3. Correlation Matrix

Variables	ROE	ROA	SIZE	AGE	TAT	LIQ	LEV	NWC	FGR
ROE	1.0000								
ROA	0.8225	1.0000							
SIZE	-0.0452	0.0149	1.0000						
AGE	-0.0901**	-0.0230	-0.1135***	1.0000					
TAT	0.1445***	0.0606	-0.5624***	0.0083	1.0000				
LIQ	0.1573***	0.4486***	-0.0024	0.0099	-0.0049	1.0000			
LEV	-0.1047**	-0.3182***	-0.0754*	-0.0219	0.1243***	-0.2748***	1.0000		
NWC	0.1706***	0.3110***	0.4579***	-0.0857**	-0.1495***	0.4181***	-0.1611***	1.0000	
FGR	0.0700*	0.0029	0.0143	-0.0166	-0.0313	-0.0286	0.2114***	0.0071	1.0000

* p<0.1, ** p<0.05, *** p<0.01

The analysis results in Table 3 also record the correlation between the independent and dependent variables. This proves that the independent and dependent variables have a cause-and-effect relationship, in which the independent variables act as causes, and the dependent variables are the results. Table 3 also shows the correlation between the independent variables. This result can lead to multicollinearity in the model, and therefore, it is necessary to check for multicollinearity in the next step of the analysis.

Continuing to check the multicollinearity of the model, the results show that the average variance inflation factor (VIF) value is 1.4, the highest is factor SIZE=1.99, and the lowest is factor AGE=1.02. This result helps us confirm that the research model does not have multicollinearity between independent variables.

4-3- Multivariate Regression Analyses

In this step, regression models (Pooled OLS, FEM and REM) are applied to each dependent variable reflecting profitability (ROE, ROA) in turn. At the same time, to select a suitable model for further analysis, the Hausman test is also performed. Hausman test results show that the FEM model is better than the REM model for both dependent variables ROE and ROA because the p-value is less than 5% (p-value = 0.000 < 0.05).

Next, White's test is used to check heteroscedasticity. The results show that both models of the dependent variables ROE and ROA have Prob>chi2 = 0.0000. This proves that the ROE and ROA models have heteroskedasticity. To determine autocorrelation, Wooldridge test is used. The results show that both models of ROE and ROA have Prob > F = 0.0000, proving that both models have autocorrelation.

To overcome the defects of the research model (autocorrelation and heteroscedasticity), we use the Generalized Least Squares (GLS) regression model. GLS regression results are shown in Table 4 (with the ROE dependent variable model) and Table 5 (with the ROA dependent variable model). In addition to the GLS regression results to overcome model defects, for ease of comparison and contrast, Tables 4 and 5 also present the results of the OLS, FEM and REM regression models.

Table 4. Regression results of the dependent variable ROE

	(OLS) ROE	(FEM) ROE	(REM) ROE	(GLS) ROE
SIZE	-0.00475	0.0109	0.00252	0.00287
	(-0.93)	(0.76)	(0.35)	(0.62)
AGE	-0.00243**	-0.0105***	-0.00696***	-0.00196**
	(-2.13)	(-4.91)	(-4.84)	(-2.34)
TAT	0.0147***	0.0322***	0.0226***	0.0234***
	(3.25)	(3.59)	(3.55)	(6.07)
LIQ	0.00742	0.00605	0.00468	0.00393
	(1.36)	(0.76)	(0.73)	(1.02)
LEV	-0.00375**	0.000901	-0.00160	-0.00286***
	(-2.53)	(0.25	(-0.71)	(-2.67)
NWC	4.12e-09***	7.17e-10	1.45e-09	1.83e-09**
	(3.27)	(0.53)	(1.17)	(1.96)
FGR	0.000119**	0.0000919**	0.0000992***	0.0000841***
	(2.42)	(2.55)	(2.79)	(3.35)
_cons	0.212**	0.0270	0.141	0.0788
	(2.44)	(0.13)	(1.19)	(1.04)
N	600	600	600	600
R-sq	0.089	0.093		

t statistics in parentheses; * p<0.1, ** p<0.05, *** p<0.01

Table 5. Regression results of the dependent variable ROA

	(OLS) ROA	FEM (ROA)	(REM) ROA	(GLS) ROA
SIZE	-0.00100	0.000472	0.00411	0.00380*
	(-0.40)	(0.07)	(1.17)	(1.94)
AGE	-0.000306	-0.00336***	-0.00265***	-0.000860**
	(-0.55)	(-3.57)	(-3.90)	(-2.06)
TAT	0.00546**	0.0237***	0.0151***	0.0127***
	(2.46)	(5.98)	(4.97)	(7.54)
LIQ	0.0208***	0.0106***	0.0130***	0.0168***
	(7.79)	(3.01)	(4.34)	(6.62)
LEV	-0.00450***	-0.00251	-0.00379***	-0.00396***
	(-6.18)	(-1.58)	(-3.50)	(-6.25)
NWC	2.22e-09***	4.32e-10	7.19e-10	6.04e-10
	(3.59)	(0.73)	(1.27)	(1.35)
FGR	0.0000427*	0.0000339**	0.0000336**	0.0000535***
	(1.76)	(2.13)	(2.10)	(3.03)
_cons	0.0511	0.0496	-0.00426	-0.0272
	(1.20)	(0.52)	(-0.08)	(-0.83)
N	600	600	600	600
R-sq	0.275	0.126		

t statistics in parentheses; * p<0.1, ** p<0.05, *** p<0.01

Tables 4 and 5 reflect the impact of liquidity, company efficiency, and control variables on the profitability of Vietnam's top 100 listed companies. Table 4 demonstrates the effects of factors on profitability measured by ROE, and Table 5 reflects the impact on profitability measured by ROA.

The factors reflecting liquidity all positively affect profitability but at different levels. Specifically, the current ratio (LIQ) positively affects ROA (coefficient value 0.0168 and significant at 1% level) while having a negligible and statistically insignificant impact on ROE. This result is similar to the studies of Amponsah-Kwatiah & Asiamah [24], Lim & Rokhim [13], Nanda & Panda [21], and Samo & Murad [19]. However, this result did not receive support from

Alarussi & Alhaderi [20], Alsharari & Alhmoud [15], Pervan et al. [17] when they did not find a significant relationship between the current ratio and profitability. On the other hand, this result contradicts the studies of Alarussi & Alhaderi [20], Aregbeyen [25], and Quoc Trung [29] when they found a negative relationship between LIQ and profitability.

The impact of the current ratio on profitability at the top 100 listed companies in Vietnam suggests that when LIQ is well managed, the company has enough cash and can pay debts and other financial obligations, minimizing risks in financial management. This result also recommends companies to promote profitability from their business activities. Positively increasing LIQ by using finance effectively to increase revenue and profits from business activities will make ROA grow faster. This implies that the company has more robust growth and higher profitability from its current assets. Therefore, an increase in LIQ can reduce the debt-to-equity ratio and facilitate the return of capital to shareholders (equity), and therefore, ROA will increase significantly compared to ROE.

Similar to LIQ, increased net working capital (NWC) will also increase profitability. However, unlike LIQ, NWC will have a positive and significant impact on ROE but not on ROA. This result is similar to the studies of Alarussi & Alhaderi [20] and Amponsah-Kwatiah & Asiamah [24], when they found a positive relationship between NWC and profits. However, this result is contrary to the studies of Aregbeyen [25], Muhammad et al. [30], Phuong Dong & Su [31], and Yazdanfar & Öhman [8] when they noted a negative relationship between net working capital and profitability.

The impact of NWC on profitability emphasizes the quality of NWC management and use. A company that can manage NWC more effectively mean it can optimize the use of capital and current assets while reducing excess cash in current assets. This can lead to lower interest rates and increased profits, which in turn increases ROE and ROA. Furthermore, through effective management and use of NWC, the additional equity capital can generate higher profits from a larger scale of business operations. The increase in ROE may stem from the company's rapid growth in strengthening its financial capacity and investing in more profitable activities.

Regarding corporate efficiency, asset turnover has a strong and positive impact at the 1% significance level on ROE (coefficient 0.0234) and ROA (coefficient 0.0127). This result is also similar to the research results of Alarussi & Alhaderi [20], Al-Homaidi et al. [1], Chandra et al. [12], Cyril & Singla [14], Essel [9], Nanda & Panda [21]. The studies by Le et al. [18] and Samo & Murad [19] also recognized similar results. However, some studies have shown opposite results, such as studies by Fairfield & Yohn [32], Reed & Reed [33], and Sell & Stickney [34], when they found an inverse relationship between asset turnover and profitability. The study by Lim & Rokhim [13] also found no significant relationship between TAT and profitability.

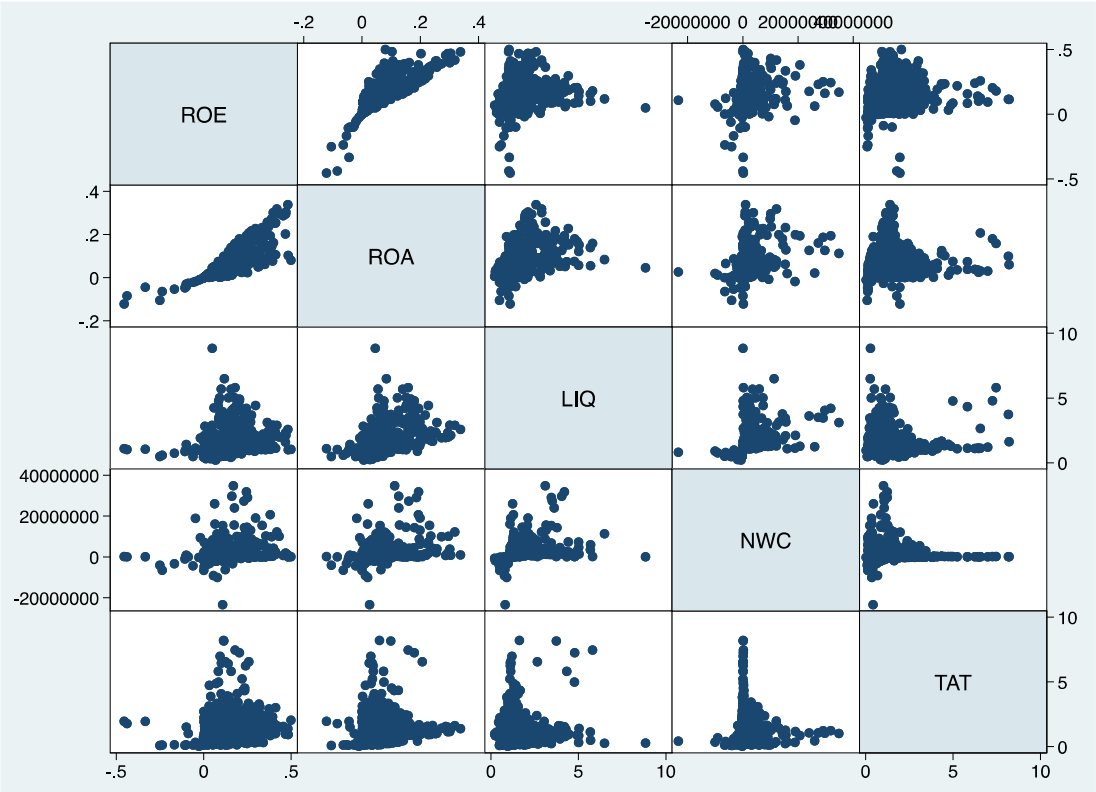

Figure 2. The relationship between liquidity and firm efficiency with profitability

Asset turnover has a strong and positive impact on ROE & ROA, showing that profits will increase when companies use assets effectively and generate significant revenue from certain investments. Thus increasing profitability and

improving both ROE & ROA. Our findings on the impact of TAT on profitability contribute to explaining the reason for investors' excessive concern about company efficiency. The relationship between dependent variables reflecting profitability (ROE, ROA) and independent variables reflecting liquidity (LIQ, NWC), reflecting company efficiency (TAT), is presented in Figure 2.

Regarding control variables, the trend and level of influence of each variable are also not the same. The company's growth rate has a strong and positive impact on profits at the 1% significance level for both ROE and ROA. Other studies support this result as they reveal that the profitability of companies with high growth rates is higher than those with lower growth rates [7, 20, 35–39]. However, this finding is inconsistent with the results of research conducted by Abou Elseoud et al. [40], and Chandra et al. [41], as these studies realized the adverse effects of growth company growth on profitability. This finding explains why investors are often concerned about a company's growth rate.

Financial leverage (LEV) has a negative impact on profitability on both ROE and ROA indicators at the 1% significance level. This finding agrees with most previously published studies when they found a strong, negative impact of LEV on profitability [7, 19, 20, 36]. The negative and significant effect of financial leverage on a company's profitability is due to many reasons. When using financial leverage to increase investment capital, the company must pay high-interest rates or capital rent. If financial costs exceed profits from investment projects, profitability will decrease. Furthermore, when increasing financial leverage, the company also increases financial risk due to the risk of not being able to repay debt or not being able to meet interest and principal payments. This will put pressure on the company, limiting its profitability.

The number of years listed by the company (AGE) has a negative impact at the 5% significance level on ROE and ROA. This result agrees with previous studies, which stated that the profitability of companies established or listed early is lower than that of companies established or listed later [8, 18]. This is contrary to the research results of Xu et al. [42], when they found a positive effect of AGE on profitability. This result also disagrees with previous studies when they found no significant relationship between AGE and profitability [14, 15].

This finding is a warning to companies as they are pressured by competition to grow. It is not true that the older a company is, the more profitable it is by accumulating assets and developing effective management skills and processes. On the contrary, long-standing companies often face challenges such as changing business environments and consumer trends, changing and adapting to the competitive and technological environment, technical challenges, creativity and innovation. The lack of flexibility of older companies can reduce growth and profitability.

Although business size has a positive effect on profitability, it is only statistically significant at the 10% level for ROA. To a certain extent, this finding receives support from previously published studies when they found a positive, substantial and significant impact of company size on profitability [1, 13, 20, 24]. However, this finding does not receive support from the studies of Aslam et al. [43], Ntim [44] and Yadav et al. [7] when they affirm that there exists a significant, negative impact of firm size on profitability.

This finding, on the one hand, points out the characteristics of the research sample, which are the leading listed companies in Vietnam. Because the research sample is all large-scale companies, the scale expansion over time is often insignificant compared to the current scale. Therefore, the impact of this factor on profitability is often less noticeable than other factors. On the other hand, this finding also shows the downside of large-scale companies. As a company grows, it needs more capital to invest in infrastructure, personnel and business processes to meet production and customer service needs. At the same time, as a company increases in size, its management and operations become more complex, which can cause suboptimal performance and reduced profitability. Furthermore, as the company grows, it may lose its flexibility in adapting to the market and changing rapidly. The decision process becomes slower and more complex, reducing profitability in a challenging business environment. However, it is essential to remember that increasing scale can bring long-term benefits to the company by enhancing growth potential, expanding markets, enhancing bargaining power with suppliers and customers, and increasing access to resources and capital. While profitability may not increase significantly immediately, the scale provides opportunities for the company to grow and develop in the future.

The relationship between dependent variables reflecting profitability (ROE, ROA) and control variables reflecting size (SIZE), age (AGE), financial leverage (LEV) and growth rate company (FGR) is presented in Figure 3.

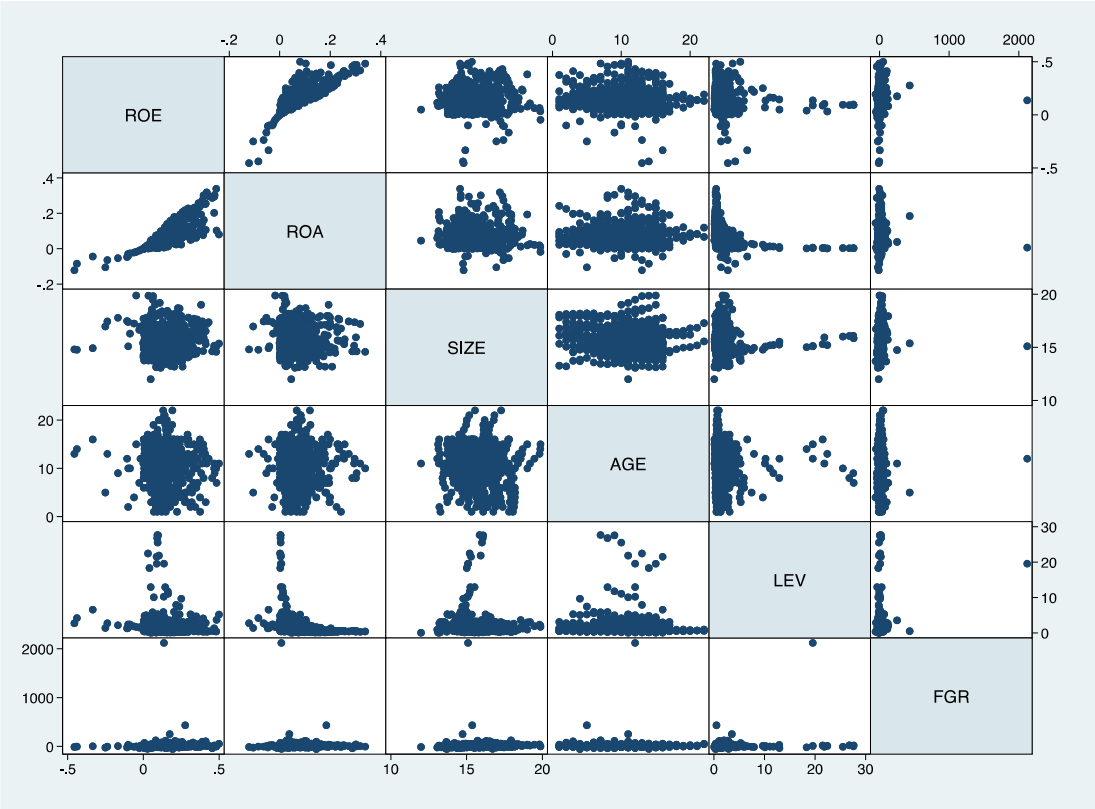

Figure 3. Relationship between control variables and profitability

5- Conclusions and Recommendations

Using a sample of the top 100 listed companies in Vietnam over the period 2016–2021, this study seeks to understand the impact of liquidity and corporate efficiency on profitability. Empirical findings from research show that companies with high efficiency have higher profitability than companies with low efficiency. The study also confirms the positive and significant impact of liquidity on profitability. Furthermore, the study also provides evidence documenting high profitability in high-growth companies. At the same time, the research results also confirm a significant negative relationship between financial leverage and the company's number of years of listing profitability.

This study proposes theoretical and managerial implications for top-listed companies in Vietnam. Theoretically, the study emphasizes the role of liquidity and company efficiency in profitability. Research shows that enhancing current solvency and improving company efficiency play a vital role in maintaining and boosting the profitability of companies. From a management perspective, this study shows that when a company manages its liquidity well, it reduces risks in financial management and increases the confidence of shareholders and lenders. This will help improve the profitability of the company. The study also highlights the positive impact of using assets effectively to generate significant revenue from certain investments on profitability.

Our research adds to the rich diversity of knowledge about the impact of factors on profitability at companies in an emerging economy. First, multi-industry research data is associated with leading listed companies, unlike most previous studies, which are usually associated with all listed companies in one or a few specific industries. On the one hand, this clarifies the impact of factors on the profitability of leading companies. Next, unlike most previous studies mainly conducted in developed countries, this study was conducted in Vietnam, where an emerging economy is just escaping from the command and subsidized economy. Thanks to that, this study overcomes the limitations of previous studies in both space and time.

We also acknowledge some limitations in our study. First, there is a limitation to the research sample. The number of new samples is limited to the top 100 listed companies within an emerging country. This affects the generalizability of the research results and requires cautious interpretation and generalization of the research results. This issue also suggests improving this research in the future by collecting samples from emerging and developed countries. Furthermore, this study only mentioned liquidity, company efficiency, and a few other micro-factors without mentioning industry characteristics and macro-factors. Although these limitations are insignificant, they partly prevent us from concluding similarities or differences in the impact trends, liquidity levels, and corporate efficiency in different financial markets and countries.

6- Declarations

6-1- Author Contributions

Conceptualization, T.T.C.N., A.T.H.L., and C.V.N.; methodology, T.T.C.N., and C.V.N.; formal analysis, T.T.C.N. and A.T.H.L.; writing—original draft preparation, T.T.C.N., A.T.H.L., and C.V.N.; writing—review and editing, T.T.C.N., A.T.H.L., and C.V.N. All authors have read and agreed to the published version of the manuscript.

6-2- Data Availability Statement

The data presented in this study are available in the article.

6-3- Funding

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6-4- Acknowledgements

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6-5- Institutional Review Board Statement

Not applicable.

6-6- Informed Consent Statement

Not applicable.

6-7- Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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