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Analysis The Impact of Liquidity Ratios, Activity Ratios, and Leverage Ratios on Profitability With Firm Size as A Moderating Variable (an Empirical Study of Transportation Sector Companies Listed on The Jakarta Stock Exchange From 2018 To 2022)

Muhammad Akbar, Rahmat Nugraha
Institut Keuangan Perbankan dan Informatika Asia Perbanas, Indonesia
makb1234@gmail.com, rahmat.nugraha61@perbanas.id

ABSTRACT

This study aims to explore not only the direct effects of Liquidity Ratio (Return on Assets), Activity Ratio (Total Asset Turnover), and Leverage Ratio (Debt to Asset Ratio) on profitability but also how firm size moderates these relationships. The data collection method employed in this research is documentation, utilizing data from existing records. Data analysis was conducted using Moderated Regression Analysis (MRA) and processed with SPSS version 25. The findings reveal that the Current Ratio (CR) and Debt to Asset Ratio (DAR) have a positive and significant impact on corporate profitability (ROA). Conversely, Total Asset Turnover (TATO) does not significantly influence ROA, indicating that corporate assets have not been utilized optimally. Furthermore, Firm Size acts as a moderator that strengthens the relationship between liquidity, leverage, and activity ratios on profitability. Larger firms tend to exhibit greater operational efficiency and better resource access, making them more effective in enhancing profitability compared to smaller firms. Firm size is also shown to have a direct impact on ROA.

Keywords: Liquidity Ratio (CR), Activity Ratio (TATO), Leverage Ratio (DAR), Firm Size, Moderated Regression Analysis.

INTRODUCTION

Currently, the development of companies in the era of globalization is taking place very quickly. This is marked by an increase in the number of companies that have sprung up in various sectors, so that competition between business actors has become increasingly fierce. In the face of increasingly fierce business competition, companies need to strengthen their company's foundation to compete with companies engaged in the same sector. Moreover, with economic conditions in Indonesia increasingly uncertain, companies with a long-term vision must be able to cope with and improve the financial health of their companies (Pradista & Kusumawati, 2022).

The financial health of a company is one of the important things to consider in a company. Basically, one of the main goals of establishing a company is to make profits and run its business efficiently and smoothly in order to achieve the company's targets and goals. To achieve high profits, companies must be able to compete with other companies and improve performance so that the profits obtained can be maximized (Nuraini & Suwaidi, 2022). Profitability is an important aspect that must be considered by companies, because the better the profitability, the greater the company's ability to make a profit. This applies to all company sectors in the form of services, trade or manufacturing, including companies in the transportation sector.

Transportation is one of the important sectors that supports people's mobility and has a major impact on the country's economic activities. Transportation plays a significant role in supporting people's economic growth and functions as a means of economic development of a country. Therefore, the success of development in the economic field must be accompanied by the development of a good transportation system (Noviyana, Koranti, Sriyanto, & Wijaya, 2024). Transportation can be divided into three types, namely land, sea, and air transportation. Transportation can be defined as an attempt to move, move, transport, or move an object from one location to another, where in this other location the object is more useful or can be used for certain purposes. Companies engaged in transportation are companies that provide facilities and services related to transportation activities (Pujiati & Melati, 2020).

In 2019, all corporate sectors experienced a very significant decline in financial performance due to the Covid-19 pandemic. This is due to a policy that limits the space for community movement to prevent the spread of the covid-19 virus called PPKM. One of the company sectors most affected by the Covid-19 pandemic is the transportation sector. This has resulted in a very significant decrease in the company's profitability ratio in the transportation sector.

Profitability is one of the indicators of a company's performance and ability to generate profits by utilizing its resources and assets. A high level of profitability indicates that the company is able to operate and carry out its activities optimally. The main goal of a business is to earn profits so that the sustainability of its business can be maintained. With profits, companies can achieve other goals. The company can maintain its growth and compete with other companies because the profits can be reinvested to support or enhance the company's growth. One of the profitability ratios that is often used to measure a company's profitability level is ROA (Return on Asset) (Kasi, 2023).

ROA (Return on Asset) is one of the financial ratios that can be used to measure how effective a company is in using its assets or wealth in generating profits (Zendrato, Zendrato, & Ompusunggu, 2023). ROA can be calculated by dividing a company's net profit by the company's total assets in a given period. The higher the ROA value, the better the company will be in generating profits from the assets owned. The ROA ratio is also useful for comparing financial performance between companies in the same industry, as it provides a view of the effectiveness of asset management that is independent of the scale of operations (Ramdani, 2023).

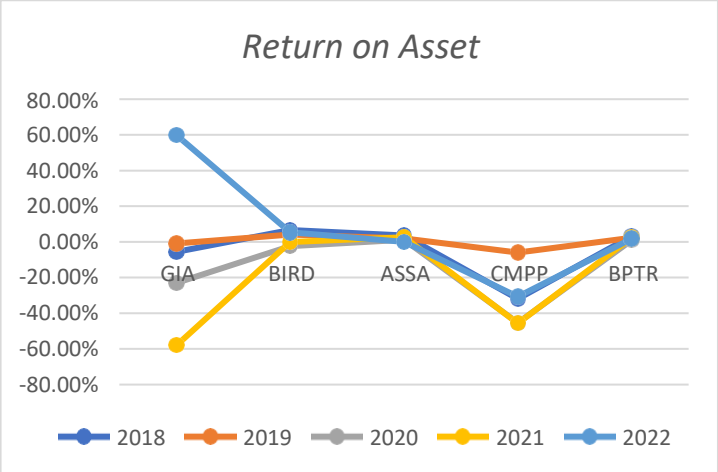

Figure 1 Chart of ROA values of 5 companies in the transportation sector in 2018-2022
(Source: Annual Report of the company 2018-2022)

Based on figure 1 above, it shows the variation in financial performance from 2018 to 2022, which was largely affected by the COVID-19 pandemic. GIAA experienced a drastic

decline in asset utilization efficiency during the pandemic, with ROA dropping from -5.51% in 2018 to -58.03% in 2021, before showing a significant recovery with ROA reaching 59.93% in 2022. This decline reflects the major impact of the pandemic on the aviation industry due to strict travel restrictions, while the recovery in 2022 shows a post-pandemic resurgence as travel policies ease. BIRD maintained a positive ROA, although it experienced a slight decline in 2020 (-2.38%) due to mobility restrictions affecting the land transportation business, but managed to recover with an ROA of 5.28% in 2022 in line with the recovery of economic activity. ASSA showed stability with a positive ROA throughout the period, reflecting effective adaptation to operational challenges during the pandemic. In contrast, the CMPP showed significant difficulties with a consistently negative ROA, especially in 2020 (-45.35%) and 2021 (-45.66%), signaling the negative impact of the pandemic on the low-cost aviation sector. In 2022, CMPP recorded a slight improvement with an ROA of -30.74%, indicating a slower recovery. BPTR maintained a stable performance with a positive ROA, although there was a slight decline in 2022 to 1.72%. This analysis shows how the COVID-19 pandemic affected efficiency Every company's operations and crisis management strategies, with some sectors, such as transportation, facing greater challenges than others.

The phenomenon shown in the graph above shows that the average company engaged in the transportation sector experiences significant fluctuations in the profitability ratio every year. Profitability is used to assess how much profit a company can generate, as well as to compare and evaluate the profit position over time. This is a reference for investors in assessing companies through performance evaluation and observation of the company's profit development every year (Setiawati & Hendrani, 2024). Some of the factors that affect changes in a company's profitability level include Liquidity Ratio, activity, leverage and company size (Nuraini & Suwaidi, 2022).

The liquidity ratio assesses a company's ability to meet its short-term obligations using its current assets. This is very important to maintain the continuity of the company's operations without having to face financial problems (Fitralisma, Suprajadi, Pertiwi, & Yulianto, 2020). The liquidity ratios that are often used are the current ratio and the quick ratio. The current ratio is calculated by dividing total current assets by total short-term liabilities, providing an overview of whether a company has enough current assets to cover its debts. Meanwhile, the quick ratio provides a tighter view by excluding inventory from current assets, so it focuses more on assets that can be quickly converted into cash. These two ratios help investors and creditors assess the company's liquidity risk and financial stability (Kustyaningsih & Jefri, 2023).

The activity ratio measures how effectively a company is using its assets to generate revenue. This includes an analysis of how quickly the company can rotate inventory, collect receivables, and use fixed assets. A common activity ratio is the inventory turnover ratio, which indicates the number of times inventory is sold and replaced over a given period. This ratio is important to understand the efficiency of inventory management and liquidity. The accounts receivable turnover ratio shows how quickly a company can collect receivables from customers. Meanwhile, the fixed asset turnover ratio assesses efficiency in the use of fixed assets in generating sales. By analyzing these ratios, management can identify areas for operational improvement and increase efficiency in the use of company resources (Faisal, 2024).

The leverage ratio assesses the proportion of debt in a company's capital structure and measures the financial risks associated with dependence on debt. This ratio is important to evaluate how much debt the company bears compared to its equity and its impact on the company's financial stability (Wijaya, 2022). The debt-to-equity ratio is one of the most common leverage ratios, calculating total debt compared to total shareholder equity. This ratio provides insight into the risks associated with the capital structure and its potential impact on

the company's profitability and ability to meet its debt obligations. Other leverage ratios include the debt-to-assets ratio, which measures the percentage of assets funded by debt. Companies with high leverage ratios may face greater financial risks, especially in uncertain economic conditions or rising interest rates (Utari et al., 2023).

The size of a company refers to the scale of a company's operations and can be measured in a variety of ways, such as total assets, total revenue, or number of employees. The size of a company can affect various aspects of a business, including competitiveness, access to financing, and operational efficiency (Arindah Failisa Putri, Rahim, & Selong, 2024). Large companies typically have greater production capacity, greater bargaining power in negotiations with suppliers and customers, and better access to capital markets for funding. In addition, the size of a company often affects product diversification and operational risk, as large companies can more easily spread risk through different business units or markets. The size of a company can also have an impact on marketing strategies and human resources, as large companies may have more resources for investment in technology, research and development, and talent management. Thus, the size of the company plays an important role in determining the company's competitive position and growth potential in the market (Nurbaya & Maklassa, 2024).

Previous research conducted by (Amin & Dasuki, 2023) and (Anggraini & Cahyono, 2021) stated that liquidity ratios have a significant influence significant to profitability. The company's ability to meet its short-term obligations is higher in the company's current assets making the company more liquid, meaning that the company can pay off its short-term debts. The results of the study are inversely proportional to the research conducted by (Ali et al., 2022) and (Prijantoro et al., 2022) stating that the liquidity ratio does not have a significant influence on profitability. Low liquidity indicates the lower the company's ability to meet its short-term obligations. Previous research conducted by (Suryaman, Nuridah, & Sagitarius, 2023) and (Amin & Dasuki, 2023) stated that the activity ratio has a significant influence on profitability. A high activity ratio indicates that the availability of current assets to pay off current liabilities is also high. This can increase the credibility of the company which will cause a positive reaction from investors and lead to an increase in the company's profitability. The results of this study are inversely proportional to research conducted by (Ali et al., 2022) and (Anggraini & Cahyono, 2021) which states that the activity ratio does not have a significant influence on profitability. The ratio of activities used by the company is not able to manage its total assets used for operations in the company which will later be reflected in the net sales owned by a company company.

Previous research conducted by (Suryaman et al., 2023) and (Anggraini & Cahyono, 2021) stated that the Leverage ratio has a significant influence on profitability. If the Leverage ratio increases, the Profitability decreases, meaning that in the face of competition, the company needs and to meet the demand. These results are inversely proportional to research conducted by (Henny Wahyu Andika Putri & Kusumawati, 2020) and (Alfahruqi et al., 2022) stating that the leverage ratio has no effect on profitability. The existence of a decrease in total debt and ineffective asset management resulted in a decrease in net profit.

In this study, the researcher also used the firm size variable as a moderating variable. The addition of moderating variables is carried out by researchers because there is still a lack of research on topics similar to the addition of moderating variables. Previous research conducted by (Alfahruqi, Indrabudiman, & Handayani, 2022) stated that firm size is unable to moderate the effect of activity ratio on profitability, firm size is able to moderate the effect of leverage ratio on profitability and firm size is able to moderate the effect of liquidity ratio on profitability.

This research introduces a novel perspective by investigating the impact of liquidity ratios, activity ratios, and leverage ratios on the profitability of transportation sector

companies listed on the Indonesia Stock Exchange (IDX), with firm size acting as a moderating variable. While previous studies have examined the relationships between these financial ratios and profitability, few have incorporated firm size as a moderating factor, particularly within the transportation industry. This study fills the gap by exploring how the scale of a company can influence the effectiveness of liquidity, activity, and leverage ratios in enhancing profitability, providing a more nuanced understanding of financial performance drivers in the sector.

Based on the background description above, the researcher is interested in raising the topic with the title "Analysis of the Influence of Liquidity Ratio, Activity Ratio, and Leverage Ratio on Profitability with Firm Size as a Moderating Variable (Empirical Study on Transportation Sector Companies Listed on the Jakarta Stock Exchange in 2018-2022)"

The primary objective of this research is to analyze the influence of liquidity ratios, activity ratios, and leverage ratios on profitability, with a focus on how firm size moderates these relationships. By utilizing Moderated Regression Analysis (MRA), the study aims to offer valuable insights into the financial dynamics of transportation sector companies. The benefits of this research include providing recommendations for managers and investors on optimizing financial strategies to enhance profitability. Additionally, the findings will help policymakers and company leaders understand the critical factors influencing financial health in the transportation industry, contributing to better decision-making and financial planning strategies.

METHOD

The quantitative research method was chosen because the data analyzed in this study was presented in the form of reasonable and systematic measured numbers. This study uses quantitative descriptive techniques. The data for this study was obtained from the annual reports of transportation sector companies listed on the IDX in the 2018-2022 period. The population used in this study includes all transportation sector companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2022. The sample selection technique used is purposive sampling. Purposive sampling is a method of selecting samples based on the following criteria:

1) Transportation sector companies listed on the Indonesia Stock Exchange (IDX) from 2018-2022
2) Transport sector companies that publish The company's annual report consistently from 2018-2022
3) Transportation sector companies that make their annual reports use the rupiah currency.

The data collection method in this study is the documentation method, which involves the use of data from existing documents. The data source used is the financial statements of manufacturing companies. In this study, data analysis was carried out using Moderated Regression Analysis (MRA) analysis (Sugiyono, 2020). Two regression models were used to compare the test results of each model. Multiple linear regression analysis was used to test the influence of two independent variables on dependent variables without including the moderating variable. Meanwhile, moderation regression analysis involves all variables in the research test. The data that has been collected is then processed using SPSS version 25.

RESULTS AND DISCUSSION

Descriptive Statistical Test Result

Table 2 Descriptive Statistical Test Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
CR	115	.00	1402.44	12.6509	130.73953
DAR	115	.03	4.09	1.0151	.91983
TATTOO	115	.07	1.04	.7522	.13063
ROA	115	.00	.35	.0869	.06874
FIRM SIZE	115	14.88	30.73	22.1606	5.65427
Valid N (listwise)	115				

Based on the results of a descriptive statistical test on a sample of 115 transportation sector companies listed on the Jakarta Stock Exchange, it can be seen that the Current Ratio (CR) variable has a minimum value of 0.00 and a maximum value of 1402.44, with an average of 12.65 and a standard deviation of 130.74. This indicates that most companies have highly variable liquidity capabilities, with some companies demonstrating an inability to meet their short-term obligations (CR = 0.00). The Debt to Asset Ratio (DAR) shows a minimum of 0.03 and a maximum of 4.09, with an average of 1.0151 and a standard deviation of 0.91983, which indicates that most companies have a high level of leverage, in fact some companies have more debt than their total assets (DAR > 1). For Total Asset Turnover (TATO), the minimum value is 0.07 and the maximum is 1.04, with an average of 0.7522, indicating that most companies are able to utilize their assets efficiently to generate revenue. The Return on Assets (ROA) variable shows a minimum value of 0.00 and a maximum of 0.35, with an average of 0.0869 and a standard deviation of 0.06874, which indicates that the company's profitability varies, but is generally quite low. The firm size has a minimum value of 14.88 and a maximum of 30.73, with an average of 22.16 and a standard deviation of 5.65, which reflects significant differences in asset size among the companies studied.

Classical Assumption Test

Data Normality Test

Table 3 Data Normality Test

One-Sample Kolmogorov-Smirnov Test

Unstandardized Residual

N		115
Normal Parametersa,b	Mean	.0000000
	Std. Deviation	1.31786546
Most Extreme Differences	Absolute	.067
	Positive	.062
	Negative	-.067
Test Statistic		.067
Asymp. Sig. (2-tailed)		.200c,d

a. t distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Based on the results of the normality test using the One-Sample Kolmogorov-Smirnov Test, the statistical test value was 0.067 with a significance value of Asymp. Sig. (2-tailed) of 0.200. Since the significance value (0.200) is greater than the significance level α = 0.05, it can be concluded that the residual distribution in this study follows the normal distribution. This means that the assumption of normality in the regression analysis has been met. The residual mean value of 0.0000000 and the standard deviation of 1.31786546 indicate that the residual deviation from the mean value is relatively small, while the Most Extreme Differences value in the range of -0.067 to 0.062 indicates that there is no significant deviation from the normal distribution. Thus, the data in this study are considered to meet the assumption of normality, which is important to continue further statistical analysis such as linear regression.

Multicollinearity Test

Table 5 Multicollinearity Test Results

Type		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	CR	.471	2.123
	DAR	.503	1.990
	TATTOO	.995	1.005
	FIRM SIZE	.625	1.600

b. Dependent Variable: ROA

Based on the results of the multicollinearity test, it can be seen that all independent variables in the regression model that affect Return on Assets (ROA) do not experience multicollinearity problems. This is indicated by a Tolerance value greater than 0.1 and a Variance Inflation Factor (VIF) value below 10. The Current Ratio (CR) variable has a Tolerance value of 0.471 and a VIF of 2.123, while the Debt to Asset Ratio (DAR) has a Tolerance of 0.503 and VIF 1,990, which indicates that there is no strong relationship between independent variables. The Total Asset Turnover (TATO) variable has the highest Tolerance of 0.995 and the lowest VIF of 1.005, indicating that this variable has almost no correlation with other variables. Meanwhile, the Firm Size shows a Tolerance of 0.625 and a VIF of 1,600. Thus, all independent variables can be considered free of multicollinearity, which means that they can be used together in a regression model without affecting the validity of the analysis results.

Heterokedasticity Test

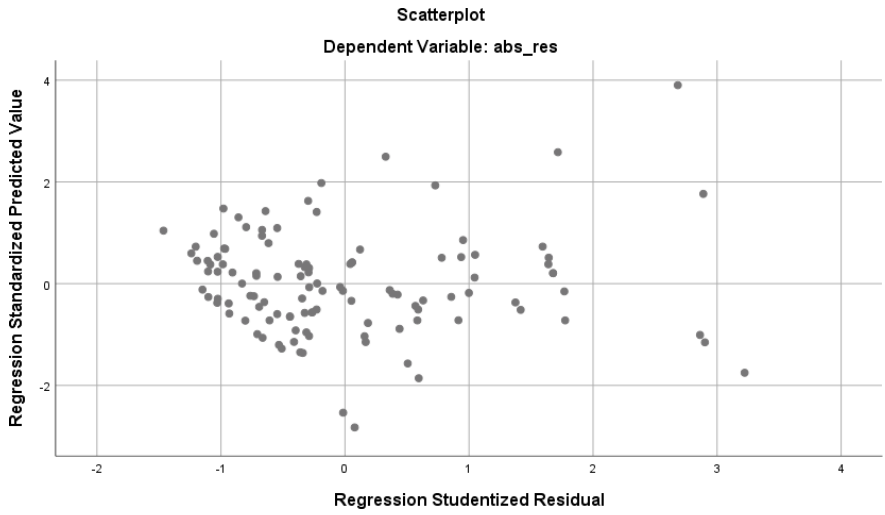

Figure 1 Scatterplot

On the heteroscedasticity test visualized through the scatterplot graph, the randomly dispersed dots and do not form a clear pattern indicate that there is no heteroscedasticity problem in the regression model. The distribution of the points occurs both above and below the horizontal (residual) axis, and the distance between the points appears irregular, which means that the variance of the residual does not increase or decrease systematically as the value of the independent variable changes. In other words, the error variance of the regression model is relatively constant or homogeneous. This is important because in linear regression, homoscedasticity assumptions must be met to ensure that the resulting parameter estimates are efficient and unbiased. These results support that the regression model used is feasible for further interpreted without interference from significant heteroscedasticity.

Autocorrelation Test

Table 6 Autocorrelation Test

Model Summaryb

Type	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.734a	.538	.522	1.34161	2.104

c. Predictors: (Constant), FIRM SIZE, TATTOO, DAR, CR

d. Dependent Variable: ROA

Based on the results of the autocorrelation test using a Durbin-Watson value of 2.104, it can be concluded that there is no autocorrelation problem in the regression model. The Durbin-Watson value close to the number 2 indicates that the residual or prediction error between observations has no correlation with each other, either positive or negative. This is important because in the event of autocorrelation, the regression estimation results can be biased and inefficient. With this value, the assumption of autocorrelation has been met, so the regression model used can be relied on for further analysis.

Moderated Regression Analysis (MRA) Test

Table 7 Moderated Regression Analysis Model 1 Test

Coefficientsa

Type		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-1.579	.372		-4.241	.000
	CR	.015	.020	.134	.759	.451
	TATTOO	.111	.139	.106	.800	.426
	DAR	-.060	.432	-.024	-.139	.890

a. Dependent Variable: ROA

The result of model 1's equation, ROA= (1.579) + 0.015 X1 + 0.111 X2 + (0.060) X3

Based on the results of regression analysis, the Current Ratio (CR) variable has a positive relationship with ROA, where every increase in one unit of CR will increase ROA by 0.015. However, the effect of CR on ROA was not strong enough to show a significant relationship in influencing ROA performance (p = 0.451). Total Asset Turnover (TATO) also has a positive relationship with ROA, where every increase in one TATO unit will increase ROA by 0.111, but its effect on ROA is not significant enough to be used as a basis for decision-making (p = 0.426). In contrast, the Debt to Asset Ratio (DAR) has a negative relationship with ROA, where

every increase in one unit of DAR decreases ROA by 0.060, but the impact is too small to make a significant contribution (p = 0.890). Thus, these three variables did not show a strong enough influence on ROA in this study.

Table 8 Moderated Regression Analysis Model 2 Test Coefficientsa

Type		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-.904	.496		-1.823	.073
	CR	.021	.020	.183	1.048	.298
	TATTOO	.160	.138	.152	1.158	.251
	DAR	.020	.425	.008	.048	.962
	Firm Size	-.033	.016	-.241	-2.011	.048

a. Dependent Variable: ROA

The result of the equation model 2, ROA= (0.904) + 0.021 X1 + 0.160 X2 + 0.020 X3 + (0.033) Z

Based on the results of regression analysis, the Current Ratio (CR) variable has a positive relationship with ROA, where every increase in one unit of CR will increase ROA by 0.021. However, the effect of CR on ROA was not strong enough to show a meaningful association (p = 0.298). Total Asset Turnover (TATO) also has a positive relationship with ROA, where every increase in one TATO unit will increase ROA by 0.160, but the impact is not significant enough to affect ROA significantly (p = 0.251). Furthermore, the Debt to Asset Ratio (DAR) showed a very small positive relationship with ROA, where every increase in one unit of DAR would increase ROA by 0.020, but this effect was almost imperceptible due to the very high p-value (p = 0.962). Meanwhile, Firm Size has a negative relationship with ROA, where every increase in one unit of Firm Size will decrease ROA by 0.033, and this influence is significant enough to be considered contributing to the model (p = 0.048). Thus, of the four variables tested, only Firm Size showed a meaningful effect on ROA.

Table 9 Moderated Regression Analysis Model 3 Test Coefficientsa

Type		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.806	.629		1.282	.003
	CR	.010	.067	.159	-.153	.000
	DAR	.344	.413	.555	-.833	.007
	TATTOO	-.540	.527	1.023	1.023	.309
	FIRM SIZE	.027	.025	.373	1.100	.008
	X1*Z	.000	.003	.134	.128	.037
	X2*Z	.003	.017	.128	.189	.006
	X3*Z	.022	.020	1.127	1.095	.006

a. Dependent Variable: ROA

The result of the equation model 3, ROA= 0.806 + 0.010 X1 + 0.344 X2 + (0.540) X3 + 0.000 X1Z + 0.003 X2Z + 0.022 X3Z

The results of the regression analysis can be explained as follows, Current Ratio (CR) has a significance value of 0.000 which is smaller than 0.05, so CR has an influence on ROA. However, the effect was very small, with a coefficient value of 0.010. The Debt to Asset Ratio

(DAR) has a significance value of 0.007, also smaller than 0.05, which indicates that DAR has an effect on ROA, with a positive effect of 0.344. Total Asset Turnover (TATO) has a significance value of 0.309, greater than 0.05, so it does not have an effect on ROA even though it shows a negative relationship with a coefficient value of -0.540.

For the interaction variable, X1Z (CR × Firm Size) has a significance value of 0.037, which is smaller than 0.05, indicating an influence, but with a very small coefficient of 0.000. This means that any change in CR only provides a very small change in ROA, so the impact is not very meaningful to the company's profitability. X2Z (DAR × Firm Size) has a significance value of 0.006, which means it is influential, but the coefficient is also small, at 0.003. Meanwhile, X3Z (TATO × Firm Size) has a significance value of 0.006, which indicates an influence, but the coefficient is 0.022, so Firm Size only plays a small role in moderating the relationship between TATO and ROA. Thus, Firm Size does not fully play a strong role as a moderation variable in the relationship between CR, DAR, and TATO to ROA.

The results of the analysis of the three steps show progress in understanding the influence of independent variables on ROA. In the first step, the CR, TATO, and DAR variables did not show a significant effect on ROA, although the relationship found was negative. This indicates that these variables are not yet strong enough to account for ROA variations. In the second step, the addition of the Firm Size variable expanded the model slightly, but the results still showed that no variable had a significant influence on ROA, although the relationship found varied between positive and negative.

The third step shows the improvement of the model by adding the interaction variables X1*Z, X2*Z, and X3*Z. As a result, several variables, such as CR, DAR, Firm Size, and interaction variables, show a significant positive influence on ROA. The moderation properties found here belong to quasi-moderation, as the interaction variables moderate the relationship between the independent variables and ROA, but also show a significant direct influence on ROA. This model provides an overview that moderation through interaction variables plays an important role in explaining the relationship between these variables and ROA, so that it can help in more data-driven strategic decision-making.

Hypothesis TestR Square Determination Test Results

Table 10 R Square Determination Test Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.734[a]	.538	.522	1.34161	2.104

a. Predictors: (Constant), FIRM SIZE, TATO, DAR, CR

b. Dependent Variable: ROA

Based on the R Square value of 0.538, it can be concluded that this model has a fairly good ability to explain the influence of independent variables on ROA (Return on Assets). As much as 53.8% of the variation in ROA can be explained by the variables Current Ratio (CR), Debt to Asset Ratio (DAR), Total Asset Turnover (TATO), and Firm Size, while the remaining 46.2% is influenced by other factors that are not included in the model.

An Adjusted R Square value of 0.522 indicates a slightly lower result than the R Square, but still indicates that this regression model is quite stable after considering the number of variables used. Overall, the model gives a pretty good picture, although there are other factors outside the model that also affect ROA.

Test Results t

Table 11 Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.840	1.585		2.423	.017
	CR	.134	.067	.188	1.992	.049
	DAR	.193	.089	.198	2.170	.032
	TATO	.013	.063	.014	.210	.834
	FIRM SIZE	.322	.057	.461	5.628	.000

a. Dependent Variable: ROA

The results of the t-test show that several variables in the regression model have a significant effect on Return on Assets (ROA). The Current Ratio (CR) variable has a coefficient of 0.134 with a t-value of 1.992 and a significance value of 0.049, which shows that CR has a significant positive influence on ROA at a significance level of $\alpha = 0.05$. Similarly, the Debt to Asset Ratio (DAR) showed a significant positive influence on ROA with a coefficient of 0.193, a t-value of 2.170, and a significance value of 0.032, which was also smaller than 0.05. In contrast, Total Asset Turnover (TATO) did not show a significant influence on ROA with a coefficient of 0.013, a t-value of 0.210, and a significance value of 0.834, which was much higher than 0.05, indicating that TATO did not contribute significantly to ROA in this model. Finally, Firm Size has a very significant effect with a coefficient of 0.322, a t-value of 5.628, and a significance value of 0.000, indicating that the size of the company significantly affects ROA. Thus, CR, DAR, and Firm Size have a significant impact on ROA, while TATO has no significant influence.

Discussion

The results of the analysis show that the liquidity ratio, measured by the Current Ratio (CR), has a significant effect on the profitability of transportation sector companies listed on the Indonesia Stock Exchange (IDX). CR shows a positive relationship with ROA with a coefficient of 0.010. This means that every increase of one unit in CR will increase ROA by 0.010, assuming the other variables remain. In addition, the interaction between CR and Firm Size resulted in a positive moderation effect of 0.000. Although the value is small, this result is significant at the level of 0.037, suggesting that company size can strengthen the relationship between company liquidity and profitability. Companies with larger sizes are better able to utilize liquidity to improve their performance.

These findings are in line with research by Al-Matari et al., (2014), which found that a positive liquidity ratio has an effect on profitability, as higher liquidity allows companies to better manage short-term liabilities and take advantage of investment opportunities. However, these findings contradict several studies that show that too high a liquidity ratio can signal less efficient asset management, thus negatively impacting profitability (Mollah, 2018).

Liquidity ratios, such as the Current Ratio and Quick Ratio, are often used to assess a company's ability to meet its short-term obligations. Research by Prijantoro, Karamoy, and Afandi (2022) shows that liquidity ratios have a significant impact on profitability, although the results may vary depending on the industry sector and company characteristics. In the transportation sector, a high liquidity ratio may indicate that a company has enough liquid assets to cope with fluctuations in demand and operating costs, which in turn can affect profitability. However, too many liquid assets can also indicate that the company is not making optimal use of its assets, thus reducing profitability (Akbar et al., 2024).

Meanwhile, Ali, Hasan, and Machmud (2022) found that liquidity ratios have different impacts on different types of companies, with companies with high liquidity tending to show profitability

which is better if balanced with operational efficiency. In the context of transportation companies, sufficient liquidity can help companies manage market uncertainty and unexpected costs, thereby supporting profitability stability. Therefore, it is important to analyze how the liquidity ratio affects profitability in the specific context of the transportation sector on the IDX and compare these results with other studies to gain a more comprehensive understanding. Based on the description above, it can be concluded that H1 is accepted.

Effect of Activity Ratio on Profitability

In this study, in contrast to CR and DAR, TATO had a negative coefficient of -0.540 to ROA, suggesting that asset utilization efficiency had no significant effect on profitability in this model. In addition, the interaction of TATO with Firm Size resulted in a moderation coefficient of 0.022, but this contribution was not significant enough to change the basic relationship between TATO and ROA. This shows that the efficiency of a company's assets, regardless of size, is not a major factor affecting profitability. These results are in line with research by Abu and Hossain (2019), which found that activity ratios do not always contribute significantly to profitability, perhaps due to industry differences or business strategy differences. However, this result contradicts other studies that state that the activity ratio has a significant impact on a company's profitability because efficiency in the use of assets is usually associated with higher profits (Ahmed and Ali, 2018).

Activity ratios, such as the Inventory Turnover Ratio and the Receivables Turnover Ratio, measure how effectively a company manages its assets to generate revenue. According to Suryaman, Nuridah, and Sagittarius (2023), a high activity ratio is generally positively related to profitability because it shows that the company is using its assets efficiently. In the transportation sector, a good activity ratio reflects effective operational management, which is essential to ensure that assets remain productive and not wasted.

However, the results of a study by Amin and Dasuki (2023) show that the influence of the activity ratio on profitability can be influenced by other factors such as

company size and market conditions. In the context of transportation sector companies listed on the IDX, a high activity ratio can indicate efficiency in the use of vehicles and equipment, which has the potential to increase profitability. However, companies must also consider external factors such as fluctuations in fuel prices and market demand, which can affect the final result. Comparisons with other studies can provide additional insights into how activity ratios contribute to profitability within the sector. Based on the description above, it can be concluded that H2 was rejected.

Effect of Leverage Ratio on Profitability

DAR also had a significant positive influence on ROA, with a coefficient of 0.344. This shows that the higher the ratio of debt to assets, the greater its contribution to profitability. The interaction between DAR and Firm Size resulted in a moderation coefficient value of 0.003, with high significance (0.006). This means that large companies are more effective in utilizing debt to support profitability growth than small companies. These findings support research by Hossain et al., (2019), which shows that debt use can increase profitability as long as debt is well managed and used for productive expansion. Conversely, some studies have found that high leverage can add to financial risk and reduce profitability if companies are unable to manage debt costs effectively (Khan et al., 2019). These differences in results can be caused by variations in market conditions and managerial strategies.

Leverage ratios, such as the Debt to Equity Ratio (DER) and Debt Ratio, measure the extent to which a company finances its operations with debt compared to equity. Pujiati and Melati (2020) found that leverage ratios can have a positive or negative impact on profitability

depending on how the company uses its debt. Debt that is used efficiently for expansion and investment can increase profitability, while debt that is too high can increase financial risk and decrease profitability.

Research by Alfahruqi, Indrabudiman, and Handayani (2022) reveals that the impact of leverage on profitability can vary based on the sector and the company's capital structure. For transportation sector companies on the IDX, high leverage may be necessary to fund investments in fleets and infrastructure, but it can also increase financial risk if not managed properly. Therefore, it is important to evaluate how transportation companies are utilizing their debt and how this affects their profitability in the context of a dynamic market. Based on the description above, it can be concluded that H3 is accepted.

Firm Size as a Moderator between Liquidity and Profitability Ratio

Firm Size serves as a moderating variable in the relationship between liquidity ratio and profitability, with Adjusted R Square showing that firm size reinforces the positive impact of liquidity ratio on ROA. These findings support the theory that larger companies have a better capacity to manage liquidity and utilize investment opportunities more efficiently (Abdullah et al., 2017). This research is in line with the findings found by Jang and Park (2020), which revealed that company size plays a key role in strengthening the relationship between liquidity and profitability. However, some studies have shown that the very large size of a company can lead to managerial problems that negatively impact operational efficiency (Singh and Sharma, 2018).

Firm size can moderate the relationship between liquidity ratio and profitability. A study by Jannah and Fitri (2024) shows that the size of a company can affect how effective the liquidity ratio is in influencing profitability. Larger companies may have more resources to manage their liquidity and capitalize on market opportunities, so liquidity ratios may have a more significant impact on profitability.

However, research by Setiawati and Hendrani (2024) shows that the effect of company size moderation on liquidity ratios and profitability can vary depending on the company's industry and business strategy. In the context of the transportation sector, a larger company size may allow for better management of liquidity and risk management, which can strengthen the positive impact of liquidity ratios on profitability. In contrast, small companies may face greater challenges in utilizing liquidity optimally, thus affecting the results of the study. Based on the description above, it can be concluded that H4 was accepted.

Firm Size as a Moderator between Activity Ratio and Profitability

Firm Size also moderated the effect of Total Asset Turnover (TATO) on profitability, but did not show significant results in this study. These results show that company size does not significantly change the relationship between asset use effectiveness and ROA. These findings are consistent with a study by Zhang et al., (2019), which showed that company size does not necessarily affect the relationship between activity ratio and profitability. However, other studies suggest that large companies may have economies of scale in asset management, thus increasing effectiveness and profitability (Chen et al., 2017). This difference in results may be due to variations in operational strategies and organizational structures across different industries.

Firm Size can also moderate the relationship between activity ratio and profitability. According to Putri, Rahim, and Selong (2024), larger companies tend to have better economies of scale and more efficient managerial capabilities, so activity ratios such as Turnover Ratio can have a more significant effect on profitability. Large companies often have better resources and systems to manage and optimize their assets, which supports the positive results of the activity ratio.

In contrast, research by Nuraini and Suwaidi (2022) shows that company size can affect the strength of the relationship between activity ratio and profitability depending on the complexity of the company's operations. For transportation sector companies on the IDX, larger

company sizes may have advantages in asset management and operational efficiency, which can strengthen the relationship between activity ratio and profitability. An evaluation of these variations in the context of the transportation sector can provide additional insights into how company size affects the relationship between activity ratios and profitability. Based on the description above, it can be concluded that H5 is accepted.

Firm Size as a Moderator between Leverage and Profitability Ratio

Firm Size acts as a moderation variable in the relationship between Debt to Asset Ratio (DAR) and profitability. The size of the company amplifies the positive impact of leverage on ROA, suggesting that larger companies can leverage debt more effectively to increase profitability. These results support the findings by Lee and Wong (2018), which show that large companies tend to have better access to resources and can manage debt risk more efficiently. However, other studies show that the enormous size of a company can introduce additional complexity in debt management that can reduce the effectiveness of leverage (Wang et al., 2019). This difference may be due to differences in the industry and managerial strategies implemented by the company.

Firm Size can play an important role in moderating the effect of leverage ratios on profitability. A study by Suryaman, Nuridah, and Sagittarius (2023) shows that company size can affect the effectiveness of debt use in increasing profitability. Large companies often have better access to capital markets and the ability to manage debt risk more effectively, so leverage ratios can have a different impact on profitability compared to smaller companies.

However, the results of the study by Fatoni (2020) show that the impact of company size moderation on the relationship between leverage ratio and profitability can vary depending on the company's financial strategy and risk management. In the transportation sector, larger company sizes may allow for more strategic use of leverage and reduced financial risk, which could amplify the positive impact of leverage ratios on profitability. An in-depth analysis of how company size moderates these relationships in the context of the transportation sector can provide additional insights and practical relevance for investors and company managers. Based on the description above, it can be concluded that H6 is accepted.

CONCLUSION

The study on the influence of liquidity ratio, activity ratio, and leverage ratio on profitability in transportation sector companies listed on the Indonesia Stock Exchange (IDX), with Firm Size as a moderating variable, reveals several key findings. The Current Ratio (CR) positively and significantly impacts profitability, indicating that better liquidity enables companies to manage operational costs efficiently, enhancing stability and minimizing default risks. Total Asset Turnover (TATO) does not significantly affect profitability, suggesting unoptimized asset utilization or the presence of unproductive assets. The Debt to Asset Ratio (DAR) positively and significantly influences profitability, demonstrating that effective use of leverage can generate returns exceeding debt costs. Firm Size moderates the relationship between liquidity ratio and profitability, amplifying the positive effect due to larger companies' access to resources and economies of scale. Moreover, Firm Size significantly influences the relationship between activity ratio and profitability, highlighting that larger companies benefit from operational efficiencies, while smaller firms leverage flexibility. Lastly, Firm Size also strengthens the relationship between leverage ratio and profitability, emphasizing its role in magnifying the impact of financial leverage on returns. These findings underscore the critical interplay of liquidity, leverage, and company size in determining profitability.

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