

EFFECT OF TOTAL ASSET TURNOVER (TATO), BOPO, DEBT TO ASSET RATIO THROUGH FIRM SIZE AS MODERATION VARIABLES ON RETURN ON ASSET (ROA) AT PT PELABUHAN INDONESIA (PERSERO)

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ABSTRACT

The study's primary aim was to examine the influence of total asset turnover (TATO), operating costs on sales (BOPO), debt to asset ratio (DAR), and company size on return on assets (ROA) at PT Pelabuhan Indonesia (Persero) during the period 2015-2021. Quantitative research methods were utilized, and data was directly obtained from the company's financial statements and records for the specified timeframe. Regression analysis, employing moderation variables through the Eviews program, was employed for data analysis. The results indicated that TATO, BOPO, and DAR had a negative impact on ROA at PT Pelabuhan Indonesia (Persero). However, the company size did not significantly moderate the relationship between TATO, BOPO, DAR, and ROA. Additionally, when these factors were collectively considered, their combined effect on the ROA variable was found to be insignificant. In conclusion, the study concluded that specific financial indicators, such as TATO, BOPO, and DAR, adversely affected the company's return on assets, whereas the company size did not play a significant role in moderating these effects. Furthermore, when these factors were analyzed together, their combined impact on the ROA variable was not statistically significant.

Keywords: total asset turnover, BOPO, debt-asset ratio, firm size, return on asset

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INTRODUCTION

Along with the times, global business competition is becoming increasingly stringent and it is becoming increasingly difficult for a company to survive this business competition. One way that must be done by a company to continue to survive in the face of global competition is by improving the company's performance. The company's performance is reflected in several performances, namely operational performance and financial performance. Operational performance is the result of achievements obtained by a company in terms of its operational activities (Riyanto, 2010). Meanwhile, financial performance is the result of achievements obtained by a company in terms of numbers reflected in financial reports (Sanjaya, 2017).

Operational performance greatly influences the financial performance of the company itself because operational performance will determine the amount of company sales which will later become a benchmark for a company's financial performance. What is most decisive in measuring the performance of a company is the financial performance obtained by the company (Murniati, 2016; Sutra & Mais, 2019). Usually, the performance of a company is assessed based on its financial performance. Good financial performance will be able to convince investors, stakeholders, owners, and the government to continue to be able to give trust to the company (Aydın Unal et al., 2017). From the results of this analysis of financial performance, internal and external parties will be able to see how the company is running its business. In the analysis of financial performance, it will be seen how well and to what extent the company manages and runs its business in accordance with applicable regulations. This is

in line with what was conveyed by Fahmi (2020), that financial performance is an analysis carried out to see how well a company has run its business using the correct operating procedures.

One mechanism or method that is often used by experts to calculate the level of a company's financial performance is by analyzing the company's financial statements (Orniati, 2009). The financial report is a report that describes how the financial position is produced by a company through a cycle of accounting records based on applicable accounting regulations which will then be used as information for management and external parties in the decision-making process.

In order to provide accurate and valid information from a company's financial statements, it is necessary to carry out an appropriate and comprehensive analysis of these financial statements. One method of analysis that is often used and can produce accurate information is the method of financial ratio analysis (Purba et al., 2021; Simanjuntak & Sari, 2014). Financial ratios are comparisons of figures from a financial report, be it a statement of financial position, income statement, or cash flow statement which aims to calculate the company's performance level (Bernardin & Tifani, 2019b).

Financial ratio analysis commonly used to analyze financial statements is the liquidity ratio which consists of the current ratio, quick ratio, cash ratio, and profitability ratio which consists of gross profit margin (GPM), net profit margin (NPM), return on assets (ROA), return on equity (ROE), return on sales (ROS), BOPO, and return on investment (ROI), the activity ratio consisting of total asset turnover and working capital turnover. In addition to liquidity ratios, profitability ratios, and activity ratios, other ratios that are often used to analyze financial statements are solvency ratios consisting of debt to equity ratio (DER), Debt to asset ratio (DAR), and debt ratio (DR). Company performance can also be seen from the size of the company itself. Company size can be calculated using a scale which is divided into several ways, namely total assets, log assets, log size, market value of company shares, sales, and so on which can affect the performance of the company itself and can affect the achievement of company goals.

PT Pelabuhan Indonesia (Persero), formerly PT Pelabuhan Indonesia II (Persero) is a State-Owned Enterprise engaged in Port Services whose shares are 100% owned by the state and represented by the Ministry of BUMN as a shareholder. PT Pelabuhan Indonesia I, II, III, and IV (Persero) is engaged in port services which include ship services, goods services, container terminals, leasing of land, buildings, water, electricity, and various business services such as ports, waste (reception facilities), and others (Bernardin & Tifani, 2019a).

Through this merger mechanism, PT Pelabuhan Indonesia (Persero) has become a world-class company and is ranked 8 (eight) in the world in terms of container throughput (Sabatini et al., 2021). In addition, with this merger, the assets owned and the volume of the company also increased significantly. The merger of these companies does not only have an impact on the total value of assets but also on the total value of the company's liabilities (Aydın Unal et al., 2017).

Based on this background, the authors want to conduct more in-depth research on the company's financial performance using financial ratio analysis in order to produce more accurate results. The author wants to see to what extent or how much influence the ratios of activity, profitability/profitability and solvency carried out through company size have on the

financial performance of PT Pelabuhan Indonesia (Persero) from 2015 to 2021 (before and after the merger) (Purba et al., 2021). Thus, the title taken in this study is "The Effect of Total Asset Turnover, BOPO, Debt to Asset Ratio Through Company Size as a Moderating Variable on Return on Assets at PT Pelabuhan Indonesia (Persero) in 2015 - 2021."

METHOD

This research uses quantitative research methods. The data sources in this study did not use primary data but used secondary data taken directly from the data contained in the financial statements and other data belonging to PT Pelabuhan Indonesia (Persero) for the 2015-2021 period (Riyanto, 2010). This study uses a simple regression model using the Eviews application version 12. The data analysis technique used is regression analysis with Moderation variables.

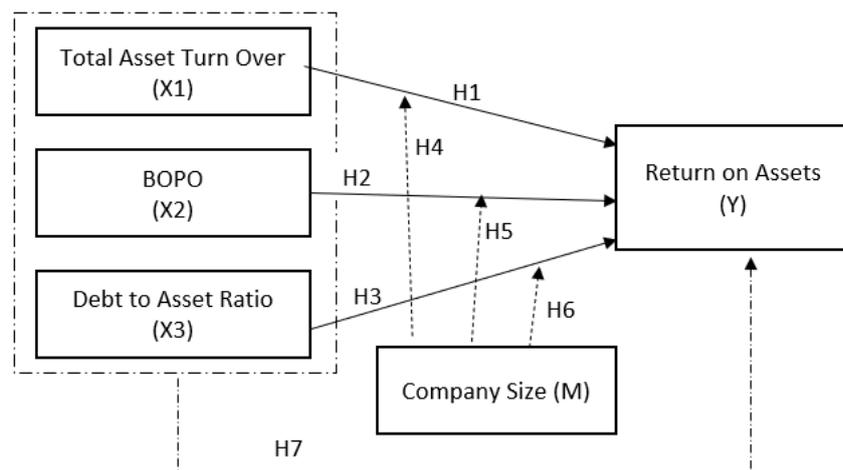


Figure I. Research design

H1 = There is a significant influence between the Total Asset Turn Over (TATO) on the Return on Assets (ROA) of PT Pelabuhan Indonesia (Persero)

H2 = There is a significant influence between BOPO on Return on Assets (ROA) of PT Pelabuhan Indonesia (Persero)

H3 = There is a significant influence between the Debt to Asset Ratio (DAR) on the Return on Assets (ROA) of PT Pelabuhan Indonesia (Persero)

H4 = There is a significant influence between Total Asset Turn Over (TATO) on the Return on Assets (ROA) of PT Pelabuhan Indonesia (Persero) with Company Size as a Moderation variable

H5 = There is a significant effect between BOPO on the Return on Assets (ROA) of PT Pelabuhan Indonesia (Persero) with Company Size as a Moderation variable

H6 = There is a significant influence between the Debt to Asset Ratio (DAR) on the Return on Assets (ROA) of PT Pelabuhan Indonesia (Persero) with Company Size as a Moderation variable

H7 = Total Asset Turnover Ratio (TATO), BOPO, and Debt to Asset Ratio (DAR) simultaneously or together have a significant effect on Return on Assets (ROA). (Brigham & Houston, 2010)

RESULTS AND DISCUSSION

Hypothesis Test

In testing this hypothesis, several analyzes will be carried out, namely analysis of the coefficient of determination, testing the simultaneous effect between variables (F test), and partial testing (t-test). The results of statistical data processing to be used for hypothesis testing are as follows:

Table 1. Hypothesis Testing Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1?	-0.986876	1.240386	-0.795620	0.5097
X2?	-0.683843	0.477303	-1.432722	0.2883
X3?	-0.606558	0.512952	-1.182487	0.3585
C	118.1351	95.28598	1.239795	0.3408
R-squared	0.771588	Mean dependent var		4.932518
Adjusted R-squared	0.428970	S.D. dependent var		1.414248
S.E. of regression	1.068698	Akaike info criterion		3.205481
Sum squared resid	2.284232	Schwarz criterion		3.066654
Log likelihood	-5.616443	Hannan-Quinn criter.		2.649745
F-statistic	2.252035	Durbin-Watson stat		3.252594
Prob(F-statistic)	0.322237			

Source: Eviews data processing results

Analysis of the Coefficient of Determination

From the table above, it can be seen that the coefficient of determination (R-squared) is 0.771588, this can be interpreted that Total Asset Turn Over, BOPO, and Debt to Asset Ratio simultaneously or together can affect Return on Assets of 77.16 %, and the remaining 22.84% was influenced by other factors outside of this study.

Simultaneous Effect Significance Test (Test F)

The simultaneous effect significance test (F test) is used to examine the effect of the independent variables jointly or simultaneously on the dependent variables. From the table of statistical values above, it can be seen that the probability value of the F-statistic of this study is 2.252035 greater than 0.05, so it can be concluded that all independent or independent variables in this study are Total Asset Turn Over Ratio (TATO), BOPO, and Debt to Asset Ratio (DAR) simultaneously or together have no significant effect on the Return on Assets variable.

Panel Data Regression Equation and Partial Effect Significance Test (t-test)

From the results of the data processing above, the multiple linear regression equation is obtained as follows:

$$Y = 118.1351 - 0.986876X1 - 0.683843X2 - 0.606558X3 + e$$

Table 2. Test Results t

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1?	-0.986876	1.240386	-0.795620	0.5097
X2?	-0.683843	0.477303	-1.432722	0.2883
X3?	-0.606558	0.512952	-1.182487	0.3585
C	118.1351	95.28598	1.239795	0.3408

Source: Eviews data processing results

Based on the table above, the following can be seen:

1. Total Asset Turn Over has a negative effect on ROA, with a coefficient value of -0.986876, but not significantly, namely with a probability value of $0.5097 > 0.05$;
2. BOPO has a negative effect on ROA, with a coefficient value of -0.683843, but not significantly, namely with a probability value of $0.2883 > 0.05$;
3. Debt to Asset Ratio has a negative effect on ROA, with a coefficient value of -0.606558, but not significantly, namely with a probability value of $0.3585 > 0.05$

Moderation Testing

The next step is to carry out moderation tests, namely tests conducted to test whether company size significantly moderates the relationship between activity ratios, profitability, and solvency on company performance. The following are the results of the moderation test:

Table 3. Moderation Test Results with TATO as an independent variable

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4139.338	2069.532	2.000132	0.1835
X1_1	-195.9394	100.7352	-1.945093	0.1912
M_1	-169.1007	84.33234	-2.005170	0.1828
X1M_1	8.013539	4.103796	1.952714	0.1901
R-squared	0.849831	Mean dependent var		4.932518
Adjusted R-squared	0.624578	S.D. dependent var		1.414248
S.E. of regression	0.866534	Akaike info criterion		2.786090
Sum squared resid	1.501762	Schwarz criterion		2.647263
Log likelihood	-4.358270	Hannan-Quinn criter.		2.230354
F-statistic	3.772781	Durbin-Watson stat		3.062663
Prob(F-statistic)	0.216572			

Source: Eviews data processing results

Based on the table above, it can be seen that company size is not a significant moderator between Total Asset Turn Over and Return on Assets with a probability value of $0.1901 > 0.05$.

Table 4. Moderation Test Results with BOPO as an independent variable

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.451657	4.382535	-2.156664	0.1638
X2_1	-0.078899	0.005131	-15.37563	0.0042
M_1	0.636227	0.186954	3.403120	0.0766
X2M_1	0.012630	0.000203	62.27316	0.0003
R-squared	0.999802	Mean dependent var		4.932518
Adjusted R-squared	0.999505	S.D. dependent var		1.414248
S.E. of regression	0.031474	Akaike info criterion		-3.844606
Sum squared resid	0.001981	Schwarz criterion		-3.983433
Log likelihood	15.53382	Hannan-Quinn criter.		-4.400342
F-statistic	3364.478	Durbin-Watson stat		3.426743
Prob(F-statistic)	0.000297			

Source: Eviews data processing results

Based on the table above, it can be seen that company size is a significant moderator between BOPO and Return on Assets with a probability value of $0.0003 < 0.05$.

Table 5. Moderation Test Results with DAR as the Independent Variable

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	413.2511	816.4379	0.506163	0.6630
X3_1	-0.500164	0.807883	-0.619105	0.5990
M_1	-15.81369	31.08200	-0.508773	0.6615
X3M_1	0.000432	0.000283	1.524963	0.2668
R-squared	0.562250	Mean dependent var		4.932518
Adjusted R-squared	-0.094374	S.D. dependent var		1.414248
S.E. of regression	1.479478	Akaike info criterion		3.855977
Sum squared resid	4.377710	Schwarz criterion		3.717150
Log likelihood	-7.567930	Hannan-Quinn criter.		3.300241
F-statistic	0.856274	Durbin-Watson stat		1.903592
Prob(F-statistic)	0.578406			

Source: Eviews data processing results

Based on the table above, it can be seen that company size is not significant as a moderator between the Debt To Asset Ratio to Return on Assets with a probability value of $0.2668 > 0.05$.

Effect of Total Asset Turn Over Ratio (TATO) on Return on Assets (ROA)

The first hypothesis of this study is that there is a significant influence between the Total Asset Turn Over Ratio (TATO) on Return on Assets (ROA). From the results of research testing, it is known that the coefficient value is -0.986876 thus indicating that the Total Asset Turn Over Ratio (TATO) has a negative effect on Return on Assets (ROA). Whereas the probability value is 0.5097 greater than 0.05 which indicates that the Total Asset Turn Over Ratio (TATO) variable has no significant effect on the Return on Assets (ROA) variable. In this study, it was concluded that H1 which states that the Total Asset Turn Over Ratio (TATO) has a significant effect on Return on Assets (ROA) is rejected or not accepted.

The influence of BOPO on Return on Assets (ROA)

The second hypothesis of this study is that there is a significant effect between BOPO on Return on Assets (ROA). From the results of research testing, it is known that the coefficient value is -0.683843 indicating that BOPO has a negative effect on Return on Assets (ROA). Whereas the probability value is 0.2883 greater than 0.05 which indicates that the BOPO variable does not significantly affect the Return on Assets (ROA) variable. In this study, it was concluded that H2 which states that BOPO has a significant effect on Return on Assets (ROA) is rejected or not accepted.

Effect of Debt to Asset Ratio (DAR) on Return on Assets (ROA)

The third hypothesis of this study is that there is a significant influence between Debt to Asset Ratio (DAR) on Return on Assets (ROA). From the results of research testing, it is known that the coefficient value is -0.606558 thus indicating that the Debt to Asset Ratio (DAR) has a negative effect on Return on Assets (ROA). Meanwhile, the probability value is 0.3585 which is greater than 0.05 which indicates that the Debt to Asset Ratio (DAR) variable has no significant effect on the Return on Assets (ROA) variable. In this study, it was concluded that H3 which states that the Debt to Asset Ratio (DAR) has a significant effect on Return on Assets (ROA) is rejected or not accepted.

The influence of Total Asset Turn Over (TATO) on Return on Assets (ROA) with Company Size as a Moderating Variable

The fourth hypothesis of this study is that there is a significant influence between Total Asset Turn Over Ratio (TATO) on Return on Assets (ROA) with Firm Size as a moderating variable. From the results of research testing, it is known that the probability value is 0.1901 greater than 0.05 which indicates that company size is not significant as a moderator between the Total Asset Turn Over Ratio (TATO) variable and the Return on Assets (ROA) variable. In this study, it was concluded that H4 which states that Total Asset Turn Over Ratio (TATO) has a significant effect on Return on Assets (ROA) with Firm Size as a moderating variable is rejected or not accepted.

The influence of BOPO on Return on Assets (ROA) and Company Size as a Moderating Variable

The fifth hypothesis of this study is that there is a significant influence between BOPO on Return on Assets (ROA) with Firm Size as a moderating variable. From the results of research testing, it is known that the probability value is 0.0003 which is less than 0.05 which indicates that company size is significantly a moderator between the BOPO variable and the Return on Assets (ROA) variable. In this study, it was concluded that H5 which states that BOPO has a significant effect on Return on Assets (ROA) with Firm Size as a moderating variable is accepted (Wijaya, 2019).

The influence of Debt to Asset Ratio on Return on Assets (ROA) with Company Size as a Moderating Variable

The sixth hypothesis of this study is that there is a significant influence between Debt to Asset Ratio (DAR) on Return on Assets (ROA) with Firm Size as a moderating variable. From

the results of research testing, it is known that the probability value is 0.2668 greater than 0.05 which indicates that company size is not significant as a moderator between the variable Debt to Asset Ratio (DAR) to the variable Return on Assets (ROA). In this study, it was concluded that H6 which states that Debt to Asset Ratio (DAR) has a significant effect on Return on Assets (ROA) with Firm Size as a moderating variable is rejected or not accepted (Agus Harjito dan Martono, 2017).

Total Asset Turnover Ratio (TATO), BOPO, and Debt to Asset Ratio (DAR) simultaneously or together have a significant effect on Return on Assets (ROA)

The seventh hypothesis of this study is that the Total Asset Turnover Ratio (TATO), BOPO, and Debt to Asset Ratio (DAR) simultaneously or together have a significant effect on Return on Assets (ROA). From the test results, it is known that the probability value of the F-statistic of this study is 2.252035 greater than 0.05, so it can be concluded that all independent or independent variables in this study are Total Asset Turn Over Ratio (TATO), BOPO, and Debt to Asset Ratio (DAR) simultaneously or together has no significant effect on the Return on Assets (ROA) variable.

CONCLUSION

Based on the results of the analysis and discussion described in the previous chapter, the conclusions that can be drawn from the research are as follows: The activity ratio represented by the Total Asset Turn Over Ratio (TATO) has a negative and insignificant effect on company performance represented by Return On Assets (ROA) at PT Pelabuhan Indonesia (Persero). Profitability Ratio represented by BOPO (Operating Expenses Operating Income) has a negative and insignificant effect on Company Performance in this case Return On Assets (ROA) at PT Pelabuhan Indonesia (Persero). The Solvency Ratio represented by the Debt to Asset Ratio (DAR) has a negative and insignificant effect on the performance of PT Pelabuhan Indonesia (Persero), which in this case is represented by the Return on Assets (ROA).

Company size does not significantly moderate the Activity Ratio which in this study is represented by the Total Asset Turn Over Ratio (TATO) to PT Pelabuhan Indonesia (Persero) Company Performance which is represented by Return on Assets (ROA). Company size significantly acts as a moderator between the Profitability Ratio represented by BOPO and PT Pelabuhan Indonesia (Persero) Company Performance represented by Return on Assets (ROA). Company size does not significantly moderate the Solvability Ratio represented by Debt to Asset Ratio (DAR) to PT Pelabuhan Indonesia (Persero) Company Performance represented by Return on Assets (ROA). Total Asset Turn Over Ratio (TATO), BOPO, and Debt to Asset Ratio (DAR) simultaneously or together have no significant effect on the Return on Assets (ROA) variable.

REFERENCES

- Agus Harjito dan Martono. (2017). *Manajemen Keuangan*. In *edisi Kedua, Cetakan Pertama*. EKONOSIA.
- Aydın Unal, E., Unal, Y., & Isık, O. (2017). The effect of firm size on profitability: evidence from turkish manufacturing sector. *Pressacademia*, 6(4). <https://doi.org/10.17261/pressacademia.2017.762>

- Bernardin, D. E. Y., & Tifani. (2019a). Financial Distress Predicted By Cash Flow and Leverage. *E-Jurnal Apresiasi Ekonomi*, 7(1).
- Bernardin, D. E. Y., & Tifani, T. (2019b). Financial distress predicted by cash flow and leverage with capital intensity as moderating. *Jurnal Apresiasi Ekonomi*, 7(1). <https://doi.org/10.31846/jae.v7i1.188>
- Brigham, E. F., & Houston, J. (2010). Dasar–Dasar Manajemen Keuangan: Assetials Of Financial Management. In *Jakarta: Penerbit Salemba Empat*. Salemba Empat.
- Fahmi, I. (2020). Pengantar Manajemen Keuangan: Teori dan Soal Jawab. In *Alfabeta*. Alfabeta.
- Murniati, S. (2016). Effect of Capital Structure, Company Size and Profitability on the Stock Price of Food and Beverage Companies Listed on the Indonesia Stock Exchange. *Information Management and Business Review*, 8(1). <https://doi.org/10.22610/imbr.v8i1.1192>
- Orniati, Y. (2009). Laporan Keuangan sebagai Alat untuk Menilai Kinerja Keuangan. *Jurnal Ekonomi Bisnis*.
- Purba, R., Hasibuan, R., & Syam, P. A. (2021). Analisis Rasio Keuangan Untuk Mengukur Kinerja Keuangan Pada PT.Pelabuhan Indonesia I (Persero) Periode 2013-2017: (Berdasarkan Keputusan Menteri BUMN Nomor: KEP-100/MBU/2002). *Owner*, 5(2).
- Riyanto, B. (2010). Dasar-dasar pembelanjaan Perusahaan, Edisi Keempat. *Yogyakarta : BPFE*.
- Sabatini, E. M., Putra, B. A., Tridayanti, H., & Damayanti, E. (2021). The Effect of Financial Compensation & Non-financial Compensation on Employee Performance at PT Pelabuhan Indonesia III (Persero) East Java Region. *IJIEEB (International Journal of Integrated Education, Engineering Business)*, 04(02).
- Sanjaya, S. (2017). Analisis Du Pont System dalam Mengukur Kinerja Keuangan PT. Taspen (Persero). *Jurnal Riset Akuntansi & Bisnis*, 17(1).
- Simanjuntak, P. D. L., & Sari, R. L. (2014). Analisis Pengaruh Return on Asset, Net Profit Margin, Earning Per Share Terhadap Return Saham Pada Perusahaan Perbankan Yang Terdaftar di BEI. *Jurnal Ekonomi Dan Keuangan*, 2(7).
- Sutra, F. M., & Mais, R. G. (2019). Faktor-Faktor yang Mempengaruhi Financial Distress dengan Pendekatan Altman Z-Score pada Perusahaan Pertambangan yang Terdaftar di Bursa Efek Indonesia Tahun 2015-2017. *Jurnal Akuntansi Dan Manajemen*, 16(01). <https://doi.org/10.36406/jam.v16i01.267>
- Wijaya, R. (2019). Analisis Perkembangan Return On Assets (ROA) dan Return On Equity (ROE) untuk Mengukur Kinerja Keuangan. *Jurnal Ilmu Manajemen*, 9(1). <https://doi.org/10.32502/jimn.v9i1.2115>