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The Effect Of Total Asset Turnover And Operating Expense Ratio On Return On Expense In Technology Sector Companies Listed On The Idx From 2023 To 2025

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Abstract

Return on Equity (ROE) is an important indicator of a company's financial performance that reflects its ability to generate profits for shareholders from its equity. In the technology sector, maintaining an efficient level of asset turnover is essential to support operational growth, while controlling operating expenses is considered a critical factor that directly influences profitability. This study aims to examine the effect of Total Asset Turnover (TATO) and Operating Expense Ratio (OER) on Return on Equity (ROE) in technology companies listed on the Indonesia Stock Exchange (IDX) during the 2023–2025 period. This study employed a quantitative approach using secondary data obtained from audited annual financial statements published on the IDX website and the official websites of the respective companies. The sample consisted of 111 firm-year observations from 37 companies, selected using purposive sampling. Panel data regression analysis was conducted, and the Common Effect Model (CEM) was selected based on the Chow and Lagrange Multiplier tests. The results indicate that the Operating Expense Ratio has a negative and statistically significant effect on Return on Equity, suggesting that controlling operating expenses enhances a company's ability to generate returns on equity. Conversely, Total Asset Turnover does not have a significant effect on Return on Equity, indicating that a higher asset turnover rate does not necessarily improve equity returns. These findings imply that effective expense management plays a more crucial role in enhancing Return on Equity than asset turnover in Indonesia's technology sector.

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Keywords : Return on Equity, Total Asset Turnover, Operating Expense Ratio, Technology, Panel Data Regression.

INTRODUCTION

The technology sector is one of the main pillars driving digital transformation, operational efficiency, and innovation in the modern economy. Amid rapid technological advancements such as artificial *intelligence* (*AI*), *cloud computing*, and digital system integration, technology companies in Indonesia are required to continuously adapt and innovate. However, during the 2023–2025 period, the technology sector faces dynamic financial challenges, such as the *"tech winter"* phenomenon, high research and development (*R&D*) costs, intense market competition, and increasingly expensive *user* acquisition costs. These conditions require technology companies to focus not only on business *growth* but also on efficient asset management and cost control in order to achieve sustainable profitability.

One indicator used to assess how effectively a company's expenditures generate returns or profits is *Return on Expense*. *Return on Expense* measures a company's ability to optimize every unit of cost or operational expenditure allocated to generate maximum financial performance. The higher the *Return on Expense* value, the more efficiently the company utilizes its operating costs to generate revenue and profit, which ultimately strengthens the company's financial competitiveness (Brigham & Houston, 2022).

One factor believed to influence *Return on Expense* is *Total Asset Turnover* (TATO). *Total Asset Turnover* is an activity ratio that indicates a company's efficiency in utilizing all of its assets to generate sales. The higher the TATO value, the more optimal the company's asset utilization, so that the costs incurred for asset management can be offset by an increase in sales volume, which has the potential to raise the *Return on Expense* (Karim et al., 2023).

In addition to *Total Asset Turnover*, *the Operating Expense Ratio* (OER) is also believed to influence *Return on Expense*. *The Operating Expense Ratio* is a metric that measures the proportion of operating expenses relative to a company's operating revenue. The lower the OER value , the more efficiently the company controls its operating costs. Strict cost control enables the company to maximize profit margins from every rupiah spent, which directly has the potential to increase *Return on Expense* (Kurniasih & Akhmadi, 2024).

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Previous research on the effects of *Total Asset Turnover* and *Operating Expense Ratio* on efficiency and profitability ratios still shows inconsistent results (*research gap*). Some researchers have found that an increase *in Total Asset Turnover* has a significant effect on financial performance efficiency, while other studies indicate that *the Operating Expense Ratio* has a more dominant influence in determining the rate of return on operating expenses. These differing results indicate that the relationship between these variables requires further investigation, particularly in capital-intensive sectors with high operating costs, such as the technology sector.

Given these conditions, research on the impact of *Total Asset Turnover* (TATO) and *the Operating Expense Ratio* (OER) on *Return on Expense* is crucial, particularly for technology sector companies listed on the Indonesia Stock Exchange (IDX). Moreover, studies examining the financial performance of the technology sector during the 2023–2025 period remain relatively limited. Therefore, this study aims to analyze the impact of *Total Asset* Turnover and *Operating Expense Ratio* on *Return on Expense* in technology sector companies listed on the Indonesia Stock Exchange for the 2023–2025 period.

Efficiency Theory

Efficiency Theory explains that a company's success in improving financial performance and maintaining business sustainability depends heavily on management's ability to optimally allocate and utilize resources to minimize waste. In the capital-intensive technology industry with high operating costs, efficient asset management and cost control are key factors in optimizing the return on a company's expenses.

This theory serves as the primary foundation for integrating the relationship between *Total Asset Turnover* (TATO) and *Operating Expense Ratio* (OER) with *Return on Expense*. Based on efficiency theory, the optimal utilization of all company assets—as indicated by a high TATO value—combined with strict control over operating expenses—as indicated by a low OER value—will create overall operational efficiency. Such cost control and asset optimization directly increase *Return on Expense*, reflecting that every rupiah of expense incurred by technology companies during the 2023–2025 period is capable of generating a maximum rate of return (Demsetz, 1973; Leibenstein, 1966).

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Return on Expense **(ROE)**

Return on Equity (ROE) is a profitability ratio used to measure a company's ability to generate net income based on its capital or equity. ROE is one of the key indicators investors use to assess management's efficiency in managing shareholders' investments. A higher *Return on Equity* indicates that a company is more effective at utilizing its capital to generate profits, suggesting that the company has better financial performance and prospects (Brigham & Houston, 2022).

According to Kasmir (2019), *Return on Equity* can be calculated using the following formula:

$$ROE = \frac{Net\ Income}{Total\ Equity}$$

Total Asset Turnover **(TATO)**

Total Asset Turnover (TATO) is an activity ratio used to measure a company's ability to utilize all of its assets to generate revenue. This ratio indicates the level of efficiency in the use of a company's assets. A higher *Total Asset Turnover* value indicates that the company is more effectively utilizing its assets to generate revenue, thereby potentially increasing the company's profits (Kasmir, 2019). Companies that are able to optimize the use of their assets will generate greater revenue, thereby increasing their chances of making a profit. This increase in profit— —can ultimately increase the *Earnings Per Share* received by shareholders.

According to Kasmir (2019), *Total Asset Turnover* is calculated using the following formula:

$$TATO = \frac{Revenue}{Total\ Asset}$$

Operating Expense Ratio **(OER)**

The Operating Expense Ratio (OER) is a ratio used to measure a company's efficiency in controlling operating expenses relative to the operating revenue generated. This ratio indicates how much in operating expenses a company must incur to generate revenue. A lower *Operating Expense Ratio* indicates that the company is more efficient in managing operating costs, while a high OER suggests that a significant portion of revenue is used to cover operating costs, thereby reducing the company's profit (Harahap, 2021). A low *Operating Expense Ratio* is expected to increase the company's profit, which ultimately leads to an increase in *Earnings Per Share.*

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The Operating Expense Ratio is calculated using the following formula:

$$OER = \frac{Operating\ Expense}{Revenue}$$

The Relationship Between *Total Asset Turnover* and *Return on Equity*

Total Asset Turnover (TATO) is an activity ratio that measures a company's ability to utilize all its assets to generate sales. A higher *Total Asset* Turnover value indicates that the company is more efficient in using its assets, so the company's sales and net income have the potential to increase. The increase in net income resulting from the efficient utilization of these assets will have a direct impact on an increase in *Return on Equity* (ROE) as an indicator of the company's ability to provide a rate of return on equity or capital invested by shareholders. The results of Susanti's (2021) study show that *Total Asset Turnover* has a significant effect on a company's profitability performance, while the study by Thohirin and Purnamawati (2021) also demonstrates that *Total Asset Turnover* has a positive and significant effect on the return ratio in telecommunications companies. Based on this discussion, the proposed hypothesis is:

H_1 = Total Asset Turnover berpengaruh terhadap Return on Equity

The Relationship Between *the Operating Expense Ratio* and *Return on Equity*

The Operating Expense Ratio (OER) is a ratio used to measure a company's efficiency in controlling operating expenses relative to operating revenue. A lower OER value indicates that the company is more efficient in managing operating expenses, leading to an increase in profits. Conversely, a high OER indicates high operating expenses that can squeeze a company's net income, thereby potentially reducing *Return on Equity* (ROE). Therefore, operational cost efficiency is a key factor in optimizing the use of capital to increase shareholder returns. Based on the above discussion, the proposed hypothesis is:

H_2 = Operating Expense Ratio berpengaruh terhadap Return on Equity

METHOD

This study employs a quantitative approach to examine the effects of *Total Asset Turnover* and *Operating Expense Ratio* on *Return on Equity* in technology sector companies listed on the Indonesia Stock Exchange (IDX). The quantitative approach was chosen because this study uses numerical data analyzed statistically to test the formulated hypotheses. Data analysis was conducted using panel data regression, a method that combines *cross-sectional* (across companies) and *time-series* (across

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periods) data, thereby yielding more informative estimates than the use of either type of data alone (Gujarati & Porter, 2009). The data used in this study consists of secondary data obtained from the audited annual financial statements of companies in the technology sector for the period 2023–2025. The financial statements were obtained from the official website of the Indonesia Stock Exchange (IDX) and the official websites of the respective companies. The data collected included information on revenue, *total assets*, *operating expenses*, *net income after tax*, and total *equity*.

The population in this study consists of all technology sector companies listed on the Indonesia Stock Exchange during the 2023–2025 period. The sampling technique used is *purposive sampling*, a method of selecting a sample based on specific criteria to ensure the sample aligns with the research objectives. The selection criteria for this study are as follows:

1. Technology sector companies listed on the Indonesia Stock Exchange consecutively during the 2023–2025 period.
2. Companies that published complete, audited annual financial reports during the study period.
3. Companies that *were* not *delisted* or changed sectors during the research period.

Based on these criteria, 37 companies were selected as the research sample. With an observation period of three years (2023–2025), the number of observations used in this study was 111. Data analysis was performed using EViews 13 software

RESULT AND DISCUSSION

This study uses panel data consisting of technology sector companies listed on the Indonesia Stock Exchange (IDX) during the 2023–2025 period. The research data were obtained from audited annual financial reports published on the official website of the Indonesia Stock Exchange and the official websites of the respective companies. After the sample selection process based on the established criteria, 37 companies were selected as the research sample, comprising a total of 111 observations.

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Table 1. Descriptive Statistics

	TATO	OER	ROE
Mean	1.478449	0.286884	0.003545
Median	1.060980	0.104757	0.029991
Maximum	6.419672	4.431773	3.408026
Minimum	0.062717	0.005872	-2.534119
Std. Dev.	1.484973	0.557345	0.510565
Skewness	1.680942	4.984033	0.932476
Kurtosis	5.324599	32.85255	26.17082
Jarque-Bera	77.26540	4581.234	2499.188
Probability	0.000000	0.000000	0.000000
Sum	164.1078	31.84413	0.393491
Sum Sq. Dev.	242.5660	34.16968	28.67439
Observations	111	111	111

Source: *Eviews 13 output*, reprocessed

Table 1 presents the descriptive statistics of the 111 observations, consisting of the s: *Total Asset Turnover* (TATO), *Operating Expense Ratio* (OER), and *Return on Equity* (ROE). Descriptive statistics are used to provide an overview of the research data characteristics based on the mean, minimum, maximum, and standard deviation of each variable. The *Total Asset Turnover* (TATO) variable has *a* mean of 1.478449, with a minimum value of 0.062717 and a maximum value of 6.419672. The standard deviation of 1.484973 indicates a fairly high level of variation in asset utilization efficiency among the sample companies in generating sales. *The Operating Expense Ratio* (OER) variable has a *mean* of 0.286884, with a minimum value of 0.005872 and a maximum value of 4.431773. The standard deviation of 0.557345 indicates that *the Operating Expense Ratio* in the study sample exhibits a considerable degree of data dispersion and variation in cost efficiency across companies.*The Return on Equity* (ROE) variable has *a* mean of 0.003545, with a minimum value of −2.534119 and a maximum value of 3.408026. The standard deviation of 0.510565 indicates a significant variation in the rate of return on equity or capital among technology sector companies listed on the IDX during the 2023–2025 study period.

Table 2. Multicollinearity Test Results

	TATO	OER	ROE
TATO	1.000000	-0.328792	-0.046024
OER	-0.328792	1.000000	-0.356604
ROE	-0.046024	-0.356604	1.000000

Source: *Eviews 13 output*, reprocessed

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Based on the results of the multicollinearity test using the correlation matrix, the correlation coefficient between the independent variables *total asset turnover* (TATO) and *operating expense ratio* (OER) is −0.328792, which is less than 0.80. Thus, it can be concluded that there is no multicollinearity in the research model, and therefore the independent variables are suitable for use in panel data regression analysis.

Selection of the Panel Data Regression Model

In this study, the analysis was conducted using panel data regression. Before estimating the model, the most appropriate regression model was selected using the Chow test and the Hausman test. The Chow test was used to determine the best model between *the Common Effects Model* (CEM) and *the Fixed Effects Model* (FEM), while the Hausman test was used to determine the best model between *the Fixed Effects Model* (FEM) and *the Random Effects Model* (REM).

Table 3. Results of the Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.724779	(36,72)	0.8545
Cross-section Chi-square	34.325663	36	0.5483

Source: *Eviews 13 output*, reprocessed

Based on the results of the Chow Test in the table, the probability value for *the Cross-section Chi-square* is 0.5483, which means the probability value is greater than the 5% significance level (0.05). Therefore, *the Common Effect Model* (CEM) is more appropriate than *the Fixed Effect Model* (FEM). Consequently, the analysis continues using the *Lagrange Multiplier* (LM) Test.

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Table 4. Results of the Lagrange Multiplier Test

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	1.685979 (0.1941)	1.056082 (0.3041)	2.742061 (0.0977)
Honda	-1.298452 (0.9029)	1.027659 (0.1521)	-0.191480 (0.5759)
King-Wu	-1.298452 (0.9029)	1.027659 (0.1521)	0.702364 (0.2412)
Standardized Honda	-1.124751 (0.8697)	1.738793 (0.0410)	-5.051722 (1.0000)
Standardized King-Wu	-1.124751 (0.8697)	1.738793 (0.0410)	-1.574510 (0.9423)
Gourieroux, et al.	--	--	1.056082 (0.2995)

Source: *EViews 13 output*, reprocessed

Based on the results of the *Lagrange Multiplier* (LM) test in the table, the *Breusch-Pagan* probability value (in the *"Both"* column) is 0.0977, which means the probability value is greater than the 5% significance level (0.05). Therefore, *the Common Effect Model* (CEM) is more appropriate than *the Random Effect Model* (REM). Based on the results of the Chow Test and the *Lagrange Multiplier* Test, the best model selected for use in the panel data regression analysis is *the Common Effect Model* (CEM).

Table 5. *Common Effect Model* (CEM) Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.206135	0.075171	2.742233	0.0071
TATO	-0.062941	0.032163	-1.956905	0.0529
OER	-0.381810	0.085695	-4.455438	0.0000

R-squared	0.157056	Mean dependent var	0.003545
Adjusted R-squared	0.141445	S.D. dependent var	0.510565
S.E. of regression	0.473080	Akaike info criterion	1.367551
Sum squared resid	24.17091	Schwarz criterion	1.440781
Log likelihood	-72.89907	Hannan-Quinn criter.	1.397258
F-statistic	10.06116	Durbin-Watson stat	1.663634
Prob(F-statistic)	0.000098		

Source: *EViews 13 output*, reprocessed

Based on the table of panel data regression estimates, the *Total Asset Turnover* (TATO) variable has a regression coefficient of −0.062941 with a p-value of 0.0529. Meanwhile, the *Operating Expense Ratio* (OER) variable has a regression coefficient of

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−0.381810 with a p-value of 0.0000. The *Prob(F-statistic)* value of 0.000098 indicates that the regression model as a whole is significant at the 5% significance level. Furthermore, the *Adjusted R-squared* value of 0.141445 indicates that the *Total Asset Turnover* (TATO) and *Operating Expense Ratio* (OER) variables account for approximately 14.14% of the variation *in Return on Equity* (ROE), while the remainder is explained by other variables outside the research model.

Regression Equation

Based on the results of the *Common Effect Model* (CEM) estimation, the following regression equation was obtained:

$$\text{ROE} = 0{,}206135 - 0{,}062941\ \text{TATO} - 0{,}381810\ \text{OER}$$

Notes:
ROE = *Return on Equity*
TATO = *Total Asset Turnover* (total asset turnover)
OER = *Operating Expense Ratio*

DISCUSSION

The Effect of *Total Asset Turnover* on *Return on Equity*

The test results show that *Total Asset Turnover* (TATO) has a negative but insignificant effect on *Return on Equity* (ROE). The regression results show a coefficient value of −0.062941 with a probability value of 0.0529, which is greater than the 5% significance level (0.05). Theoretically, Kasmir (2019) states that *Total Asset Turnover* measures a company's ability to utilize all its assets to generate sales, where increased efficiency in asset utilization is expected to potentially boost profits, which ultimately has a positive impact on *Return on Equity.* However, the findings of this study reveal a different scenario. High asset turnover efficiency (TATO) does not automatically translate increased sales into net income capable of optimizing the return on equity or shareholders' capital (Brigham & Houston, 2022).

This occurs because technology sector companies listed on the IDX during the 2023–2025 period generally require significant investment in *intangible assets,* research and development (R&D) expenditures, and high user acquisition costs. The ability to leverage assets to generate high sales does not necessarily result in increased net profit if profit margins are eroded by operating costs and economies of scale have not been optimally achieved. In contrast to the findings of Susanti (2021) and Thohirin and Purnamawati (2021), who identified significant effects in other subsectors, in the

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technology sector, asset turnover has not yet been able to produce a tangible impact on the increase in Return on Equity (ROE) received by shareholders.

The Effect of *the Operating Expense Ratio* on *Return on Equity*

The test results show that *the Operating Expense Ratio* (OER) has a negative and significant effect on *Return on Equity* (ROE). The regression results show a coefficient value of −0.381810 with a probability value of 0.0000, which is far smaller than the 5% significance level (0.05). This finding aligns with the theory proposed by Harahap (2021), in which *the Operating Expense Ratio* is used to measure a company's efficiency in controlling operating expenses relative to revenue generated. A high OER value indicates that a significant portion of the company's revenue is forced to cover operating expenses, thereby reducing the company's net profit.

The negative sign of the coefficient indicates an inverse relationship: the higher the OER, the lower the resulting ROE. For companies in the technology- s sector on the IDX, high operating expenses—such as server and IT infrastructure maintenance costs, digital marketing expenses, and salaries for IT specialists—directly erode net profit. This decline in net income ultimately significantly reduces the company's ability to provide a return on shareholders' equity (Brigham & Houston, 2022). The results of this study demonstrate that controlling operational cost efficiency (a low OER) is a crucial factor for companies in the technology sector in increasing their *Return on Equity* (ROE).

CONCLUSION

This study aims to analyze the effect of total asset turnover and operating expense ratio on return on equity in technology sector companies listed on the Indonesia Stock Exchange for the period 2023–2025. Based on the results of panel data regression analysis using the Common Effect Model (CEM), it was concluded that the operating expense ratio has a negative and significant effect on return on equity. These results indicate that technology companies capable of efficiently controlling and managing their operating expenses tend to be better at optimizing the rate of return on equity or shareholder capital. On the other hand, total asset turnover does not have a significant effect on return on equity. This finding indicates that a high asset turnover rate does not necessarily automatically improve a company's ability to generate return on equity for investors. Thus, the effectiveness of controlling operating costs plays a more dominant role in increasing return on equity compared to the efficiency of the company's overall asset turnover.

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This study has limitations because it only includes technology sector companies listed on the Indonesia Stock Exchange during the 2023–2025 period and uses only two independent variables. Therefore, future research is recommended to extend the study period, broaden the scope of industrial sectors, and consider other variables that may potentially influence return on equity

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