MJIFM | MAJAPAHIT JOURNAL OF ISLAMIC FINANCE AND MANAGEMENT

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

ASSET TURNOVER, LEVERAGE, AND ROA: THE MODERATING ROLE OF FIRM SIZE IN ASEAN TECHNOLOGY FIRMS

Vanda Sherlita Ardelia[1]
Universitas Negeri Surabaya, Surabaya, Indonesia
vanda.22098@mhs.unesa.ac.id

Loggar Bhilawa[2]
Universitas Negeri Surabaya, Surabaya, Indonesia
loggarbhilawa@unesa.ac.id

Abstract

The introduction section already presents a clear and relevant research focus by examining the influence of Asset Turnover (ATO) and Debt to Equity Ratio (DER) on firm performance in technology companies within the context of the burn money phenomenon. The background effectively explains why financial efficiency and capital structure are important issues in technology firms that prioritize rapid expansion over short-term profitability. In addition, the inclusion of firm size as a moderating variable adds theoretical contribution by exploring whether company scale strengthens or weakens the relationship between ATO, DER, and Return on Assets (ROA). The research objectives are also stated systematically and are consistent with the variables discussed in the study. Furthermore, the use of quantitative methods and Moderated Regression Analysis (MRA) is appropriate for empirically testing both direct and moderating effects. However, the explanation regarding the low coefficient of determination (R^2) could be elaborated further to provide a stronger justification that firm performance may also be influenced by other financial and non-financial factors outside the model.

Keywords: Asset Turnover; Debt to Equity Ratio; Return on Assets; Firm Size

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

INTRODUCTION

In the era of increasingly rapid digital transformation, technology companies in the ASEAN region are also increasingly faced with intense competition to capture market share and expand their market reach (Garner, 2025). Various aggressive expansion and promotional strategies are being implemented to dominate the market and survive amidst rapid market change. The phenomenon of "burning money" is a common practice among technology companies in the ASEAN region (Murwani, 2024). Burning money is an aggressive strategy employed by technology companies, spending large sums of money on major promotions, extra discounts, and customer subsidies, with the risk of significant short-term losses. This phenomenon is a hallmark of the fierce competition in the digital technology and e-commerce sectors in ASEAN (Samudra et al., 2022).

"Burning money" strategies implemented by technology companies generally require substantial funding and intensive asset utilization to support expansion, customer acquisition, and digital innovation. In this context, companies must maintain efficient operational performance despite prioritizing rapid growth over short-term profitability. Asset Turnover (ATO) becomes relevant because aggressive expansion strategies depend on the company's ability to optimize its assets in generating sales and operational activity. Meanwhile, the Debt to Equity Ratio (DER) reflects the funding structure used to finance expansion activities, as technology firms often rely on external financing to sustain growth strategies and market penetration. Ineffective asset utilization and excessive dependence on debt may reduce profitability and weaken financial sustainability, which is reflected in Return on Assets (ROA). Therefore, although burn money practices emphasize market expansion and customer growth, financial efficiency and funding management remain important factors in determining the long-term performance of technology companies.

Technology companies in ASEAN should be able to achieve high profitability by optimizing asset turnover and maintaining a healthy funding structure. However, according to data from the OECD (2024) document, the average Return on Assets (ROA) for ASEAN companies declined from 6% in 2010 to 4% in 2022. This decline in ROA is not in line with the increase in investment in assets and digitalization among ASEAN companies (Board, 2025). This indicates that companies have not been able to translate asset investment and funding efficiency into increased profitability.

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

This research was conducted on technology companies in ASEAN, specifically Indonesia, Malaysia, Thailand, Vietnam, and Singapore, during the 2024 period. ASEAN was selected based on its position as a developing technology hub with rapid technological growth, high investment in the digital economy, and intense technological competition in the region (Board, 2025). The phenomenon observed in this study indicates a mismatch between the magnitude of investment in assets and digitalization and suboptimal profitability.

Theoretically, the relationship between these variables is explained through the resource-based view, pecking order theory, and operational efficiency theory, which emphasizes the importance of resource management and funding strategies in improving performance. However, previous research has shown inconsistent results and has not been extensively tested specifically in the technology sector in ASEAN.

This study adds firm size as a moderating variable, as larger firms tend to have better resources and access to funding than smaller firms (Hung et al., 2021). Therefore, this study aims to analyze the effect of asset turnover and DER on ROA by considering the role of firm size, and to contribute to the growing literature on technology firm performance in the ASEAN region.

LITERATURE REVIEW

Resource-Based View Theory

Resource-Based View Theory (RBV) explains that company performance must be valuable, rare, inimitable, and non-substitutable. (Barney, 1991) states that companies can achieve sustainable competitive advantage not only through a "strengths-weaknesses-opportunities-threats" analysis, but also by considering resources that are heterogeneous, difficult to imitate, and capable of supporting strategy implementation that can increase efficiency and effectiveness. In the context of technology companies, the assets referred to are not only physical assets, but also financial capabilities, technological competencies, and managerial processes that can generate added value (Priatna & Limakrisna, 2021). Therefore, the Asset Turnover and Debt to Equity Ratio variables are relevant for analysis using the resource-based view theory, as both variables demonstrate a company's ability to optimize internal resources to generate profitability, as measured by Return on Assets.

Asset Turnover illustrates a company's ability to manage and utilize its assets to generate revenue. Based on RBV theory, resources (assets) are considered valuable if they can increase a company's efficiency. Asset turnover is an important indicator of a company's effectiveness in managing its assets. The

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

higher the asset turnover, the greater the value created by the assets, thus increasing contribution, which ultimately increases Return on Assets (Hanafi & Halim, 2018). Based on their assets, technology companies are classified as sectors with numerous digital assets and infrastructure. The efficiency of asset utilization is an indicator that can differentiate between companies that can generate competitive advantages and those that cannot (Zou et al., 2024).

The Debt to Equity Ratio (DER) illustrates a company's ability to manage its financial resources and funding structure. RBV theory is useful for linking financial capabilities to strategic implementation. Companies that effectively manage leverage can expand their operational capacity and fund innovation (Abubakar & Anyonje, 2025). However, excessive use of debt can also increase financial risk, ultimately reducing the effectiveness of capital utilization (Budiarsyah, 2025). Therefore, the effect of Debt to Equity on Return on Assets can be positive or negative, depending on how the company manages its capital structure.

Firm size acts as a moderating variable in the relationship between Asset Turnover and Debt to Equity Ratio on Return on Assets. Larger companies possess more comprehensive, stable, and difficult-to-imitate resources. These resources can include broader access to funding, a stronger reputation, more advanced technology, and more mature managerial capabilities (Fowowe, 2017). This aligns with the concept of resource heterogeneity in RBV theory, which explains that companies do not have the same capacity to manage resources (Barney, 1991). Therefore, the effect of Asset Turnover and Debt to Equity Ratio can vary depending on company size. Larger companies are typically more efficient in utilizing assets and are better able to manage leverage risk.

Pecking Order Theory

This theory explains a company's preferences in choosing funding sources to meet its capital needs. This theory states that companies will prefer to use internal funding first (retained earnings), before using external funding such as debt, and ultimately using equity (Myers & Majiuf, 1984). In this study, pecking order theory is relevant to explain the relationship between the Debt to Equity Ratio and Return on Assets. Companies with high profitability tend to have large internal funding sources, which ultimately can lead to a low Debt to Equity Ratio, meaning the company is less dependent on debt. Meanwhile, companies with low profitability rely more on funding such as debt, which can increase the Debt to Equity Ratio.

Operational Efficiency Theory

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

Operational efficiency theory explains that a company's ability to achieve maximum output with minimum input usage is key to improving financial performance. Operational efficiency, according to Lee & Johnson (2012), is a company's ability to "deliver products and services cost-effectively without sacrificing quality." This efficiency measure can be seen from the comparison between actual output and the input used by the company. High efficiency is achieved when the company is able to achieve productivity levels close to best practices. In this study, Asset Turnover is a variable that reflects how efficiently a company uses assets to generate sales. If a company is able to improve its operational efficiency (minimizing asset waste, increasing the use of fixed assets, and accelerating inventory turnover), the Asset Turnover value will increase. This increased efficiency ultimately increases the company's ability to generate profits, as reflected by the Return on Assets variable.

Asset Turnover

The asset turnover ratio indicates how much sales volume is generated by each dollar of the company's assets. Asset Turnover measures how effectively a company's assets are used to generate sales (Brealey et al., 2020). Asset Turnover calculates a company's net sales, which is the result of total revenue minus sales returns and discounts. Total assets, henceforth, include all current and non-current assets used by the company during its business operations. A high asset turnover value indicates that a company is capable of generating relatively large sales from its assets, while a low asset turnover value indicates that the company's assets are less productive or not optimally managed (Wu et al., 2025).

Two factors can influence asset turnover. The first is internal: operational efficiency, fixed asset investment policies, and the company's asset structure can determine the company's ability to generate revenue from its assets. The second is external: industry characteristics and the level of competition can also influence asset turnover. In technology companies in ASEAN, the dominant asset structure of digital assets can lead to relatively higher asset turnover values compared to other sectors.

Debt to Equity Ratio

The Debt to Equity Ratio is a solvency ratio used to measure the proportion of debt to equity. This ratio is useful for determining the ratio between the amount of funds provided by creditors and the amount of funds from the company's owners (Thian, 2022). A high ratio indicates that the company uses high financial leverage. Companies with high financial leverage also face high risks. Conversely, companies with low financial leverage have lower risks. Proper use of leverage can increase profitability if borrowed funds are used productively. However,

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

excessive leverage can depress profitability due to increased interest expenses. Other factors such as revenue stability, asset structure, company size, and economic conditions can also influence the Debt to Equity Ratio.

Return on Assets

Return on Assets is a ratio that indicates the contribution of assets to generating net income (Thian, 2022). In other words, using ROA can help determine whether available assets are truly operating and generating profits (Hanafi & Halim, 2018). Return on Assets is composed of two main components: profit margin and asset turnover. Profit margin illustrates how much profit a company earns from each dollar of sales. Meanwhile, asset turnover illustrates how quickly a company is able to use its assets to generate sales (Faradilla & Bhilawa, 2022). A high profit margin or asset turnover rate will increase Return on Assets.

Firm Size

Firm size reflects the size of a company, calculated by total assets, average sales level, total sales, or stock market value (Afonso Baretto & Ramadhani Kurniawan, 2025). Based on the concept of economies of scale (Tarumingkeng, 2025), there are characteristic differences between large and small companies. Large companies typically have stronger operational stability and are able to operate at lower costs per unit due to their high production scale and optimal utilization of technology and resources. This condition not only strengthens operational performance but also increases the efficiency of asset use, thereby strengthening the influence of asset turnover on return on assets. Larger companies have easier access to funding and have a better reputation among investors and creditors. Company size can influence capital structure, as larger companies generally have easier access to loans or other sources of funding and possess more mature managerial capabilities than smaller companies (Setiawan, 2022). Thus, the negative impact of the debt-to-equity ratio on return on assets can be reduced. Unlike large companies, small companies have more flexible operational capabilities and stronger levels of innovation, but they also face higher risks, including higher debt costs and dependence on faster asset turnover. Therefore, company size plays a significant role in moderating the relationship between the two variables. Therefore, firm size may strengthen or weaken the influence of Asset Turnover and Debt to Equity Ratio on Return on Assets.

RESEARCH METHOD

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

This study uses quantitative methods to examine the impact of Asset Turnover and Debt to Equity Ratio on Return on Assets, moderated by company size. The study population comprised 288 technology companies that published their financial reports in the OSIRIS database. After the outlier screening process, 134 companies met the research criteria and were selected as the final sample. Secondary data was obtained from the OSIRIS Financial database for the 2024 period. The currency used in the study was USD with the average exchange rate for 2024, sourced from (World Bank, 2024).

Data analysis was performed using moderated regression analysis to test the moderating effect of a variable. Prior to the regression analysis, classical assumption tests, including normality, multicollinearity, and heteroscedasticity tests, were conducted to ensure the validity of the regression model. In addition to the classical assumption tests. In addition, sensitivity analysis was conducted through outlier identification using boxplots and mean-centering procedures to minimize multicollinearity in the interaction terms. Statistical analysis was performed using SPSS software, with a significance level of 5% ($\alpha = 0.05$) used to determine the statistical significance of the findings.

RESULTS AND DISCUSSION

Descriptive Statistical Test

Descriptive Statistics

	N	Minimum	Maximum	Mean	Standard Deviation
X1 (ATO)	134	.00	1.41	.6008	.28824
X2 (DER)	134	.00	1.16	.4175	.29115
Y (ROA)	134	-.10	.14	.0298	.05112
M (Firm Size)	134	7.63	13.77	10.8366	1.35192

Based on the table, it can be seen that the data used in this study is 134 technology companies in the ASEAN region. This data was obtained after outliers were removed from the total of 288 data sets.

The Asset Turnover variable has an average of 0.6008, indicating that the company is able to generate sales of approximately 0.60 times its total assets. The Debt to Equity Ratio has an average value of 0.4175, indicating that companies generally use debt in a lower proportion than equity. Meanwhile, Return on Assets has an average value of 0.0298, indicating that the company's ability to generate profits from total assets is still relatively low. The company size variable has an average of 10.8366, illustrating that the companies sampled in this study have a fairly large scale with relatively moderate variations.

MJIFM | MAJAPAHIT JOURNAL OF ISLAMIC FINANCE AND MANAGEMENT
Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

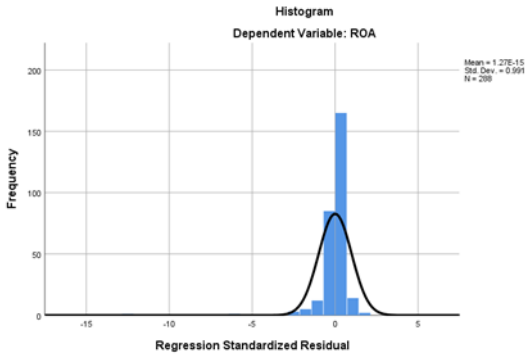
Normality Test

Normality testing in this study uses the Kolmogorov-Smirnov (KS) test by looking at the significance value derived from the residuals that have been generated.

One Sample Kolmogorov-Smirnov Test

	Standardized Residual
N	288
Asymp. Sig. (2-tailed)	.000

Based on the table, the normality test results obtained for a total of 288 data sets were 0.000 (<0.05). This indicates that the data is not normally distributed. The results of the normality test are supported by the following histogram and PP plot:



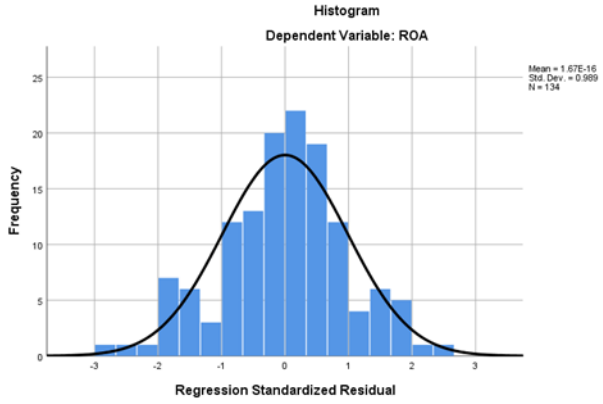
Based on the PP Plot display, it can be concluded that the histogram graph shows a distribution pattern that is skewed to the right and is not normal. To address the non-normal distribution, outlier screening was conducted using boxplot analysis and standardized residual identification. Observations categorized as extreme outliers were excluded because they had the potential to distort the regression estimates and violate classical assumption requirements. After the screening process, 134 observations remained and met the normality criteria, as indicated by the Kolmogorov-Smirnov significance value of 0.200 (>0.05).

The outlier removal process was conducted solely to improve the robustness and validity of the regression model, not to manipulate the statistical results. The remaining sample was still considered representative of technology companies in ASEAN because it retained firms with relatively similar industrial characteristics and financial reporting standards.

MJIFM | MAJAPAHIT JOURNAL OF ISLAMIC FINANCE AND MANAGEMENT
Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

One Sample Kolmogorov-Smirnov Test	
	Standardized Residual
N	134
Asymp. Sig. (2-tailed)	.200

Based on the table, the data used is 134 technology companies in ASEAN with an Asymp Sig value of 0.200 (>0.05). The results of the normality test are supported by the following histogram and PP plot:



Based on the histogram graph and PP Plot with 134 data, it is concluded that the histogram graph is normally distributed and symmetrical, not skewed to the right or left.

Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	**VIF**
(Constant)		
X1 (ATO)	.010	97.568
X2 (DER)	.015	66.902
M (Firm Size)	.143	7.009
X1M	.010	104.543
X2M	.014	73.093

Dependent Variable: ROA

The table shows the results of the multicollinearity test before centering. It shows that all variables except the moderating variable exhibited multicollinearity, with VIF values >10.00. The table below displays the results of the centering method:

Model	Collinearity Statistics	
	Tolerance	**VIF**

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

(Constant)		
X1 (ATO)	.871	1,147
X2 (DER)	.761	1,315
M (Firm Size)	.900	1.111
X1M _C	.897	1,114
X2M_C	.861	1,162

Dependent Variable: ROA

Based on the table, it can be seen that:

A. The VIF value of variable X1 (Asset Turnover) shows 1.147 (<10.00). It can be concluded that the Asset Turnover variable does not experience multicollinearity symptoms.
B. The VIF value of variable X2 (Debt to Equity Ratio) shows 1.315 (<10.00). It can be concluded that the Debt to Equity Ratio variable does not experience multicollinearity symptoms.
C. The VIF value of the M (Firm Size) variable shows 1.111 (<10.00). It can be concluded that the Firm Size variable does not experience multicollinearity symptoms.
D. The VIF value of the interaction variable between X1 (Asset Turnover) and M (Firm Size) shows 1.114 (<10.00). It can be concluded that the interaction variable between Asset Turnover and Firm Size does not experience multicollinearity symptoms.
E. The VIF value of the interaction variable between X2 (Debt to Equity Ratio) and M (Firm Size) shows a figure of 1.162 (<10.00). It can be concluded that the interaction variable between Debt to Equity Ratio and Firm Size does not experience symptoms of multicollinearity.

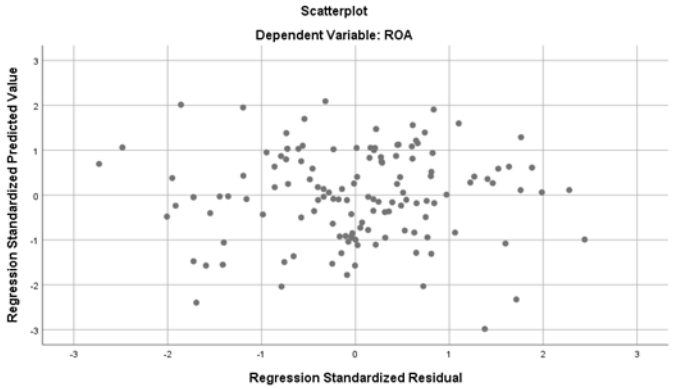
Heteroscedasticity Test

Heteroscedasticity testing in this study uses the White Test by looking at the significance value derived from the residuals that have been generated.

White Test for Heteroskedasticity [a,b,c]	
Chi-Square	Sig.
19,872	.281

Based on the table, it can be seen that the White Test Significance value is 0.281 (>0.05); therefore, it can be concluded that the residual data variance is constant or homoscedasticity, or there are no symptoms of heteroscedasticity. The results of the table are supported by the following scatterplot:

MJIFM | MAJAPAHIT JOURNAL OF ISLAMIC FINANCE AND MANAGEMENT
Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170



Based on the scatterplot graph, it can be seen that the points are spread randomly and are spread both above and below the number 0 on the Y axis. This can be concluded that there is no heteroscedasticity in the regression model.

Hypothesis Testing

Coefficients		
Model	**Unstandardized Coefficients B**	**Sig.**
(Constant)	-.044	.217
ATO	.055	.000
DER	-.060	.000
Firm Size	.006	.065
X1M_C	-.002	.909
X2M_C	.002	.841

Dependent Variable: ROA

Based on the table, it can be seen that:

A. Asset Turnover shows a significant value of 0.000 (<0.05) which has a positive and significant influence on Return on Assets.
B. Debt to Equity Ratio shows a significant value of 0.000 (<0.05) which has a negative and significant influence on Return on Assets.
C. The significance value of the Firm Size*ATO interaction is 0.909 (>0.05). This indicates that firm size cannot moderate the effect of ATO on ROA.

The significance value of the Firm Size*DER interaction is 0.841 (>0.05). This indicates that company size cannot moderate the effect of DER on ROA.

The Influence of Asset Turnover on Return on Assets of Technology Companies in ASEAN

The research found that asset turnover (ATO) has a positive and significant effect on return on assets (ROA) in technology companies in ASEAN. This finding

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

indicates that the faster a company's assets turn over to generate sales, the higher its profitability.

These results are supported by several previous studies. Zavalii et al., (2025)In their study of advertising companies in Central and Eastern Europe, they found that asset turnover positively impacted return on assets. Similarly, Nasution et al., (2019)they demonstrated that total asset turnover significantly impacted profitability (return on equity) in automotive companies in Indonesia. Research by Fachrezi & Maidalena, (2025) and Syafruddin et al., (2023)also showed a positive effect of asset turnover on return on assets.

The findings of this study align with the Operational Efficiency Theory by Lee & Johnson, (2012), which states that operational efficiency is a company's ability to deliver products and services cost-effectively without sacrificing quality. Asset Turnover in this study serves as a proxy for efficiency, illustrating how optimally inputs (total assets) are managed to generate outputs (sales). When technology companies are able to minimize asset waste, accelerate inventory turnover, or optimize the use of digital assets and technology infrastructure, the ATO value will increase. This increased efficiency ultimately increases the company's ability to generate profits (ROA).

The results of this study also strengthen the Resource-Based View Theory (RBV) perspective (Barney, 1991). In RBV, a company's resources must be valuable to create a competitive advantage. A high ATO value reflects the company's assets being effectively managed to create added value. For technology companies, some of whose assets are digital and intangible, the ability to use these assets efficiently is a crucial factor in distinguishing between companies that achieve competitive advantage and those that do not. Therefore, technology companies in ASEAN that have achieved high ATO values have demonstrated that their asset resources are valuable and contribute directly to increased profitability.

H1: Asset Turnover has a positive and significant effect on Return on Assets.

The Effect of Debt-to-Equity Ratio on Return on Assets of Technology Companies in ASEAN

The results of the research indicate that the Debt-to-Equity Ratio (DER) has a negative and significant effect on Return on Assets (ROA). This means that increasing the proportion of debt in the capital structure can actually reduce the profitability (ROA) of technology companies in ASEAN.

Previous research by [Nasution et al. (2019)] found that the Debt to Equity Ratio had a significant negative effect on profitability. Research by Syafruddin et

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

al. (2023)[ ] also showed that DER had a negative effect on Return on Assets of non-financial companies in Indonesia. However, there are differences in the results of this study Fachrezi & Maidalena (2025)and Devi et al., (2025)those that showed a positive effect. These differences could be due to differences in sector, research period, or company characteristics. In the dynamic and high-risk technology sector, the market and investors prefer companies with prudent capital structures, so high debt can be viewed as a negative factor that can depress profitability.

The findings of this study align with Pecking Order Theory by Myers & Majiuf (1984). This theory explains that companies have funding preferences. Companies with high profitability (high ROA) tend to have substantial internal funding sources, resulting in low reliance on debt (low DER). Conversely, companies with low profitability will rely on external funding such as debt, which can ultimately increase DER.

Based on the Resource-Based View Theory Barney (1991), financial capability is a strategic resource that must be managed carefully. Abubakar & Anyonje, (2025) states that companies that are able to manage leverage effectively should be able to expand operational capacity and fund innovation. However, the results of this study indicate that technology companies in ASEAN have not been able to manage debt optimally. Excessive use of debt actually increases the debt burden and financial risk, which ultimately reduces the effectiveness of capital use and suppresses profitability. This indicates that in the dynamic and high-risk technology industry, debt is not automatically a valuable resource, but can become a burden that erodes profits if not balanced with adequate risk management.

H2: Debt-to-Equity Ratio has a negative and significant effect on Return on Assets.

The Effect of Asset Turnover on Return on Assets of Technology Companies in ASEAN Moderated by Company Size

The research results show that company size cannot moderate the effect of asset turnover on return on assets. In other words, company size does not change the intensity of the relationship between asset turnover efficiency and profitability.

These results align with research Devi et al., (2025)that found that company size did not moderate the relationship between variables in its study of the basic and chemical industries. Although Zavalii et al., (2025)it found that company size, measured by the number of employees, had a direct negative effect on efficiency, as a moderating variable, company size did not alter the intensity

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

of the relationship between ATO and ROA. This indicates that ATO directly and robustly influences profitability, independent of the size of the company's total assets.

Resource-Based View Theory (RBV) emphasizes resource heterogeneity, which states that companies have varying capacities for managing resources. Theoretically, larger companies should possess more comprehensive resources, more advanced technology, and more mature managerial capabilities, thus enabling them to utilize assets more efficiently than smaller companies (Fowowe, 2017). However, this study found no such differences.

This indicates that in the ASEAN technology industry, asset management effectiveness (ATO) is a fundamental, universal capability, regardless of company size. Small, agile, and adaptable companies are able to utilize their assets efficiently, while larger companies with more assets may not necessarily have a superior asset turnover rate. In other words, competitive advantage from operational efficiency can be achieved by companies of all sizes, provided they implement sound asset management practices.

H3: Company size cannot moderate the relationship between Asset Turnover and Return on Assets.

The Effect of Debt to Equity Ratio on Return on Assets of Technology Companies in ASEAN Moderated by Company Size

Research has shown that company size does not moderate the effect of Debt to Equity Ratio on Return on Assets. The negative effect of DER on ROA is consistent across small, medium, and large companies.

Previous research has shown mixed results. Research by [ ] Kim et al., (2023)found that the effect of the Debt to Equity Ratio varies depending on company size in the ICT sector in Korea. Kim's research states that DER has no significant effect in large companies. Furthermore, research by [ ] Wahyuni & Fanny, (2025)found that company size does not moderate the effect between DER and ROA. Thus, these findings reinforce the findings of this study that company size is not a factor capable of moderating the effect of the Debt to Equity Ratio on Return on Assets.

This phenomenon can be explained by referring to the pecking order theory (Myers & Majiuf, 1984). This theory emphasizes the preference for internal funding, rather than the scale of the company. This means that financing decisions are determined more by the availability of retained earnings than by asset size. If a large company has low profitability, it will still be forced to use debt and bear the risks. Furthermore, the highly competitive and dynamic nature

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

of the technology industry in ASEAN means that even large companies face high innovation pressures. Funds from debt are often allocated to sales activities, such as extra discounts, which are risky and do not necessarily generate short-term profits. As a result, the debt burden depresses ROA, regardless of the company's size.

H4: Company size cannot moderate the relationship between Debt to Equity Ratio and Return on Assets.

CONCLUSION

This study provides empirical evidence on how operational efficiency and capital structure influence profitability in ASEAN technology firms, while also examining the moderating role of firm size. The findings reveal that Asset Turnover has a positive and significant effect on Return on Assets, confirming that efficient utilization of assets is a key driver of profitability. Firms that are able to optimize digital infrastructure, manage resources effectively, and accelerate asset utilization tend to generate higher returns. Conversely, Debt to Equity Ratio is found to have a negative and significant impact on profitability, indicating that excessive reliance on debt increases financial risk and suppresses firm performance, particularly in the highly dynamic and innovation driven technology sector.

Furthermore, the study finds that firm size does not moderate the relationship between Asset Turnover and Return on Assets, nor between Debt to Equity Ratio and Return on Assets. This suggests that both efficiency and financial structure exert consistent effects across firms regardless of their scale. Smaller firms can achieve similar efficiency levels as larger firms, while the negative consequences of high leverage remain relevant irrespective of firm size. These findings imply that internal efficiency and prudent financial management are more critical than scale in determining profitability within the ASEAN technology industry.

However, this study is subject to several limitations. The substantial removal of outliers reduces the representativeness of the sample, the non-linear relationship among variables indicates potential model limitations, and the relatively low explanatory power suggests that other important factors such as macroeconomic conditions, innovation capability, and managerial strategy are not captured in the model. Additionally, the inability of firm size to act as a moderating variable indicates that alternative moderating factors may better explain variations in profitability.

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

Based on these findings, several suggestions are proposed. For practitioners, technology firms should prioritize improving asset efficiency and adopt more cautious debt management strategies, emphasizing internal financing whenever possible. For investors, Asset Turnover can serve as a reliable indicator of operational effectiveness, while high leverage should be carefully evaluated due to its potential negative impact on returns. For future researchers, it is recommended to incorporate longer panel data, apply more robust analytical methods, and explore additional variables such as innovation intensity, market competition, and macroeconomic indicators to enhance the explanatory power of the model and provide deeper insights into firm performance.

REFERENCES

Abubakar, A. O., & Anyonje, S. A. (2025). Financial Leverage and Corporate Financial Performance: A Comprehensive Review. *East African Finance Journal*, *4*(2), 34–54. https://doi.org/10.59413/eafj/v4.i2.3

Afonso Baretto, C., & Ramadhani Kurniawan, A. (2025). The Influence of Profitability, Executive Character, and Company Size on Tax Avoidance. *AKRUAL: Jurnal Akuntansi*, *17*(1), 2085–9643. https://doi.org/10.26740/jaj.v17n1.p.180-187

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. In *MA Journal of Management ~* (Vol. 17, Number 1).

Board, J. (2025). Mengapa Asia Tenggara jadi Primadona Investasi Digital dan Pusat Data? *CNA*. https://www.cna.id/asia/mengapa-asia-tenggara-jadi-primadona-investasi-digital-dan-pusat-data-26931?utm_source=chatgpt.com

Brealey, R. A., Myers, S. C., & Allen, F. (2020). *Principles of Corporate Finance*.

Budiarsyah, G. G. (2025). Pengaruh Leverage terhadap Risiko Financial Distress: Pendekatan Altman, Ohlson dan Zmijewski. *E-JURNAL EKONOMI DAN BISNIS UNIVERSITAS UDAYANA*. https://ojs.unud.ac.id/index.php/EEB/

Devi, D., Tandiah, E., & Salim, M. (2025). The Effect of Return on Assets, Debt to Equity, and Total Asset Turnover on Earnings Growth with Company Size as a Moderating Variable in Basic Industry and Chemical Sector Manufacturing Companies Listed on the Indonesia Stock Exchange (IDX) for the 2020-2023 Period. *Journal of Applied Business Administration*, *9*(1), 145–157. https://doi.org/10.30871/jaba.9323

Fachrezi, H. A., & Maidalena. (2025). Correlation of Current Ratio (CR), Debt to

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

Equity Ratio (DER) and Total Asset Turnover (TATO) to Return on Assets (ROA) at PT Cisadane Sawit Raya Tbk Period 2019-2023. *MORFAI JOURNAL*, *5*(1), 553–559. https://doi.org/10.54443/morfai.v5i1.2686

Faradilla, I. C., & Bhilawa, L. (2022). Pengaruh Profitabilitas, Leverage, Ukuran Perusahaan dan Sales Growth terhadap Tax Avoidance. *Jurnal Ilmiah Akuntansi Dan Keuangan*, *5*(1), 2022. https://journal.ikopin.ac.id/index.php/fairvalue

Fowowe, B. (2017). Access to finance and firm performance: Evidence from African countries. *Review of Development Finance*, *7*(1), 6–17. https://doi.org/10.1016/j.rdf.2017.01.006

Garner, A. (2025). Digital Innovation Management Transformation in Southeast Asia. In *Journal of Business Management & Innovation (JBMI Insight)* (Number 2).

Hanafi, M. M., & Halim, A. (2018). *Analisis Laporan Keuangan*. UPP STIM YKPN.

Hung, C. V., Vinh, T. P., & Thai, B. D. (2021). "The impact of firm size on the performance of Vietnamese private enterprises: A case study." *Problems and Perspectives in Management*, *19*(2), 243–250. https://doi.org/10.21511/ppm.19(2).2021.20

Isbahi, M. B., Zuana, M. M. M., & Toha, M. (2024). The Multi-Social Relation of the Cattle Industry in the Plaosan Subdistrict Animal Market of Magetan Regency. *Malacca: Journal of Management and Business Development*, *1*(1), 31–46. https://doi.org/10.69965/malacca.v1i1.51

Kim, Y., Jung, S., & Kim, C. (2023). The Impact of Capital Structure on the Profitability Performance of ICT Firms. *Processes*, *11*(2). https://doi.org/10.3390/pr11020635

Lee, C.-Y., & Johnson, A. L. (2012). *Operational Efficiency*.

Murwani, S. (2024). Belum Kapok? Start Up Nekat Lanjutkan Strategi Bakar Uang. *Tirto.Id*. https://tirto.id/belum-kapok-start-up-nekat-lanjutkan-strategi-bakar-uang-gPWm

Myers, S. C., & Majiuf, N. S. (1984). *Corporate Financing and Investment Decisions When Firms Have Information the Investors Do Not Have*.

Nasution, A. E., Putri, L. P., & Dungga, S. (2019). *The Effect of Debt to Equity Ratio and Total Asset Turnover on Return on Equity in Automotive Companies and Components in Indonesia*.

OECD. (2024). *Mobilising ASEAN Capital Markets for Sustainable Growth*. OECD Publishing. https://doi.org/10.1787/196b5bde-en

Priatna, D. K., & Limakrisna, N. (2021). *Intellectual Capital Management* . chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://repo.unwim.ac.id/1

Vol. 6 No. 2, 2026, 2788–2805 e-ISSN 2798-0170

113/1/Intelectual%20Capital%20Management.pdf?utm_source=chatgpt.com

Samudra, J. K., Sudaryat, S., & Nova Lita, H. (2022). "Burning Money" By E-Commerce Platform Businesses And The Relationship With Selling Loss Based On Business Competition Law In Indonesia. *Unram Law Review*, *6*(1). https://doi.org/10.29303/ulrev.v6i1.222

Setiawan, E. (2022). *Profitabilitas, Ukuran Perusahaan dan Pertumbuhan Asset Serta Pengaruhnya Terhadap Leverage pada Perusahaan (Teori Hingga Empirik)*.

Syafruddin, M., Weinanto, C. J., & Haryani, H. (2023). Evidence of Financial Ratio Impact on Non-Financial Firm Profitability. *Accounting Analysis Journal*, *12*(2), 102–111. https://doi.org/10.15294/aaj.v12i2.70466

Tarumingkeng, R. C. (2025). *Economies of Scale*.

Thian, A. (2022). *Analisis Laporan Keuangan*.

Wahyuni, E., & Fanny, I. S. (2025). Pengaruh Current Ratio, Debt to Equity Ratio Terhadap Return On Asset Dengan Ukuran Perusahaan Sebagai Variabel Moderasi pada Perusahaan Transportasi yang Terdaftar di BEI Periode 2018-2022. *Equivalent : Journal Of Economic, Accounting and Management*, *3*(1), 474–481. http://jurnal.dokicti.org/index.php/equivalent/index

World Bank. (2024). *Official exchange rate (LCU per US$, period average)*.

Wu, W. Y., Chang, W. S., Liao, Y. K., Sudjai, P., Lizares, R., Rahnema, L., Ulpindo, E., & Capistrano, E. P. (2025). Ranking mechanisms for Assessing the Competitiveness of Listed Companies in the Philippines: A Comparative Analysis. *Asia Pacific Management Review*. https://doi.org/10.1016/j.apmrv.2025.100394

Zavalii, T., Lehenchuk, S., Chyzhevska, L., & Hrabchuk, I. (2025). Determinants of Financial Performance in Advertising and Marketing Companies: Evidence from Central and Eastern European Countries. *Journal of Risk and Financial Management*, *18*(3). https://doi.org/10.3390/jrfm18030141

Zou, L., Li, W., Wu, H., Liu, J., & Gao, P. (2024). Measuring Corporate Digital Transformation: Methodology, Indicators and Applications. In *Sustainability (Switzerland)* (Vol. 16, Number 10). Multidisciplinary Digital Publishing Institute (MDPI). https://doi.org/10.3390/su16104087