

Determinants of Factors Affecting Company Performance in The Industrial Goods Subsector on The Indonesia Stock Exchange

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ABSTRACT

This study examines the effect of cash holding, firm size, leverage, asset turnover, intensity, and growth on firm performance in the industrial goods subsector listed on the Indonesia Stock Exchange during the 2015–2024 period. This research employs a quantitative approach using panel data from 130 firms selected through purposive sampling. Data were analyzed using a fixed effect panel regression model with EViews 12. Firm performance is measured by Return on Assets (ROA). The results indicate that firm size, leverage, intensity, and growth have a significant effect, whereas cash holding and asset turnover do not significantly affect firm performance. These findings suggest that effective capital structure management, asset utilization, and growth strategies are essential for improving firm performance.

INTRODUCTION

Over the past twenty years, economic interconnectedness between countries has become increasingly strong, allowing political policies and trade barriers to rapidly impact global financial markets. This increased integration of financial markets makes shocks in one country easily spread to others (Yarovaya et al. 2022). Several major crises, such as the 1997 Asian Crisis, the 2008 Global Financial Crisis, and the COVID-19 pandemic, demonstrate that economic systems remain vulnerable to external pressures, impacting exchange rates, liquidity, and corporate stability. High economic uncertainty increases risk perceptions, leading companies to delay investments and be more cautious in financial decision-making (Chakradhar and Gupta 2025). These conditions require companies to be adaptive to maintain business performance and sustainability.

One indicator frequently used to describe economic uncertainty is the World Uncertainty Index (WUI). This index showed a significant spike during the COVID-19 pandemic and continued to fluctuate in the subsequent period. Data from the Federal Reserve Bank of St. Louis (2026) shows that the WUI in Indonesia has increased since 2023 (St. Louis 2026), reflecting an economic condition that is not yet fully stable. Similar information is also provided by the Economic Policy Uncertainty Index (2025) at the global level (EPU 2025). This situation encourages businesses to be more cautious in determining investment and financing policies. Institutional weaknesses and policy uncertainty can disrupt business performance if not balanced by strong internal governance (Alamandi 2025). Therefore, adaptive planning is increasingly important (Mir, Sheikh, and Muhammad 2025).

In financial management literature, company performance is often associated with several internal factors, such as cash holdings, company size, leverage, asset turnover, intensity, and growth. Alnori and Bugshan (2023) explain that adequate cash holdings can help companies fund investments and reduce financing constraints. Similar findings were also presented by Jabbouri and Almustafa (2021), who showed that cash holdings have a positive effect on performance. However, POST (2022) argues that excessive cash can reflect inefficient resource use. Tawfik et al. (2024) also found that excess cash does not always improve company performance. These discrepant results indicate that the relationship between cash holdings and company performance remains inconclusive.

Variations in findings are also evident in size and leverage variables. Nazir, Azam, and Khalid (2021) stated that larger companies have broader access to financing, potentially improving performance. However, Neves et al. (2022) found that large company size can increase managerial complexity and trigger agency problems. Leverage, according to Jabbouri and Almustafa (2021), can improve performance through debt management effects, but also increases financial risk if not managed properly (Alnori and Bugshan 2023). Inconsistent results also emerged for asset turnover, intensity, and growth. Rizka, Aryaningsih, and Budianto (2025) linked high asset turnover to operational efficiency, while Sudryanto (2023) found that this ratio did not always lead to

increased profits. Intensity and growth also show varying relationships with company performance depending on the context and economic conditions.

Based on these differences in findings, this study focuses its analysis on the industrial goods subsector on the Indonesia Stock Exchange, which plays a significant role in the national economy and has demonstrated resilience during the post-pandemic recovery period. Return on Assets and Industrial Production Index data indicate that this subsector recovered relatively faster than several other sectors. Therefore, this study aims to analyze the influence of cash holdings, size, leverage, asset turnover, intensity, and growth on company performance, as measured by ROA, from 2015 to 2024. This study replicates and adapts the model developed by Alnori and Bugshan (2023) in the Indonesian context, with the hope of providing empirical contributions to the literature and practical implications for company management in the face of economic uncertainty.

LITERATURE REVIEW

Trade-Off Theory

Trade-off theory explains that every company needs to find the right balance between the benefits and risks of using debt to achieve an optimal capital structure (Ahmed et al. 2024). In running a business, debt can be a useful tool because it helps companies obtain additional funds to finance operational activities. Other benefits of using debt include tax savings from interest payments and encouraging management to be more disciplined in managing resources (Gajdosikova and George 2023). However, on the other hand, the greater the amount of debt, the greater the risks faced, such as increased interest expenses, liquidity pressures, and the potential for financial distress or bankruptcy (Attia, Eldeen, and Daher 2022). Therefore, companies must be able to balance the benefits and costs of using leverage to maximize debt financing results without incurring excessive risk. If this balance is achieved, the use of debt will have a positive impact on operational activities, increasing the efficiency of asset use, increasing profits, and ultimately improving the company's financial performance (Stella; Sha 2024).

Pecking Order Theory

Pecking Order Theory explains that companies have a preference order in selecting funding sources, starting with the use of retained earnings, then debt, and finally the issuance of new shares (Bui, Hung, and Pham 2023). This order arises due to information asymmetry, where managers have a better understanding of the company's condition than external investors. The use of internal funds can reduce dependence on external financing, which often incurs additional costs and negative signals to the market (S. Kim, Jung, and Cho 2021). When internal funds are insufficient, companies tend to choose debt because it is considered safer than equity. Ryanata and Deitiana (2022) state that equity is perceived as riskier because shareholders demand a higher rate of return as the risk-free interest rate increases. This choice of financing structure affects company performance, as internal funding can reduce interest costs and improve asset efficiency, thereby increasing ROA (Attia, Eldeen, and Daher 2023). Conversely, excessive use of debt increases financial risk (Y. Kim, Jung, and Kim

2023), while equity issuance incurs issuance costs and dilution risks that can reduce capital efficiency (Burkart and Zhong 2023).

Cash Holding and Company Performance

Cash holding is a company's policy of managing cash to maintain an optimal level to meet current operational needs and long-term financial planning (Elberry 2025). Several studies have shown that cash holding can improve company performance by providing financial flexibility to finance investments and maintain operational continuity. Alnori (2020), Riyazahmed and Sriram (2024), and Jabbouri and Almustafa (2021) assess that cash availability allows companies to respond to business opportunities, including during crises, without facing financing constraints. Conversely, POST (2022) and Tawfik et al. (2024) argue that excessive cash holdings actually reflect inefficiency because funds are not utilized productively and have the potential to reduce profitability. The findings of Alnori and Bugshan (2023) indicate no significant effect between cash holdings and performance, as the benefits of liquidity and opportunity costs cancel each other out.

H1: Cash holding has a significant influence on company performance.

Company Size and Performance

Size reflects the scale of a company, as indicated by the proportion of resources it controls. Larger companies generally have more adequate assets, human resources, and financial capacity to carry out complex business activities (Yusmanianti et al. 2022). Several studies have shown that company size has a positive effect on performance because larger assets and business scale provide room for expansion, diversification, and broader access to financing. This finding was presented by Nazir, Azam, and Khalid (2021) and supported by Alnori (2020) and Das, Chowdhury, and Islam (2022). However, other views suggest that excessive size can actually decrease performance due to increased bureaucracy, managerial complexity, and operational inefficiencies, as reported by Neves et al. (2022) and Sethi, Sahu, and Maity (2023). Other studies found that size has no significant effect on performance because the benefits of scale and additional costs tend to counteract each other, especially when asset management and financial policies are suboptimal (Alnori and Bugshan 2023).

H2: Size has a significant influence on company performance.

Leverage and Company Performance

Leverage is a company's strategy of utilizing borrowed funds as a source of financing to increase potential returns for shareholders (Al-Habashneh 2023). Various studies have shown conflicting results regarding the effect of leverage on company performance. Jabbouri and Almustafa (2021), POST (2022), and Rizka, Aryaningsih, and Budianto (2025) found that using debt can improve performance by increasing investment capacity and providing tax benefits that support profitability (Averio 2020). Conversely, Alnori and Bugshan (2023) and Nazir, Azam, and Khalid (2021) reported that high leverage actually depresses performance due to increased interest expenses, liquidity risk, and potential bankruptcy, ultimately reducing profits (Lestari and Sampurno 2021). Rukin et al. (2025) found no significant effect because the benefits of using debt and financial costs tend to counteract each other.

H3: Leverage has a significant influence on company performance

Asset Turnover and Company Performance

Asset turnover is a ratio that indicates how effectively a company utilizes all its assets to generate sales. This ratio compares total sales to total assets, thus reflecting the company's operational efficiency (Bama, Maksum, and Adnans 2021). Several studies have shown that asset turnover has a positive effect on company performance because it reflects the efficiency of asset use in generating sales and profits. This finding was presented by Rizka, Aryaningsih, and Budianto (2025) and supported by Grozdic et al. (2020) and Elumaro et al. (2024). However, Rukin et al. (2025) found that high asset turnover does not always have a positive impact, as it can stem from low-margin sales or a reduction in productive assets that actually depress profits. Sudryanto (2023) even reported no significant relationship between asset turnover and performance, as the effect of asset efficiency can be overshadowed by other factors such as operational costs, pricing strategy, and industry characteristics.

H4: Asset turnover has a significant influence on company performance.

Intensity and Company Performance

Intensity describes the proportion of tangible fixed assets owned by a company, such as buildings, machinery, and equipment, which have economic value but are relatively difficult to liquidate (İltaş and Demirgüneş 2020). Various studies have shown different results regarding the effect of intensity on company performance. Ali, Rangone, and Martín-de Castro (2024), Weqar, Sofi, and Haque (2020), and Priyan, Nyabakora, and Rwezimula (2023) found that high ownership of tangible assets can improve performance because it serves as collateral that lowers debt costs and supports operational expansion, particularly in the manufacturing sector (İltaş and Demirgüneş 2020). Conversely, Alnori and Bugshan (2023), Chirchir, Kalui, and Tari (2024), and Elumaro et al. (2024) reported that high intensity actually depresses performance due to increased depreciation and maintenance costs, and reduced managerial flexibility. Hayat et al. (2024) found no significant influence because the benefits of access to financing and fixed cost burdens tended to neutralize each other.

H5: Intensity has a significant influence on company performance.

Company Growth and Performance

Growth reflects a company's development, as evidenced by changes in assets and increased economic activity over a period (Puspita et al. 2024). Empirical findings show mixed results regarding the effect of growth on company performance. Several studies suggest that growth has a positive impact because increased sales and business expansion can strengthen profitability and company value, as demonstrated by Alnori (2020), Sawarni, Narayanasamy, and Ayyalusamy (2021), and S. Yadav and Srivastava (2023). Vuković et al. (2022) add that sales growth is often followed by improved financial performance. However, other studies report a negative impact when growth is not accompanied by adequate cost management and control systems, resulting in inefficiencies and depressed profits (Ali, Rangone, and Martín-de Castro 2024; Pakpahan and Laksana 2022). Still others find no significant impact because increased sales are often offset by increased costs and investment (Alnori and Bugshan 2023).

H6: Growth has a significant influence on company performance.

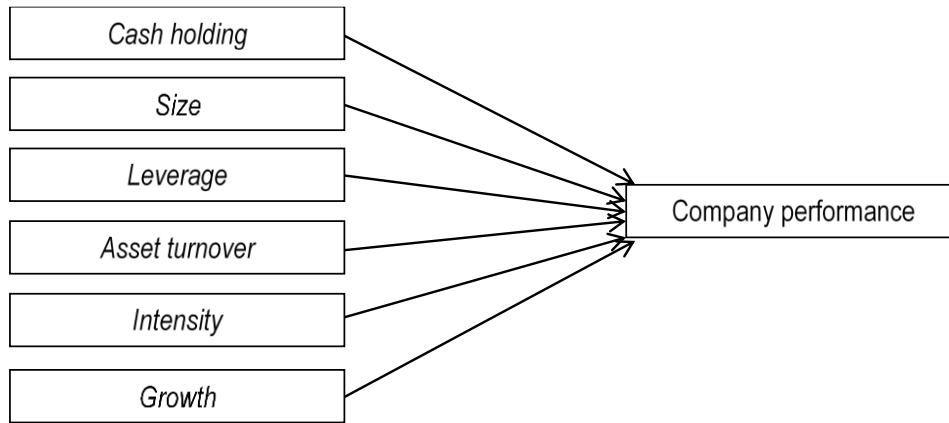


Figure 1
Research Model

METHODOLOGY

This study uses secondary data in the form of quantitative data obtained from company financial reports through the official website of the Indonesia Stock Exchange (IDX) and the official pages of each company. The sample was determined using a purposive sampling method based on certain considerations and criteria to align with the research objectives. The research objects include companies in the industrial goods subsector listed on the Indonesia Stock Exchange during the 2015–2024 period and meeting the established research criteria. Data analysis was performed using the multiple linear regression method, and all collected data were then processed and analyzed using EViews software version 12 to obtain accurate and accountable empirical results. The criteria in the sampling process are shown in Table 1.

Table 1
Sample Selection Criteria

Sample Criteria	Total
1. 1. Companies in the industrial goods business publicly listed on the Indonesia Stock Exchange between 2015 and 2024.	21
2. 2. Companies that did not regularly report financial statements between 2015 and 2024.	(1)
3. 3. Companies that did not present financial statements for a fiscal year ending on December 31st each year.	(2)
Companies that produce outlier data	(5)
Companies that meet all criteria and are used as research objects	13
Number of research periods	10
TOTAL RESEARCH SAMPLE	130

Source: IDX (processed)

Company Performance

Company performance is a company's capacity to achieve its goals and create value for its stakeholders. In this study, financial performance is calculated using ROA, as follows (Alnori and Bugshan 2023):

$$ROA = \frac{\text{Net Income}}{\text{Total Asset}}$$

Cash Holding

Cash holding refers to the amount of cash and cash equivalents a company optimizes for asset investment and distribution to investors while meeting short-term, long-term, and emergency needs to ensure liquidity and mitigate risk. Cash holding can be calculated using the following formula (Alnori and Bugshan 2023):

$$\text{Cash Holding} = \frac{\text{Cash and Cash Equivalent}}{\text{Total Asset}}$$

Size

Size is the amount of resources and assets a company has to fund operations and investments, function efficiently in the market, and gain a competitive advantage. Size can be calculated using the following formula (Alnori and Bugshan 2023):

$$\text{Size} = \ln(\text{Total Asset})$$

Leverage

Financial leverage is the use of fixed-interest borrowed funds to support a company's activities and investments, with the goal of increasing investment returns and profits for shareholders. The proxies used to calculate leverage are (Alnori and Bugshan 2023):

$$\text{Leverage} = \frac{\text{Total Liabilities}}{\text{Total Asset}}$$

Asset Turnover

Asset turnover is a ratio that compares revenue to a company's total assets to measure how efficiently and effectively all assets are used to generate sales per invested asset. Asset turnover is calculated using the following formula (Alnori and Bugshan 2023):

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Total Asset}}$$

Intensity

Intensity is defined as the percentage of a company's physical fixed assets, including buildings, factories, equipment, machinery, and land, that are difficult to liquidate directly but can be pledged for financing and used to generate economic value for stakeholders. Intensity is calculated using the following proxy (Alnori and Bugshan 2023):

$$\text{Intensity} = \frac{\text{Property, Plant, and Equipment}}{\text{Total Asset}}$$

Growth

Growth is a term used to describe the success of investment and operational growth caused by changes in total assets, increased output, increased prices and volume, and qualitative improvements, such as customer satisfaction, product quality, and market position. The proxies used to calculate growth are (Alnori and Bugshan 2023):

$$\text{Growth} = \frac{\text{Revenue}_t - \text{Revenue}_{t-1}}{\text{Revenue}_{t-1}}$$

RESEARCH RESULT & DISCUSSION

The results of the descriptive statistical data analysis are presented in Table 2 as follows:

Table 2
Descriptive Statistics Results

	Mean	Maximum	Minimum	Std. Dev	Obs.
ROA	0,033061	0,163681	-0,091919	0,052200	130
CASH	0,077656	0,394038	0,001970	0,074911	130
SIZE	28,625160	32,763760	26,734500	1,337092	130
LEV	0,513821	1,095112	0,058163	0,214463	130
ASSTRN	0,919124	3,461174	0,132032	0,579954	130
INT	0,350605	0,782401	0,026513	0,203139	130
GRO	0,080745	1,369800	-0,461739	0,259575	130

Source: Eviews edition 12 (edited)

Table 2. can be explained as follows:

1. The dependent variable "ROA" has an average of 0.033061, a maximum value of 0.163681, a minimum value of -0.091919, and a standard deviation of 0.052200 during the 2015-2024 period.
2. The independent variable "Cash holding" has an average of 0.077656, a maximum value of 0.394038, a minimum value of 0.001970, and a standard deviation of 0.074911 during the 2015-2024 period.
3. The independent variable "Size" has an average of 28.625160, a maximum value of 32.763760, a minimum value of 26.734500, and a standard deviation of 1.337092 during the 2015-2024 period.
4. Variables The independent variable "Leverage" has an average of 0.513821, a maximum value of 1.095112, a minimum value of 0.058163, and a standard deviation of 0.214463 during the 2015-2024 period.
5. The independent variable "Asset turnover" has an average of 0.919124, a maximum value of 3.461174, a minimum value of 0.132032, and a standard deviation of 0.579954 during the 2015-2024 period.

6. The independent variable "Intensity" has an average of 0.350605, a maximum value of 0.782401, a minimum value of 0.026513, and a standard deviation of 0.203139 during the 2015-2024 period.
7. The independent variable "Growth" has average of 0.080745, maximum value of 1.369800, minimum value of -0.461739, and standard deviation of 0.259575 during the period 2015 – 2024.

Analysis of Correlation Coefficient and Determination

The correlation coefficient (R) value is 0.714529, obtained from the square root of the R-squared value of 0.510551. This value is in the interval of 0.60 to 0.799, which indicates a strong and unidirectional relationship between the independent and dependent variables. The Adjusted R-squared value of 0.486675 indicates that the independent variables in the regression model are able to explain 48.6675% of the variation in the dependent variable. Meanwhile, the remaining 51.3325% is influenced by other factors outside the research model.

Goodness-of-Fit Test

Based on the results of the F test, the F-statistic value was obtained at 21.38383, which is greater than the F-table value of 2.1731 at a significance level of 0.05 with degrees of freedom $df_1 = 6$ and $df_2 = 123$. Therefore, the null hypothesis (H0) is rejected. In addition, the F-statistical probability value of 0.000000 which is smaller than 0.05 further strengthens these results. Thus, the regression model is declared suitable for use, and all independent variables simultaneously influence the dependent variable.

Regression Analysis and Hypothesis Testing

The results of the regression analysis are shown in Table 3 as follows:

Table 3
Results of Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CASHH	0,084033	0,065658	1,279851	0,203000
SIZE	0,010634	0,003114	3,414607	0,000900
LEV	-0,134567	0,021945	-6,132124	0,000000
ASSTR	0,005787	0,006664	0,868451	0,386800
INT	-0,044415	0,022125	-2,007465	0,046900
GRO	0,044213	0,012852	3,440052	0,000800
C	-0,202030	0,085404	-2,365571	0,019600

Source: Eviews edition 12 (edited)

Based on the results of the regression analysis, the regression equation in this study is formulated as follows: $ROA = - 0.202030 + 0.084033 \text{ Cash holding} + 0.010634 \text{ Size} - 0.134567 \text{ Leverage} + 0.005787 \text{ Asset turnover} - 0.0044415 \text{ Intensity} + 0.044213 \text{ Growth} + \varepsilon$

The first hypothesis examines the effect of cash holding on company performance. Based on the partial test (t-test) on the cash holding variable, the t-statistic value is 1.279851, which is absolutely smaller than the t-table of 1.9787. Furthermore, the probability value (p-value) of 0.2030 is greater than the significance level of $\alpha = 0.05$. Referring to the decision criteria, if the t-statistic \leq t-table or p-value $> \alpha$, then the alternative hypothesis (H1) is rejected and the null hypothesis (H0) is accepted. Thus, it can be concluded that cash holding does not significantly affect company performance. This result is consistent with previous research conducted by Alnori and Bugshan (2023). However, this result contradicts the results found by Riyazahmed and Sriram (2024), Jabbouri and Almustafa (2021), and POST (2022). ROA reflects the efficiency of asset utilization, so that cash that is only stored without being used for investment or productive operational activities does not provide a real contribution to company performance (Saragi 2025).

The second hypothesis examines the effect of size on company performance. Based on the partial test (t-test) results on the size variable, the t-statistic value is 3.414607, which is absolutely greater than the t-table of 1.9787. Furthermore, the probability value (p-value) of 0.000900 is smaller than the significance level of $\alpha = 0.05$. Referring to the decision criteria, if the t-statistic $>$ t-table or p-value $< \alpha$, then the null hypothesis (H0) is rejected and the alternative hypothesis (H2) is accepted. Thus, it can be concluded that size significantly influences company performance. These results are consistent with previous research conducted by ADAM and WIBOWO (2022), Alnori (2020), and Das, Chowdhury, and Islam (2022). However, these results contradict those found by Alnori and Bugshan (2023) and Luluah, Sulistiyo, and Karawang (2025). Size provides companies with resources to expand operations and attract investors, thereby increasing company value and performance (ADAM and WIBOWO 2022). Furthermore, higher sales and higher asset levels indicate diversification capacity and better access to financing, which support profitability.

The third hypothesis examines the effect of leverage on company performance. Based on the partial test (t-test) results on the leverage variable, the t-statistic value is -6.132124, which is absolutely greater than the t-table of 1.9787. Furthermore, the probability value (p-value) of 0.000000 is smaller than the significance level of $\alpha = 0.05$. Referring to the decision criteria, if the t-statistic $>$ t-table or p-value $< \alpha$, then the null hypothesis (H0) is rejected and the alternative hypothesis (H3) is accepted. Thus, it can be concluded that leverage has a significant effect on company performance. These results are consistent with previous studies conducted by Alnori and Bugshan (2023), Nazir, Azam, and Khalid (2021), and Priyan, Nyabakora, and Rwezimula (2023). However, these results contradict the results found by Rukin et al. (2025). Debt used to finance investments can increase expected returns by increasing investment capacity (Averio 2020). With the right financing and tax benefits, this external capital can boost a company's profitability.

The fourth hypothesis examines the effect of asset turnover on company performance. Based on the results of the partial test (t-test) on the asset turnover variable, the t-statistic value is 0.868451, which is absolutely smaller than the t-

table of 1.9787. In addition, the probability value (p-value) of 0.386800 is greater than the significance level of $\alpha = 0.05$. Referring to the decision criteria, if the t-statistic \leq t-table or p-value $>$ α , then the alternative hypothesis (H4) is rejected and the null hypothesis (H0) is accepted. Thus, it can be concluded that asset turnover does not significantly affect company performance. These results are consistent with previous research conducted by Sudryanto (2023). However, these results contradict the results found by Rukin et al. (2025), Grozdic et al. (2020), and Elumaro et al. (2024). High asset turnover indicates that a company's assets are capable of generating sales quickly, but this does not always translate into increased ROA because net profit is heavily influenced by profit margins and the amount of operating costs, interest, and taxes (Akbar and Nugraha 2022). The relationship between asset turnover and company performance is often overshadowed by other economic factors, such as pricing policy, cost efficiency, and industry characteristics (Sudryanto 2023).

The fifth hypothesis examines the effect of intensity on company performance. Based on the results of the partial test (t-test) on the intensity variable, the t-statistic value obtained was -2.007465, which is absolutely greater than the t-table of 1.9787. In addition, the probability value (p-value) of 0.046900 is smaller than the significance level of $\alpha = 0.05$. Referring to the decision criteria, if the t-statistic $>$ t-table or p-value $<$ α , then the null hypothesis (H0) is rejected and the alternative hypothesis (H5) is accepted. Thus, it can be concluded that intensity has a significant effect on company performance. These results are in accordance with previous studies conducted by Alnori and Bugshan (2023), Elumaro et al. (2024) and Chirchir, Kalui, and Tari (2024). However, these results contradict the results found by Hayat et al. (2024). A high proportion of tangible assets often increases depreciation and maintenance costs and reduces managerial flexibility in responding to market changes. If fixed assets are not used productively, fixed cost burdens can squeeze margins and reduce performance.

The sixth hypothesis examines the effect of growth on company performance. Based on the results of the partial test (t-test) on the growth variable, the t-statistic value is 3.440052, which is absolutely greater than the t-table of 1.9787. Furthermore, the probability value (p-value) of 0.000800 is smaller than the significance level of $\alpha = 0.05$. Referring to the decision criteria, if the t-statistic $>$ t-table or p-value $<$ α , then the null hypothesis (H0) is rejected and the alternative hypothesis (H6) is accepted. Thus, it can be concluded that growth has a significant effect on company performance. These results are consistent with previous research conducted by Sawarni, Narayanasamy, and Ayyalusamy (2021), S. Yadav and Srivastava (2023), and Alnori (2020). However, these results contradict those found by Alnori and Bugshan (2023), Rizka, Aryaningsih, and Budianto (2025), and Hidayat, Suroso, and Widyastuti (2024). Increases in a company's sales can strengthen its financial performance and value (Vuković et al. 2022). Furthermore, growing companies tend to adopt better management accounting practices and supply chain strategies, thereby enhancing operational integration and competitive advantage (Waked, Aljaaidi, and Alanazi 2023).

CONCLUSIONS AND RECOMMENDATIONS

The results of the study indicate that cash holdings and asset turnover do not significantly influence company performance, while size, leverage, intensity, and growth are proven to have a significant effect. However, this study has several limitations. First, the model only uses six independent variables with an Adjusted R-squared value of 48.6675%, so that more than half of the variation in company performance is still explained by factors other than the model. Second, the scope of the study is limited to the industrial goods subsector on the Indonesia Stock Exchange during the period 2015–2024, so the results cannot be broadly generalized. Third, the presence of positive autocorrelation indicates the need for model improvements in further research. Therefore, future research is recommended to add relevant variables, expand the object and period of study, and refine the specifications of the regression model.

Based on the results and limitations of the study, several recommendations can be put forward. Further research is recommended to: 1) Add other independent variables that have the potential to influence company performance, such as capital expenditure, market-to-book ratio, and macroeconomic variables to provide a stronger explanatory power for the model. 2) It is necessary to expand the research object by involving other subsectors or sectors in the Indonesia Stock Exchange and the use of a longer observation period is expected to increase the level of generalizability of the research results. 3) Given the discovery of positive autocorrelation, further research is also recommended to improve the specifications of the regression model or use adjustment variables so that the obtained estimation results are more reliable and accurate.

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