

Financial Performance Dynamics and Profitability Drivers in Retail Firms: A Panel Data Analysis

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Abstract

This study analyses the effect of accounts receivable turnover, asset growth, liquidity, leverage, and company size on profitability in retail sub-sector companies listed on the Indonesia Stock Exchange (IDX) for the period 2019–2024. Of the 31 companies, 18 were selected as samples using purposive sampling. The analysis used panel data regression with the selected model being the common effect model. The results showed that accounts receivable turnover and company size had a significant positive effect on profitability, indicating that efficient accounts receivable management and greater company capacity could increase profits. Conversely, leverage has a significant negative effect, suggesting that excessive debt use reduces financial performance. Meanwhile, asset growth and liquidity have no effect on profitability. Managerially, these results imply the importance of optimizing accounts receivable management, controlling debt levels, and utilizing asset capacity to improve the efficiency and financial performance of retail companies.

Keywords: Accounts Receivable Turnover, Assets Growth, Liquidity, Leverage, Company Size, Profitability

JEL CODES: G32; G35; C23

1. Introduction

Organizations that wish to maximize sustainable growth must consider not only external factors but also internal factors that affect profitability. Successful strategies are based on managers' ability to ensure these factors are properly addressed to maximize revenue ([Aldboush, Almasria, and Ferdous 2023](#)). Profitability is considered an important indicator of company performance and, for investors, a positive signal for return on investment. On the other hand, poor profitability indicates poor performance, which will reduce capital, and if this situation persists, the company will eventually be at risk of bankruptcy. Expectations of a positive rate of return are an important part of investment ([Hossain 2020](#)). In investment decision-making, in addition to external macroeconomic factors, internal company factors also serve as indicators of company value, such as leverage, profitability, hedging policies, company size, and others. Investors can determine this by analyzing profitability indicators ([Alghifari et al.](#)

[2022](#)).

The profitability of the consumer cyclicals sector is an interesting topic for discussion ([Oktavia and Ramadhan 2024](#)). The phenomenon occurring at the retail company PT Mitra Adiperkasa Tbk (MAP) illustrates the ongoing impact of the pandemic on the offline retail sector. In the third quarter of 2021, MAP recorded a loss of IDR 114.8 billion due to many mall outlets closing temporarily during the surge in Delta variant cases. Although its revenue increased by 18.3% year-on-year and its gross profit margin reached 41.6%, the company still suffered losses because it was unable to cover other expenses beyond its main operations, such as interest, taxes, and other costs. However, the company's losses decreased as revenue increased. In response, MAP accelerated its transformation to an omnichannel model, strengthened online sales and loyalty programs, and expanded its new category portfolio (health, beauty, lifestyle electronics) to cope with the pressure and look forward to recovery ([Fitriyani 2021](#)). In addition, judging from the average profitability and asset growth rates, retail companies experienced declines and increases every year. Profitability rates declined from 2019 to 2020. Although profitability increased from 2020 to 2022, it declined again from 2022 to 2024. In terms of asset growth, retail companies saw their assets increase from 2019 to 2021. However, after an increase, the company actually declined from 2021 to 2024. This is shown in Figure 1.

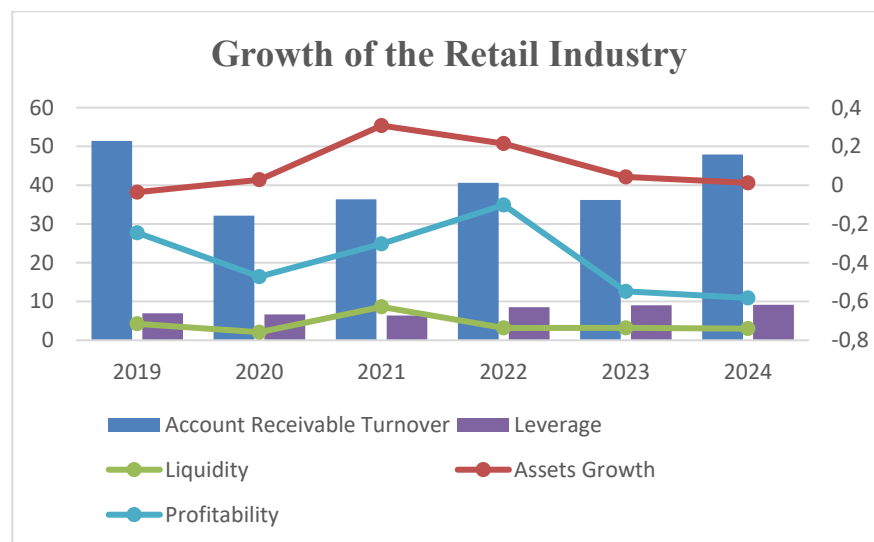


Figure 1. Growth of the Retail Industry in Indonesia (2019-2024)

Source: Data processed by the author, 2025

Effective accounts receivable management supports business growth, improves cash flow, and supports operations and investment. With good management, the risk of bad debts can be reduced, thereby increasing profitability through the reduction of bad debt costs and optimization of working capital ([Surikova et al. 2022](#)). A high accounts receivable turnover rate indicates that the company manages its accounts receivable efficiently. This efficiency reflects good operational management and can contribute to increased company profitability ([Hasanudin, Awaloedin, and Arviany 2022](#)). Effectiveness in accounts receivable management also contributes to the growth of company assets, an important indicator of business growth and expansion.

Asset growth is an important indicator in assessing a company's expansion and development. Increasing assets reflect investments to improve operational capacity and competitiveness.

However, an increase in assets does not always go hand in hand with an increase in company profitability. Efficiency in asset management is a key factor in converting this growth into profit ([Nemati, Javed, and Siddiqui 2021](#)). To achieve profitability, asset growth needs to be balanced with adequate liquidity to support operations and short-term liabilities ([Pamuji et al. 2025](#)).

Liquidity is one of the drivers of a company's profitability, therefore it must be maintained to ensure the financial health of the company ([Olofin et al. 2024](#)). Liquidity ratios are closely related to financial performance because they reflect the level of capital available to the company to operate. Liquidity is very important in ensuring the company's ability to meet short-term obligations and maintain cash flow without disruption by facilitating the rapid and efficient conversion of assets such as financial investments, short-term financing, accounts receivable, short-term advances, and inventory into cash. Assets are considered liquid and high quality if they can be easily and directly converted into cash with minimal or no depreciation in value ([Nam and Tuyen 2024](#)). In addition to liquidity, leverage also plays an important role in maintaining financial stability and supporting the company's long-term profitability.

Leverage is also an important financial strategy that managers must manage. As a mixture of debt and assets adopted by companies to meet their financing needs, leverage determines a company's profitability; thus, a company's choice of financial structure (i.e., the mix of long-term, short-term debt, or equity) affects its value maximization ([Kotey 2024](#)). Currently, there has been extensive research on the effect of leverage on a company's financial performance, but the results are mixed. In addition, each business sector has different characteristics and debt management, so the level of impact also varies greatly ([Pham et al. 2021](#)). Apart from leverage, a company's size also determines its efficiency and profitability.

Company size encompasses the company's capabilities and capacity, measured by the variety and quantity of production capacity it can offer clients simultaneously. Perhaps the biggest advantage for large companies is the opportunity to achieve economies of scale ([Balogun et al. 2023](#)). In the modern global era, larger companies can take advantage of this phenomenon and gain a long-term competitive advantage over smaller companies by maintaining a high market share and producing at lower costs ([Azhar and Ahmed 2019](#)).

Although some studies show a correlation between profitability and accounts receivable turnover, company growth, liquidity, leverage, and company size, other studies have found conflicting results. Research conducted by [Rifai et al. \(2024\)](#) shows that accounts receivable turnover is positively correlated with profitability, but [Aldubhani et al. \(2022\)](#) show no effect between accounts receivable turnover and profitability. Asset growth is positively correlated with profitability, according to research by [Nguyen et al., \(2024\)](#), but [Aldboush et al. \(2023\)](#) found no effect of asset growth on profitability. Research conducted by [Isayas \(2022\)](#); [Mazreku et al., \(2020\)](#) reveals that liquidity is positively correlated with profitability, while research conducted by [Alarussi & Gao \(2021\)](#); [Hossain \(2020\)](#) shows a negative correlation. Leverage is positively correlated with profitability, according to research by [Isayas \(2022\)](#), but research conducted by [Alarussi & Gao \(2021\)](#); [Aldubhani et al., \(2022\)](#); [Yadav et al., \(2022\)](#) produced a negative correlation between leverage and profitability. Company size is positively correlated with profitability, according to the research results of [Dahmash et al., \(2021\)](#); [Tica et al., \(2023\)](#), while research conducted by [Mengstie et al., \(2024\)](#); [Rifai et al., \(2024\)](#) in their research shows a negative correlation.

Unlike the study conducted by [Mazreku et al. \(2020\)](#), which was limited to the banking sector in Kosovo and only involved three financial variables, namely bank size, capital structure, and liquidity, this study broadens the scope by analyzing the retail sub-sector in Indonesia and adding two new independent variables, namely asset growth and accounts receivable turnover. The differences in industry characteristics provide new insights that the determinants of profitability can exhibit different behaviors across economic sectors. In addition, this study reveals distinct and even conflicting effects of each variable on profitability, providing a new perspective on the complexity of financial factors' influence across industry sectors.

The purpose of this study is to explore the significant determinants of profitability in Indonesian manufacturing companies and to examine the relationships between the independent and dependent variables. Academics, prospective investors, external parties, and business management can benefit from the information gathered from this study, which will help them make more informed choices in the future.

2. Literature review

2.1 Signalling Theory

One of the theories that examines finance is signalling theory. This theory was first introduced by [Spence \(1973\)](#) in his research on job market signalling. Signalling theory is a method that facilitates the integration of a company's financial management with external entities. Signalling theory facilitates communication between a company's internal stakeholders, typically represented by financial managers, and external stakeholders such as investors, capital providers, or the general public. The aim is to convey information regarding the company's financial status ([Katterbauer et al. 2022](#)). The signals in question concern the company's internal management strategies aimed at fulfilling the wishes of capital owners. This information is a crucial determinant for investors in making investment decisions regarding a company ([Neto 2023](#)). Managers can use financial statements to communicate these signals, which indicate the success of the company's strategy implementation. This enables investors to gauge the extent to which a company can meet its future objectives. Information derived from signalling theory can have both positive and negative implications. A positive signal indicates that the company is experiencing an increase in profits, whilst a negative signal indicates a decline in profits for the company ([Digdowiseiso 2023](#)). Furthermore, investors can use these guidelines as a reference when monitoring factors such as substantial profits generated, which will enhance the company's profitability. Signalling theory can respond positively to an entity's profitability, thereby increasing shareholders' interest in investing their equity, as it demonstrates that the business is under sound management ([Tsaqif and Agustiningsih 2021](#)).

2.2 Profitability

[Rathi et al. \(2023:72\)](#) state that profitability is a business's capacity to generate profits. According to [Suriyanti & Hamzah \(2023:59\)](#), profitability refers to a company's level of effectiveness in generating profits from its operational activities. Furthermore, profitability also refers to a company's ability to manage its resources to generate profits for investors. Profitability is considered important because it is one of the indicators used to measure a company's financial performance, and can therefore be used as a benchmark for evaluating the company ([Azizi, Umaimah, and Afiqoh 2023](#)). Furthermore, profitability is a ratio used to calculate a company's performance in generating profits from its business activities ([Margono and Gantino 2021](#)). Profitability in this study is proxied by Return on Assets (ROA), which

assesses how efficiently a company generates profit from its assets ([Chrisnando et al. 2024](#); [Talunohi and Bertuah 2022](#)). ROA illustrates a company's ability to generate profit from its resources. This ratio is calculated by comparing net profit after tax with the company's total assets. The higher the return on assets ratio, the better the company's performance in generating profit from its assets ([Hudzaifah, Erlina, and Gultom 2024](#)).

2.3 Accounts Receivable Turnover

Accounts receivable arise as a result of a company's policy of selling on credit ([Jenita & Herispon, 2022:155](#)). However, companies must have a system in place to monitor and control whether credit terms are being applied and adhered to. There is often a need to take corrective action on certain credit policies, and the only way to determine whether the situation is appropriate is to have a sound accounts receivable control system ([Aldubhani et al. 2022](#)). Trade receivables are one of the main sources of cash flow generation and are reflected in the composition of assets in financial statements, as they form part of the organisation's wealth that it legally owns but which is held by another economic entity ([Surikova et al. 2022](#)). According to [Olagunju et al. \(2020\)](#), trade receivables are a crucial component of business finance. Optimal policy requires credit analysis, credit control, and an effective collection system to balance customer needs with the company's liquidity and profitability. This study uses receivables turnover to measure a company's efficiency in collecting receivables over a given period. Receivables turnover is a component of current assets that illustrates the length of time required to convert receivables into cash ([Jirwanto et al., 2024:122](#)). This ratio indicates how many times the funds invested in trade receivables are turned over. A low turnover rate indicates poor collection efficiency ([Astuti and Aprianti 2020](#)).

2.4 Asset Growth

Asset growth refers to the annual rate of change in a company's total assets from one period to the next ([Hartono, 2022:672](#)). Asset growth enhances a company's ability to generate profit as it is accompanied by an increase in the economic benefits derived from those assets. Therefore, asset growth reflects a company's wealth growth. If the company's wealth was previously static, then significant asset growth indicates that the company's final wealth has increased ([Afrianti and Purwaningsih 2022](#)). Asset growth is calculated as the percentage change in assets at a given time relative to the previous year ([Gautam and Bangshi 2024](#)). The growth variable is calculated by taking the difference in assets between two years (t and $t - 1$) and dividing that difference by the assets in year $t - 1$ ([Kim 2025](#)).

2.5 Liquidity

Liquidity ratios are measures used to assess a company's ability to meet its short-term financial obligations, namely the extent to which the company is able to provide sufficient liquid assets to cover those obligations on time ([Jirwanto et al., 2024:22](#)). The view of liquidity according to [Suriyanti & Hamzah \(2023:59\)](#) is to assess a company's capacity to meet its short-term liabilities that have fallen due. Furthermore, the proportion indicating a company's capacity to settle short-term debts that must be paid, or to assess the company's financial potential and meet obligations when called upon, is known as the liquidity ratio. These ratios illustrate a company's ability to meet short-term liabilities ([Setiawan and Pereira 2021](#)). Furthermore, the liquidity ratio is a measure of a company's ability to meet short-term liabilities when they are called upon ([Prasetyo and Isbanah 2023](#)). Liquidity in this study utilises the current ratio. The current ratio is one of the most common liquidity ratios. In his book, [Kasmir \(2010:111\)](#) defines the current ratio as a measure of a company's ability to settle all its short-term liabilities when

they become due for payment. One approach to evaluating a business's financial health is to examine the ratio of current assets to liabilities ([Jihadi et al. 2021](#)). Therefore, liquidity is crucial for maintaining business continuity and meeting short-term emergency needs, as well as supporting growth functions to increase assets in line with industry expectations ([Raharjo and Abdurrahman 2020](#)).

2.6 Leverage

Leverage is one of the key indicators in analyzing a company's capital structure, indicating the extent to which its assets are financed by debt. In other words, the leverage ratio is a ratio used to measure the extent of the debt burden a company must bear in order to finance its assets ([Susanti, Latifa, and Sunarsi 2020](#)). The leverage ratio reflects a company's ability to meet its financial obligations and illustrates the level of financial risk it faces. Furthermore, leverage can be defined as the use of assets or funds, whereby, as a result of utilising these funds, the company must incur or pay fixed costs. Increasing the level of leverage implies an increase in the uncertainty surrounding the returns to be obtained ([Jenita & Herispon, 2022:311](#)). According to [Ayoush et al. \(2021\)](#), debt financing creates what is known as financial leverage, which can provide benefits in the form of tax savings, but also increases financial risk if the company is unable to manage interest and principal obligations efficiently. A high level of leverage can increase returns to shareholders when operating profits exceed the cost of debt, but conversely, it will worsen profitability when the company's performance declines. In this study, leverage is measured using the DAR (Debt to Asset Ratio). This ratio measures the percentage of total debt used for leverage. The higher this ratio, the greater the financial risk ([Aziz & Rahman, 2017](#); [Sari, 2023](#)).

2.7 Company Size

One indicator of a company's financial health and stability is the company size ratio, which reflects the overall scale of the company ([Wiyono and Mardijuwono 2020](#)). Company size is a value indicating the size of a company, which can be assessed by total assets, total sales, equity, or market capitalisation ([Kasmir, 2014:127](#)). Company size is used as a proxy for the size of a company ([Hartono, 2022:672](#)). Companies can achieve higher productivity and economies of scale because their size influences their profitability ([Tica et al. 2023](#)). Company size is a measure that can be used to categorize the size of a company using various calculation methods, including ln total assets, ln total sales, and market capitalization ([Margono and Gantino 2021](#)). Company size refers to a company's ability to provide a certain amount of funds for various production capacities or services. The larger the company, the higher its value, thereby attracting investor interest ([Afinindy, Salim, and Ratnawati 2021](#)). Company size plays a crucial role in determining the nature of relationships a company maintains both within and outside its operational environment ([Setiawan and Pereira 2021](#)). Company size can be measured in three ways: sales, total assets, and fair value of equity. In this study, total assets were used to measure company size ([Kalbuana et al. 2022](#)).

3. Research Method

This study analyzes the behavior of several variables, namely the relationship between each variable (independent variables and dependent variables). The variables in this study comprise five independent variables: accounts receivable turnover, asset growth, liquidity measured by the current ratio (CR), leverage measured by the debt-to-assets ratio (DAR), and company size measured by the natural logarithm (Ln) of total assets. The dependent variable is profitability, measured using Return on Assets (ROA).

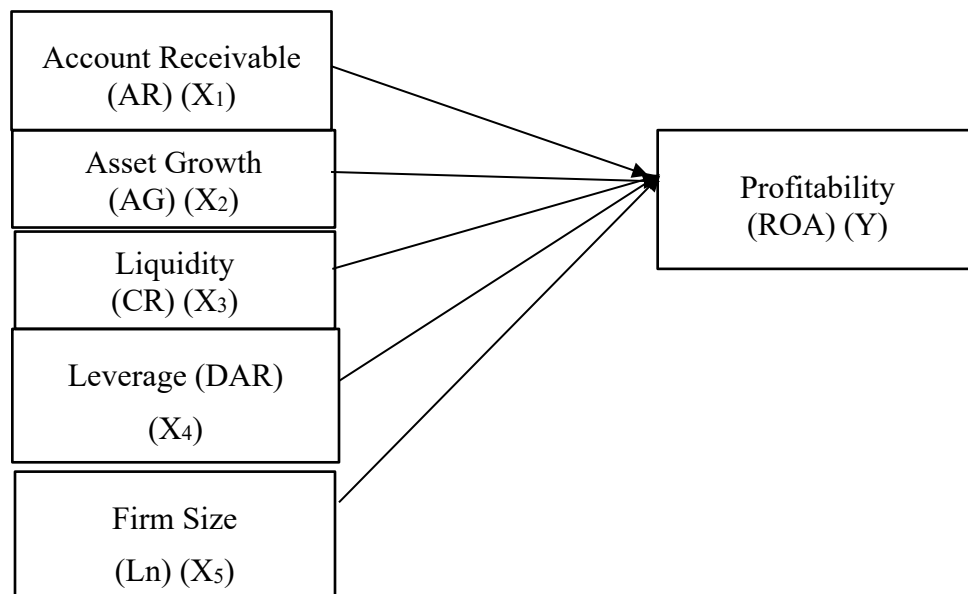


Figure 2. Conceptual Model

Source: Data processed by the author, 2025

The following hypothesis proposed by researchers are shown in figure 2:

H₁: Accounts receivable turnover has a positive effect on profitability

H₂: Asset growth has a positive effect on profitability

H₃: Liquidity has a positive effect on profitability

H₄: Leverage has a negative effect on profitability

H₅: Firm size has a positive effect on profitability

The data used in this study are quantitative. The ratio data are sourced from the Indonesia Stock Exchange website for manufacturing companies in the retailing sub-sector, and from the respective companies' websites, using the companies' annual financial reports for 2019-2024. Data collection in this study uses secondary data, i.e., data not obtained directly but sourced from the official websites of the relevant retail companies.

The population used in this study consisted of manufacturing companies in the consumer cyclicals sector and the retailing sub-sector, listed on the Indonesia Stock Exchange, for the period 2019-2024. This study used purposive sampling from manufacturing companies in the consumer goods sector listed on the Indonesia Stock Exchange, yielding 18 companies over 6 years and 108 data points. The population and sample in this study included companies listed on the Indonesia Stock Exchange in the consumer cyclicals sector, specifically the retailing sub-sector, with the criteria being companies that had conducted an Initial Public Offering (IPO) no later than 2018 and had not experienced a suspension of ≥ 1 year during the observation period. The sample selection criteria can be seen in the following table 1:

Table 1. Purposive Sampling Criteria for Companies

No	Sample Selection Criteria	Total
1	Retail companies listed on the IDX	30

2	Retail companies that have conducted an IPO no later than 2018	(10)
3	Retail companies that have not experienced suspension ≥ 1 year during the 2019-2024 period	(2)
Total Companies		18
Total Data = Number of Companies x Research Years (6 years)		108 data

Source: Data processed by the author, 2025

This study applies panel data regression analysis techniques, a method that combines cross-sectional and time-series data. The panel data regression analysis was carried out in several stages: descriptive statistical analysis; model selection using the Chow, Hausman, and Lagrange multiplier tests; and classical assumption testing and hypothesis testing. The panel data regression equation used for this study is as follows:

$$ROA_{i,t} = \alpha + \beta_1 ART_{i,t} + \beta_2 AG_{i,t} + \beta_3 CR_{i,t} - \beta_4 DAR_{i,t} + \beta_5 LN_{i,t} + \varepsilon$$

Explanation:

α = Constant
 β = Regression coefficient
 AR = Accounts Receivable Turnover
 AG = Asset Growth
 CR = Liquidity (Current Ratio)
 DAR = Leverage (Debt to Asset Ratio)
 LN = Company Size (Natural Logarithm)
 ROA = Profitability (Return on Assets)
 ε = Error

4. Results and Discussion

4.1 Results

Descriptive Statistical Analysis

The initial stage in data analysis techniques in this study was to conduct a descriptive analysis. Descriptive statistical analysis aims to provide an overview of the data based on the mean, standard deviation, maximum value, minimum value, sum, range, kurtosis, and skewness ([Rifkhan, 2023:132](#)).

Table 2. Descriptive Statistics Results

	ROA	ART	AG	CR	DAR	FS
Mean	-0.375	40.769	0.094	4.057	7.793	28.499
Median	0.030	31.055	0.030	1.715	0.455	29.215
Maximum	4.690	171.020	5.030	113.910	117.380	31.850
Minimum	-9.870	1.120	-0.780	0.010	0.010	22.840
Std. Dev.	1.758	35.324	0.570	11.874	23.230	2.082
Observations	108	108	108	108	108	108

Source: Data processed by the author, 2025

Table 2 above presents the mean, median, maximum, minimum, and standard deviation for each variable used in this study, based on a total sample of 108 observations collected from 2019 to

2024. The mean value for the ROA variable is -0.380, with a median of 0.030 and a standard deviation of 1.750. The maximum ROA value is 4.690, recorded by PT Trikonsel Oke Tbk in 2022, while the minimum ROA value is -9.870, recorded by PT Globe Kita Terang Tbk in 2024.

The mean value for the ART variable is 40.77, with a median of 31.050 and a standard deviation of 35.320. The maximum ART value is 171.020, recorded by PT Sona Topas Tourism Industry Tbk in 2024, while the minimum ART value is 1.12, recorded by the same company in 2021.

For the AG variable, the mean value obtained is 0.090, the median is 0.030, and the standard deviation is 0.570. The maximum AG value is 5.030, recorded by PT Yelooo Integra Datanet Tbk in 2021, while the minimum AG value is -0.780, recorded by PT Globe Kita Terang Tbk in 2019.

The mean value for the CR variable is 4.050, with a median of 1.710 and a standard deviation of 11.87. The maximum CR value is 113.910, recorded by PT Yelooo Integra Datanet Tbk in 2021, while the minimum CR value is 0.010, recorded by PT Globe Kita Terang Tbk in 2023 and 2024.

For the DAR variable, the mean value is 7.790, the median is 0.450, and the standard deviation is 23.230. The maximum DAR value is 117.380, recorded by PT Globe Kita Terang Tbk in 2023, while the minimum DAR value is 0.010, recorded by PT Yelooo Integra Datanet Tbk in 2021.

The mean value for the FS variable is 28.490, the median is 29.210, and the standard deviation is 2.080. The maximum FS value is 31.850, recorded by PT Indomobil Sukses Internasional Tbk in 2024, while the minimum FS value is 22.840, recorded by PT Globe Kita Terang Tbk in 2019.

Model Selection

Test: The model selection test is conducted to choose the best model among the three available regression models, namely the Common Effect, Fixed Effect, and Random Effect models ([Priyatno, 2022](#)). There are three types of tests used for model selection, as follows:

Chow Test

The Chow Test is a testing method used to determine whether the Common Effect Model or the Fixed Effect Model is more appropriate for estimating panel data ([Basuki & Prawoto, 2015](#)). The hypotheses for the Chow Test are as follows:

H0: Common Effect Model (probability value more than 0.050)

H1: Fixed Effect Model (probability value less than 0.050)

The Common Effect Model (CEM) is selected when the resulting probability value is greater than 0.050. However, if the resulting p-value is less than 0.050, the model chosen is the Fixed Effect Model (FEM).

Table 3. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.958	(17.850)	0.511
Cross-section Chi-square	18.939	17	0.332

Source: Data processed by the author, 2025

Based on Table 3, the results of the Chow test indicate that the cross-section F statistic has a probability value of 0.510, which is greater than 0.050 ($0.51 > 0.05$). This means that H_0 is accepted and the study proceeds using the Common Effect Model, while H_1 is rejected because the p-value is greater than 0.050.

Hausman Test

The Hausman Test is a testing method used to determine whether the Fixed Effect Model or Random Effect Model is more appropriate for estimating panel data ([Basuki & Prawoto, 2015:21](#)). The hypotheses for the Hausman Test are as follows:

H_0 : Random Effect Model (probability value more than 0.050)

H_1 : Fixed Effect Model (probability value less than 0.050)

The Random Effect Model (REM) is selected when the resulting probability value is greater than 0.050. However, if the resulting p-value is less than 0.050, the chosen model is the Fixed Effect Model (FEM).

Table 4. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	9.412	5	0.093

Source: Data processed by the author, 2025

Based on Table 4, the results of the Hausman Test show a cross-section random probability value of 0.090, which is greater than 0.050 (0.090 more than 0.050). This means that H_0 is accepted and the study continues using the Random Effect Model, while H_1 is rejected because the p-value is greater than 0.050.

Lagrange Multiplier (LM) Test

The Lagrange Multiplier (LM) Test is a testing method used to determine whether the Common Effect Model or the Random Effect Model is the most appropriate choice in panel data analysis ([Priyatno, 2022](#)). The hypotheses for the Lagrange Multiplier Test are as follows:

H_0 : Common Effect Model (probability value more than 0.050)

H_1 : Random Effect Model (probability value less than 0.050)

The Common Effect Model (CEM) is selected when the probability value of the Breusch–Pagan cross-section result is greater than 0.050. However, if the Breusch–Pagan probability value produced is less than 0.050, then the Random Effect Model (REM) is selected.

Table 5. Lagrange Multiplier Test Results

Test Hypothesis	Cross-section	Time	Both
Breusch-Pagan	0.237 (0.626)	5.721 (0.016)	5.958 (0.014)

Source: Data processed by the author, 2025

Based on Table 5, the results of the Lagrange Multiplier test show that the probability value of the Breusch–Pagan cross-section is 0.620, which is greater than 0.05 (0.620 more than 0.050). This means that H_0 is accepted, indicating that the Common Effect Model is selected, and that H_1 is rejected because the obtained p-value is greater than 0.050. After conducting the Chow

Test, Hausman Test, and Lagrange Multiplier Test, the most appropriate model for this study is the Common Effect Model (CEM).

Classical Assumption Test

The classical assumption test assesses the validity of the regression model used. This test is conducted to ensure that the regression model is free from multicollinearity and heteroscedasticity problems and to confirm that the resulting data follow a normal distribution ([Priyatno, 2022](#)). The classical assumption tests in this study consist of the normality test, autocorrelation test, heteroscedasticity test, and multicollinearity test.

Normality Test

The normality test in a regression model assesses whether the residuals are normally distributed. A good regression model is indicated by residuals that follow a normal distribution. The decision criterion is that the data are considered normally distributed if the probability value is greater than 0.05 ([Priyatno, 2022:64](#)).

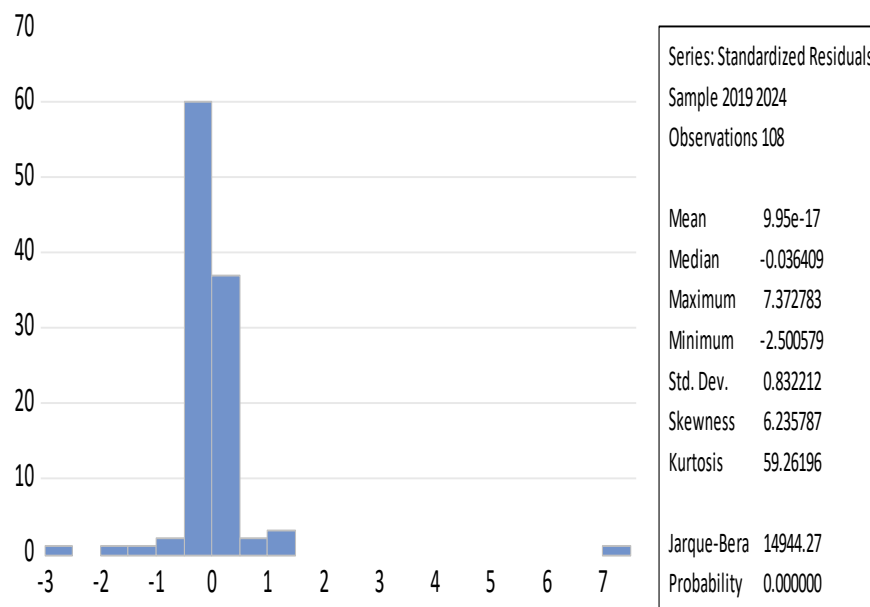


Figure 3. Normality Test Results Before Transformation

Source: Data processed by the author, 2025

The results of the normality test shown in Figure 3 indicate a probability value of 0.000, which is lower than the significance threshold of 0.050 (0.000 less than 0.050). This indicates that the data are not normally distributed. Therefore, a data transformation was performed by removing outlier data. Outliers are data points with values that are significantly different or extreme compared to the majority of other observations in the dataset. This transformation was carried out to address data anomalies.

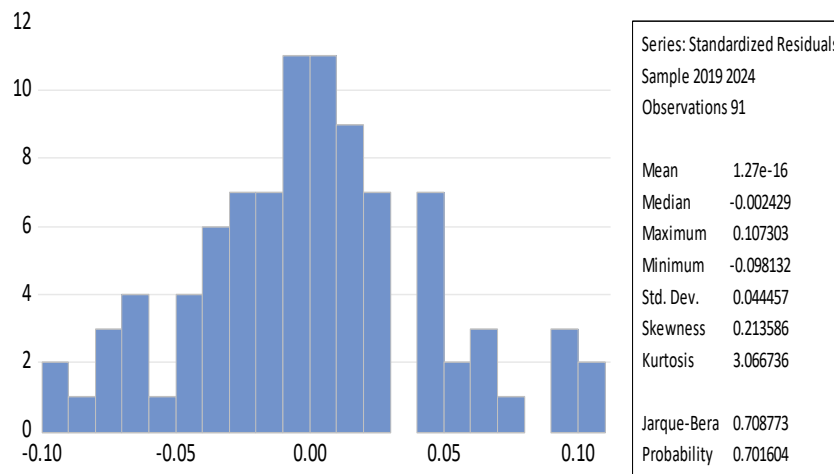


Figure 4. Normality Test Results After Transformation

Source: Data processed by the author, 2025

After performing data transformation to remove outliers, the normality test results shown in Figure 4 indicate a p-value of 0.700, which is greater than the significance threshold of 0.050 ($0.700 > 0.050$). Therefore, the normality test indicates that the data are normally distributed, and the research data are also normally distributed.

Autocorrelation Test

The autocorrelation test is used to determine whether observations in a series are correlated. In this study, the presence of autocorrelation in the model can be identified through the chi-square probability value. If the probability value is greater than 0.050, it indicates that there is no autocorrelation problem ([Basuki & Prawoto, 2015:203](#)).

Table 6. Autocorrelation Test Result

F-statistic	55	Prob. F(2.830)	75
Obs*R-squared	02	Prob. Chi-Square(2)	48

Source: Data processed by the author, 2025

Based on the results of the autocorrelation test in Table 6, the Chi-Square probability value is 0.540, which is greater than 0.050 (0.540 more than 0.050). Therefore, it can be concluded that the model does not exhibit autocorrelation problems.

Heteroscedasticity Test

The heteroscedasticity test is conducted to examine whether disturbances have unequal or non-constant variances. This study uses the Glejser test, in which a p-value greater than 0.050 indicates no heteroscedasticity, while a p-value less than 0.050 indicates heteroscedasticity.

Table 7. Heteroscedasticity Test (Glejser Test) Result

F-Statistic	66	Prob. F(5.850)	27
Obs*R-squared	340	Prob. Chi-Square(5)	30
Scaled explained SS	297	Prob. Chi-Square(5)	20

Source: Data processed by the author, 2025

The results of the heteroscedasticity test using the Glejser method in Table 7 show that the Chi-Square probability value for Obs*R-squared is 0.030, which is lower than 0.050 (0.030 less than 0.050). Therefore, this research model exhibits heteroscedasticity. This means that the magnitude of the prediction error variance differs across observations, or in other words, is not uniform. However, since the Glejser test indicates heteroscedasticity, which may lead to inaccurate estimation results, a follow-up White test is conducted. The White test is allowed and commonly used following the Glejser test, especially when the Glejser test indicates heteroscedasticity ([Djalil and Terzic 2021](#); [Onifade and Olanrewaju 2020](#)).

Table 8. Heteroscedasticity Test (White Test) Result

F-Statistic	04	Prob. F(20.700)	49
Obs*R-squared	065	Prob. Chi-Square(20)	63
Scaled explained SS	500	Prob. Chi-Square(20)	64

Source: Data processed by the author, 2025

The results of the heteroscedasticity test using the White test in Table 8 show that the Chi-Square probability value for Obs*R-squared is 0.160, which is greater than 0.050 (0.160 more than 0.050). Therefore, the model is free of heteroscedasticity.

Multicollinearity Test

Multicollinearity is a condition in which the independent variables in a regression model have a very strong or nearly perfect linear relationship. To determine whether multicollinearity exists, the Variance Inflation Factor (VIF) value is examined. If the VIF value is less than 10, it can be concluded that there is no multicollinearity issue ([Priyatno, 2022](#)).

Table 9. Multicollinearity Test Result

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.013	602.541	NA
ART	1,95E-08	2.171	1.015
AG	0,000	3.468	3.307
CR	5,42E-07	4.350	3.847
DAR	5,49E-07	1.453	1.396
FS	1,59E-05	581.940	1.652

Source: Data processed by the author, 2025

Based on the multicollinearity test results presented in Table 9, all five independent variables have VIF values less than 10 (VIF less than 10); therefore, it can be concluded that the study does not indicate multicollinearity issues.

Panel Data Regression Analysis

The regression model used in this study, based on model selection tests, is the Common Effect Model.

Table 10. Multicollinearity Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0,329	0,117	-2,796	0,006
ART	0,000	0,000	4,590	0,000
AG	0,020	0,014	1,439	0,153

CR	-0,000	0,000	-1,250	0,214
DAR	-0,068	0,000	-92,082	0,000
FS	0,013	0,003	3,271	0,001

Source: Data processed by the author, 2025

The results from the panel data regression analysis presented in Table 10 produce the following regression equation:

$$ROA = -0.329 + 0.000AR^* + 0.020AG - 0.000CR - 0.068DAR^* + 0.013FS^*$$

Based on the regression formulation above, the constant (α) value is -0.320 , which indicates that when the independent variables used in the model—accounts receivable turnover, asset growth, liquidity, leverage, and firm size are assumed to be constant or equal to zero, the dependent variable (ROA) will decrease by -0.320 .

The coefficient of the ART variable is 0.000 , indicating that every one-unit increase in ART, assuming the other independent variables remain constant, will increase the return on assets (ROA) by 0.000 or 0.064% . The positive coefficient indicates a direct relationship between ART and ROA, meaning that the higher a company's accounts receivable turnover, the higher its asset returns.

The coefficient for the AG variable is 0.020 , which implies that a one-unit increase in asset growth, while holding the other independent variables constant, will increase ROA by 0.020899 , or 2.0899% . The positive sign indicates a direct relationship between asset growth and company profitability.

The coefficient for the CR variable is -0.000921 , suggesting that a one-unit increase in the current ratio, holding the other independent variables constant, decreases ROA by 0.000921 , or 0.0921% . The negative sign indicates an inverse relationship between liquidity, as measured by the current ratio, and profitability, measured by ROA.

The coefficient for the DAR variable is -0.068197 , indicating that a one-unit increase in DAR, with other independent variables held constant, will decrease ROA by 0.068197 , or 6.8197% . This negative sign indicates an inverse relationship between leverage and profitability.

The coefficient for the FS variable is 0.013038 , indicating that each one-unit increase in firm size, holding other variables constant, increases ROA by 0.013038 , or 1.3038% . The positive sign indicates a direct relationship between firm size and profitability as measured by ROA.

Coefficient of Determination

The coefficient of determination indicates the extent to which the dependent variable can be explained by the regression model. Its value ranges from 0 to 1. If $R^2 = 0$, the independent variables are unable to explain the dependent variable at all. Conversely, if $R^2 = 1$, the independent variables can fully explain the dependent variable ([Priyatno, 2022:68](#)).

The Adjusted R-squared value is 0.992663 , indicating that approximately 99.26% of the variation in profitability is explained by the independent variables used in this study, with the remaining 0.74% attributed to factors outside the study's scope.

Partial t-Test

The t-test is used to determine whether each independent variable in the regression model has a significant partial effect on the dependent variable ([Priyatno, 2022:67](#)).

Table 11. Partial Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.329	0.117	-2.796	0.006
ART	0.000	0.000	4.590	0.000
AG	0.020	0.014	1.439	0.153
CR	-0.000	0.000	-1.250	0.214
DAR	-0.068	0.000	-92.082	0.000
FS	0.013	0.003	3.271	0.001

Source: Data processed by the author, 2025

Table 11 presents the results of the partial t-test for each variable. The ART variable shows a t-statistic of 4.590 and a p-value of 0.000, which is less than the significance level of 0.050 ($0.000 < 0.050$). Therefore, it can be stated that ART has a significant positive effect on profitability. The AG variable produces a t-statistic of 1.430 and a p-value of 0.153, which is greater than the significance level of 0.050 ($0.153 > 0.050$). Thus, it can be concluded that AG does not have a significant effect on profitability. The probability value for the CR variable is 0.214, which is also greater than the significance level of 0.050 ($0.214 > 0.050$), and the t-statistic of -1.250 indicates that CR does not significantly affect profitability. The DAR variable shows a t-statistic of -92.080 and a p-value of 0.00, which is lower than the significance level of 0.05 ($0.000 < 0.050$). These results indicate that DAR has a significant negative effect on profitability. The last variable, FS, shows a t-statistic of 3.27 and a p-value of 0.00, which is also below the significance level of 0.05 ($0.00 < 0.05$). Therefore, it can be concluded that FS has a significant positive effect on profitability.

4.2 Discussion

4.2.1 Accounts receivable turnover on profitability

Accounts receivable turnover has a significant positive effect on the profitability of retail companies, thereby supporting H1. This means that the higher the accounts receivable turnover, the faster and more efficiently a retail company listed on the stock exchange manages its assets, and the company's chances of making a profit increase. The standard or criterion for assessing accounts receivable turnover is that a turnover of 15 times is considered good. This means that if the accounts receivable turnover rate reaches ≥ 15 times, it is considered good. Conversely, if the accounts receivable turnover is below ≤ 15 times, it is considered less favorable ([Kasmir, 2015:177](#)). Looking at the overall average of retail companies (18 companies), the mean is 40.7, which indicates that these 18 companies are in the high turnover category. Based on the mean of 40.7, there are 11 companies with turnover below the average for retail companies (but still many with turnover above 15 times), and 7 companies with turnover above the average.

From these findings, companies with high accounts receivable turnover are more profitable. This is because fast-returning receivables provide strong cash flow, enabling companies to immediately replenish inventory, reduce credit risk, and decrease working capital requirements. Thus, high accounts receivable turnover directly contributes to increased net profit and operational efficiency for retail companies. The retail business is highly dependent on fast cash flow. High accounts receivable turnover indicates the efficiency of retail companies in converting credit sales into cash. For retail companies such as MAP, which sell products with relatively thin margins, this speed of cash inflow is crucial to immediately repurchase inventory (merchandise) and cover high daily operating costs. In the face of uncertainty, such as store closures or a decline in consumer purchasing power during a pandemic, available cash becomes

a determining factor for survival. These results confirm that retail companies with efficient collection management (high ART) will be more resilient, as they have a strong cash buffer to withstand sudden income fluctuations.

A high turnover rate means that funds tied up in receivables are returned quickly. Therefore, the risk of unpaid receivables is relatively small. Companies can collect receivables quickly and efficiently, so they are returned to cash and used for company operations. Accounts receivable turnover that has been running smoothly will quickly convert to cash ([Herison et al. 2022](#)). Cash returns from the settlement of accounts receivable are very beneficial for companies because cash will always be available and can be reused ([Sari, 2023](#)). According to [Anggarini et al. \(2022\)](#), a high accounts receivable turnover rate indicates that a company is performing well or is able to optimize accounts receivable management so that the working capital invested in accounts receivable is low, which means that the company is able to convert accounts receivable into cash in a short time and make a profit. Within the signaling theory framework, management that is able to increase AR turnover actually signals that current assets (receivables) are well managed. Thus, the company's returns on each asset (ROA) increase because receivables are not left on the balance sheet but are converted more quickly into cash or subsequent sales, thereby increasing overall asset productivity.

The results of this study support the hypothesis that accounts receivable turnover has a positive effect on profitability. In addition, the results of this study also support previous studies conducted by [Anggarini et al., \(2022\)](#); [Herison et al., \(2022\)](#); [Napitupulu et al., \(2020\)](#); [Rifai et al., \(2024\)](#); [Sari, \(2023\)](#), which found that accounts receivable turnover has a positive and significant effect on profitability.

4.2.2 Assets growth turnover on profitability

Asset growth does not significantly affect profitability in retail companies, so H2 is rejected. This means that even as companies increase their assets over time, the increase is not necessarily accompanied by higher profits. Based on the mean asset growth of 18 retail companies (0.09), five companies have average asset growth above the industry average. However, this asset growth does not indicate a significant increase in profitability. This occurs because an increase in assets in the retail sector is often interpreted as physical expansion (opening new outlets, adding facilities). This expansion requires significant capital costs and has a long wait before contributing significantly to profits. Therefore, increased assets are not necessarily instantly efficient or productive, especially in the retail industry, which has a seasonal business cycle.

One reason why asset growth does not have a significant effect on profitability is that high asset growth often requires additional costs, such as maintenance costs, depreciation expenses, or suboptimal asset utilization, and therefore does not directly contribute to increased profitability. The lack of impact of asset growth on profitability is also partly due to the existence of several companies whose asset growth ratio has declined or is negative, but whose profitability ratio has continued to increase or is positive, and vice versa. In other words, companies are unable to create a large increase in assets and effectively utilize the additional assets to improve ROA ([Utomo and Widhiastuti 2024](#)). The results of this study do not support the hypothesis that asset growth has a significant positive effect on profitability.

Furthermore, the results of this study support previous studies conducted by [Hm \(2022\)](#); [Tica et al., \(2023\)](#); [Utomo & Widhiastuti \(2024\)](#); [Wahyuni et al., \(2025\)](#), which also found that asset growth does not have a significant effect on profitability. These results also contradict the signaling theory, which holds that the higher total assets, the greater the operating results or

profits. According to signaling theory, companies with good prospects will try to send positive signals to investors through financial reports, including showing high asset growth. An increase in assets is usually interpreted as an expansion of production capacity, the addition of facilities, or an investment in new assets expected to support future performance. However, in the context of this study, asset growth has not been accompanied by optimal operational efficiency, so positive signals have not been successfully translated into increased profitability ([Spence 1973](#)).

4.2.3 Liquidity on profitability

Liquidity, as measured by CR, does not have a significant effect on profitability in retail companies, so H3 is rejected. This means that the amount of current assets a company holds to cover short-term liabilities does not necessarily increase its ability to generate profits. Companies with good liquidity generally range from 1,0 to 3,0 depending on the industry. Due to high inventory turnover, the acceptable current ratio for the retail industry is often 1,0 to 1,5. The retail business uses a fast sales cycle to maintain liquidity, so a lower ratio is common. Looking at the overall average of retail companies (18 companies), the mean is 4.05, which indicates that these 18 companies are in the category of having very high liquidity compared to the ideal average for retail companies. Based on the study, only 4 companies had averages within the ideal range for retail companies, while the other 14 had averages below 1,0 or above 1,5. Excessively low liquidity indicates liquidity risk because current assets are insufficient to cover short-term debt. Conversely, excessively high liquidity is undesirable because excess current assets remain idle and fail to generate profits. Furthermore, funds that should be invested in productive activities are instead stored in the form of current assets ([Ayoush et al. 2021](#)).

Unlike previous studies, research on financial companies (banks) in Kosovo shows that liquidity (current ratio) has a significant positive effect on bank profits. However, in this study, the regression results indicate that the current ratio and current liability ratio are not significant at the 5% level. From a signaling theory perspective, companies attempt to convey information to external parties through financial reports to demonstrate their performance and prospects ([Spence 1973](#)). A high level of liquidity should be a positive signal regarding a company's ability to meet its short-term obligations. However, the results of this study show that liquidity signals are not interpreted by the market as a good indicator of profitability.

Excess liquidity can send negative signals because it indicates cash that is not being used productively. High liquidity, such as a high CR, does reflect a company's ability to meet its short-term obligations. However, if current assets such as cash or inventory are too large, they can become idle. These types of assets do not circulate in operations or productive investments, so they do not generate profits. Investors may conclude that management is inefficient in allocating resources, so profitability does not increase even though the company can pay short-term obligations. The results of this study do not support the hypothesis that liquidity has a significant positive effect on profitability. Furthermore, the results of this study support previous studies conducted by [Ayoush et al., \(2021\)](#); [Mengstie et al., \(2024\)](#); [Tica et al., \(2023\)](#), which found that CR does not affect profitability because high liquidity may indicate an excess of current assets that are less productive in generating profits.

4.2.4 Leverage on profitability

Based on the partial test, profitability is negatively and significantly affected by capital structure (DAR). The t-statistic result shows a figure of -92.08 with a significance value of 0.000 less than 0.05, indicating a clear relationship between capital structure and profitability in retail companies, thus accepting H4. This indicates that an increase in the debt-to-total assets ratio

reduces the company's ability to generate profits; in other words, the higher the debt-to-asset ratio, the lower the profitability. Companies with good DAR generally have a DAR value of 0.6-0.7. Looking at the overall average of retail companies (18 companies), the mean is 7.79, which is very high and exceeds the generally accepted good DAR value. Of the 18 companies, around 16 have ideal DAR values, and 2 have extreme DAR values of 93.7 (PT Globe Kita Terang Tbk) and 39.2 (PT Trikonsel Oke Tbk). These DAR values indicate that almost all of the company's assets are financed by debt, thereby increasing financial risk. The retail sector has an operational cost structure characterized by high fixed costs (rent and employee salaries).

The use of debt (high DAR) will add another fixed cost: interest expense. If retail sales slow down, these interest expenses will significantly reduce profits and may even cause losses. The phenomenon that has hit the retail sub-sector, such as the losses experienced by MAP amid the pandemic, is exacerbated by high leverage. When revenue declines dramatically due to lockdowns, the interest expense on existing debt continues to accrue, reducing the margin of safety. An increase in DAR is usually accompanied by higher interest expense and other financial costs, which directly reduce net profit and thereby suppress profitability indicators such as ROA. Theoretically, this is consistent with the phenomenon of over-leverage, where interest expense and financial obligations burden net income, thereby reducing profit margins. When using financial leverage to increase investment capital, companies must pay high interest rates or capital costs. If financial costs exceed the profits from investment projects, profits will decline. In addition, when increasing financial leverage, companies increase financial risk by becoming more vulnerable to defaulting on debts or failing to meet interest and principal payments. This will put pressure on the company, thereby limiting its profitability ([Nguyen et al., 2024](#)).

If a company uses excessive debt, the market and creditors may interpret high debt ratios as a signal of risk (rather than a signal of confidence) ([Arhinful and Radmehr 2023](#); [Mazanec 2023](#)). The findings of this study support the hypothesis formed and also support the results of studies conducted by [Ayoush et al., \(2021\)](#); [Mazreku et al., \(2020\)](#); [Nguyen et al., \(2024\)](#); [Rifai et al., \(2024\)](#); [Yadav et al., \(2022\)](#), which show that an increase in the debt-to-asset ratio tends to suppress profitability due to high interest expenses and financial risks borne by the company, so that a high level of leverage reflects an increase in financial risk and has a negative impact on profitability, because the company must allocate most of its income to pay debt obligations rather than to improve operational performance.

4.2.5 Company size on profitability

The findings indicate that company size has a positive and significant effect on profitability, with a t-statistic of 3.27 and a probability value of 0.0015, which is less than the significance level of 0.05. As a result, company size has a direct, positive, and significant effect on profitability in retail companies, thereby fully supporting the fifth hypothesis (H5). This indicates that the larger the company, the stronger its ability to generate profits. Looking at the overall average of retail companies (18 companies), the mean is 28.49, and there are seven companies whose averages are below the overall mean. Generally, companies listed on the Indonesia Stock Exchange are large, but they do not always have high asset growth and tend to vary from year to year. This indicates that large size does not automatically reflect aggressive expansion or increased operational capacity. Several large companies have actually experienced a slowdown in asset growth, while medium-sized companies have shown stronger growth. This scale advantage directly supports better profitability. Amidst the crisis, large retail companies have greater resilience. Companies have easier access to capital, such as bank loans or bond

issuance, and have the resources to transform their businesses quickly. These findings show that despite market shocks, large company size is a solid internal factor in maintaining competitive advantage and profitability in the retail sector ([Atiningsih and Izzaty 2021](#)).

In general, several studies find that larger companies are more profitable due to economies of scale, such as lower average production costs per unit through operational efficiency, greater bargaining power in purchasing raw materials, and the ability to spread fixed costs across a larger output base. Thus, large companies have a greater capacity to maximize profits than smaller companies. Based on signaling theory, the existence of large companies also serves as a positive signal to the market that the company is healthy and capable of growing, thereby generating a positive effect on investor and stakeholder perceptions ([Moussa and Hedfi 2023](#)). This study aligns with research by [Atiningsih & Izzaty \(2021\)](#), which shows that firm size has a positive effect on profitability in manufacturing companies listed on the Indonesia Stock Exchange, as larger companies tend to be better at managing assets and attracting investor interest due to their greater credibility. In addition to strengthening and supporting the constructed hypothesis, the findings of this study also reinforce previous research results by [Aldboush et al., \(2023\)](#); [Isayas, \(2022\)](#); [Moussa & Hedfi, \(2023\)](#); [Nazir et al., \(2021\)](#); [Susilo et al., \(2020\)](#), which indicates that companies with larger size, measured by total assets, generally possess greater capacity to utilize resources, gain easier access to financing, and improve operational efficiency through economies of scale, thus ultimately generating higher profitability compared to smaller firms.

5. Conclusion

Based on the results of research and discussion regarding the effect of accounts receivable turnover, asset growth, liquidity, leverage, and company size on profitability in retail companies, the following conclusions can be drawn: accounts receivable turnover has a significant positive effect on profitability, which means that the higher the accounts receivable turnover, the more efficient the company is in managing accounts receivable, thereby increasing profits. Conversely, asset growth and liquidity do not have a significant effect on profitability, indicating that increases in assets or a strong ability to pay short-term liabilities do not necessarily increase company profits. Leverage has been proven to have a significant negative effect on profitability, indicating that high debt burdens actually suppress a company's financial performance. Meanwhile, company size has a significant positive effect on profitability, indicating that larger companies have greater opportunities to increase profits.

Based on the results of research and discussion regarding the effect of accounts receivable turnover, asset growth, liquidity, leverage, and company size on profitability in retail companies, it is recommended that future research expand the observation period and add external variables such as inflation, interest rates, or national economic growth rates so that the analysis results are more comprehensive and able to reflect conditions that also affect the financial performance of the retail sector. For investors and stakeholders, the results of this study can be used as consideration in assessing the performance of retail companies. Investors are advised not to only look at liquidity ratios or asset growth, but also to pay attention to leverage levels and accounts receivable management efficiency as key indicators of profitability. To eliminate the negative phenomenon of excessive debt risk (leverage), companies are advised to immediately set a strict ceiling on the debt-to-asset ratio. In addition, to reduce the phenomenon of ineffective asset growth, where assets grow but profits do not, companies should tie each asset expansion programme to a minimum Return on Assets (ROA) benchmark that must be achieved within a short period.

This study has limitations in terms of sample coverage, which is focused only on the manufacturing retailing sub-sector in Indonesia, so the results cannot necessarily be generalised to the entire industrial sector. In addition, the study period is limited to 2019–2024, so it does not fully describe long-term dynamics. The independent variables used are also limited to accounts receivable turnover, asset growth, liquidity, leverage, and company size, while other external factors such as macroeconomic conditions, inflation, and interest rates have not been included in the research model.

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