

Economic and Business Horizon

ISSN: 2963-2765

Economic and Business Horizon

Volume: 05
Issue: 03
Year: 2026
Page: 297-310

Citation:

Marfuah, S., Jaya, F. P., Diana, Nurdin, M., & Nasution, M. D. M. (2026). The effect of cash turnover ratio, total asset turnover, and debt to asset ratio on return on assets. *Economic and Business Horizon*, 5(3), 297-310.

The Effect of Cash Turnover Ratio, Total Asset Turnover, and Debt to Asset Ratio on Return on Assets

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Abstract

This study is motivated by the importance of financial performance analysis in the automotive industry listed on the Indonesia Stock Exchange (IDX), particularly in assessing the effectiveness of asset management, liquidity, and capital structure on company profitability. This study aims to analyze the effect of Cash Turnover Ratio (CTR), Total Assets Turnover Ratio (TATO), and Debt to Asset Ratio (DAR) on the Return on Asset (ROA) of automotive companies listed on the Indonesia Stock Exchange in 2020-2024. The method used is a quantitative approach with multiple linear regression analysis. The sample consists of 9 automotive companies listed on the IDX over a five-year period (2020–2024), using financial statement data as the primary source. The results show that, partially, CTR and DAR have no significant effect on ROA, while TATO has a significant effect on ROA. Simultaneously, CTR, TATO, and DAR significantly affect ROA. The findings indicate that asset utilization efficiency is the key determinant of profitability in automotive companies. These results can serve as a reference for management in improving asset management efficiency and for investors in evaluating company performance.

Keywords

Automotive Industry, Cash Turnover Ratio, Debt to Asset Ratio, Return on Asset, Total Assets Turnover Ratio.

1. Introduction

The automotive industry in Indonesia has grown rapidly, supported by government policies and technological advances that have intensified competition among manufacturers to meet changing consumer preferences (Setiawan, 2021; Maghfiroh et al., 2021; Febransyah, 2021). As one of the world's most promising automotive markets, Indonesia requires companies to strengthen their performance and managerial capabilities to sustain competitiveness and profitability (Habiburrahman et al., 2024; Sasongko et al., 2024). Evaluating company performance is therefore essential to determine whether management has achieved its objective of maximizing shareholder value (Mičičeta et al., 2025). Such evaluation is closely linked to estimating future cash flows and assessing profitability (Nurhikma, 2019; Chaidir et al., 2025). Profitability remains a key indicator of a firm's ability to generate returns from its resources, and firm value tends to increase when profitability exceeds the cost of capital (Scott, 2020; Melina & Endri, 2025). Financial statements and ratio analysis are thus important tools for predicting future performance and evaluating financial condition (Hidayat, 2018; Tahawa & Wijaya, 2025).

Financial statement analysis is conducted to assess a company's profitability and financial condition through the information presented in its financial reports (Astuti, 2020). One of the key profitability indicators is Return on Assets (ROA), which measures how efficiently a company utilizes its total assets to generate net income. A higher ROA reflects better asset utilization and stronger financial performance. As presented in Table 1, evidence from automotive companies listed on the Indonesia Stock Exchange indicates that ROA fluctuated during 2022–2024, with some firms experiencing increases while others declined. These inconsistencies suggest variations in operational efficiency and financial management, indicating that profitability in the automotive sector remains unstable and may be influenced by cash efficiency, asset utilization, and capital structure.

Table 1. ROA of Automotive Companies on IDX (2022–2024)

No.	Company	Length (%)		
		Year 2022	Year 2023	Year 2024
1.	PT Astra International Tbk	16.96	0.0165	15.55
2.	PT Astra Otoparts Tbk	14.52	15.699	14.58
3.	PT Mitra Pinasthika Mustika Tbk	12.23	14.132	15.39
4.	PT Indomobil Sukses Internasional Tbk	7.39	7.348	7.151
5.	PT Gajah Tunggal Tbk	1.00	3.636	4.969
6.	PT Goodyear Indonesia Tbk	8.212	17.906	16.316
7.	PT Indospring Tbk	15.222	11.853	7.338
8.	PT W. Multi Prima Sejahtera Tbk	3.499	3.563	3.785
9.	PT Garuda Metalindo Tbk	5.736	21.657	19.854

The data in Table 1 indicate that ROA performance varies considerably among automotive companies. Some firms, such as PT Garuda Metalindo Tbk and PT Goodyear Indonesia Tbk, show relatively high and improving profitability in certain years, while others, such as PT Indospring Tbk, experience a declining trend. These fluctuations reflect differences in efficiency, asset utilization, and financial structure among companies. The inconsistency of ROA performance strengthens the indication that internal financial ratios may play an important role in determining profitability levels in the automotive sector.

Cash plays an important role in supporting operational activities, and cash turnover reflects the efficiency of cash utilization in generating sales, where higher

turnover indicates smoother operations and greater profitability potential. Total Asset Turnover (TATO) measures the effectiveness of asset utilization in generating revenue, with higher values indicating better operational efficiency (Hery, 2015a; Kasmir, 2019). Meanwhile, Debt to Asset Ratio (DAR) describes the proportion of assets financed by debt, where a higher ratio reflects greater financial risk and potential pressure on profitability. Rahayu (2020) emphasizes that financial ratio analysis is essential in assessing a company's financial health, as liquidity, solvency, and activity ratios collectively influence profitability. However, previous studies have reported inconsistent findings. Fraser et al. (2016) found that cash turnover significantly affects ROA, whereas Hidayat (2018) reported that DAR negatively and TATO positively affect ROA. These inconsistencies reveal a research gap in the automotive sector, characterized by its unique capital intensity and operational structure.

The novelty of this study lies in its focus on automotive companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. Unlike previous studies that tend to analyze these variables separately or in different sectors, this study integrates them into a single model within a capital-intensive industry context. Therefore, the purpose of this study is to analyze the effect of cash turnover ratio, total assets turnover ratio, and debt-to-assets on ROA, both partially and simultaneously, in automotive companies listed on the IDX during 2020–2024.

2. Literature Review and Hypothesis Development

2.1. The Effect of Cash Turnover Ratio on Return on Assets

Finance can be defined as the art and science of managing money, including the allocation of funds when needed. Financial concepts include capital, funds, money, and assets, while the main goal of financial management is to maximize firm value or increase shareholder wealth (Astuti, 2020). Financial ratios are analytical tools derived from financial statements that are used to assess a company's financial condition and performance by comparing relevant financial statement items either within the same report or across different reports (Hery, 2015a). These ratios generally include liquidity, solvency, activity, and profitability ratios as key indicators in financial analysis (Riski et al., 2018; Jaya et al., 2023).

Cash turnover ratio, as part of working capital management efficiency, reflects how effectively a firm utilizes its cash cycle to generate sales and profits. Empirical studies by Kouaib and Haya (2024) consistently show that faster cash conversion and higher turnover efficiency improve profitability and ROA, as firms are able to reinvest cash more quickly into productive assets. Working capital efficiency measured through the cash conversion cycle has been found to have a significant positive relationship with firm performance and ROA in manufacturing and service firms (Aldubhani et al., 2022). In addition, efficient management of cash turnover components such as inventory and receivables turnover improves operational efficiency and profitability (Amponsah-Kwatiah & Asiamah, 2021). Recent evidence by Stavropoulos and Zounta (2025) from European firms also confirms that shorter cash cycles enhance financial performance by improving asset utilization and return generation. Therefore, a higher cash turnover ratio is expected to positively affect ROA because it strengthens liquidity efficiency and accelerates profit generation.

H1: Cash turnover ratio has a significant effect on return on assets.

2.2. The Effect of Total Assets Turnover Ratio on Return on Assets

Financial performance reflects a company's financial achievements over a certain period as presented in financial statements, including the balance sheet, income statement, statement of changes in equity, cash flow statement, and accompanying

notes (Winarno, 2017; Muntoharo et al., 2022). Strong financial performance enhances public confidence and facilitates access to funding, and one common method of assessment is financial ratio analysis (Jaya et al., 2023). Financial performance information is valuable for investors, creditors, governments, bankers, management, and other stakeholders in decision-making processes (Astuti, 2020). Its evaluation may differ across industries according to business characteristics. Fahmi (2012) explains that financial performance analysis involves reviewing, calculating, comparing, interpreting, and solving financial problems, while Siswanto (2021) emphasizes that financial statements provide reliable information on economic resources, liabilities, and future prospects when prepared in accordance with applicable accounting standards.

Total Asset Turnover (TATO) reflects how efficiently a company utilizes its assets to generate sales, which directly contributes to profitability as measured by ROA (Saefullah et al., 2018). Empirical evidence shows that companies with higher asset turnover tend to achieve higher ROA because efficient asset utilization increases revenue without requiring additional asset expansion. Studies on manufacturing and industrial firms confirm that TATO has a positive and significant effect on ROA, indicating that better asset management improves financial performance (Azzah et al., 2025). Similarly, research in Islamic and emerging market firms shows that asset efficiency significantly enhances profitability due to optimal resource utilization (Suryani et al., 2025). In addition, findings from the infrastructure and automotive sectors also show that higher TATO strengthens profitability by improving operational efficiency and income generation (Dewanti et al., 2025). Therefore, higher total asset turnover leads to higher ROA because of improved asset productivity and firm efficiency.

H2: Total assets turnover ratio has a significant effect on return on assets.

2.3. The Effect of Debt to Asset Ratio on Return on Assets

The asset component includes cash, bank loans, and securities, while the liability (passive) component consists of current accounts, savings, and deposits. The capital component includes paid-up capital, reserves, retained earnings from the previous year, and current year profit. The income statement consists of operating income and cost components. Financial statement analysis, as noted by Jaya et al. (2023), can be categorized into analysis and financial statements. The analysis refers to the division of financial information into smaller components, while financial statements include the statement of financial position, income statement, and cash flow statement.

Debt-to-Asset Ratio (DAR) reflects the proportion of assets financed through debt and is an important indicator of capital structure that influences ROA. Empirical studies by Putri et al. (2025) show that leverage significantly affects financial performance, where the use of debt can enhance profitability through financial leverage effects, although excessive debt may reduce returns. Research on manufacturing firms confirms that capital structure decisions, including DAR, significantly influence ROA due to their impact on risk and return balance (Ahmed et al., 2024). In addition, leverage improves financial performance when debt is used efficiently for productive investment (Hasanatun et al., 2025). Financial leverage remains a key determinant of profitability across sectors (Nazir et al., 2021). Therefore, DAR is expected to significantly affect ROA as it reflects the effectiveness of debt usage in generating asset returns.

H3: Debt-to-asset ratio has a significant effect on return on assets.

2.4. The Simultaneous Effect on Return on Asset

Financial statements of an organization are documents that showcase the financial status of a corporation or financial institution during a specific timeframe (Fuad, 2017). Their purpose is to deliver insights regarding financial standing, operational results, alterations in equity, cash movements, and additional pertinent information to aid in decision-making and accountability in resource management. Comprehensive financial statements typically include the balance sheet, income statement, statement of changes in equity, cash flow statement, and accompanying notes to financial statements (Supriono, 2022; Bakri et al., 2022). These are developed in line with the Financial Accounting Standards (*Standar Akuntansi Keuangan/SAK*) and Indonesian Banking Accounting Standards (*Standar Khusus Akuntansi Perbankan Indonesia/SKAPI*).

Cash turnover ratio, total asset turnover, and debt to asset ratio collectively reflect liquidity efficiency, asset utilization, and capital structure, which are key determinants of profitability measured by ROA. Empirical studies by Hidayat and Bintara (2025) using multiple linear regression show that these ratios simultaneously affect ROA because they represent how effectively firms manage cash flow, utilize assets, and structure financing decisions. Research on manufacturing and listed firms indicates that asset and cash turnover improve profitability, while leverage ratios such as DAR also significantly influence financial performance when managed efficiently. Similarly, studies in healthcare and industrial sectors confirm that working capital efficiency and capital structure jointly have a significant effect on ROA (Syofyan & Fitra, 2025). Therefore, the simultaneous interaction of CTR, TATO, and DAR significantly affects ROA through their combined role in operational efficiency and financial sustainability.

H4: Cash turnover ratio, total assets turnover ratio, and debt to asset ratio simultaneously affect return on assets.

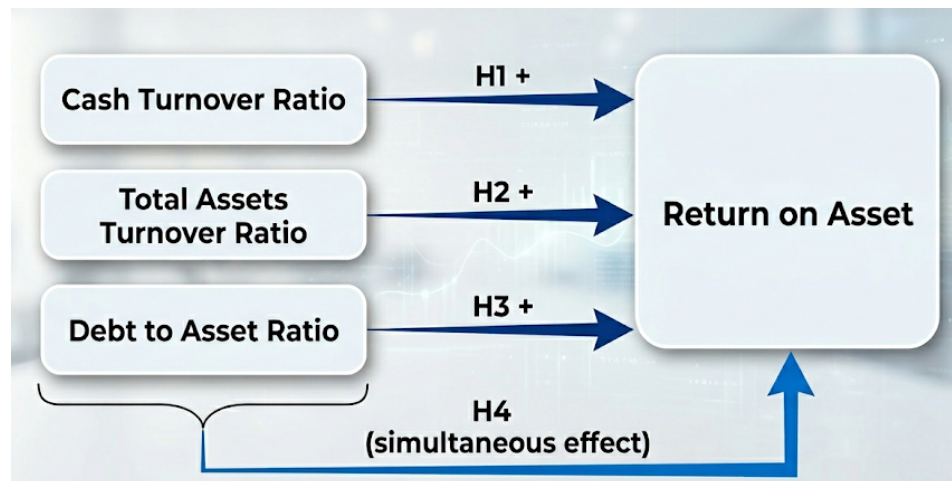


Figure 1. Research Framework

Figure 1 presents the conceptual framework of this study, illustrating that cash turnover ratio, total asset turnover ratio, and debt to asset ratio are proposed to influence Return on Assets (ROA). Hypotheses H1–H3 represent the partial effects of each independent variable on ROA, while H4 reflects their simultaneous effect on profitability. The framework suggests that efficient cash management and asset utilization can enhance profitability, whereas the proportion of debt financing may also affect a company’s ability to generate returns from its assets. This model

provides the basis for examining how these financial ratios collectively and individually explain variations in ROA among automotive companies.

3. Methods

This research employs a quantitative methodology, utilizing a survey technique carried out on automotive firms listed on the Indonesia Stock Exchange for the period from 2020 to 2024, which was sourced from online financial publication records (Kurniawan, 2016). The sample for this investigation includes the financial documents of automotive companies registered on the Indonesia Stock Exchange for the years 2020 to 2024. This includes PT Astra International Tbk (ASII), PT Astra Otoparts Tbk (AUTO), PT Mitra Pinasthika Mustika Tbk (MPMX), and PT Indomobil Sukses Internasional Tbk (IMAS). Additionally, it features PT Gajah Tunggal Tbk (GJTL), PT Goodyear Indonesia Tbk (GDYR), PT Indospring Tbk (INDS), PT Multi Prima Sejahtera Tbk (LPIN), and PT Garuda Metalindo Tbk. All these entities serve as the analytical units for this research.

The study examines four variables in total, of which three are independent: Cash Turnover Ratio (CTR), Total Assets Turnover Ratio (TATO), and Debt to Asset Ratio (DAR). The dependent variable in this research is Return on Asset (ROA) for automotive firms that are listed on the Indonesia Stock Exchange (IDX) from 2020 to 2024. The research utilizes cross-sectional data, which refers to information collected at a specific point in time (a single moment) that fits within defined measurement characteristics as reflected in the financial statements of automotive companies listed on the Indonesia Stock Exchange for the years 2019 to 2024. This research data comprises secondary information drawn from financial statements available online, as well as supplementary sources such as literature (books and journal articles) pertinent to the research questions in both physical and digital formats.

The analysis of the data in this research employs multiple linear regression. This type of regression analysis is utilized to examine how independent variables affect dependent variables, as well as to evaluate the characteristics or explanations of cash turnover ratio, total asset turnover ratio, debt to asset ratio, and ROA. Additionally, the hypothesis was assessed using both the t-test and the F-test. The t-test was conducted to evaluate the hypothesis regarding the impact of CTR, TATO, and DAR on the ROA of automotive firms listed on the Indonesia Stock Exchange from 2020 to 2024 in a partial manner. On the other hand, the F-test is applied to assess the hypothesis of the simultaneous influence of CTR, TATO, and DAR on the ROA of automotive firms on the Indonesia Stock Exchange during the period of 2020 to 2024.

4. Results

The results of the analysis of financial statements using ratio analysis are explained by the CTR, TATO, DAR, and ROA of automotive companies listed on the Indonesia Stock Exchange. Analysis of these ratios provides a comprehensive overview of a company's financial health from various operational and structural perspectives. Liquidity is determined by the cash turnover and asset turnover efficiency through total asset turnover. Meanwhile, capital structure, measured by the debt-to-asset ratio and profitability through ROA are key indicator for investors to assess the automotive industry's risk and ability to generate net income from its total assets.

Table 2. Cash Turnover (CTO) of Automotive Companies on IDX (2020–2024)

Company	Year				
	2020	2021	2022	2023	2024
PT Astra International Tbk	3.681.07	3.650.085.	7.298.195.	7.695.570.	6.824.077.
PT Astra Otoparts Tbk	1.646	200	907	790	702
PT Mitra Pinasthika Mustika Tbk	7.896.26	8.246.341.	8.958.892.	6.797.892.	5.279.054.
PT Indomobil Sukses Internasional Tbk	3.432	530	121	001	140
PT Gajah Tunggal Tbk	6.857.43	6.445.160.	6.374.697.	8.094.830.	8.445.952.
PT Goodyear Indonesia Tbk	4.513	128	220	935	594
PT Indospring Tbk	2.828.31	2.553.341.	2.334.803.	3.085.227.	2.421.921.
PT Multi Prima Sejahtera Tbk	0.097	806	361	344	755
PT Garuda Metalindo Tbk	20.552.7	18.294.948	19.993.901	18.205.300	12.862.45
	44.520	.550	.860	.770	7.530
	7.114.81	12.153.202	19.026.505	28.106.039	19.797.23
	2.716	.850	.450	.330	0.460
	5.154.98	40.997.954	35.535.895	43.903.803	44.251.47
	1.528		.720	.820	1.730
	3.145.80	3.491.104.	3.496.362.	5.804.542.	4.011.247.
	2.609	365	308	030	353
	65.049.2	150.406.01	44.977.417	40.559.238	13.036.82
	93.420	9	.820	.210	6.240

Table 2 displays the Cash Turnover Ratio (CTR) for automotive businesses listed on the Indonesia Stock Exchange from 2020 to 2024, showing generally variable patterns among different companies. PT Astra International Tbk, PT Astra Otoparts Tbk, PT Mitra Pinasthika Mustika Tbk, and PT Indomobil Sukses Internasional Tbk saw a mix of increases and decreases throughout these years, while similar variations were noted with PT Gajah Tunggal Tbk, PT Goodyear Indonesia Tbk, PT Indospring Tbk, PT Multi Prima Sejahtera Tbk, and PT Garuda Metalindo Tbk. The lack of a steady upward or downward trend points to fluctuations in cash efficiency for generating sales year over year, reflecting inconsistent cash management effectiveness among automotive firms during the 2020–2024 timeframe.

Table 3. Total Assets Turnover Ratio of Automotive Companies on IDX (2020–2024)

Company	Year				
	2020	2021	2022	2023	2024
PT Astra International Tbk	0.517576	0.6356602	0.7292068	0.7102982	0.6997304
PT Astra Otoparts Tbk	722	44	42	19	01
PT Mitra Pinasthika Mustika Tbk	0.741098	0.8940538	1.0031674	0.9508501	0.9069751
PT Indomobil Sukses Internasional Tbk	693	55	95	56	15
PT Gajah Tunggal Tbk	1.214100	1.2070647	1.4334212	1.6117024	1.7781770
PT Goodyear Indonesia Tbk	726	50	47	18	01
PT Indospring Tbk	0.175244	0.1637014	0.1791879	0.1795224	0.1837780
PT Multi Prima Sejahtera Tbk	160	84	13	29	58
PT Garuda Metalindo Tbk	0.751819	0.8338889	0.0931053	0.6626135	0.6756772
	657	55	26	96	71
	0.929258	1.2524867	1.3864979	1.5127447	1.4394637
	050	64	78	43	49
	0.575386	0.8501956	0.9381194	0.6587186	0.5713456
	028	25	03	54	06
	0.378683	0.3051772	0.3001128	0.3007076	0.3119541
	355	69	54	10	64
	0.488726	0.8636653	1.0069321	1.0904186	1.0506745
	013	64	47	99	17

Based on Table 3, the Total Asset Turnover (TATO) ratio across the nine listed automotive companies on the IDX from 2020 to 2024 exhibits noticeable variations, reflecting distinct levels of asset utilization efficiency. PT Mitra Pinasthika Mustika Tbk consistently demonstrated the highest efficiency, with its TATO steadily rising from 1.214 in 2020 to a peak of 1.778 in 2024, followed closely by PT Goodyear Indonesia Tbk, which peaked at 1.513 in 2023 before slightly declining to 1.439 in 2024. Major industry players like PT Astra International Tbk and PT Astra Otoparts Tbk showed a similar trajectory of upward efficiency from 2020 to 2022, followed by minor contractions through 2024. Conversely, PT Indomobil Sukses Internasional Tbk consistently recorded the lowest asset turnover, stagnating below 0.190 throughout the five-year period. Meanwhile, PT Gajah Tunggal Tbk experienced a drastic anomaly in 2022, where its ratio plummeted to a critical low of 0.093 before recovering to 0.676 in 2024, and PT Indospring Tbk showed an initial increase up to 2022, followed by a sharp decline in its asset efficiency over the subsequent two years.

Table 4. Debt-to-Asset Ratio (DAR) of Automotive Companies on IDX (2020–2024)

Company	Year				
	2020	2021	2022	2023	2024
PT Astra International Tbk	0.4220808 21	0.412990 626	0.4103030 02	0.4374920 07	0.4259216 58
PT Astra Otoparts Tbk	0.2440917 85	0.301025 105	0.2953198 49	0.2586706 71	0.2587679 19
PT Mitra Pinasthika Mustika Tbk	0.3133560 00	0.365842 484	0.3040079 11	0.2892319 43	0.3004469 22
PT Indomobil Sukses Internasional Tbk	0.8475301 92	0.845591 262	0.8357549 07	0.8349867 44	0.8402981 07
PT Gajah Tunggal Tbk	0.6144499 20	0.611635 527	0.6200215 38	0.5598641 28	0.5403723 90
PT Goodyear Indonesia Tbk	0.6130981 36	0.596810 592	0.6353443 84	0.5489111 96	0.5309958 21
PT Indospring Tbk	0.0928859 21	0.191035 102	0.2318398 53	0.2172036 79	0.1751723 93
PT Multi Prima Sejahtera Tbk	0.7703608 19	0.738646 350	0.7316735 11	0.7444251 30	0.7276118 46
PT Garuda Metalindo Tbk	0.3714038 68	0.402513 143	0.3960317 68	0.3514077 68	0.3676174 41

Table 4 illustrates that the debt-to-asset ratio of automotive firms listed on the Indonesia Stock Exchange from 2020 to 2024 varied considerably among the different companies. PT Astra International Tbk saw a decline in 2021, a rise in 2023, and another decline in 2024, whereas PT Astra Otoparts Tbk had an uptick in 2021, followed by drops in 2022 and 2023, and then a rise again in 2024. PT Mitra Pinasthika Mustika Tbk and PT Indomobil Sukses Internasional Tbk also displayed a mix of increases and decreases during this timeframe. Likewise, PT Gajah Tunggal Tbk, PT Goodyear Indonesia Tbk, PT Indospring Tbk, PT Multi Prima Sejahtera Tbk, and PT Garuda Metalindo Tbk demonstrated irregular trends throughout the years. The varying Debt to Asset Ratios reflect inconsistent management of capital structures and differing degrees of financial leverage among automotive companies throughout the years 2020 to 2024.

Table 5. Return on Assets (ROA) of Automotive Companies on IDX (2020–2024)

Company	Year				
	2020	2021	2022	2023	2024
PT Astra International Tbk	11.76	13.89	16.96	0.02	15.55
PT Astra Otoparts Tbk	9.87	10.98	14.52	15.70	14.58
PT Mitra Pinasthika Mustika Tbk	11.39	9.73	12.23	14.13	15.39
PT Indomobil Sukses Internasional Tbk	6.70	5.69	7.39	7.35	7.15
PT Gajah Tunggal Tbk	1.80	0.40	1.00	3.64	4.97
PT Goodyear Indonesia Tbk	8.79	11.67	8.21	17.91	16.32
PT Indospring Tbk	9.25	15.21	15.22	11.85	7.34
PT Multi Prima Sejahtera Tbk	1.40	2.14	3.50	3.56	3.78
PT Garuda Metalindo Tbk	5.16	7.48	5.74	21.66	19.85

Table 5 illustrates the return on assets for automotive companies traded on the Indonesia Stock Exchange from 2020 to 2024, displaying a general variability among different firms. PT Astra International Tbk experienced a rise in 2021 and 2022, a drop in 2023, followed by another increase in 2024. PT Astra Otoparts Tbk experienced growth up until 2023, after which it fell in 2024. PT Mitra Pinasthika Mustika Tbk saw a decrease in 2021 but consistently rose through to 2024. PT Indomobil Sukses Internasional Tbk showed fluctuations, including a decrease in 2021, an uptick in 2022, and declines in both 2023 and 2024. Other firms displayed varied movements throughout this period as well. The return on assets suggests the profitability performance among automotive companies has been inconsistent between 2020 and 2024.

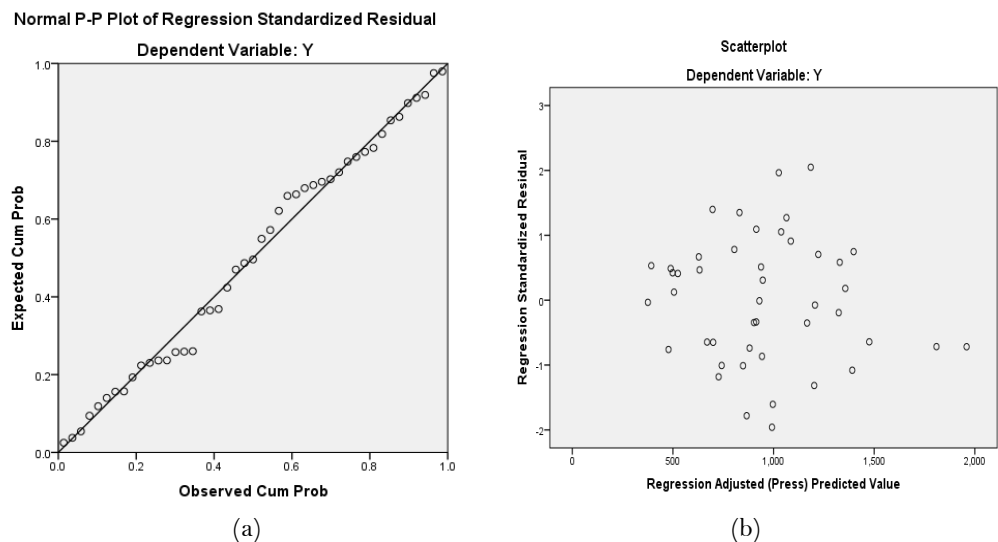


Figure 2. (a) Normality Test (b) Heteroscedasticity Test

Figure 2 demonstrates that the residuals from the regression analysis exhibit a normal distribution, which is shown by the histogram shaped like a bell and the Normal P-P Plot where the data points align closely with the diagonal line. These observations imply that the regression model’s assumption of normality is upheld. In addition, the scatterplot reveals points that are randomly scattered without any recognizable trends, indicating there is no heteroscedasticity present. The random pattern of the residuals validates the consistency of error variance across different observations, confirming that the regression model fulfills the homoscedasticity criterion.

Table 6. Multicollinearity Test

Variable	Tolerance	VIF
Cash Turnover Ratio (CTR)	0.970	1.031
Total Assets Turnover Ratio (TATO)	0.882	1.134
Debt To Asset Ratio (DAR)	0.869	1.151

Table 6 indicates that each independent variable meets the criteria for multicollinearity, where the tolerance values are higher than 0.10, and the VIF values remain under 10. In particular, CTR presents a tolerance value of 0.970 and a VIF of 1.031, TATO has a tolerance value of 0.882 and a VIF of 1.134, while DAR has a tolerance value of 0.869 and a VIF of 1.151. Because all the variables align with the necessary thresholds, the model is devoid of multicollinearity, suggesting that the independent variables do not display significant correlations among themselves.

Table 7. Results of the Coefficient of Determination and the ANOVA Test

Test	Model	Value
Coefficient Determination	R	0.609
	R Square	0.371
	Adjusted R-Square	0.325
	Std. Error of the Estimate	461.36748
ANOVA	Regression (df)	3
	Regression Mean Square	1,714,659.248
	F-Statistics	8.055
	Sig.	0.000
	Residual (df)	41
	Residual Mean Square	212,859.955
	Total (df)	44

Table 7 displays the coefficient of determination derived from the regression analysis, revealing an R-square of 0.325. This signifies that CTR, TATO, and DAR collectively account for 32.5% of the changes in ROA. The figure is calculated as $0.325 \times 100\% = 32.5\%$. In contrast, the remaining 67.5% of ROA is affected by other factors not included in this study's framework. This implies that there are further elements aside from CTR, TATO, and DAR that are significant in influencing ROA.

The F-test (ANOVA) was employed to evaluate this research model. The findings indicate that the calculated F-value stands at 8.055, exceeding the tabulated F-value of 2.84, with a significance level of 0.000, which is less than 0.05. This demonstrates that the regression model holds statistical significance and is viable. Consequently, the model is regarded as suitable for additional investigation. The hypothesis proposing that CTR, TATO, and DAR simultaneously impact the ROA of automotive firms listed on the Indonesia Stock Exchange from 2020 to 2024 is upheld.

Table 8. Regression Coefficients

Path	t-statistic	Sig.	Information
Cash Turnover Ratio -> Return on Asset (ROA)	1.511	0.138	Hypothesis rejected
Total Assets Turnover Ratio -> Return on Assets	4.181	0.000	Hypothesis accepted
Debt To Asset Ratio -> Return on Asset	-0.134	0.894	Hypothesis rejected

Table 8 presents the results of the partial regression test showing the effect of independent variables on ROA. The significance value of the cash turnover ratio is

0.138 > 0.05, indicating that the cash turnover ratio has no significant effect on ROA, so the hypothesis is rejected. Meanwhile, the total assets turnover ratio has a significance value of 0.000 < 0.05, meaning it has a significant effect on ROA, and the hypothesis is accepted. In contrast, the debt-to-asset ratio shows a significance value of 0.894 > 0.05, indicating no significant effect on ROA, and the hypothesis is rejected. Only the total assets turnover ratio significantly influences ROA, while the cash turnover ratio and the debt-to-asset ratio do not have a partial effect.

5. Discussion

The findings of this study indicate that Cash Turnover Ratio (CTR) does not have a significant effect on Return on Assets (ROA) in automotive companies listed on the Indonesia Stock Exchange during 2020–2024. This result suggests that cash efficiency alone is not sufficient to drive profitability. In line with Hery (2015b), financial performance is determined by the interaction of multiple financial ratios rather than a single indicator. Similarly, Fahmi (2012) emphasizes that profitability is influenced more strongly by operational efficiency and overall asset utilization than isolated liquidity measures. Although Astuti (2020) highlights the importance of financial management in ensuring firm performance, the current findings imply that cash turnover in the automotive sector plays a supporting rather than a determining role in profitability. Matondang and Wuryani (2020) also support this view by showing that liquidity-related variables often fail to significantly explain profitability when not accompanied by strong operational performance.

In contrast, Total Asset Turnover (TATO) shows a positive and significant effect on ROA. This finding aligns strongly with Hery (2015a), who explains that TATO reflects how effectively a company utilizes its total assets to generate sales. Kasmir (2019) further reinforces that higher asset turnover indicates more efficient asset management, which ultimately enhances profitability. Empirically, this result is consistent with Sitanggang et al. (2021), Utami (2024), all of whom found that TATO has a positive and significant impact on ROA across different industries, including manufacturing and automotive-related sectors. These consistent findings confirm that asset utilization efficiency is a core driver of profitability, particularly in capital-intensive industries such as automotive manufacturing.

Meanwhile, the Debt to Asset Ratio (DAR) does not significantly affect ROA in this study. This finding suggests that the proportion of debt used to finance assets does not directly translate into higher profitability. Nazir et al. (2021) argue that the impact of leverage on performance depends heavily on how effectively debt is utilized in productive investments. Similarly, Ahmed et al. (2024) emphasize that capital structure only enhances performance when borrowed funds generate returns exceeding their costs. However, in the automotive industry context, the current results indicate that debt financing decisions are not immediately reflected in ROA performance, as also implied by Hery (2015a), who notes that profitability is more strongly driven by operational efficiency than financing structure alone.

When tested simultaneously, CTR, TATO, and DAR jointly have a significant effect on ROA. This indicates that profitability is not determined by a single financial dimension but rather by the integration of liquidity management, asset efficiency, and capital structure decisions. This finding is consistent with Jaya et al. (2023), who state that financial performance reflects the combined outcome of multiple financial management decisions. Hayat et al. (2021) further support this view by emphasizing that financial ratios interact in shaping overall firm performance. Empirical studies such as Dian (2021) and Azzah et al. (2025) also confirm that liquidity, activity, and solvency ratios collectively influence profitability. Therefore, the results highlight that ROA in automotive companies is best explained through a holistic financial perspective rather than isolated ratio analysis.

6. Conclusion

Based on the results of this study, it can be concluded that the cash turnover ratio does not have a significant partial effect on return on assets of automotive companies listed on the Indonesia Stock Exchange during 2020–2024. Similarly, the debt-to-asset ratio also does not have a significant partial effect on return on assets. In contrast, the total asset turnover ratio has a significant positive effect on return on assets, indicating that asset utilization efficiency plays an important role in improving company profitability. Meanwhile, when tested simultaneously, cash turnover ratio, total asset turnover ratio, and debt-to-asset together have a significant effect on return on assets, suggesting that these financial ratios collectively contribute to variations in profitability.

The implications of this study indicate that automotive companies should prioritize improving asset efficiency, particularly through better management of total asset utilization, as it has the strongest influence on profitability. Managers should also evaluate operational effectiveness to maximize returns from existing assets. For investors, the total asset turnover ratio can be considered a key indicator in assessing the profitability potential of automotive firms.

However, this study has several limitations. First, the sample is limited to only nine automotive companies listed on the IDX, which may reduce generalizability. Second, the study only uses three independent variables, while other financial and macroeconomic factors that may influence return on assets are not included. Third, the observation period is limited to 2020–2024. Future research is recommended to expand the sample size by including other sectors or longer observation periods. In addition, future studies should incorporate additional variables such as liquidity ratios, firm size, or macroeconomic indicators to provide a more comprehensive analysis of factors affecting return on assets.

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