Enrichment: Journal of Management, 15 (4) (2025)

Published by: Instiute of Computer Science (IOCS)

Enrichment: Journal of Management

Journal homepage: www.enrichment.iocspublisher.org

The impact of working capital management on the return on assets of e-commerce companies in Indonesia from 2022 to 2024

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ARTICLE INFO

Article history:

Received August 5, 2025
Revised August 20, 2025
Accepted Sep 19, 2025

Keywords:

E-commerce companies;
Indonesia;
Profitability;
Return on Assets;
Working capital management;

ABSTRACT

This research discusses how working capital management affects return on assets (ROA) among Indonesian e-commerce companies from 2022 to 2024. Effective working capital management is crucial for companies' sustainability and profitability, especially in the highly dynamic e-commerce sector, which requires a high level of liquidity. In this study, a quantitative method and secondary data are used to analyze three e-commerce companies that are listed on the Indonesia Stock Exchange (IDX). The data is taken from the annual financial reports of Indonesian e-commerce companies. The independent variables include the cash turnover, accounts receivable turnover, and inventory turnover ratios, as well as the trade debt-to-sales ratio, which are indicators of working capital management. ROA is used as the dependent variable to measure company profitability. The data was analyzed and the research hypotheses were tested with the help of panel data regression. The study's objective is to provide empirical evidence regarding the contribution of optimizing working capital components, such as cash management, accounts receivable, and inventory, to the profitability of e-commerce companies. However, the study revealed that there is no significant relationship between cash turnover, accounts receivable turnover, or inventory turnover and a company's ROA.

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INTRODUCTION

The rapid development of the e-commerce industry in Indonesia has driven major transformations in business structures, consumption patterns, and corporate financial management strategies. Amidst the growth in digital transaction volumes and high internet penetration, e-commerce companies face challenges in maintaining operational efficiency and profitability.

One important aspect of corporate financial management is working capital management, which includes cash management, accounts receivable, inventory, and current liabilities (Sartono, 2010). Theoretically, effective working capital management can improve operational efficiency and

have a positive impact on corporate profitability, which in this study is measured through Return on Assets (ROA).

Companies will lose revenue and profits if they are not efficient in managing working capital (Sitorus & irsutami, 2013). Company profits or profitability will increase as working capital increases (Kasmir, 2012).

The e-commerce sector in Indonesia has experienced exponential growth in recent years, driven by increased internet penetration, digital adoption, and changes in consumer behavior following the COVID-19 pandemic. The unique characteristics of e-commerce businesses—such as fast cash cycles, high technology investment requirements, dynamic inventory fluctuations, and varied payment models—make working capital management both a challenge and a critical opportunity. Existing literature tends to focus more on manufacturing or conventional service companies. This study specifically highlights how working capital management principles apply and interact within the distinct e-commerce ecosystem.

Additionally, e-commerce companies tend to have low fixed asset ratios, consequently the effect of working capital management on ROA has become more significant. However, many e-commerce startups face financial pressures and negative cash flows due to their focus on user growth rather than financial efficiency. This makes return on assets an intriguing indicator, as it measures how effectively relatively limited digital and physical assets are used to generate profits.

This study offers novelty because it investigates how working capital management affects a company's profitability (ROA) in the context of the e-commerce industry, which has not been widely highlighted in Indonesian literature. In addition, this approach considers the shift in asset structure and digital cash flows that differ from conventional companies, thereby providing new insights into modern financial management practices in the digital economy. The data period for this study is particularly significant as it covers the post-COVID-19 pandemic phase, during which many e-commerce companies had to adapt to changes in consumption patterns, intensified competition, and global macroeconomic challenges. Data from this period will provide a more relevant and up-to-date picture of working capital management practices and their impact on profitability amid current market dynamics, which may differ from previous research findings using older historical data.

RESEARCH METHOD

This quantitative study uses secondary data from the financial reports of all e-commerce companies listed on the Indonesia Stock Exchange (IDX) between 2022 and 2024. The data was collected from the official IDX website. The sample used the total sampling method, where the entire population served as the research sample, resulting in a sample of 3 e-commerce companies namely PT Global Digital Niaga Tbk (Blibli), PT. GoTo Gojek Tokopedia Tbk (Tokopedia), and PT. Bukalapak Tbk (Bukalapak). Using SPSS version 22, the study performed a series of analytical steps on the data. These included descriptive statistical analysis, tests for classical assumptions, multiple regression, and hypothesis testing. This study uses two variables in its conceptual framework, namely independent variables and dependent variables. This research uses cash turnover (X1) and accounts receivable turnover (X2) and inventory turnover (X3) as its independent variables, while the dependent variable is Return on Assets (Y).

Research Variable

The independent variables used in this study are :

Cash Turnover (X1)

Cash turnover shows the ability of cash to generate income. It shows how many times cash turns over in a given period (Sapetu et al., 2017).

$$\text{Cash Turnover} = \frac{net\ sales}{average\ cash}$$

Account receivable Turnover (X2)

The accounts receivable turnover ratio measures how quickly a company collects its debts. It's calculated by dividing net credit sales by the average accounts receivable balance (Sari et al., 2023).

$$\text{Account Receivable Turnover} = \frac{net\ sales}{average\ account\ receivable}$$

Inventory Turnover (X3)

Inventory turnover is a metric utilized to assess how frequently the funds tied up in inventory are converted into sales over a given time frame (Amelia, 2023).

$$\text{Inventory Turnover} = \frac{cost\ of\ goods\ sold}{average\ inventory}$$

Return on Assets (Y)

Return On Assets (ROA) is a profitability ratio that shows how well a company uses its assets to generate profit (Shalini et al., 2020). The formula to calculate it is:

$$\text{Return on Assets} = \frac{earning\ before\ tax}{total\ assets}$$

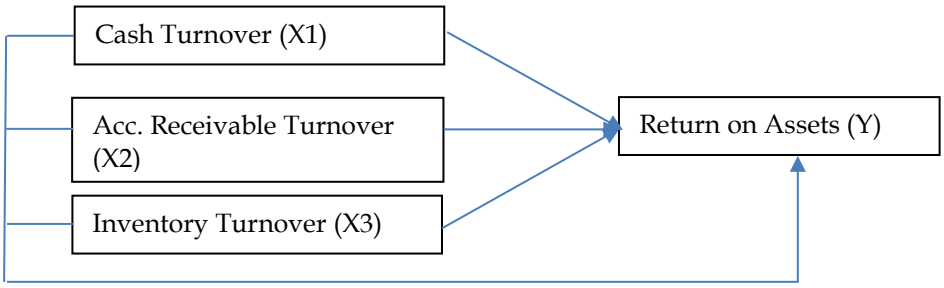

Figure 1. Conceptual Framework

The research hypotheses obtained from the results of the conceptual framework design of this study are as follows:

H1: It is hypothesized that cash turnover affects return on assets

H2: It is hypothesized that accounts receivable turnover affects return on assets.

H3: It is hypothesized inventory turnover impacts return on assets.

H4: The combined effect of cash turnover, accounts receivable turnover, and inventory turnover influences ROA.

RESULTS AND DISCUSSIONS

Multicollinearity Test:

The criteria for testing multicollinearity are if the tolerance value is greater than 0.100 and the VIF is less than 10, then there is no multicollinearity in the independent variable data.

Table 1. Multicollinearity Test

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.036	.224		.160	.879		
	Perputaran Kas	-.049	.032	-.688	-1.565	.178	.466	2.146
	Perputaran Piutang	.008	.006	.519	1.369	.229	.628	1.593

	Perputaran Persediaan	-.009	.004	-1.087	-2.333	.067	.415	2.407

a. Dependent Variable: ROA

With tolerance values above 0.100 and VIF values below 10, the independent variables (cash turnover, accounts receivable turnover, and inventory turnover) do not exhibit multicollinearity.

Normality Test :

The normality test, performed using the Kolmogorov-Smirnov method, relies on the Asymp.Sig (2-tailed) value. A value greater than 0.05 indicates that the data is normally distributed.

Table 2. Normality Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		9
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.15069049
Most Extreme Differences	Absolute	.233
	Positive	.120
	Negative	-.233
Test Statistic		.233
Asymp. Sig. (2-tailed)		.174[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Since the test result showed a value of 0.174, which is well above 0.05, we can conclude that the data meets the assumption of normality.

Heteroscedasticity test (Park test)

Testing criteria: if the sig value is greater than 0.05, then the data does not exhibit heteroscedasticity

Table 3. Heteroscedasticity test (Park test)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.245	3.147		-1.984	.104
	Perputaran Kas	.292	.443	.326	.659	.539
	Perputaran Piutang	-.128	.079	-.692	-1.622	.166
	Perputaran Persediaan	.078	.051	.801	1.526	.187

a. Dependent Variable: LN_RES

According to the table, cash turnover has a sig value of 0.539, accounts receivable turnover is 0.116 , and inventory turnover is 0.187. It can therefore be concluded that there is no heteroscedasticity because the sig values for all three variables are greater than 0.05.

Multiple linear regression test

Table 4. Multiple linier regression test

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.036	.224		.160	.879
	Perputaran Kas	-.049	.032	-.688	-1.565	.178
	Perputaran Piutang	.008	.006	.519	1.369	.229
	Perputaran Persediaan	-.009	.004	-1.087	-2.333	.067

a. Dependent Variable: ROA

Based on the table above, a regression equation can be created for this study, namely :
Y = 0.036 + -0.049 X1 + 0.008 X2 + -0.009 X3 + e

1. The value 0.036 represents the increase in Return on Assets (ROA) when the variables for Cash Turnover, Accounts Receivable Turnover, and Inventory Turnover are held at zero.
2. A beta coefficient of -0.049 for cash turnover indicates that a one-unit change in this variable leads to a -0.049 unit change in Return on Assets (ROA), with all other assumptions remaining constant.
3. The beta coefficient value for account receivable turnover 0.008 means that every change in the Account receivable Turnover variable (X2) by one unit will result in a change in Return On Assets (ROA) of 0.008 units, with all other assumptions remaining constant.
4. The beta coefficient value for inventory turnover -0.009 means that every change in the Inventory Turnover variable (X3) by one unit will result in a change in Return On Assets (ROA) of -0.009 units, with all other assumptions remaining constant.

Partial T-Test

H1: It is hypothesized that cash turnover affects return on assets

As shown in Table 4, the cash turnover variable has a significance value of 0.178. Because this value exceeds the 0.05 significance level, it is concluded that cash turnover does not have a statistically significant influence on the ROA of e-commerce companies.

H2: It is hypothesized that accounts receivable turnover affects return on assets.

With a significance value of 0.229 (which is greater than 0.05), accounts receivable turnover has no significant impact on the ROA of e-commerce companies, as shown by the results in Table 4.

H3: It is hypothesized that inventory turnover affects return on assets.

The results in Table 4 indicate that the significance of the inventory turnover variable is 0.067. As this value exceeds the 0.05 significance level, it is concluded that inventory turnover does not significantly affect the ROA of e-commerce companies.

Simultaneous Test (F-Test)

Table 4. Multiple linier regression test

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.221	3	.074	2.031	.228[b]
	Residual	.182	5	.036		
	Total	.403	8			

a. Dependent Variable: ROA

b. Predictors: (Constant), Perputaran Persediaan, Perputaran Piutang, Perputaran Kas

The analysis reveals a significance value of 0.228, which is above the 0.05 threshold. Consequently, we can conclude that the combined variables of cash turnover, accounts receivable turnover, and inventory turnover do not significantly impact return on assets.

This is a compelling result, as it challenges the typical assumption that working capital management directly affects the profitability (ROA) of e-commerce firms on the IDX. This is because the e-commerce business model has characteristics that differ from conventional companies, and this can affect the relationship between working capital and ROA. E-commerce companies typically

receive payments instantly (e.g., via credit cards, e-wallets, or bank transfers) even before goods are shipped. This creates a very short cash conversion cycle, or even a negative one. With such an efficient cash cycle, minor improvements in working capital management may not yield significant visible impacts on overall profitability.

In addition, many e-commerce companies have intangible assets such as technology platforms, customer databases, and brand equity that are extremely valuable. ROA measures net income against total assets. If total assets are dominated by intangible assets that are not recorded at their actual market value in the financial statements, then ROA may be more influenced by the investment strategy for these intangible assets than by the management of current assets.

Based on field observations, the profitability of e-commerce companies is greatly influenced by variables other than working capital management, such as: (1) Marketing and Promotion Strategies. E-commerce companies often spend large amounts of money on acquiring new customers, promotions, and discounts. These costs directly reduce net income, which is the numerator of ROA. Aggressive marketing expenditures may have a far greater impact on profits than inventory turnover efficiency or accounts receivable. (2) Economies of Scale and Sales Growth: Massive sales growth and economies of scale achieved by large e-commerce companies can be key determinants of ROA. Significant increases in sales volume can offset minor inefficiencies in working capital management. (3) Technology Investment: E-commerce companies continuously invest in technology, logistics infrastructure, and platform development. These costs can be substantial and significantly impact ROA, outweighing the effects of working capital management.

CONCLUSION

The results show that, in e-commerce companies, working capital management variables (cash turnover, inventory turnover, and accounts receivable turnover) do not affect return on assets (ROA), either partially or simultaneously. The study's findings may be limited because the chosen variables for working capital management—such as inventory turnover, accounts receivable turnover, and the cash conversion cycle—might not adequately reflect the unique complexities of e-commerce business models. This is because e-commerce companies generally have very small accounts receivable since most transactions are paid upfront. Additionally, many e-commerce companies, especially marketplaces, do not hold inventory themselves (drop-shipping or consignment business models). This makes inventory turnover insignificant or irrelevant as an indicator. However, the research findings indicating that working capital management does not significantly impact ROA in e-commerce companies do not mean that working capital management is unimportant. Rather, it indicates that e-commerce companies are unique because they differ from manufacturing companies, where profitability is more driven by larger strategic factors such as growth strategies, technology investments, and economies of scale. Therefore, the researchers suggest that future studies include additional variables such as growth strategies, technology investments, and economies of scale in their research.

ACKNOWLEDGEMENTS

The researcher would like to thank her husband and two children, Rafif and Rayyan, for their constant support in all activities related to the three pillars of higher education. I would also like to thank YAPAN College of Economics for their continued support.

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