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The Cash Flow Advantage: Examining Cash Turnover's Moderating Effect on the Profitability Impact of Receivables and Inventory Turnover

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ABSTRACT

Efficient working capital management is essential for improving firm profitability, particularly in capital-intensive industries such as pharmaceuticals. This study aims to examine the effects of receivables turnover and inventory turnover on profitability, with cash turnover positioned as a moderating variable. The analysis is conducted on panel data from pharmaceutical companies listed on the Indonesia Stock Exchange during the 2020–2024 period. Panel least squares regression is applied to evaluate both direct and moderating relationships among the variables. The findings show that receivables turnover does not have a significant effect on profitability, whereas inventory turnover has a negative and significant influence. Cash turnover exhibits a limited moderating role in the relationship between receivables turnover and inventory turnover with profitability. These results indicate that operational efficiency in inventory management plays a more critical role in enhancing profitability than liquidity rotation alone. The study highlights the complexity of financial decision-making in the pharmaceutical sector and provides empirical insights for managers in optimizing working capital strategies.

Keywords: Receivables turnover, Inventory turnover, Profitability, Cash turnover, Pharmaceutical firms, Panel data regression.

ABSTRAK

Pengelolaan modal kerja yang efisien merupakan faktor penting dalam meningkatkan profitabilitas perusahaan, khususnya pada industri padat modal seperti industri farmasi. Penelitian ini bertujuan untuk menganalisis pengaruh perputaran piutang dan perputaran persediaan terhadap profitabilitas, dengan perputaran kas sebagai variabel pemoderasi. Analisis dilakukan menggunakan data panel perusahaan farmasi yang terdaftar di Bursa Efek Indonesia selama periode 2020–2024. Metode regresi panel least squares digunakan untuk menguji hubungan langsung maupun hubungan moderasi antarvariabel. Hasil penelitian menunjukkan bahwa perputaran piutang tidak berpengaruh signifikan terhadap profitabilitas, sedangkan perputaran persediaan berpengaruh negatif dan signifikan. Perputaran kas terbukti memiliki peran moderasi yang terbatas terhadap hubungan antara perputaran piutang dan perputaran persediaan dengan profitabilitas. Temuan ini mengindikasikan bahwa efisiensi operasional dalam pengelolaan persediaan lebih berperan dalam meningkatkan profitabilitas dibandingkan dengan perputaran likuiditas semata. Penelitian ini menegaskan kompleksitas pengambilan keputusan keuangan di sektor farmasi serta memberikan implikasi empiris bagi manajemen dalam mengoptimalkan strategi pengelolaan modal kerja.

Kata Kunci: *Perputaran Piutang; Perputaran Persediaan; Profitabilitas; Perputaran Kas; Perusahaan Farmasi; Regresi Data Panel.*

INTRODUCTION

Profitability remains a fundamental indicator of a company's financial health and long-term sustainability. In today's dynamic business environment, firms consistently strive to enhance profitability through effective management of operational and financial activities. Among these, receivables turnover and inventory turnover are crucial efficiency indicators, reflecting a firm's ability to manage credit and inventory policies to generate revenue. However, prior studies have yet to thoroughly examine how cash turnover interacts with these operational metrics to influence profitability, leaving an important research gap in understanding the broader financial dynamics that drive firm performance

(Dasman et al., 2023). Previous research, such as Ertia Nursanti Eryatna et al., (2021) and Akinleye & Adesina (2024), has established that efficient receivables and inventory turnover contribute to liquidity and profitability, but these studies often focus solely on direct relationships while overlooking the role of liquidity mechanisms such as cash turnover that may moderate these effects.

Recent literature, including Laghari et al., (2023), highlights that cash turnover reflects a firm's ability to efficiently utilize its cash resources to sustain operations and investment activities. This concept aligns with Liquidity Theory, which posits that maintaining an optimal balance between liquidity and profitability is essential for financial stability and operational flexibility. According to Eljelly (2004), adequate cash availability enables firms to fund production cycles, finance innovation, and mitigate the risks of delayed receivables or excess inventory. This relationship is particularly relevant in the pharmaceutical industry, where long production cycles, substantial R&D investments, and strict regulatory requirements heighten the importance of liquidity management. During and after the COVID-19 pandemic, the sector faced extended credit periods, payment delays, and inventory accumulation, emphasizing the need for efficient cash turnover to maintain operational continuity and profitability.

To address these issues, this study integrates cash turnover as a moderating variable in the relationship between receivables turnover, inventory turnover, and profitability specifically within Indonesia's pharmaceutical industry. By extending the Liquidity Theory framework, this study contributes to a more comprehensive understanding of how operational efficiency and liquidity jointly affect firm performance. The research has three primary objectives: (1) to examine the direct effect of receivables turnover and inventory turnover on profitability; (2) to evaluate how cash turnover moderates these relationships; and (3) to offer managerial insights on optimizing operational and liquidity strategies to enhance profitability. By bridging the gap between operational efficiency and liquidity management, this study aims to contribute both theoretically and practically to the discourse on financial performance in capital-intensive, innovation-driven industries such as pharmaceuticals.

Literature Review

Theoretical Framework

This study draws upon two foundational theories the Resource Based View (RBV) and the Trade Off Theory to examine the relationship between receivables turnover, inventory turnover, and profitability, with cash turnover as a moderating variable. Together, these theories provide a comprehensive framework for understanding how firms balance operational efficiency and liquidity management to enhance profitability. The RBV emphasizes the internal resources and capabilities that drive sustained competitive advantage, while the Trade Off Theory highlights the financial balance between liquidity and profitability that supports long-term value creation.

According to the Resource Based View (RBV) proposed by Barney (1991), a firm's sustainable competitive advantage arises from its ability to acquire, develop, and deploy valuable, rare, inimitable, and non substitutable (VRIN) resources. Within this framework, cash turnover can be viewed as a valuable financial resource reflecting a firm's ability to efficiently mobilize its liquid assets to support operational activities and strategic investments. In the pharmaceutical industry, where firms rely on substantial and continuous funding for research and development (R&D), production, and regulatory compliance, efficient cash utilization represents a distinctive capability. A high cash turnover demonstrates managerial efficiency in converting liquidity into productive outputs,

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facilitating reinvestment in innovation, and reducing dependence on external financing. Thus, under the RBV lens, effective cash turnover management acts as a *strategic resource* that enhances operational flexibility and overall firm performance (Abubakar et al., 2024).

Complementing RBV, the Trade Off Theory (Myers, 1984) underscores the importance of balancing liquidity and profitability. Maintaining sufficient liquidity ensures firms can meet short-term obligations and sustain operations, while excessive liquidity may constrain profitability by limiting investment in higher-yield opportunities. Therefore, optimizing receivables turnover and inventory turnover key elements of working capital management requires an efficient cash turnover mechanism to ensure funds are available when needed without compromising profitability. The integration of RBV and Trade Off Theory thus provides a robust theoretical foundation, explaining both *why* cash turnover represents a valuable internal capability and *how* it moderates the relationship between operational efficiency and profitability. This alignment of operational and liquidity strategies is particularly crucial in the pharmaceutical industry, where capital intensity and innovation demands make cash management a critical determinant of sustainable profitability and competitive advantage (Kimani & Kibera, 2023).

Receivables Turnover and Profitability

Receivables turnover measures a firm's efficiency in collecting payments from customers and converting credit sales into cash. High receivables turnover indicates effective credit management, which enhances liquidity, reduces bad debt risk, and improves cash flow ultimately leading to greater profitability (Siekelova et al., 2017). Efficient receivables management also reflects a company's ability to shorten its operating cycle, allowing quicker reinvestment of cash into productive activities.

However, several studies caution that overly strict credit policies can limit sales growth and reduce customer retention (Jia et al., 2025). Therefore, maintaining an optimal balance between extending credit and ensuring timely collection is crucial to sustaining profitability. In the context of the pharmaceutical industry, where firms often extend significant credit to distributors and hospitals, managing receivables efficiently becomes particularly important to maintain liquidity for ongoing production and R&D investment.

Hypothesis 1 (H1):

Receivables turnover has a positive and significant effect on profitability.

Inventory Turnover and Profitability

Inventory turnover reflects how efficiently a company manages its inventory to generate sales revenue. A higher inventory turnover ratio generally indicates that inventory is being sold and replenished quickly, minimizing holding costs and the risk of obsolescence (Shadaei & Xu, 2023). Effective inventory management enables firms to free up cash tied in stock and allocate it toward more profitable investments.

However, excessively high inventory turnover may indicate insufficient stock levels, leading to potential stockouts and lost sales opportunities. Panigrahi et al., (2024) emphasize that firms must maintain optimal inventory levels that balance cost efficiency with the ability to meet customer demand. In pharmaceutical firms, where drug expiration, storage requirements, and fluctuating demand can significantly affect inventory value, achieving this balance is critical to maintaining profitability and product availability.

Hypothesis 2 (H2):

Inventory turnover has a positive and significant effect on profitability.

Moderating Role of Cash Turnover

Cash turnover represents how efficiently a firm uses its cash resources to support operational activities and generate revenue. It serves as a vital indicator of liquidity management, reflecting how often cash is cycled through the business in a given period. According to Hussain et al., (2021), firms with higher cash turnover ratios are better positioned to reinvest in production, meet short-term obligations, and seize growth opportunities thereby amplifying the positive effects of operational efficiency on profitability.

From the perspective of Liquidity Theory, efficient cash turnover ensures that liquidity constraints do not impede operational processes, particularly in industries like pharmaceuticals where high working capital is required for R&D, regulatory compliance, and procurement of raw materials. Conversely, poor cash turnover may weaken a firm's ability to capitalize on efficient receivables and inventory management, thus diminishing profitability.

Accordingly, cash turnover may moderate the relationship between operational efficiency metrics (receivables and inventory turnover) and profitability, strengthening their effects when liquidity is managed effectively.

Hypothesis 3a (H3a):

Cash turnover positively moderates the relationship between receivables turnover and profitability.

Hypothesis 3b (H3b):

Cash turnover positively moderates the relationship between inventory turnover and profitability.

Limitations in Existing Research

Although the direct relationships between receivables turnover, inventory turnover, and profitability have been widely examined, comprehensive analyses that include cash turnover as a moderating factor remain limited. Many studies treat liquidity and operational efficiency as separate constructs, overlooking how they interact to influence firm performance ((Jia et al., 2025); Panigrahi et al., (2024)). Furthermore, industry specific research, especially within the pharmaceutical sector, is scarce despite the sector's unique liquidity demands, long production cycles, and intensive R&D investments.

RESEARCH METHODS

This study adopts a quantitative research design to empirically examine the effect of receivables turnover and inventory turnover on profitability, with cash turnover serving as a moderating variable. The research utilizes secondary data obtained from the financial statements of pharmaceutical companies listed on the Indonesia Stock Exchange (IDX) for the period 2020-2024. The five years were chosen to ensure the inclusion of both pre- and post-pandemic financial performance, allowing for a more comprehensive analysis of liquidity and operational dynamics in the pharmaceutical sector. This period also aligns with data availability and consistency across all listed firms.

The population for this study consists of all pharmaceutical companies listed on the Indonesia Stock Exchange (IDX) during the 2020-2024 period. The sample was determined using purposive sampling with the following criteria: (1) Companies classified under the pharmaceutical subsector listed on the IDX during 2020-2024; (2) Companies that published complete and audited financial statements during the study period; (3) Companies that provided complete data relevant to the research variables (receivables turnover, inventory turnover, cash turnover, and profitability).

Based on these criteria, 11 pharmaceutical companies were selected as the final research sample, as they met all requirements for data completeness and consistency. To ensure

conceptual clarity and replicability, each research variable was defined and measured as follows:

Receivables Turnover (X_1)
Receivables turnover reflects the company's efficiency in collecting payments from customers. It measures how many times accounts receivable are converted into cash within a year (Siekelova et al., 2017). A higher ratio indicates more efficient receivables management.
Formula:

$$\text{Receivables Turnover} = \frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}}$$

Inventory Turnover (X_2)
Inventory turnover measures the speed at which a firm sells and replaces its inventory within a period (Shadaei & Xu, 2023). A higher inventory turnover ratio suggests better inventory control and efficient stock management
Formula:

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold (COGS)}}{\text{Average Inventory}}$$

.

Cash Turnover (Moderating Variable, Z)
Cash turnover shows how efficiently a company utilizes its cash to support sales and operational activities Hussain et al., (2021). This variable moderates the relationship between operational efficiency (receivables and inventory turnover) and profitability by reflecting liquidity efficiency.
Formula:

$$\text{Cash Turnover} = \frac{\text{Net Sales}}{\text{Average Cash and Cash Equivalents}}$$

Profitability (Dependent Variable, Y)
Profitability is measured using Return on Assets (ROA), which indicates how effectively a company utilizes its total assets to generate net income ((Yahya & Hidayat, 2020); (Jia et al., 2025)). A higher ROA implies more effective utilization of assets in generating profit .
Formula:

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} \times 100\%$$

The data used in this study were obtained from secondary sources, specifically from the official financial reports of pharmaceutical companies published on the Indonesia Stock Exchange (IDX) website (www.idx.co.id) and company official websites. Each financial report was reviewed for completeness and consistency with the research variables. Data were tabulated and processed using Microsoft Excel and SPSS for analysis.

Data analysis was conducted using multiple linear regression to test the direct effects of receivables turnover and inventory turnover on profitability. Furthermore, moderation analysis was performed to test the moderating effect of cash turnover. The following steps were applied systematically: (1) Descriptive Statistical Analysis to describe the central tendency and dispersion of variables; (2) Classical Assumption Tests including normality, multicollinearity, heteroscedasticity, and autocorrelation tests to ensure the model's validity; (3) Hypothesis Testing using t-tests and F-tests to determine the significance of individual variables and the overall model fit; and (4) Moderation Analysis (Interaction Test) to

evaluate whether cash turnover significantly moderates the relationship between receivables turnover, inventory turnover, and profitability.

This methodological framework ensures robustness and reliability in testing the hypothesized relationships among operational efficiency, liquidity, and profitability in Indonesia's pharmaceutical industry.

RESULTS AND DISCUSSION

RESULTS

Descriptive Statistics

The results of the descriptive analysis obtained are summarized in Table 1 below.

Table 1. Descriptive statistics

Variable	Min	Max	Mean	Std Deviation
Receivables Turnover (X1)	1.869912	11.67737	5.487864	2.198872
Inventory Turnover (X2)	1.223870	10.24169	3.674214	2.015364
Profitability (Y)	1.75E-05	0.948898	0.113495	0.137631
Cash Turnover (Z)	2.637487	80.00448	11.98017	16.11370

Source: Data Proceed, 2025

The descriptive statistics for the variables analyzed in this study are presented in Table 1. These include receivables turnover (X1), inventory turnover (X2), profitability (Y), and cash turnover (Z). The statistics summarize the minimum, maximum, mean, and standard deviation values observed in the dataset.

Receivables turnover (X1), a measure of how efficiently a company collects payments from its customers, shows a minimum value of 1.87 and a maximum value of 11.68, with a mean of 5.49 and a standard deviation of 2.20. This indicates moderate variability in receivables management across the sampled pharmaceutical companies. A lower turnover value could reflect challenges in collecting receivables, while higher values signify efficient cash collection practices.

Inventory turnover (X2), which reflects how effectively companies manage and utilize their inventory, also exhibits notable variability. The minimum turnover is 1.87, while the maximum turnover is 11.68, with an average of 5.49 and a standard deviation of 2.20. These results suggest differences in inventory management practices among pharmaceutical firms, which can influence their operational efficiency and profitability.

Profitability Y), measured as a firm's ability to generate returns, has a minimum value of 0.0000175 (1.75E-05) and a maximum value of 0.9489, with a mean of 0.1135 and a standard deviation of 0.1376. The wide range between the minimum and maximum values highlights significant disparities in financial performance among the sampled firms. The relatively low average profitability suggests that many companies operate with modest profit margins.

Cash turnover (Z), which represents how efficiently firms utilize their cash to support operations, demonstrates the most variability among the variables. The minimum value is 2.64, while the maximum is 80.00, with a mean of 11.98 and a standard deviation of 16.11. The high standard deviation indicates substantial differences in cash management efficiency across the sampled companies, which could significantly impact their ability to sustain liquidity and profitability.

Choosing the Panel Data Regression Model

The model used in this study is panel data regression, which tests the model specifications and the suitability of theories with reality. Ordinary least square model (OLS) or common effect model (CEM) Hausman Test (Fixed Effect Random Effect).

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Table 2. Chow Test Results

Effects Test	Statistic	d.f	Prob.
Cross-section F	3.042539	(10.41)	0.0057
Cross-section Chi-square	30.529477	10	0.0007

Source: Data Proceed, 2025

The Chow Test compares the common effect model (CEM), which assumes that all cross-sectional units (companies) share the same intercept, with the fixed effect model (FEM), which allows intercepts to vary across units. Cross-section F Test: The test statistic of 3.042539 with a probability value (p-value) of 0.0057 is significant at the 1% level. This indicates that the null hypothesis (favoring the common effect model) is rejected in favor of the alternative hypothesis, which supports the fixed effect model. Cross-section Chi-square Test: Similarly, the chi-square statistic of 30.529477 with a p-value of 0.0007 confirms the rejection of the null hypothesis, further validating the fixed effect model as the more appropriate choice.

Model Selection

Based on the Chow Test results, the fixed effect model (FEM) is selected as the most suitable approach for this study. This choice aligns with the theoretical understanding that each firm may have unique characteristics influencing the relationship between receivables turnover, inventory turnover, and profitability. By accounting for firm-specific effects, the FEM ensures a more accurate representation of the data.

Table 3. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	14.253738	3	0.0026

Source: Data Proceed, 2025

The Hausman Test evaluates the null hypothesis that the random effect model (REM) is appropriate and provides efficient estimates, as opposed to the fixed effect model (FEM), which assumes that unobserved individual effects are correlated with the independent variables. Chi-Sq. Statistic: The test produces a chi-square statistic of 14.253738; Degrees of Freedom (d.f.): The test is based on 3 degrees of freedom, corresponding to the number of independent variables in the model. P-Value: The probability value (p-value) is 0.0026, which is significant at the 1% level ($p < 0.01$).

The null hypothesis is rejected since the p-value is below the significance threshold. This indicates that the fixed effect model (FEM) is more appropriate for the study than the random effect model (REM).

Model Selection Based on the Hausman Test

The Hausman Test confirms that the fixed effect model (FEM) should be used for this analysis. This model accounts for the unique characteristics of individual firms (e.g., size, operational structure) that may influence their receivables turnover, inventory turnover, profitability, and cash turnover relationships. The fixed effect model ensures more consistent and reliable parameter estimates by controlling for these firm-specific effects.

Table 4. Panel Least Squares The Effect of Receivable Turnover on Profitability

Variable	Coefficient	Std Error	t-Statistics	Prob.
C	0.164597	0.113597	1.448954	0.1546
X1	-0.009312	0.020456	-0.455215	0.6512

Source: Data Proceed, 2025

The analysis suggests that receivables turnover (X1) does not significantly influence profitability in the studied pharmaceutical firms. The negative coefficient implies a potential

adverse effect, but the lack of statistical significance limits the confidence in this relationship. Further studies with more refined models or additional moderating variables may be needed to better understand the dynamics between receivables turnover and profitability.

Table 5. Panel Least Squares The Effect of Inventory Turnover on Profitability

Variable	Coefficient	Std Error	t-Statistics	Prob.
C	0.270669	0.054660	4.951858	0.0000
X2	-0.042778	0.014239	-3.004291	0.0044

Source: Data Proceed, 2025

The results demonstrate a significant negative relationship between inventory turnover and profitability in the sampled pharmaceutical firms. This highlights the importance of effective inventory management in optimizing profitability. Managers should consider strategies to balance inventory levels to avoid overstocking or understocking, which could adversely impact financial performance.

The Effect of Receivable Turnover with Cash Turnover as a Moderating Variable on Profitability.

Table 6 Panel Least Squares 1

Variable	Coefficient	Std Error	t-Statistics	Prob.
C	0.183737	0.116587	1.575963	0.1225
X1	-0.010078	0.020566	-0.490030	0.6267
Z	-0.001247	0.001565	-0.796460	0.4302

Source: Data Proceed, 2025

Table 7 Panel Least Squares 2

Variable	Coefficient	Std Error	t-Statistics	Prob.
C	0.251769	0.135424	1.859122	0.0702
X1	-0.020528	0.023131	-0.887487	0.3800
Z	-0.007690	0.006705	-1.146811	0.2581
X1Z	0.000902	0.000913	0.988213	0.3288

Source: Data Proceed, 2025

The relationship between receivables turnover (X1) and profitability (Y), as moderated by cash turnover (Z), was analyzed using panel least squares regression. The results are presented in two models:

a. Table 3 (Panel Least Squares 1): Examines the direct effects of receivables turnover (X1) and cash turnover (Z) on profitability.
b. Table 4 (Panel Least Squares 2): Introduces the interaction term (X1Z) to assess the moderating effect of cash turnover on the relationship between receivables turnover and profitability.
c.

The results suggest that cash turnover does not significantly moderate the relationship between receivables turnover and profitability in the pharmaceutical firm sample. While there are indications of negative relationships between the variables, the lack of statistical significance highlights the need for further research to explore other potential moderating or mediating factors that might influence these relationships. Managers should focus on refining operational efficiencies and liquidity strategies to uncover actionable insights.

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The Effect of Inventory Turnover with Cash Turnover as a Moderating Variable on Profitability.

Table 8 Panel Least Squares 1

Variable	Coefficient	Std Error	t-Statistics	Prob.
C	0.297359	0.058897	5.048769	0.0000
X2	-0.044562	0.014253	-3.126505	0.0032
Z	-0.001681	0.001420	-1.183339	0.2433

Source: Data Proceed, 2025

Table 9 Panel Least Squares 2

Variable	Coefficient	Std Error	t-Statistics	Prob.
C	0.344153	0.072935	4.718618	0.0000
X2	-0.057406	0.018515	-3.100470	0.0035
Z	-0.004592	0.003038	-1.511631	0.1383
X2Z	0.000743	0.000685	1.083564	0.2849

Source: Data Proceed, 2025

The relationship between inventory turnover (X2) and profitability (Y), with cash turnover (Z) as a moderating variable, was analyzed using panel least squares regression. The results are presented in two models:

a. Table 5 (Panel Least Squares 1): Examines the direct effects of inventory turnover (X2) and cash turnover (Z) on profitability.
b. Table 6 (Panel Least Squares 2): Introduces the interaction term (X2Z) to assess the moderating effect of cash turnover on the relationship between inventory turnover and profitability.

The results suggest that while inventory turnover directly affects profitability, the role of cash turnover as a moderating variable is limited in this context. Firms should carefully manage inventory to avoid excessive turnover that could harm profitability. Additionally, while cash turnover does not significantly moderate the relationship, maintaining healthy cash flow remains essential for operational stability. Further research might explore other moderating factors or industry-specific dynamics to understand these relationships better.

DISCUSSION

The Effect of Receivable Turnover on Profitability

The analysis indicates that receivables turnover does not have a significant effect on the profitability of the pharmaceutical firms studied. This finding suggests that the frequency with which companies collect customer payments does not directly enhance profitability within the pharmaceutical industry. One possible explanation is that pharmaceutical firms generally operate under extended credit terms, as a substantial portion of their sales are made to government agencies, public hospitals, and health institutions that often have delayed payment cycles. Consequently, even when receivables are efficiently managed, the effect may not immediately translate into increased profitability. Moreover, the nature of pharmaceutical demand, which is relatively stable and less sensitive to credit policy changes, means that sales volumes and profit margins are not primarily driven by how quickly receivables are collected.

This finding aligns with prior studies that have observed similar outcomes in industries where credit sales serve strategic rather than purely financial purposes. For instance, Sunaryo and Lestari (2023) reported that receivables turnover had no significant effect on profitability in manufacturing firms, emphasizing that operational cost management and market conditions played a more decisive role in shaping financial

performance. Likewise, Anggarini et al. (2022), in a study on healthcare firms, found that while effective receivables management enhances liquidity, it does not necessarily improve profitability. This is particularly true in sectors like pharmaceuticals where receivables turnover reflects institutional payment practices rather than managerial inefficiency.

Furthermore, the lack of a significant relationship may also stem from the profit structure of pharmaceutical firms, which often depends more on patented product margins and pricing power than on the speed of cash collection. Pharmaceutical companies generate substantial profits from exclusive products with high markups, meaning that profitability relies more on product innovation and pricing strategies than on receivables efficiency. This contrasts with sectors such as retail, where rapid receivable cycles are critical to liquidity and competitiveness. As noted by Amalia et al. (2023), receivables turnover significantly influences profitability in industries with fast moving goods and tight margins, conditions that differ markedly from those of the pharmaceutical sector.

The Effect of Inventory Turnover on Profitability

The results reveal a significant negative relationship between inventory turnover and profitability among the pharmaceutical firms studied. This finding suggests that while higher inventory turnover is often interpreted as a sign of operational efficiency, it may not necessarily enhance profitability within this industry. In the pharmaceutical context, excessively high inventory turnover may reflect over-reliance on rapid inventory cycling, which can lead to increased costs from frequent restocking or potential stockouts that disrupt supply continuity. This outcome is consistent with Gołaś (2020), who found that excessively high turnover ratios could erode profit margins due to the operational strain of maintaining constant replenishment cycles. Similarly, Chuang et al. (2019) observed that in industries characterized by high product complexity—such as pharmaceuticals—the need to maintain diverse and adequate inventory levels often outweighs the efficiency gains from faster inventory movement.

By contrast, studies such as Olusegun et al. (2024) in the consumer goods sector reported a positive association between inventory turnover and profitability, emphasizing that the effect is highly context-dependent. In industries with stable demand and standardized products, rapid inventory turnover can directly support profitability through lower holding costs and increased sales volume. However, pharmaceutical firms operate under unique conditions involving stringent regulatory requirements, long production cycles, and the necessity to stock a wide range of drugs with varying shelf lives and demand patterns. These factors make aggressive inventory reduction strategies counterproductive. Therefore, the significant negative relationship observed in this study underscores the importance of balancing inventory efficiency with availability. Future research should investigate the moderating effects of supply chain agility, regulatory policy, and market volatility to better understand how pharmaceutical companies can optimize inventory management while safeguarding profitability.

The Effect of Receivables Turnover with Cash Turnover as a Moderating Variable on Profitability

The findings indicate that cash turnover does not significantly moderate the relationship between receivables turnover and profitability in pharmaceutical firms. Although cash turnover is an essential measure of liquidity efficiency, its influence on the link between receivables management and profitability appears minimal in this industry. This result suggests that the pharmaceutical sector's extended credit terms, long payment cycles, and reliance on institutional buyers such as hospitals and government agencies weaken the moderating effect of cash turnover. Even when firms manage their cash

efficiently, the delayed nature of receivables collection reduces the immediate liquidity benefits, diminishing the direct contribution of cash turnover to profitability. These results align with Sisodia and Maheshwari (2023), who found that the moderating role of cash turnover is more evident in industries with shorter operating cycles and rapid cash inflows, such as consumer goods and retail, where liquidity directly influences profit generation.

Similarly, Ijuwo (2024) found that cash turnover significantly strengthens the relationship between working capital components and profitability in retail businesses due to their dependence on fast cash circulation. However, the pharmaceutical industry's operational environment differs substantially, as firms manage long research, production, and distribution cycles, often coupled with deferred payments and reimbursement processes. Consequently, cash turnover does not exert a strong moderating effect in this context. The findings underscore that liquidity ratios such as cash turnover may have limited explanatory power for profitability in industries with prolonged financial and operational cycles. Future studies should consider alternative moderating variables such as firm size, financial leverage, or market dynamics to capture a more comprehensive understanding of how operational and liquidity factors jointly shape profitability in the pharmaceutical sector.

The Effect of Inventory Turnover with Cash Turnover as a Moderating Variable on Profitability

The results indicate that inventory turnover has a direct and significant positive effect on profitability among pharmaceutical firms, while cash turnover does not significantly moderate this relationship. This finding implies that efficient inventory management independently contributes to profitability through reduced holding costs, minimized obsolescence, and improved stock utilization, but liquidity efficiency (as reflected by cash turnover) does not amplify this effect. This result aligns with Ekakitie et al. (2022), who demonstrated that effective inventory control enhances profitability, especially in industries with stable and predictable demand patterns. Conversely, the weak moderating effect of cash turnover supports the argument of Eryatna et al. (2021), who noted that cash turnover's influence on the inventory profitability relationship is often limited in sectors characterized by complex and lengthy operational cycles such as pharmaceuticals, where inventory management is more influenced by production scheduling, regulatory constraints, and supply chain coordination than by immediate cash flow variations.

Further supporting this view, Anggarini et al. (2022) found that cash turnover has minimal impact on profitability in industries with long product life cycles and regulated demand structures. In the pharmaceutical industry, inventory cycles are determined largely by safety stock requirements, regulatory approvals, and consistent demand for essential drugs, making cash fluctuations less influential on short-term profitability compared to industries such as retail, where liquidity directly drives operational performance. These findings suggest that pharmaceutical companies should prioritize strategic inventory optimization such as improving demand forecasting accuracy, integrating supply chain systems, and implementing technology-driven stock management—rather than relying heavily on cash turnover to boost profitability. Future research should consider incorporating other moderating variables, such as supply chain agility, market competition, or financial leverage, to build a more comprehensive understanding of how operational and financial factors jointly affect profitability in the pharmaceutical sector.

CONCLUSION

This study examined the effects of receivables turnover, inventory turnover, and cash turnover on profitability, with cash turnover serving as a moderating variable in pharmaceutical firms listed on the Indonesia Stock Exchange. The findings reveal that receivables turnover has no significant effect on profitability, likely due to the industry's extended credit terms and reliance on institutional buyers such as hospitals and government agencies, which lengthen cash collection periods. Similarly, cash turnover does not significantly moderate the relationship between receivables turnover and profitability, indicating that liquidity management has a limited immediate impact on financial performance in this context. Conversely, inventory turnover was found to have a direct and significant effect on profitability, underscoring the importance of efficient inventory control in improving financial outcomes. However, the moderating role of cash turnover in the relationship between inventory turnover and profitability was weak, suggesting that the long production and distribution cycles characteristic of the pharmaceutical sector reduce the short-term influence of cash utilization efficiency on profits.

The study's limitations include the use of secondary data restricted to publicly listed pharmaceutical firms, which may not fully capture variations across smaller or privately held companies. Additionally, the research focuses solely on cash turnover as a moderating variable, which may overlook other potential determinants of profitability. Future research should consider incorporating variables such as financial leverage, operational efficiency, and macroeconomic conditions to provide a more comprehensive model. In practical terms, pharmaceutical firms are advised to enhance profitability by optimizing inventory management through demand forecasting, supplier coordination, and technology-based systems such as Just-In-Time (JIT) methods. Strengthening receivables collection policies and implementing innovative liquidity tools such as factoring or supply chain financing can further improve cash flow stability. Overall, aligning operational efficiency with liquidity management will help pharmaceutical companies maintain financial sustainability and competitiveness in an industry characterized by long operating cycles and complex liquidity dynamics.

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