



ANALYSIS OF THE EFFECT OF CASH MANAGEMENT ON PROFIT PERFORMANCE WITH LIQUIDITY AS A MODERATING VARIABLE IN PHARMACY COMPANIES IN INDONESIA

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Abstract

This study investigates how cash management influences profit performance in Indonesian pharmacy companies, with liquidity positioned as a moderating factor. Using a quantitative approach rooted in the positivist paradigm, the research analyzes secondary data obtained from audited financial statements of pharmacy firms listed on the Indonesia Stock Exchange for the 2021–2024 period. Cash Turnover, Return on Assets (ROA), and the Current Ratio (CR) were used as key indicators to represent cash management, profit performance, and liquidity. Multiple linear regression and Moderated Regression Analysis (MRA) were applied after meeting classical assumption requirements, including tests for normality, multicollinearity, heteroskedasticity, and autocorrelation. The empirical findings indicate that cash management significantly and negatively affects profit performance, suggesting that overly rapid cash turnover may reflect insufficient cash reserves and can weaken profitability. Liquidity shows a positive and significant effect on profit performance, demonstrating its role in supporting operational stability. Additionally, liquidity moderates the relationship between cash management and profit performance by reducing the strength of this influence. These results highlight the importance of balanced cash management and optimal liquidity conditions in ensuring financial sustainability within pharmacy companies. The study also recommends expanding future research through additional variables, broader samples, and alternative analytical frameworks.

Keywords: Cash Management, Liquidity, Moderated Regression, Pharmacy Companies, Profit Performance



INTRODUCTION

In an increasingly competitive healthcare market, financial efficiency has become a central requirement for sustaining business operations, including pharmacies that function as the frontline of pharmaceutical services. According to Ministry of Health Regulation No. 73/2016, a pharmacy is designated as a facility responsible for storing, compounding, dispensing, and distributing a wide range of medicinal products encompassing modern pharmaceuticals, traditional remedies, phytopharmaca, as well as narcotics, psychotropics, and various medical devices. Beyond its distribution role, a pharmacy also acts as a hub for drug-related information, therapeutic consultation, monitoring of adverse reactions, and community education on proper medication use and healthy living (Mizranita et al., 2024; Sa'idaturrohman, 2022; Dwi et al., 2022). The Ministry of Health reports that more than 47 thousand pharmaceutical distribution facilities are currently operating across Indonesia, underscoring the significant contribution of pharmacies within the national healthcare supply chain (Data Indonesia, 2023). High-quality services enable pharmacies to establish customer trust, retain loyalty, expand market reach, and ultimately strengthen profitability. This aligns with findings by Susantika et al. (2023), who observed that a community pharmacy was able to maintain a gross profit margin of approximately 34–36% and a net profit margin of 18–20%, reflecting stable earnings from the sale of medicines and health-related products.

Profit plays an essential role in safeguarding the continuity of pharmacy operations, as it demonstrates how effectively managers utilize available resources and assets (Utami et al., 2024). Without sufficient earnings, routine activities—such as procuring pharmaceutical stocks, compensating personnel, and supporting distribution functions cannot be carried out optimally. Profitability also serves as the foundation for business development initiatives, including service expansion and the adoption of digital technologies that improve service systems and inventory management. In a pharmaceutical landscape marked by intense competition and rapid transformation, the ability of pharmacies to sustain profitable performance has become strategically important, especially as they now compete not only with traditional outlets but also with modern retail chains and digital health platforms (Listyowati et al., 2023). Evidence from Indonesia indicates that many pharmacies face challenges in maintaining consistent profit levels. Firman (2025) reported that several pharmacies in Jakarta experienced financial strain due to national economic pressures, shifts in consumer purchasing patterns, and managerial limitations.



One pharmacy examined in the study recorded weak profitability, with its Net Profit Margin fluctuating between 2.00% and 3.20% during 2023–2024 as a result of inflationary pressures, rising operational expenses, and elevated interest rates. Although certain periods showed high revenue, net income remained difficult to maintain, illustrating how pharmacy profitability is highly sensitive to cost–revenue dynamics and emphasizing the urgency of precise cash-flow management to ensure operational continuity during periods of unstable income.

A company's profit performance is closely linked to how effectively it manages its cash resources, as sound cash administration supports smooth operations and strengthens business continuity. Conceptually, cash management encompasses forecasting funding needs, arranging excess liquidity, and implementing internal control procedures (Amaliyah & Yasmin, 2024). Ineffective cash handling can create issues: insufficient cash may weaken liquidity, while excessive idle funds reduce the opportunity to allocate resources into more productive investments (Yulianti et al., 2023). Within the pharmacy sector, cash management becomes even more critical due to rapid inventory turnover and the constant requirement to replenish stocks; training interventions related to cash administration have been shown to improve record accuracy, stock control, and operational efficiency (Muntasir et al., 2024). Proper handling of cash flows also reflects managerial capability in maintaining stable inflows and outflows, reducing the likelihood of overstocking or stock shortages, both of which can disrupt revenue generation (Santoso et al., 2023; Martini et al., 2019). Prior empirical findings, however, present mixed evidence: some studies demonstrate a positive contribution of cash management to profitability (Akhmad et al., 2024; Fajrin & Priyawan, 2024), whereas others report no significant linkage between the two variables (Sitorus & Purba, 2022). These inconsistencies highlight the need for deeper investigation into the role of cash management in shaping profit performance, particularly within the pharmacy industry.

The divergence in past findings indicates a research gap regarding the relationship between cash management and profit outcomes. While certain studies argue that well-managed cash enhances profitability, others contend that cash management exerts no meaningful effect. This inconsistency suggests that the relationship may be conditioned by other factors, such as the firm's liquidity position. Given that liquidity reflects a company's capacity to settle short-term obligations and influences its flexibility in allocating cash productively (Putra & Mawardi, 2021), this study introduces a moderating perspective by examining whether liquidity strengthens or weakens the effect of cash management on profit performance. The relevance of this inquiry is further reinforced by the dynamic



growth of Indonesia's healthcare and pharmacy sector, which faces external pressures such as price fluctuations, regulatory changes, and heightened competition conditions that make liquidity management vital for operational resilience and competitive advantage (Ratajczak et al., 2024). Thus, assessing the moderating role of liquidity in the linkage between cash management and profit performance becomes essential for supporting the sustainability of pharmacy businesses in Indonesia.

Research exploring the moderating role of liquidity in the relationship between cash management and profit performance among pharmacy companies in Indonesia remains scarce. This gap highlights the importance of conducting the present study to provide a deeper and more integrated understanding of how liquidity may strengthen or weaken the influence of cash management on profitability. Accordingly, this research centers on pharmacy enterprises in Indonesia, aiming to assess the linkage between cash management practices and profit outcomes while evaluating the moderating effect of liquidity within that relationship.

LITERATURE REVIEW

Cash Management

Cash is the most liquid element of a firm's working capital, serving as an immediately usable medium for meeting obligations and supporting daily operations. It includes physical currency, bank deposits, demand accounts, undeposited checks, traveler's checks, and other instruments that can be converted into spending power without delay. Some cash balances may be restricted for specific purposes, requiring classification as current or non-current assets depending on when related obligations fall due. Because it underpins the entire operating cycle, purchasing goods, generating receivables, and reconverting them into cash, its management must be highly disciplined. Firms therefore implement internal controls such as designating authorized personnel, separating cash-handling from record-keeping, and requiring complete documentation for every receipt. Cash disbursements, often made through checks, also demand safeguards like issuing checks to named recipients, performing routine bank reconciliations, and retaining canceled checks as verifiable proof. In practice, companies divide cash into petty cash for small recurring expenses under an imprest system and bank cash for larger payments and corporate transactions. Effective cash oversight ultimately preserves



liquidity, prevents financial loss, and ensures the firm can meet short-term obligations reliably.

Profit Performance

Profit performance represents a central benchmark for evaluating how effectively a firm converts its resources into sustainable earnings, as it reflects not only the gap between revenue and expenses but also the firm's economic resilience and managerial efficiency. Persistent and well-supported profit figures, as highlighted by Gunawan and Gurusinga (2022), strengthen stakeholders' confidence because they signal stable operational cash flows rather than temporary accounting outcomes. Net income, described by Indriyani et al. (2022) as the culmination of all operational activities, frequently guides decisions made by managers, investors, and creditors, emphasizing its strategic relevance. Moreover, Situmorang et al. (2023) stress that credible profit performance must align with actual cash availability to avoid misleading interpretations. Hardirmaningrum et al. (2021) further argue that the integrity of reported profit is inseparable from financial reporting transparency, as earnings influenced by managerial intervention may distort the firm's true condition. Consistent profits, according to Abdillah et al. (2021), also serve as an indicator of business continuity, enabling firms to maintain trust from external parties. From an external perspective, Riza and Suryono (2022) note that profit levels shape regulatory obligations such as taxation, making earnings a multidimensional metric that informs both financial evaluation and governance practices. In the context of this research, profit performance is therefore understood as a comprehensive reflection of how effectively pharmacy companies in Indonesia manage their operations to generate reliable, sustainable, and decision-useful earnings.

Liquidity

Liquidity ratios constitute analytical tools designed to interpret a firm's financial statements and gauge its capacity to settle imminent short-term obligations. Scholars such as Setiawan and Pratama (2019), Sutriani (2014), Fatimah Az Zahrah et al. (2023), and Suryanto (2019) consistently emphasize that liquidity ratios portray how reliably a company can discharge debts that mature in the near term, thereby serving as indicators of short-run financial soundness. These ratios also support managerial planning because they reveal weaknesses in the composition of current assets and liabilities and allow firms to monitor liquidity positions across periods. According to Yushita (2017), the overarching purposes of liquidity assessment include evaluating the firm's readiness to pay due obligations, determining its ability to use available current assets either



wholly or excluding inventories and receivables to cover short-term debts, identifying the adequacy of cash holdings, assessing the proportion of inventory relative to working capital, and guiding future cash-and-debt management decisions. In practice, companies employ several common liquidity metrics (Khomsiyah et al., 2021), namely the Current Ratio, which compares total current assets to current liabilities to indicate a firm's margin of safety; the Quick Ratio, which refines this measure by excluding inventory to capture more immediate solvency; the Cash Ratio, which focuses solely on cash and cash equivalents as a buffer against short-term claims; the Cash Turnover Ratio, reflecting how effectively cash supports sales-related expenditures and short-term obligations; and the Inventory-to-Net-Working-Capital ratio, which examines the extent to which inventories dominate the firm's working capital structure.

Hypothesis Development

A hypothesis functions as a provisional response to a research problem that has been formulated as a question. It is considered tentative because it relies solely on theoretical foundations rather than empirical findings gathered through data collection (Sugiyono, 2017:134). In this study, the researcher employs hypotheses represented by specific symbols:

H1: Cash management has a positive and significant effect on profit performance in Indonesian pharmacy companies.

H2: Liquidity moderates the effect of cash management on profit performance in Indonesian pharmacy companies.

H3: Liquidity strengthens the positive relationship between cash management and profit performance in Indonesian pharmacy companies.

RESEARCH METHOD

This study employs a quantitative design grounded in a positivist paradigm, focusing on numerical indicators to empirically validate predetermined hypotheses. The analysis utilizes secondary data extracted from the audited annual financial statements of pharmacy companies listed on the Indonesia Stock Exchange for 2021–2024, which provide the required information on cash positions, liquidity profiles, and profitability metrics. The research population consists of all pharmacy firms operating in Indonesia during the observation horizon, and a purposive sampling technique is employed to ensure only companies with uninterrupted operations, complete and consistently published financial reports, available data on Cash Turnover, Return on Assets (ROA), and Current Ratio (CR), and no record of delisting or suspension are



included. These criteria secure a dataset that is both credible and analytically reliable. Each construct is operationalized into measurable indicators using ratio-scale metrics, where Profit Performance (ROA) serves as the dependent variable, Cash Management captured through Cash Turnover acts as the independent variable, and Liquidity measured via the Current Ratio functions as the moderating variable. Data were compiled through documentation of publicly released financial reports, which are regarded as objective and dependable sources for quantitative inquiry. The empirical strategy incorporates multiple linear regression and Moderated Regression Analysis (MRA) to evaluate the magnitude of cash management's influence on profit performance and to determine whether liquidity modifies this relationship. Prior to modeling, normality, multicollinearity, heteroskedasticity, and autocorrelation diagnostics were conducted using the Kolmogorov–Smirnov test, tolerance VIF values, scatterplot patterns, and the Durbin–Watson statistic. Hypotheses were examined through t-tests and F-tests, complemented by the coefficient of determination (R^2) to gauge explanatory strength. All computations were executed using SPSS to enhance accuracy and reduce human calculation bias, enabling a comprehensive assessment of how cash management shapes firm profitability and how liquidity conditions strengthen or weaken that effect.

RESULTS AND DISCUSSION

Overview of the Research Object

The object of the research is pharmacy companies listed on the Indonesia Stock Exchange (BEI) for the 2021-2024 period. The selection of this sector as a research sample is motivated by the characteristics of the health pharmaceutical industry, which has.

Descriptive Statistics

Table 1. Descriptive Statistics of Research Variables

| Variable | N | Minimum | Maximum | Mean | Std. Deviation |
|--------------------|----|---------|---------|----------|----------------|
| Cash Management | 36 | 3.3505 | 21.9815 | 7.950831 | 4.5363921 |
| Liquidity | 36 | 0.4948 | 5.3573 | 2.433664 | 1.4138574 |
| Profit Performance | 36 | 0.0045 | 0.3099 | 0.100700 | 0.0885263 |

The average cash management ratio in the sample pharmacy companies was 7.95, with significant variation. The average liquidity ratio was 2.43, indicating relatively good capacity to meet short-term obligations. Profit



performance (e.g., ROA) averaged around 10.07 percent, with a fairly wide range across pharmacies.

Classical Assumption Test Results

The diagnostic assessment initially revealed that the residuals derived from the original dependent variable did not exhibit a normal distribution, as indicated by the Kolmogorov–Smirnov significance value of 0.000. After applying a natural logarithm transformation to the dependent variable, the significance level rose to 0.200, demonstrating conformity with the normality assumption and aligning with the visual pattern observed in the P–P Plot. Additional evaluations of model assumptions showed that the independent variables met the multicollinearity criteria, with tolerance values exceeding 0.10 and VIF scores well below the threshold of 10. Likewise, Glejser’s test produced nonsignificant probabilities for both predictors, implying stable variance of the residuals and the absence of heteroskedasticity.

Further verification through the Durbin–Watson statistic produced a value of 1.888 for the moderation model, suggesting that the residuals were free from autocorrelation and fulfilled the independence assumption. Taken together, the transformed model successfully satisfied all classical assumption tests of normality, multicollinearity, homoskedasticity, and autocorrelation, indicating that the regression estimation using the log-transformed dependent variable yields reliable and statistically sound results.

Hypothesis Test Results

Simple Regression

This first model was conducted using simple linear regression to see the effect of Cash Management on Profit Performance.

F test and coefficient of determination (R Square)

Table 2. Results of F and R Square tests for model 1

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | F | Sig. |
|-------|-------|----------|-------------------|----------------------------|--------|-------|
| 1 | 0.479 | 0.229 | 0.207 | 0.0788439 | 10.124 | 0.003 |

The R Square value of 0.229 indicates that Cash Management accounts for about 22.9% of the variation in Profit Performance, while the remaining 77.1% is shaped by factors not included in the model. The F statistic of 10.124 with a significance level of 0.003 (< 0.05) confirms that the regression model using Cash Management as the sole predictor meets statistical feasibility, implying that Cash Management exerts a significant overall influence on Profit Performance.

T-Test



Table 3. Results of the Simple Regression Analysis t-Test

| Variable | B | Std. Error | Beta | t | Sig. |
|-----------------|--------|------------|--------|--------|-------|
| Constant | 0.175 | 0.027 | | 6.530 | 0.000 |
| Cash Management | -0.009 | 0.003 | -0.479 | -3.182 | 0.003 |

The significance value for Cash Management is 0.003, indicating a statistically meaningful effect on Profit Performance. Its regression coefficient is negative (-0.009), implying that an increase in cash turnover corresponds to a slight decline in profit performance when other variables remain controlled. This pattern suggests that excessively rapid cash rotation may not always enhance profitability and can even reduce it when not supported by prudent financial oversight. Consequently, Hypothesis 1 stating that Cash Management influences the financial performance of pharmacy companies in Indonesia is accepted, although the direction of its impact is negative.

Moderate Regression

F-test and Coefficient of Determination

Table 4. Results of the F-test and R-Square for Model 2

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | F | Sig. |
|-------|-------|----------|-------------------|----------------------------|-------|-------|
| 1 | 0.602 | 0.362 | 0.302 | 0.0739518 | 6.052 | 0.002 |

The R-square value rises from 0.229 to 0.362 once Liquidity and the Cash Management–Liquidity interaction are incorporated, implying that 36.2% of the variability in Profit Performance becomes attributable to these combined predictors. This escalation signals a stronger explanatory capacity of the model after the moderator is introduced. The F-statistic of 6.052 with a significance level of 0.002 (<0.05) further confirms that the moderated model operates significantly as a whole, indicating that Cash Management, Liquidity, and their interaction jointly exert a meaningful influence on Profit Performance.

t-test

Table 5. Results of the t-test for Model 2

| Variable | B | Std. Error | Beta | t | Sig. |
|-------------------------------------|--------|------------|--------|--------|-------|
| Contant | 0.033 | 0.061 | | 0.543 | 0.591 |
| Cash Management (X1) | 0.004 | 0.006 | 0.228 | 0.702 | 0.487 |
| Liquidity (Z) | 0.062 | 0.025 | 0.990 | 2.522 | 0.017 |
| Cash disbursement x Liquidity (X1Z) | -0.007 | 0.004 | -0.739 | -2.074 | 0.046 |



The results in Table 4 indicate that the moderation model produces a significance value of 0.487 (> 0.05), implying that Cash Management no longer shows a direct significant effect on Profit Performance once Liquidity and the interaction term are incorporated, suggesting that the Cash Management–Profit Performance linkage is highly contingent on the firm’s liquidity conditions. Meanwhile, Liquidity demonstrates a significant positive effect on Profit Performance (sig. $0.017 < 0.05$; coef. 0.062), thereby supporting the hypothesis that Liquidity meaningfully enhances financial outcomes among pharmacy companies in Indonesia. Furthermore, the interaction term between Cash Management and Liquidity is significant (sig. $0.046 < 0.05$) with a negative coefficient (-0.007), indicating that Liquidity weakens the impact of Cash Management on Profit Performance—where higher Liquidity levels reduce, or potentially reverse, the influence of Cash Management. Accordingly, the third hypothesis is accepted, as the moderating role of Liquidity is empirically verified through the significant interaction effect.

Discussion

The discussion is organized to address the three research questions by integrating insights drawn from the empirical outcomes of regression models 1 and 2 and juxtaposing them with pertinent prior studies. Overall, this section aims to deliver a concise yet comprehensive explanation of the ways in which Cash Management, Liquidity, and their interaction collectively shape Profit Performance among pharmacy firms in Indonesia, with all interpretations grounded in the statistical evidence obtained.

The Influence of Cash Management on Profit Performance in Pharmacy Companies in Indonesia

The first research question examines whether Cash Management significantly influences Profit Performance. The regression results confirm a significant effect, reflected in a p-value of 0.003, with a negative coefficient of -0.009 , indicating an inverse relationship between the two variables. This suggests that a higher cash turnover—often interpreted as rapid cash circulation—does not automatically strengthen profitability. In pharmacy businesses, extremely fast cash turnover typically signals limited cash holdings, which can hinder routine operations such as restocking medicines with short shelf lives, meeting supplier payments, and maintaining adequate inventory levels. Insufficient operational cash can disrupt continuity in procurement and stock availability, ultimately suppressing profit generation. These findings align with Hasanudin, Awaloedin, and Arviany (2022), who reported that cash turnover significantly affects



profitability in agribusiness firms, as well as Nuraini (2021), who emphasized its contribution to profit levels. Overall, the evidence affirms that Cash Management exerts a significant yet negative impact on Profit Performance, underscoring the need for pharmacies to maintain a balanced cash turnover that supports operational liquidity while sustaining financial performance.

The Influence of Liquidity as a Moderating Variable on Profit Performance in Pharmacy Companies in Indonesia

Liquidity proved to be a decisive factor in shaping Profit Performance, as indicated by the second research question. The analysis revealed a significant relationship ($p = 0.017$), with a positive coefficient suggesting that firms with stronger short-term solvency tend to generate higher profits. In the context of pharmacy businesses, adequate liquidity ensures uninterrupted operations—allowing firms to maintain sufficient drug inventories, respond to sudden demand, avoid payment delays to suppliers, secure purchase discounts, and sustain efficient service delivery. These advantages collectively enhance operational effectiveness and ultimately strengthen profitability. The results align with findings by Khayidah et al. (2024), who reported a significant effect of liquidity on financial performance among listed Indonesian firms, as well as Romadloni and Herizon (2015), who emphasized liquidity's central role in determining profitability within the banking sector. Overall, the evidence reinforces that robust liquidity supports operational stability and financial resilience, thereby positively influencing the profit performance of pharmacy companies.

The Influence of Cash Management on Liquidity as a Moderating Variable in Determining Profit Performance

The third research question examines whether liquidity moderates the linkage between cash management and profit performance. The second model reveals that the interaction term between cash management and liquidity exerts a statistically significant effect on profit performance (sig. 0.046), and its negative coefficient signifies that liquidity attenuates this relationship. These results imply that the influence of cash management on profitability shifts when firms maintain strong liquidity positions; abundant liquid assets reduce reliance on efficient cash circulation because operational demands can still be met despite suboptimal cash turnover. In contrast, firms with limited liquidity depend heavily on precise cash management, making poor cash control more detrimental to earnings. This pattern aligns with Romadloni and Herizon (2015), who demonstrated that liquidity can either weaken or strengthen financial variable interactions, and is consistent with Ningsih and Ilhami (2023), who identified liquidity as a structural



determinant of financial performance in the banking sector. Overall, the findings confirm that liquidity functions as a significant moderating variable that tends to weaken the effect of cash management on the profit performance of pharmacy firms in Indonesia.

CONCLUSION

The study's findings reveal that the financial dynamics of Indonesian pharmacy companies are shaped by the interaction between cash management, liquidity, and profit performance. Cash management was found to exert a significant yet negative influence on profitability, indicating that excessively rapid cash turnover may signal insufficient operational cash reserves, ultimately suppressing profit generation. Liquidity, in contrast, demonstrated a positive and meaningful contribution to profit performance, as firms with stronger short-term solvency tend to operate more smoothly and maintain adequate supplies and working capital. Furthermore, liquidity acted as a weakening moderator in the relationship between cash management and profit performance, suggesting that pharmacies with robust liquidity are less dependent on the efficiency of cash turnover to sustain profitability, while firms with weaker liquidity rely more heavily on effective cash management. Based on these insights, pharmacies are encouraged to maintain a balanced cash management strategy, ensure liquidity levels remain optimal, and adopt integrated systems such as digital payment mechanisms and inventory technologies to strengthen financial stability. Future research is advised to broaden the model by incorporating additional determinants of profit performance, expanding sample coverage, and employing alternative analytical approaches such as panel regression or SEM to obtain more comprehensive empirical results.

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