The Effect of Working Capital on the Profitability of Pharmaceutical Companies Listed in the Indonesia Sharia Stock Index (ISSI)

Dwi Meilvinasvita[1,a)], Muhammad Arifai[1,b)], Zulkarnaini[1,c)] and Diana[1,d)]

[1]*Department of Bussiness, Politeknik Negeri Lhokseumawe, Lhokseumawe, Indonesia*

[a)]Corresponding author: dwimeilvinasvita@pnl.ac.id
[b)]arifai_m@pnl.ac.id
[c)]zulkarnaini@pnl.ac.id
[d)]diana@pnl.ac.id

Abstract. The purpose of this paper is to examine the factors affecting profitability of pharmaceutical company in Indonesia. This research is based on three independent variables that were empirically examined for working capital relationship with profitability. These variables are Cash Turn Over, Receivable Turn Over, Inventory Turn Over. Data of five pharmaceutical companies listed on in the Indonesia Sharia Stock Index covering the period of 2018–2023 were extracted from companies' annual reports. The findings of this research show that cash turnover, accounts receivable turnover and inventory turnover simultaneously influence profitability. Partially, cah turnover does not have a significant effect on profitability. Meanwhile, receivables turnover and inventory turnover have a significant effect on profitability, with a coefficient of determination (R2) of 72,8%. The results provide a basis for future research in this field and can inform decision-making for pharmaceutical firms looking to improve their financial performance.pharmaceutical firms looking to improve their financial performance.

Keywords: Profitability, Return On Asset, Cash Turn Over, Receivable Turn Over, Inventory Turn Over.

INTRODUCTION

The pharmaceutical industry holds a critical role in the production of pharmaceuticals and medical devices, emphasizing the discovery, development, manufacturing, and marketing of these products. This role is crucial in supporting the quality of healthcare services, which helps strengthen the Indonesian economy. The industry ensures the availability of safe and effective medicines, contributes to medical research, creates job opportunities, and supports technological advancement.

Diverging from other sectors, the pharmaceutical and medicine industry thrived during the COVID-19 pandemic. Demand for medicines, especially vaccines and traditional medicines to maintain health, surged during the pandemic, causing this industry to reach its highest level in recent years. The Central Bureau of Statistics (BPS) reported that the Gross Domestic Product (GDP) of the chemical, pharmaceutical, and traditional medicine sub-sector at current prices (ADHB) reached IDR 339.18 trillion in 2021. This value represents 11.51% of the national non-oil and gas manufacturing industry GDP, which reached IDR 2.95 quadrillion, as illustrated in the graph below:

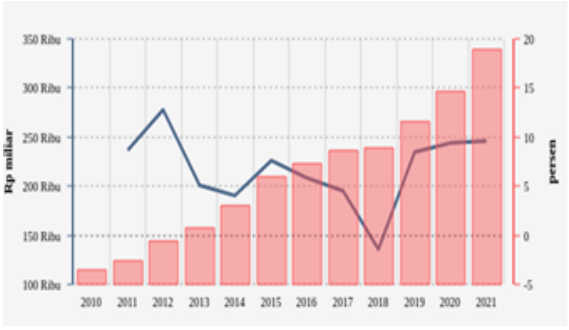

FIGURE 1. Value and Growth of GDP in the Chemical, Pharmaceutical, and Traditional Medicine Industry (2010-2021) *Source: https://databoks.katadata.co.id*

In the business context, including the pharmaceutical industry sector, profitability ratios serve as a crucial indicator reflecting a company's success in generating net profit. Companies compete to achieve substantial profits, and profitability is regarded as a primary parameter of success in meeting this objective. Overall, profitability reflects a company's ability to optimize earnings by utilizing all its resources, including sales activities, assets, capital, company size, and other factors. An increase in a company's profitability enhances its value and boosts investor confidence [1].

A company's profitability is influenced by some factors that should be recognized by the financial manager in order to maximize profit. One of the factors is Working Capital. Working capital refers to the total current assets owned by a company, which are used to support its operational activities. These assets serve either as investments or as financing for the company's day-to-day operations, including cash, receivables, inventories, securities, and other current assets. Profitability, when associated with a company's working capital such as cash turnover, receivables turnover, and inventory turnover [2][3] affects the company's value. The company's value improves as it acknowledges the importance of effective working capital management in its ability to generate profits.

This study will examine the performance of pharmaceutical companies listed on the Indonesia Sharia Stock Index (ISSI) by analyzing how cash turnover, receivables turnover, and inventory turnover impact the profitability of these companies. The ISSI was selected as the research focus because it reflects the condition of the sharia capital market, which is also significant to consider due to its current development. There are several measures of profitability, such as Return On Investment (ROI), Return On Asset (ROA), and Return On Equity (ROE). In this study, the profitability ratio analyzed is the Return on Assets (ROA) ratio. ROA is an indicator that measures how effectively a company's assets generate profit.

METHODS

The framework of this research is shown in Figure 2:

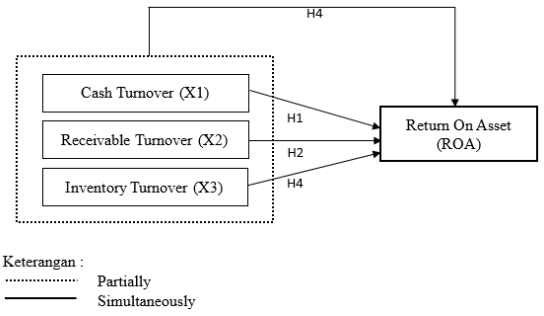

FIGURE 2. Framework of Research

1. Sharia Capital Market

The Sharia capital market is a market where all operational mechanisms, particularly those concerning issuers, types of securities traded, and trading processes, are in compliance with Sharia principles [4]. Meanwhile, one of the Sharia stock indices in Indonesia is the Indonesia Sharia Stock Index (ISSI). Stocks included in the ISSI must undergo a selection process to ensure adherence to Islamic Sharia principles.

ISSI is a composite index consisting of all Sharia-compliant stocks listed on the Indonesia Stock Exchange (IDX). The constituents of the ISSI are all Sharia-compliant stocks registered on the IDX and included in the Sharia Securities List (DES) published by the Financial Services Authority (OJK). The selection of ISSI constituents occurs twice a year, in May and November, in line with the DES review schedule. As a result, each selection period may see Sharia-compliant stocks added or removed from the ISSI constituents [5].

2. Profitability (ROA)

Profitability is the ability of a company to generate profits in relation to sales, total assets, and equity. This ratio provides a measure of the effectiveness of a company's management. Profitability ratios can be analyzed by comparing various components found in financial statements, particularly the balance sheet and income statement [5][6]. In this study, profitability is measured using Return on Assets (ROA).

ROA is an indicator of how profitable a company is relative to its total assets. ROA provides insights to managers, investors, or analysts about the efficiency of a company's management in utilizing its assets to generate revenue. The formula used to calculate ROA is:

$$ROA = \frac{Net\ Profit}{Total\ Assets}$$

3. Cash Turnover

Cash turnover is the ratio between sales and the average cash and cash equivalents. A high cash turnover rate indicates efficiency in the use of cash, allowing the company to maximize profits. Conversely, a low cash turnover rate reduces the company’s ability to optimize profitability.

The cash turnover ratio serves to measure the adequacy of a company’s working capital needed to pay its bills and finance sales. In other words, this ratio is used to assess the level of cash availability to settle bills or debts and cover expenses related to sales. The formula used to calculate Cash Turnover is:

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

4. Receivable Turnover

Receivables can be defined as the company's assets owed by other parties due to past transactions of goods or services or other transactions, which will be received in the future. Receivables turnover is the ratio between net sales and receivables, calculated by dividing net sales by average net receivables.
The formula used to calculate Receivable Turnover is:

$$\text{Account Reveivable Ratio} = \frac{\text{Sales}}{\text{Average Account Receivable}}$$

5. Inventory Turnover

Inventory is an asset available for sale in the normal course of business or in production, transit, or in the form of materials or supplies to be used in the production process. Inventory turnover determines how many times inventory is sold or replaced with new inventory within a year, and provides several measures regarding a company's liquidity and ability to convert its inventory into cash promptly. A higher inventory turnover ratio indicates more liquid inventory in the company, whereas a lower inventory turnover ratio suggests that a large amount of inventory is piling up, which may negatively impact the return on investment.
The formula used to calculate Receivable Turnover is:

$$Inventory\ Turnover\ Ratio = \frac{Sales}{Average\ Inventory}$$

6. Relationship of Variable

According to Mead, Baker, and Malott [4], working capital means current assets. Working capital refers to the current assets of a company that, in daily business activities, are transformed from one form to another, for example, from cash to inventory, inventory to receivables, and receivables back to cash [7].

Efficient cash flow management is a significant tool for enhancing financial performance. Proper cash flow management is crucial for business sustainability. Companies manage cash flow efficiently through working capital by balancing liquidity and profitability [6].

Several studies conducted by previous researchers have shown that the higher the cash turnover rate, the greater the profitability obtained by a company. Conversely, if a company's cash turnover rate is low, then its profitability will also be low [2][8]. However, this contradicts the findings of [3][9] where cash turnover has a negative and insignificant effect on profitability.

Accounts receivable turnover can indicate how quickly receivables are collected within a period. If the accounts receivable turnover is higher within a period, it shows how quickly a company gains profit from its sales, which will affect profitability (Return On Assets) and subsequently increase [7][10].

Furthermore, a faster inventory turnover for a company is considered favorable because it indicates that the sales activities are running smoothly. High inventory turnover suggests that the company is efficiently selling its inventory, which can contribute positively to profitability and overall business performance [11]. This affects profitability (Return On Assets) because the higher the inventory turnover, the shorter the time capital is tied up in inventory. Conversely, if inventory turnover is slow, it will decrease a company's profitability. This is consistent with the findings of [3][8][12][13] which show that inventory turnover has a positive effect on profitability.

Based on the conceptual framework of the research that has been prepared, the research hypotheses are as follows:

H1: Cash turnover partially affects profitability.

H2: Accounts receivable turnover partially affects profitability.

H3: Inventory turnover partially affects profitability.

H4: Cash turnover, accounts receivable turnover, and inventory turnover simultaneously affect profitability.

The type of data used in this study is quantitative data, which is presented in the form of panel data to analyze the influence of the relationship between independent variables and dependent variables. The data in this study consists of financial reports from pharmaceutical sub-industry companies listed in the Sharia Stock Index for the period of 2018-2023, which include profitability (Return On Assets) as the dependent variable and cash turnover, accounts receivable turnover, and inventory turnover as independent variables. Secondary data obtained from:

1. Financial statements of pharmaceutical sub-industry issuers from 2018 to 2023 that are listed in the Indonesia Sharia Stock Index (ISSI).
2. Quarterly financial reports provided by the Indonesia Stock Exchange on the website.
3. Journals, articles, and literature related to the research.

Sample selection in this study uses the Purposive Sampling technique with the following criteria:

a. Sharia-compliant issuers in the pharmaceutical sub-industry listed in the Indonesia Sharia Stock Index (ISSI).
b. Sharia-compliant issuers to be studied have complete quarterly financial reports for the research needs, which consist of cash turnover ratio, accounts receivable turnover ratio, inventory turnover ratio, and Return On Assets (ROA). The names of companies that meet the above research criteria in Figure 3:

NO	Kode	Nama Perusahaan
1	KLBF	PT. Kalbe Farma Tbk
2	SIDO	PT. Industri Jamu dan Farmasi Sido Muncul Tbk
3	DVLA	PT. Darya-Varia Laboratoria Tbk
4	KAEF	PT. Kimia Farma Tbk
5	MERK	PT. Merck Tbk

FIGURE 3. The names of companies (*Source: www.idx.co.id)*

Using panel data, the model constructed in this research is as follows:

$$ROA_{it} = \alpha + \beta 1\ CTO_{it} + \beta 2\ RTO_{it} + \beta 3\ ITO_{it} + \varepsilon_{it}$$

ROA : Return On Assets
α : constanta
β1 β2 β3 : The regression coefficients for each independent variable.
CTO : Cash Turnover
RTO : Receivable Turnover
ITO : Inventory Turnover
Ɛ : error
i : Company i-th (Cross Section)
t : Observation Year (Time Series)

RESULTS AND DISCUSSION

This study uses panel data regression analysis with model selection through the Common Effect Model (CEM), Fixed Effect Model (FEM), or Random Effect Model (REM). To analyze which model is the best, model testing is necessary using the Chow Test, Hausman Test, and Lagrange Multiplier Test with the following criteria:

Uji Chow	**Prob. > 0,05** **Prob. < 0,05**	**CEM** **FEM**
Uji Hausman	**Prob. > 0,05** **Prob. < 0,05**	**REM** **FEM**
Uji Legrange Multiplier	**Prob. > 0,05** **Prob. < 0,05**	**CEM** **REM**

FIGURE 4. Criteria for Selecting Panel Data Models

The results of the Chow Test are as follows:

Uji Chow

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	27.047771	(4,112)	0.0000
Cross-section Chi-square	81.119623	4	0.0000

The data was processed using EViews 13

FIGURE 5. The results of the Chow Test

Based on the results of the Chow Test above, it can be seen that the probability value of Cross-Section F is 0.0000 < 0.05, so it can be concluded that FEM is selected. Based on these results, it can proceed to the Hausman Test with the results as follows:

Uji Hausman

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	20.914241	3	0.0001

The data was processed using EViews 13.

FIGURE 6. The results of the Hausman Test

The results of the Hausman Test show that the probability value for Cross-section Random is 0.0001, which is less than 0.05. Therefore, the model selected from the Hausman Test is FEM, and there is no need to proceed with the Lagrange Multiplier (LM) Test.

Because the selected model is FEM, the classical assumption tests conducted in this study include the heteroscedasticity test and the multicollinearity test. The results of these tests are as follows:

1. Result of Heteroscedasticity Test

	X1	X2	X3
X1	1.000000	0.383603	0.281877
X2	0.383603	1.000000	0.633576
X3	0.281877	0.633576	1.000000

The data was processed using EViews 13.

FIGURE 7. The results of Heteroscedasticity Test

The results of the heteroscedasticity test for all independent variables are greater than 0.05, therefore the assumption of no heteroscedasticity is met. This means that the residual variance is considered constant at various levels of the independent variables, so the regression model used meets the heteroscedasticity assumption in classical linear regression analysis.

2. Results of the Multicollinearity Test

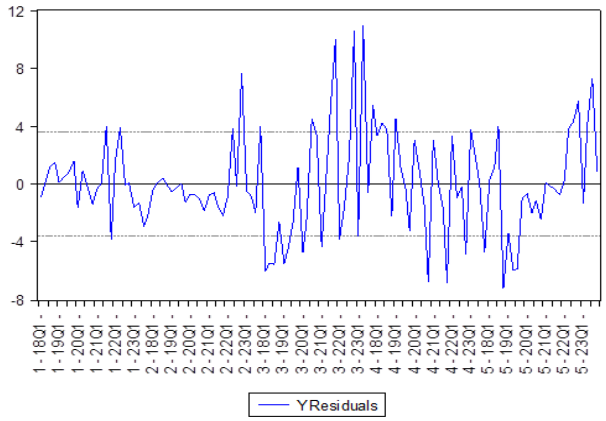

FIGURE 8. The results of the Multicollinearity Test

Based on the results of the analysis or residual plot, it shows that the Y Residual value does not exceed 500. This means that the residuals or deviations of the predicted values from the actual values are within a certain range and relatively controlled. The results of the regression model analysis using FEM are as follows:

Dependent Variable: Y
Method: Panel Least Squares
Date: 11/11/24 Time: 06:53
Sample: 2018Q1 2023Q4
Periods included: 24
Cross-sections included: 5
Total panel (balanced) observations: 120

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.616426	0.739232	2.186629	0.0308
X1	0.083005	0.147480	0.562822	0.5747
X2	0.658304	0.122955	5.354046	0.0000
X3	1.287780	0.538109	2.393158	0.0184

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.744330	Mean dependent var	8.278917
Adjusted R-squared	0.728350	S.D. dependent var	6.863188
S.E. of regression	3.577095	Akaike info criterion	5.451319
Sum squared resid	1433.108	Schwarz criterion	5.637152
Log likelihood	-319.0792	Hannan-Quinn criter.	5.526787
F-statistic	46.58061	Durbin-Watson stat	1.728260
Prob(F-statistic)	0.000000		

The data was processed using EViews 13.

FIGURE 9. The results of the regression model analysis using FEM

The results of the panel data regression analysis are as follows:

ROAit = 1,616 + 0,083CTOit + 0.658RTOit +1,287 ITOit + Ɛit

The multiple regression model explained that profitability has value of 1,616 with the condition of cash turnover, receivable turnover, and inventory turnover assumed as constant in the Pharmaceutical Sub-industry listed in the ISSI. If cash turnover increases by one unit, profitability will increase by 0,083 with the condition of receivable turnover and inventory turnover assumed as constant. If receivable turnover increases by one unit, profitability will increase by 0,658 with the condition of cash turnover and inventory turnover assumed as constant. If inventory turnover increases by one unit, profitability will increase by 1,28 with the condition of cash turnover and receivable turnover assumed as constant.

Based on the results shown in the table, the F-statistic probability value is 0.0000, which is less than 0.05. It can be concluded that Cash Turnover (CTO), Accounts Receivable Turnover (RTO), and Inventory Turnover (ITO) simultaneously have a significant effect on profitability. The t-test (partial) shows that Accounts Receivable Turnover (5.36) and Inventory Turnover (2.39), which are higher than the t_table value, indicate that these two variables have an effect on profitability. Meanwhile, the Cash Turnover variable (0.56), which is lower than the t_table value, indicates that Cash Turnover does not have an effect on profitability.

Meanwhile, in the data processing output, the Adjusted R-squared value is 0.728. This means that the variation in the rise and fall of the Profitability variable (ROA) can be explained by the Cash Turnover (CTO), Accounts Receivable Turnover (RTO), and Inventory Turnover (ITO) variables by 72.8%, while the remaining 27.2% is explained by other variables that were not examined in this study.

CONCLUSIONS

The pharmaceutical industry is one of the fastest-growing industries in recent years, especially since COVID-19, where the demand for medicines and medical equipment has increased significantly. Even though COVID-19 has subsided, the potential for growth in this industry and its contribution to boosting national economic growth remains very promising.

This research examines the impact of working capital attributes (current assets), namely cash turnover, accounts receivable turnover, and inventory turnover, on profitability (Return On Assets) in pharmaceutical companies listed on the Indonesia Sharia Stock Index (ISSI). Based on the above tests, the regression model analysis using the Fixed Effect Model (FEM) shows that Cash Turnover, Accounts Receivable Turnover, and Inventory Turnover have a significant simultaneous effect on profitability.

In the partial t-test, the coefficients for Accounts Receivable Turnover and Inventory Turnover are significant, indicating that these variables positively affect ROA. However, the Cash Turnover variable does not show a significant effect on ROA. The findings highlight the critical role of efficient management of working capital, especially accounts receivable and inventory turnover, in boosting pharmaceutical companies' profitability. These insights emphasize the importance of strategic financial management in sustaining and enhancing company performance within a sharia-compliant framework.

Future studies could incorporate additional independent variables and explore other profitability ratios, such as Return on Equity (ROE), Return on Investment (ROI), and Net Profit Margin (NPM), among others. Similar research could be conducted in other industry sectors to provide a broader understanding of the impact of working capital management on profitability across various contexts

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REFERENCES

[1] Lonkani, R. (2018). Firm Value. Firm Value - Theory and Empirical Evidence. https://doi.org/10.5772/intechopen.77342

[2] Eryatna, E. N., Eltivia, N., & Handayawati, K. U. (2021). The Effect of Cash Turnover, Receivable Turnover, and Inventory Turnover Towards Profitability of Consumer Goods Companies in Indonesia. Proceedings of 2nd Annual Management, Business and Economic Conference (AMBEC 2020), 183(Ambec 2020), 191–197.

[3] Rahayu Maya, Rico Nur Ilham, Marzuki, & Nurainun. (2023). the Influence of Cash Turnover, Receivables Turnover and Inventory Turnover on the Economic Profitability of Registered Pharmaceutical Companies on the Indonesian Stock Exchange Period 2017-2021. Journal of Accounting Research, Utility Finance and Digital Assets, 1(4), 336–341. https://doi.org/10.54443/jaruda.v1i4.53.

[4] Abdulloh, I. 2016. Pasar Modal Syariah Sebuah pengenalan Dasar Tentang Pasar Modal Islam. Jakarta: Elex Media Komputindo.

[5] https://www.idx.co.id/idx-syariah/indekssaham-syariah/).

[6] Laghari, F., Ahmed, F., & de las Nieves López García, M. (2023). Cash flow management and its effect on firm performance: Empirical evidence on nonfinancial firms of China. PLoS ONE, 18(6 JUNE), 1–27. https://doi.org/10.1371/journal.pone.0287135.

[7] Simon, S., Sawandi, N., & Abdul-Hamid, M. A. (2018). Working Capital Management and Firm Performance. Indian-Pacific Journal of Accounting and Finance, 2(2), 37–50. https://doi.org/10.52962/ipjaf.2018.2.2.47.

[8] Amanda, The Impact Of Cash Turnover, Receivable Turnover, Inventory Turnover, Current Ratio And Debt To Equity Ratio On Profitability. Journal of Research in Management Vol. 2, No. 2, 2019, pp. 14–22. 2019.

[9] Yusuf, M. B. (2019). the Impact of Working Capital Management Practice on Firm Profitability: an Evidence From Manufacturing Firms in Istanbul Stock Exchange. Journal of International Social Research, 12(62), 1645–1655. https://doi.org/10.17719/jisr.2019.3172.

[10] Kasmir, Analisa Laporan Keuangan, Rajagrafindo Persada, 2016

[11] Adekunle, R., Tosin, A., & Bodunde, D. (2021). The Impact Of Inventory Management On The Profitability Of Manufacturing Companies In Nigeria. Revista IJIRAS, 8(1), 9–15. www.ijiras.com https://databoks.katadata.co.id/datapublish/2022/03/29/industri-kimia-farmasi-dan-obat tradisional-terus-tumbuh-di-masa-pandemi-covid-19.
[12] Fitria, S. M., & Suartini, S. (2021). The Effect Of Cash Turnover, Account Receivable Turnover And Inventory Turnover On Profitability. Gorontalo Accounting Journal, 4(1), 1. https://doi.org/10.32662/gaj.v4i1.1214.
[13] Hantono, et.al. 2019, Pengaruh Perputaran Kas, Perputaran Piutang, Perputaran Persediaan, Current Ratio, dan Debt to Equity Ratio, Total Assets Turn Over terhadap Profitabilitas, Owner 3(1):116. doi: 10.33395/owner.v3i1.110. https://doi.org/10.2991/aebmr.k.210717.039