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THE EFFECT OF INVENTORY TURNOVER AND DEBT-TO-EQUITY RATIO ON PROFITABILITY WITH INFLATION AS MODERATION

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Abstract: This study investigates the effect of inventory turnover (ITO) and debt-to-equity ratio (DER) on profitability, specifically return on assets (ROA), with inflation acting as a moderating variable. Using secondary data from the financial statements of 17 IDX-listed retail firms from 2021 to 2023, the research employs multiple linear regression and MRA. The findings reveal that ITO and DER have no significant direct effect on ROA, highlighting the complexity of their role in profitability. Interestingly, while inflation does not moderate the relationship between ITO and ROA, it does weaken the negative effect of DER on ROA under high inflation conditions. This suggests that inflation may influence profitability indirectly through the company's ability to adjust its financial strategies, such as pricing and debt management, rather than directly affecting operational efficiency or capital structure. This research contributes to the literature by addressing the limited research on the moderating role of inflation in the relationship between financial ratios and profitability, particularly in the retail sector. It extends the application of agency theory in understanding how managerial decisions related to inventory and debt are influenced by external macroeconomic pressures. The results emphasize the need for a more comprehensive understanding of profitability determinants, suggesting that both internal management strategies and external factors must be considered to better navigate economic uncertainties.

Keywords: debt-to-equity ratio, inflation, inventory turnover, profitability, retail firms

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INTRODUCTION

In a competitive business world, profitability is the main indicator of a company's success. Profitability not only reflects operational efficiency but also provides higher motivation for management to manage assets wisely (Alarussi, 2021). However, the COVID-19 pandemic contributes to the decline in net profit of companies within the non-primary consumer goods sector because consumers prioritize spending on basic needs (Oktary & Amelia, 2021). Effective from 25 January 2021, the Indonesia Stock Exchange (IDX) Industry Categorization introduces a new categorization for the non-primary consumer products industry sector. Businesses in this category include those that produce or distribute secondary goods, the demand for which is highly cyclical. Return on assets (ROA), which assesses a company's capability to manage assets for profit, is often used to assess profitability in this industry (Rahmawati et al., 2019).

The phenomenon of declining profitability has also been experienced by the home appliance distributor industry, including the company managed by the author, over the past two years. This decline is thought to be related to the efficiency of operational management and the influence of economic instability, although limited internal data is an obstacle to in-depth analysis. Therefore, this study utilizes secondary data from the non-primary consumer goods sector, specifically the retail trade sub-sector listed on the IDX, to illustrate a broader picture of the dynamics of this sector. The selection of the retail trade sub-sector is determined by the relevance of its characteristics, such as dependence on operational efficiency (inventory turnover) and capital structure (debt-to-equity ratio), as well as sensitivity to macroeconomic pressures such as inflation.

One of the main variables affecting profitability is inventory turnover (ITO), which assesses the company's efficiency in managing stock to support sales (Astuti & Satiman, 2024). This ratio shows how often inventory is renewed during a given period (Rahmawati et al., 2019) and is often linked to the level of operational efficiency. Previous research suggests that higher inventory turnover reflects an optimal efficiency level and contributes positively to profitability (Arvita et al., 2023). However, other findings show a negative correlation between high ITO and net profit, indicating that high turnover is not always good for the health of the company (Utari, 2023).

Another important factor is the debt-to-equity Ratio (DER), which shows the composition of the company's capital structure. DER shows the dependence of using debt compared to equity in funding the company's operational activities (Nadiana et al., 2024). Previous research indicates that good debt management can support profitability (Dewi &

Estiningrum, 2021), but excessive use of debt can reduce net income due to high interest expenses (Adzahri & Oktaviani, 2024). The inconsistency of these findings suggests the need for further studies to understand how other factors, such as macroeconomic conditions, may influence the relationship.

As one of the significant macroeconomic factors, inflation is considered relevant to analyze in this study. Inflation reflects the impact of economic pressures on corporate financial performance (Youssef et al., 2023). Some studies show that inflation can moderate the relationship between certain financial variables, although the effect is highly dependent on the industry sector (Misbahudin et al., 2020). Research from Nurariffia & Jati (2024) and Utari (2023) reveal that inflation exerts a significant negative effect on profitability under conditions of economic instability because it increases the company's cost burden. However, companies that are adaptive to economic fluctuations can better manage the impact of inflation (Zavitri & Pertiwi, 2024). Although several studies have addressed the impact of inflation on profitability, its influence as a moderating variable in the relationship between ITO, DER, and profitability is rarely explored.

Agency theory is a relevant theory to understand the relationship between managers (agents) and company owners (principals). The theory states that there may be a potential conflict of interest between managers acting on behalf of company owners and the owners themselves. In the context of this study, agency theory helps analyze how managers manage important variables such as ITO and DER to maximize profitability, which also aligns with the interests of company owners. According to this theory, when there is an information imbalance (information asymmetry), managers are more likely to prioritize personal interests over the long-term goals of the company. Therefore, this theory helps formulate hypotheses regarding the impact of ITO and DER on profitability and how inflation acts as a moderating variable affecting these relationships.

However, while previous studies have discussed the effects of ITO and DER on profitability separately, studies that combine these two variables with inflation as a moderating variable have not been conducted. Additionally, many prior studies focus on specific periods or industry sectors, making it difficult to generalize the results. This study intends to fill this scientific gap by analyzing the effect of ITO and DER on profitability in 17 IDX-listed retail firms from 2021 to 2023 and evaluating how inflation moderates the relationship between these two variables and profitability.

This study is a contribution to expanding academic understanding of the interaction dynamics between key financial variables such as ITO and DER, within the retail trade

sub-sector. By adding the perspective of inflation as a moderating variable, this research also offers a new approach to analyzing how both internal and external factors simultaneously affect company profitability. Therefore, this study's hypotheses are:

H1: Inventory turnover (ITO) positively affects profitability.

H2: Debt-to-equity ratio (DER) positively affects profitability.

H3: Inflation moderates the relationship between inventory turnover (ITO) and profitability.

H4: Inflation moderates the relationship between debt-to-equity ratio (DER) and profitability.

METHOD

This study adopts a quantitative method to examine the influence between the independent and dependent variables and intends to evaluate the effect of ITO and DER as independent variables on profitability as the dependent variable. Furthermore, it also explores the role of inflation as a moderating variable to assess the extent to which macroeconomic pressures affect the relationship between the independent and dependent variables.

Research Variables

The study involved three groups of variables. Inventory turnover (ITO) is the first independent variable, which assesses the company's level of efficiency in managing its inventory. ITO is calculated using the formula (Kurniawati & Waluyo, 2024):

$$ITO = \frac{Cost\ of\ Good\ Sold}{Average\ Inventory}$$

Debt-to-equity ratio (DER) is the second independent variable, which reflects the dependence of the use of debt on own capital in the company's capital structure, calculated by the formula (Kurniawati & Waluyo, 2024):

$$DER = \frac{Total\ Debt}{Total\ Equity}$$

The dependent variable is profitability (ROA), which assesses how effectively the company

is achieving profits from its total assets. ROA is calculated using the following formula (Kurniawati & Waluyo, 2024):

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

The moderating variable is inflation, which is the percentage increase in the prices of goods and services within a certain period. The calculation of inflation is based on data from BPS (*Badan Pusat Statistik*) in the form of annual percentages.

Population and Sample

The population involves all companies operating in the non-primary consumer goods sector, especially the retail trade sub-sector, which are listed on the IDX from 2021 to 2023. Sample selection utilizes a purposive sampling method according to criteria such as: companies listed in the retail trade sub-sector according to the IDX Industrial Classification (IDX-IC), listed on the IDX consistently throughout the study (2021-2023), did not delist throughout the research period and did not experience business changes, reported annual financials in full and publish data on research variables (ITO, DER, and ROA), and company data is available through the IDX website or other reliable sources, such as related company websites.

Out of the 31 companies listed in the retail trade sub-sector according to the IDX Industrial Classification (IDX-IC), a selection was made based on purposive sampling criteria. As a result, 17 companies met all criteria, including the availability of complete annual financial reports during the 2021-2023 period, not delisted, and had the data needed for this study (ITO, DER, ROA), as shown in Table 1. The 2021-2023 research period was chosen to reflect the company's financial condition after the COVID-19 pandemic while considering the availability of the latest financial data that can be accessed consistently from the IDX. Taking into account the 17 companies observed during the 3 years of the study, the total observations analyzed in this study were 51 (17 companies × 3 years = 51 observations).

Table 1 Research Sample

Company Name	Stock Code	Sample	Description
Mitra Komunikasi Nusantara Tbk	MKNT	-	No 2023 financial report
Omni Inovasi Indonesia Tbk	TELE	-	Suspension
Yelooo Integra Datanet Tbk	YELO	Sample 1	-
Matahari Departement Store Tbk	LPPF	Sample 2	-
Ramayana Lestari Sentosa Tbk	RALS	Sample 3	-
Sona Topas Tourism Industry Tbk	SONA	Sample 4	-
Multitrend Indo Tbk	BABY	-	Not within the study period
MAP Aktif Adiperkasa Tbk	MAPA	Sample 5	-
Mitra Adiperkasa Tbk	MAPI	Sample 6	-
Bersama Zatta Jaya Tbk	ZATA	-	Not within the study period
Mega Perintis Tbk	ZONE	Sample 7	-
Electronic City Indonesia Tbk	ECII	Sample 8	-
Erajaya Swasembada Tbk	ERAA	Sample 9	-
Sinar Eka Selaras Tbk	ERAL	-	Not within the study period
Globe Kita Terang Tbk	GLOB	-	Business diversification
Gaya Abadi Sempurna Tbk	SLIS	Sample 10	-
Trikomsel Oke Tbk	TRIO	-	Suspension
Damai Sejahtera Abadi Tbk	UFOE	-	Not within the study period
Aspirasi Hidup Indonesia Tbk	ACES	Sample 11	-
Mitra Angkasa Sejahtera Tbk	BAUT	-	Not within the study period
Catur Sentosa Adiprana Tbk	CSAP	Sample 12	-
Caturkarda Depo Bangunan Tbk	DEPO	-	Not within the study period
Klinko Karya Imaji Tbk	KLIN	-	Not within the study period
Rohartindo Nusantara Luas Tbk	TOOL	-	Not within the study period
Autopedia Sukses Lestari Tbk	ASLC	-	Not within the study period
Bintang Oto Global Tbk	BOGA	Sample 13	-
Industry and Trade Bintraco Dharma Tbk	CARS	Sample 14	-
Indomobil Sukses Internasional Tbk	IMAS	Sample 15	-
Mitra Pinasthika Mustika Tbk	MPMX	Sample 16	-
Putra Mandiri Jembar Tbk	PMJS	Sample 17	-
Tunas Ridean Tbk	TURI	-	Delisting

The sample in this study included companies that experienced both profits and losses. The sample selection is not based on profitability conditions but on the availability of complete financial reports over the research period and the fulfillment of predetermined purposive sampling criteria. By including companies that experience losses, this study can identify whether factors such as inventory turnover efficiency and capital structure still affect the company's financial performance in various conditions, including when the

company experiences financial stress.

Data Collection Types and Techniques

This research utilized secondary data obtained from two main sources. First, the company's annual financial statements provided data on inventory, cost of goods sold (COGS), debt, equity, net profit, and total assets. These financial details were collected from companies listed in the retail trade sub-sector within the non-primary consumer goods sector, based on the IDX-IC classification. The financial statements for the years 2021 to 2023 were accessed through the IDX portal or each company's official website. Second, inflation data was sourced from BPS publications, representing the annual inflation rate for the period 2021-2023. This data was used as a moderating variable and retrieved from the official BPS website. The documentation method is adopted as a research data collection technique, which is to download documents like the company's annual financial statements or inflation data from official sources. All data is processed and analyzed to support the study objectives.

Data Analysis Technique

SPSS software was utilized for data analysis, which involved several key stages. The first stage, descriptive analysis, aimed to outline the characteristics of the study data by presenting the average, minimum, maximum, and standard deviation values for individual variables (ITO, DER, ROA, and inflation). This provided an initial overview of the data distribution. Following this, a classical assumption test was conducted to ensure data validity before running the regression analysis. The normality test adopted the Kolmogorov-Smirnov test to check whether residuals were normally distributed, assuming normality if the p-value exceeded 0.05. The multicollinearity test identified high correlations between independent variables by checking the Variance Inflation Factor (VIF) and tolerance values, where VIF < 10 and tolerance > 0.1 indicated no multicollinearity. To assess the homogeneity of residual variance, the heteroscedasticity test was performed adopting the Glejser test, with a p-value exceeds 0.05 indicating no heteroscedasticity. Additionally, the autocorrelation test was conducted using the Durbin-Watson test, comparing results with the DW table to detect the presence of autocorrelation.

The final stage, goodness of fit, evaluated how well the regression model explained the dependent variable through the independent variables. The coefficient of determination (Adjusted R^2) measured the extent to which variations in ROA were explained by ITO and

DER. Additionally, the F-test (simultaneous test) assessed whether all independent variables collectively had a significant effect on ROA. These analytical steps ensured the reliability and validity of the regression model in explaining the relationship between ITO, DER, and ROA.

To evaluate the effect of ITO and DER on profitability (ROA), multiple regression analysis is applied, namely:

$$ROA = \beta_0 + \beta_1 ITO + \beta_2 DER + \varepsilon$$

Where ROA = profitability (return on assets), ITO = inventory turnover, DER = debt-to-equity ratio, β_0, β_1, β_2 = regression coefficients, and ε = error term.

After running the regression model, a hypothesis test was performed to evaluate the contribution of each variable. This included the t-test, which evaluates the significance of individual independent variable's effect on ROA. A variable is considered to have a significant effect if its p-value is under 0.05. The findings of this analysis will determine whether ITO and DER have a statistically significant impact on ROA.

Moderated Regression Analysis (MRA) was applied to evaluate the possibility of inflation as a moderating variable in strengthening or diminishing the relationship between the independent and dependent variables. The equation below shows the moderation model for inventory turnover (ITO):

$$ROA = \beta_0 + \beta_1 ITO + \beta_2 Inflation + \beta_2 (ITO \times Inflation) + \varepsilon$$

The equation below shows the moderation model for debt-to-equity ratio:

$$ROA = \beta_0 + \beta_1 DER + \beta_2 Inflation + \beta_2 (DER \times Inflation) + \varepsilon$$

In this study, inflation is tested as a moderating variable in its interaction with ITO and DER. The moderation coefficient (β_3) indicates whether inflation strengthens or weakens the relationship between ITO and DER on ROA. The moderation hypothesis test is applied as follows: if the p-value of the moderation coefficient (β_3) is less than 0.05, inflation has a significant moderating effect. Conversely, if the p-value exceeds 0.05, inflation

does not act as a moderating variable. The findings of this analysis will determine whether inflation enhances or reduces the effect of ITO and DER on profitability (ROA).

RESULTS

Descriptive Statistics Test

Descriptive statistical analysis was employed to present an overview of the research variables, including ITO, DER, ROA, and inflation. The following table summarizes the descriptive statistics utilized in the study.

Table 2 Descriptive Statistical Test Results

	N	Min	Max	Mean	Std. Dev.
Inventory Turnover (ITO)	51	0.23	55.11	9.0061	12.63558
Debt-to-Equity (DER)	51	0.01	190.31	5.1371	26.50999
Inflation	51	1.87	5.51	33300	1.58645
Return on Assets (ROA)	51	-10.33	24.06	5.0773	5.82270
Valid N (listwise)	51				

As seen in Table 2, ITO has a mean of 9.0061 with a standard deviation of 12.63558, indicating significant variation in the company's inventory turnover. DER has a mean of 5.1371 with a standard deviation of 26.50999, reflecting large differences in capital structure. Inflation averaged 3.3300 with a standard deviation of 1.58645, indicating moderate fluctuations over the study period. The average ROA is 5.0773 with a minimum value of -10.33, some companies have incurred losses. These results indicate heterogeneity in the sample, which may affect the relationship between variables in the study.

Classical Assumption Test

To ensure that the residual data is normally distributed, the normality test employs the One-Sample Kolmogorov-Smirnov test. Referring to the test findings displayed in Table 3, the asymptotic significance (2-tailed) value of 0.200, above the 0.05 significance level, indicates that there is no significant difference between the residual distribution and the normal distribution, so the conclusion is that the residual data is normally distributed.

Table 3 Normality Test Results

One-Sample Kolmogorov-Smirnov Test		Description
	Unstandardized Residual	
Asymp. Sig. (2-tailed)	0.200	Meets the assumption of normality

To detect the possibility of a high linear relationship between independent variables within the regression model, the multicollinearity test is applied. The presence of multicollinearity can interfere with the estimation of regression coefficients, so it is necessary to ensure that the independent variables do not have excessive correlation with each other.

Table 4 Multicollinearity Test Results

Variables	Tolerance	VIF	Description
Inventory Turnover	0.997	1.003	No multicollinearity
Debt-to-Equity Ratio	0.997	1.003	No multicollinearity

Looking at Table 4, the VIF value of all variables is below 10, while the tolerance value exceeds 0.1. ITO and DER variables have a VIF value of 1.003 and a tolerance value of 0.997. In conclusion, there is no multicollinearity within the regression model, which suggests that the model is applicable for further analysis without the risk of bias due to high correlation between independent variables.

The heteroscedasticity test is applied to check the possibility of finding inequality of residual variances in the regression model, which can cause the estimation to be biased and less efficient. In this research, the Glejser test is used by regressing the absolute residuals as the dependent variable on the independent variables. A significance value exceeds 0.05 for individual variables, revealing that heteroscedasticity is not present within the regression model.

Table 5 Heteroscedasticity Test Results

Variables	Standardized Coefficients Beta	T	Sig.	Description
Inventory Turnover	0.024	0.169	0.867	No heteroscedasticity
Debt-to-Equity Ratio	-0.111	-0.775	0.442	No heteroscedasticity

Following Table 5, the significance value of ITO is 0.867, and DER is 0.442. Since all significance values exceed 0.05, it reveals that the regression model in the research has no presence of heteroscedasticity. So, the homoscedasticity assumption is met, revealing that the residual variance within the regression model is constant and is not affected by changes in the value of the independent variables. This indicates that the regression model is reliable and does not require additional data transformation to overcome heteroscedasticity issues.

The autocorrelation test is tested to detect the possibility of correlation between residuals in the regression model, which may affect the validity of the estimates. In this study, to detect autocorrelation, the Durbin-Watson test was utilized. The analysis findings reveal that the Durbin-Watson value is 2.116, while the lower limit (dL) and upper limit (dU) values based on the table are 1.4684 and 1.6309. The value of Durbin-Watson is between dU and (4 - dU) 2.3691, which means that the regression model does not find autocorrelation. So, this model fulfills the assumption of residual independence, so the regression estimation results can be used for further analysis without bias due to autocorrelation.

Table 6 Autocorrelation Test Results

Model	Durbin-Watson
1	2.116

Goodness of Fit

The goodness of fit test in multiple linear regression is carried out by testing the adjusted R^2 and the F-test**.** Adjusted R^2 is utilized to evaluate the extent to which the independent variables in the model can explain the variability of the dependent variable after adjusting for the number of variables used. Meanwhile, the F-test is utilized to test the significance of the model simultaneously. The findings of the adjusted R^2 test and F-test are presented in Tables 7 and 8 below:

Table 7 Test Results of the Coefficient of Determination (Adjusted R^2)

Model	R	R-squared	Adjusted R-squared	Std. Error of the Estimate
1	0.271	0.073	0.035	5.72102

Looking at the results in the table, the adjusted R^2 value is 0.035. This implies that ITO and DER can only explain 3.5% of the variation that occurs in ROA. Thus, 96.5% of the variability in ROA is influenced by factors beyond this research model. The findings of

the F-test are summarized in Table 8 below:

Table 8 Simultaneous Test Results (F)

Model	Sum of Squares	df	Mean Square	F	Sig. (p-value)
Regression	124.143	2	62.072	1.896	0.161
Residuals	1571.046	48	32.730		
Total	1695.189	50			

In Table 8, the F-count value is 1.896 with a significance value of 0.161. The F-value is below the F-table, and the p-value is above 0.05. ITO and DER simultaneously have no significant effect on profitability as measured by ROA. However, according to Gujarati & Porter (2009), a low adjusted R^2 value and an insignificant F-test do not necessarily indicate that the model is invalid or cannot be used. Some reasons that support the use of this model are as follows: despite the low adjusted R^2 value, the regression model in this study remains conceptually strong and theoretically justified. ITO and DER play a role in influencing ROA in accordance with existing financial theory. As stated by Gujarati & Porter (2009), low adjusted R^2 values are common in empirical research in economics and finance, yet a model can still be valid if the variables included have a strong theoretical foundation. Additionally, the significance of individual variables should not be overlooked. Gujarati & Porter (2009) also highlight that even if a model is not significant, individual independent variables may still have a meaningful impact. Therefore, further analysis of the significance of each regression coefficient is necessary. Moreover, the model remains useful in explaining trends and relationships between variables. According to Gujarati & Porter (2009), an economic regression model can still provide valuable insights even if the adjusted R^2 is low if it effectively demonstrates relationships between variables. In this study, the model remains valid for examining the relationship patterns between ITO, DER, and ROA, even if a large portion of ROA variation is not captured by the model. Considering these factors, the regression model can still be utilized for profitability analysis without requiring modifications or additional variables.

Multiple Regression Analysis

Multiple linear regression analysis is applied to assess the effect of ITO and DER on ROA. Looking at Table 9, the obtained multiple linear regression equation model is:

$$ROA = 5.801 - 0.099(ITO) + 0.033(DER) + 1.005$$

Table 9 Results of Multiple Linear Regression Analysis and Partial Test (t)

Variables	Coef. B	Std. Error	Beta	t-value	Sig. (p-value)	Conclusion
Constant	5.801	1.005	-	5.770	< 0.001	
Inventory Turnover (ITO)	-0.099	0.064	-0.215	-1.548	0.128	H1 rejected
Debt-to-Equity Ratio (DER)	0.033	0.031	0.152	1.089	0.281	H2 rejected

The conclusion indicates that the constant value of 5.801 suggests that if ITO and DER are both zero, the ROA value will remain at 5.801. Additionally, the ITO coefficient of -0.099 implies that for every 1-unit increase in ITO, ROA will decrease by 0.099 units. Conversely, the DER coefficient of 0.033 signifies that an increase of 1 unit in DER will give an increase in ROA of 0.033 units.

The partial hypothesis testing (t-test) is conducted to assess whether ITO and DER individually have a significant impact on ROA. Looking at Table 9, the findings are as follows. First, ITO has no significant effect on ROA, as evidenced by a p-value of 0.128 (> 0.05). Consequently, H1, which states that ITO affects ROA, is rejected. This suggests that the speed of inventory turnover does not directly influence profitability (ROA) in this study, possibly due to other factors such as operational efficiency, inventory management strategies, or profit margins that are less dependent on inventory turnover speed. Similarly, DER also has no significant effect on ROA, with a p-value of 0.281 (> 0.05). This indicates that the proportion of corporate DER has no significant relationship with the company's profitability as measured by ROA. Consequently, hypothesis 2 (H2), which posits that DER affects ROA, is also rejected. This may be attributed to a stable capital structure or the use of debt that does not directly enhance profitability in the short term.

Moderated Regression Analysis (MRA)

Looking at the findings of the moderation regression analysis, the regression model formed is for ITO, inflation, and ITO × inflation (MRA Model 1) is:

$$ROA = 3.375 - 0.115(ITO) + 0.789(Inflation) + 0.004(ITO \times Inflation) + 2.290$$

The MRA 1 model shows that if the ITO and Inflation variables are zero, the ROA value is 3.375. The regression coefficient for ITO is -0.115, meaning that an increase of 1 unit of ITO will cause ROA to decrease by 0.115 units.

Table 10 Moderated Regression Analysis (MRA) Results & Partial Test (t)

Variables	Coef. B	Std. Error	Beta	t-value	Sig. (p-value)	Conclusion
MRA 1 (ITO, Inflation, ITO × Inflation)						
ITO_Inflation	0.004	0.039	0.030	0.093	0.926	H3 rejected
MRA 2 (DER, Inflation, DER × Inflation)						
DER_Inflation	0.508	0.205	6.051	2.475	0.017	H4 accepted

Furthermore, the coefficient of inflation is 0.789, showing that every 1 unit increase in Inflation will give an increase in ROA of 0.789 units. However, the moderating effect represented by ITO × Inflation moderation has a coefficient of 0.004, which indicates that the impact of inflation on the relationship between ITO and ROA is very small. Thus, although there is moderation between ITO and inflation, the effect is not significant enough to moderate the relationship between inventory turnover and ROA.

The regression model formed is for DER, Inflation, and DER × Inflation (MRA Model 2) is:

$$ROA = 4.200 - 1.290(DER) + 0.016(Inflation) + 0.508(DER \times Inflation) + 2.001$$

This model shows that if the DER and inflation variables are zero, the ROA value is 4.200. The regression coefficient for DER is -1.290, meaning that an increase of every 1 unit of DER will cause ROA to decrease by 1.290 units, indicating that higher debt ratios tend to reduce company profitability.

Furthermore, the coefficient of inflation is 0.016, meaning that an increase of every 1 unit of inflation will increase ROA by 0.016 units, although the impact is relatively small. More interesting is the moderating effect represented by DER × Inflation moderation with a coefficient of 0.508, meaning that inflation has a role in influencing the relationship between DER and ROA. This positive coefficient indicates that although DER has a negative impact on ROA, this negative effect becomes weaker when inflation increases.

Partial test is utilized to assess the effect of individual independent variable and moderation on ROA. Referring to the t-test, it is known that moderation between inventory turnover and inflation is not significant with a p-value of 0.926 (> 0.05), revealing that inflation cannot moderate the relationship between ITO and ROA, so H3, inflation moderates the relationship between ITO and profitability, is rejected. In other words, changes in the inflation rate do not strengthen or weaken the impact of inventory turnover on company profitability.

Furthermore, the results in MRA Model 2 show that moderation between DER and Inflation shows significant results with a p-value of 0.017 (< 0.05); this reveals that inflation moderates the relationship between DER and ROA. So, H4, that inflation moderates the relationship between DER and profitability, is accepted. That is, in high inflation conditions, the effect of DER on profitability becomes stronger.

DISCUSSION

Effect of Inventory Turnover on Profitability

The findings revealed that ITO has no significant effect on ROA, indicating that although the company experienced an increase in inventory turnover, this did not necessarily have a direct impact on profitability. This can be explained by examining the condition of the companies in the sample, which shows that the average profitability is low, with an ROA value of 5.08% and a standard deviation of 5.82%. This variation suggests significant differences between companies in their ability to generate profits from assets, indicating that factors other than inventory turnover may be influencing profitability.

In the context of agency theory, the differences in inventory management can be explained by the conflict of interest between managers (agents) and shareholders (principals). Managers may be more inclined to increase inventory turnover as a way to show good performance or meet short-term targets, even if such increases do not always lead to long-term profitability. This is consistent with the finding that while some companies with high ITO manage inventory turnover quickly, it does not necessarily result in increased profitability, particularly when the companies do not have an efficient cost structure or sufficient profit margins.

Furthermore, based on descriptive analysis, the ITO values in the sample vary widely, with an average of 9.01 times per year and a high standard deviation of 12.63. The presence of companies with an ITO as high as 55.11 times per year indicates that some companies are able to manage inventory turnover very quickly, while others have an ITO as low as 0.23, indicating very slow inventory turnover. This disparity suggests that inventory management strategies among the companies in the sample are not uniform. Consequently, the effect of ITO on profitability is diverse, and it is difficult to show a statistically significant relationship across the entire sample.

In addition, industry structure and profit margin are also important factors in explaining these findings. In industries with low profit margins, even if inventory turnover

is high, its impact on profitability remains limited due to the small margin contribution per unit. This is consistent with the sample characteristics in this research, where there are loss-making companies with ROA values as low as -10.33%. This indicates that an increase in ITO does not necessarily have a positive effect on profitability, especially when the margin is too low to generate substantial returns. Conversely, in companies with a more efficient cost structure and higher profit margins, an increase in ITO may contribute more significantly to an increase in ROA.

This study's findings align with the research by Sulistriani & Pranjoto (2024), which found that ITO does not always have a significant impact on profitability, especially in industries that prioritize long-term operational efficiency over aggressive inventory management strategies. Additionally, the findings are supported by Rahmawati et al. (2019), who observed that high inventory turnover does not always correlate with profitability, particularly in the retail trade industry, where inventory policies tend to be more flexible and responsive to market demand.

These findings suggest that inventory turnover is not the only factor that determines a company's profitability. Its impact on ROA is highly influenced by the company's industry structure, profit margin, and operational strategy. Therefore, in evaluating the relationship between ITO and ROA, companies should consider external factors such as pricing policy, operational efficiency, and resilience to market fluctuations. By doing so, companies can better target their inventory strategies to increase profitability and achieve more sustainable financial performance. In the context of agency theory, efficient inventory management can only contribute to profitability if there is an alignment of interests between managers and shareholders.

Effect of Debt-to-Equity Ratio on Profitability

The findings showed that DER has no significant effect on ROA, as indicated by a p-value of 0.281 (> 0.05). This suggests that DER does not have a direct impact on the ROA of the companies in this sample. The descriptive analysis reveals that DER in the sample has an average of 5.13, with a very high standard deviation of 26.50. This suggests that there is considerable variation in the capital structure between companies. Some companies have a very low DER of 0.01, while others have a very high DER of 190.31. This huge disparity indicates that most of the companies in the sample do not rely heavily on debt to fund their operations, while a small group of companies is highly dependent on debt financing.

In this study, the lack of a significant relationship between DER and ROA can be attributed to the efficiency of corporate debt management. If a company manages its debt efficiently—such as securing loans at low interest rates or allocating debt funds to productive investments—then a high DER does not necessarily hurt profitability. Therefore, companies with high DER can still generate stable profits if they reduce interest expenses and utilize leverage effectively. On the other hand, companies with low DER are not automatically more profitable if they lack a strong expansion strategy.

These findings are consistent with Utari's (2023) study, which found that DER does not always significantly impact profitability, especially in industries that have access to affordable financing or employ efficient leverage strategies. Similarly, Fahriyan & Budhiarjo's (2024) research also suggests that a debt-based capital structure does not always directly affect profitability, as other factors, such as operational efficiency, marketing strategy, and asset management, may have a greater influence on company profits.

In the context of agency theory, this result can be explained by the existence of external monitoring mechanisms in managerial decision-making. The decision to use debt is influenced by several factors, including risk management policies**,** shareholder interests, and the company's long-term financial strategy. Although DER does not significantly impact ROA directly, management still needs to consider an optimal debt management strategy to ensure the company's long-term financial sustainability. Agency theory suggests that managers (agents) may take on debt to enhance company growth, but they must balance risk and rewards to align with shareholders' (principals) interests.

These findings indicate that DER is not the sole factor influencing a company's profitability. Other factors, like operational efficiency, asset management, also business expansion strategies, also play critical roles in determining ROA. Therefore, companies should adopt a more comprehensive approach to capital structure, focusing not only on debt usage but also on how capital is effectively managed to generate optimal profits.

The Role of Inflation as a Moderating Variable in the Relationship between Inventory Turnover and Profitability

The findings of the MRA suggest that inflation does not moderate the relationship between ITO and ROA (p-value = 0.926 > 0.05). This suggests that changes in inflation neither strengthen nor weaken the relationship between ITO efficiency and profitability. During the study period, economic conditions were significantly impacted by the COVID-19 pandemic, which led to supply chain disruptions and changes in companies'

business strategies. In this context, many companies focused more on pricing strategies and promotion strategies to navigate inflationary pressures rather than adjusting inventory turnover to directly respond to inflation. Moreover, the economic policies implemented during the pandemic, including government interventions to maintain price stability, likely minimized the effect of inflation on business operations, thus, inflation did not directly moderate the relationship between ITO and ROA.

These findings are consistent with the study by Gumilang & Sulhan (2022), which asserts that inflation is not the primary factor in moderating the relationship between activity ratios and profitability. In the context of agency theory, managerial decisions regarding inventory management are more influenced by internal operational strategies such as supply chain efficiency, cost management, and pricing policies rather than external macroeconomic factors like inflation. This aligns with agency theory, which suggests that managers (agents) are more likely to act in ways that benefit the company's short-term goals (such as managing operational efficiency), sometimes ignoring external pressures like inflation if it does not directly affect profitability in the short term.

This result further suggests that companies should focus on internal operational efficiencies, such as enhancing supply chain efficiency and adjusting pricing strategies to reflect changing market conditions instead of relying on inventory turnover adjustments to mitigate the impact of inflation. The emphasis should be on improving internal strategies to maintain profitability amid economic uncertainty rather than relying on inflation as a factor in decision-making.

The Role of Inflation as a Moderating Variable on the Relationship between Debt-to-Equity Ratio and Profitability

The findings from the MRA reveal that inflation moderates the relationship between DER and ROA, indicating that the negative effect of DER on ROA becomes weaker at higher inflation rates. Although previous regression findings suggest that DER has no direct effect on ROA, the moderating effect of inflation can be explained through the company's adaptation mechanism in response to economic changes. Under high inflation conditions, companies with high DER can still maintain profitability through price adjustment strategies and the optimization of financial policies. As the price of products and services rises due to inflation, companies with significant debt burdens can mitigate the negative impact on profitability by increasing revenue. This adjustment helps ease the financial pressure from debt, making it more manageable despite high leverage.

This research strengthens the study by Nadiana et al. (2024), which shows that inflation can weaken the negative impact of DER on profitability, especially in companies that are able to adjust their cost structure and funding strategies. In the context of agency theory, high inflation conditions prompt companies to be more cautious in managing their debt, as managers (agents) focus on strategies such as pricing adjustments and operational efficiency to maintain stable profitability. According to agency theory, managers aim to align their actions with the interests of shareholders (principals) by finding ways to maintain profitability even under economic pressures like inflation. Although DER does not directly affect ROA, inflation changes the pattern of this relationship by pushing companies to adopt adaptive strategies, such as adjusting prices or selecting funding sources with fixed interest rates, to safeguard profitability.

From a practical perspective, this finding suggests that companies with debt-based capital structures can still reduce the risk of financial stress under high inflation conditions if they are able to adopt adaptive financial strategies. The flexibility to adjust pricing policies and select appropriate funding sources are critical factors in ensuring that inflation does not negatively impact the profitability of companies with high debt ratios. Companies should focus on maintaining a balanced debt management strategy that minimizes exposure to inflationary pressures while also ensuring that they remain competitive and profitable.

Conclusion, Limitations, and Suggestions

This study aims to answer how ITO and DER affect ROA and whether inflation acts as a moderating variable in the relationship. The findings reveal that ITO and DER do not significantly affect ROA, indicating that inventory turnover and capital structure are not the primary determinants of company profitability in the non-primary consumer goods industry. External factors such as market demand, pricing strategies, and operational policies play a greater role in determining profitability.

Moderation analysis shows that inflation does not moderate the relationship between ITO and ROA, but it moderates the relationship between DER and ROA. Under high inflation conditions, the negative impact of DER on profitability becomes smaller, which can be explained by the company's proficiency in adjusting selling prices to offset the increase in the cost of capital. This finding also confirms that a firm's profitability is more influenced by its adaptation strategy to market dynamics than by its activity ratio and capital structure. Therefore, firms need to focus on operational efficiency and pricing flexibility to deal with economic uncertainty.

This study has several limitations that may affect the results and interpretation of the findings. The first limitation lies in the availability of data, where not all companies in the non-primary consumer goods industry have complete financial statements, so the number of samples used is still limited. In addition, the use of multiple linear regression and moderation tests may not fully capture the complexity of the relationship between variables, especially if there are non-linear patterns or dynamic effects that are not detected within the study period. Another limitation is in the measurement of inflation, which only uses aggregate annual inflation data without considering sectoral variations, so its impact on the relationship of financial variables in this industry may be underrepresented. Therefore, the findings of this study should account for these limitations in mind.

Based on the limitations identified, future research is recommended to use a wider sample and cover a longer research period to obtain more representative results. In addition, more complex analytical methods, such as non-linear regression or dynamic econometric models, can be used to capture more in-depth relationships between variables. Inflation measurement can also be expanded by considering sectoral inflation or other macroeconomic factors that are more specific to the industry under study. In addition, further research can consider other factors that potentially affect profitability, such as operational efficiency, sales growth, or financial risk management strategies, to achieve a deeper understanding of the determinants of corporate profitability.

REFERENCES

Adzahri, P., & Oktaviani, R. F. (2024). Pengaruh Cash Ratio, Debt-to-Equity Ratio, Total Asset Turnover dan Pertumbuhan Penjualan terhadap Return On Equity. *Jurnal Akuntansi, Keuangan, Perpajakan Dan Tata Kelola Perusahaan (JAKPT), 1*(3), 8–19. https://doi.org/10.59407/jakpt.v1i3.460

Alarussi, A. S. A. (2021). Financial Ratios and Efficiency in Malaysian Listed Companies. *Asian Journal of Economics and Banking, 5*(2), 116–135. https://doi.org/10.1108/ajeb-06-2020-0014

Arvita, R., Novita, M. D., Wibisono, K., & Syafitri, H. N. K. (2023). Pengaruh Biaya Operasional, Perputaran Persediaan, dan Debt-to-Equity Ratio terhadap Profitabilitas (Studi pada Perusahaan Sub Sektor Farmasi yang Terdaftar di Bursa Efek Indonesia Tahun 2017-2021). *Jurnal IAKP: Inovasi Akuntansi Keuangan & Perpajakan, 4*(2), 127–139. https://doi.org/10.35314/iakp.v4i2.3765

Astuti, D. W., & Satiman. (2024). Pengaruh Perputaran Persediaan, Perputaran Piutang dan Total Hutang terhadap Laba Bersih. *Jurnal Ilmiah Research and Development Student, 2*(1), 213–221. https://doi.org/10.59024/jis.v2i1.631

Dewi, A. C., & Estiningrum, S. D. (2021). Pengaruh Current Ratio, Debt-to-Equity Ratio, Total Asset Turnover dan Net Profit Margin terhadap Profitabilitas. *Jurnal Manajemen Strategi Dan Aplikasi Bisnis, 4*(2), 409–420. https://doi.org/https://doi.org/10.36407/jmsab.v4i2.332

Fahriyan, A., & Budhiarjo, I. (2024). Pengaruh Debt-to-Equity Ratio dan Total Asset Turnover terhadap Return on Asset pada PT Ace Hardware Indonesia Tbk Periode 2013-2022. JORAPI: *Journal of Research and Publication Innovation, 2*(5), 79–90. https://doi.org/10.61722/jiem.v2i5.1250

Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics* (5th ed.). New Delhi, Tata McGraw-hill Education

Gumilang, A. R., & Sulhan, M. (2022). Pengaruh Rasio Aktivitas terhadap Profitabilitas yang Terdaftar Dimoderasi oleh Inflasi (Studi pada Perusahaan Sektor Keuangan di BEI). *JPEKA: Jurnal Pendidikan Ekonomi, Manajemen Dan Keuangan, 6*(1), 55–64. https://doi.org/10.26740/jpeka.v6n1.p55-64

Kurniawati, F. A., & Waluyo, D. E. (2024). The Effect of Current Ratio, Debt-to-Equity Ratio, and Inventory Turnover on Return on Asset (Study on Food and Beverage Subsector Manufacturing Companies Listed on the Indonesia Stock Exchange for the Period 2020 – 2022). *Management Studies and Entrepreneurship Journal (MSEJ), 5*(1), 4582–4596. https://doi.org/10.37385/msej.v5i2.4666

Misbahudin, D., Ahmar, N., & Wiratno, A. (2020). Peran Inflasi dalam Memoderasi Return Saham dan Determinasinya pada Industri Barang Konsumsi dan Industri Dasar Kimia. *Journal of Islamic Economy and Business (JIsEB), 1*(1), 11–23.

Nadiana, S., Mahirun, & Taruna, M. S. (2024). Pengaruh Leverage, Ukuran Perusahaan, Modal Intelektual, dan Risiko Bisnis terhadap Profitabilitas dengan Inflasi sebagai Variabel Moderasi pada Perusahaan yang Melakukan Merger dan Akuisisi yang Terdaftar di BEI 2017-2021. *Journal of Accounting and Management's Student, 1*(2), 1–15.

Nurariffia, N., & Jati, W. (2024). Pengaruh Total Assets Turnover (TATO) dan debt-to-equity Ratio (DER) terhadap Return on Equity (ROE) pada PT Matahari Departemen Store Tbk Periode 2013-2022. *Journal of Research and Publication Innovation, 2*(4), 1643–1651.

Oktary, D., & Amelia. (2021). Dampak COVID-19 terhadap Kinerja Keuangan Perusahaan Sektor Barang Konsumen–Non Primer yang Terdaftar di Bursa Efek Indonesia. *Jurnal Ekonomi STIEP (JES), 6*(2), 42–48. https://doi.org/10.54526/jes.v6i2.52

Rahmawati, E., Asiah, A. N., & Kartini, R. (2019). Pengaruh Current Rasio, Debt Equity Ratio, Inventory Turnover, dan Total Asset Turnover, terhadap Profitabilitas pada Perusahaan Sub Sektor Perdagangan Eceran (Ritel) yang terdaftar di Bursa Efek Indonesia. *Jurnal Manajemen dan Akuntansi, 2*(1), 13–24.

Sulistriani, & Pranjoto, G. H. (2024). Pengaruh Perputaran Persediaan, Perputaran Piutang, Perputaran Total Aset, Debt-to-Equity Ratio dan Current Ratio terhadap Profitabilitas pada Perusahaan Manufaktur Sub Sektor Properti dan Real Estate yang Terdaftar di Bursa Efek Indonesia (BEI) pada Periode Tahun 2019-2022. *Jurnal Kajian Ilmu Manajemen, 4*(1), 77–87. https://doi.org/10.21107/jkim.v4i1.24916

Utari, L. (2023). Pengaruh Current Ratio (CR), Debt-to-Equity Ratio (DER), Debt to Asset Ratio (DAR) dan Inventory Turnover (ITO) terhadap Laba Bersih pada Sub Sektor Pulp & Paper yang Terdaftar di BEI Periode 2017-2021. *Science of Management and Students Research Journal (SMS), 4*(1), 31–39. https://doi.org/10.33087/sms.v4i1.137

Youssef, I. S., Salloum, C., & Al Sayah, M. (2023). The Determinants of Profitability in Non-Financial UK SMEs. *European Business Review, 35*(5), 652–671. https://doi.org/10.1108/EBR-09-2022-0173

Zavitri, E. M., & Pertiwi, I. F. P. (2024). The Influence of Financial Ratios and Macroeconomic Factors on Profit Growth: The Role of Independent Board. *Accounting Business and Management, 1*(1), 40–53. https://doi.org/10.47153/abmr11