

The Effect of Return on Assets, Current Ratio, Debt to Equity Ratio, and Company Growth on Company Value with Inflation as A Moderating Variable in Pharmaceutical Companies Listed on The Indonesia Stock Exchange in 2019-2023

¹Genta Aditya*, ²Nurfa Rini Husvifa, ³Riskal Danang Setiawan, ⁴Suhardi

^{1,2,3,4}Universitas Pertiba

*Corresponding Author:

Nadiafasya17@gmail.com

Abstract

This study seeks to analyze the impact of Return on Assets (ROA), Current Ratio (CR), Debt to Equity Ratio (DER), and company growth on firm value, with inflation acting as a moderating variable, specifically within pharmaceutical companies listed on the Indonesia Stock Exchange from 2019 to 2023. The research method employed is a quantitative approach with secondary data in the form of company financial reports. The analysis technique uses panel data regression with a Random Effects Model (REM). The results show that ROA has a partially significant effect on firm value, while CR, DER, company growth, and inflation do not. Simultaneously, all independent variables do not affect firm value. Moreover, the coefficient of determination reveals that the independent variables' capacity to explain variations in firm value remains limited. This study highlights that profitability is the key factor driving an increase in firm value, while liquidity, leverage, growth, and inflation have not made significant contributions within the pharmaceutical sector during the study period.

Keywords: ROA, CR, DER, Company Growth, Inflation, Company Value

1. INTRODUCTION

Company value is an important indicator reflecting management performance and investor confidence in a company's prospects. In the capital market, company value is often linked to stock price, which indicates a company's success in creating wealth for shareholders (Brigham & Houston, 2021).

Company value is influenced by internal factors such as profitability, liquidity, leverage, and company growth. Return on Assets (ROA) indicates a company's ability to generate profits, the Current Ratio (CR) reflects liquidity, and the Debt to Equity Ratio (DER) reflects the company's capital structure. Company growth is an important indicator in assessing a company's prospects. However, previous research has shown that the influence of these variables on company value is inconsistent (Putri et al., 2023). On the other hand, external factors such as inflation can also affect company value. Inflation may depress purchasing power and increase operational costs, thus impacting company performance. Therefore, inflation is used as a moderating variable in this study (Bank Indonesia, 2024).

The pharmaceutical sector was selected due to its strategic importance and relative stability during the 2019–2023 period. However, this industry still encounters economic challenges, which makes it an intriguing area for study. Accordingly, this research aims to examine the impact of Return on Assets (ROA), Current Ratio (CR), Debt to Equity Ratio (DER), and company growth on firm value, considering inflation as a moderating variable, in pharmaceutical companies listed on the Indonesia Stock Exchange.

2. LITERATURE REVIEW

Relationship between Return on Assets (ROA) and Firm Value

Return on Assets (ROA) has a positive relationship with firm value because it reflects a company's ability to generate profits from its assets. The higher the ROA, the more efficient the company is in managing its resources, thereby increasing investor confidence. Empirically, research shows that ROA has a positive and significant effect on firm value, as profitability is a key indicator in assessing company performance. Furthermore, ROA is often a dominant factor in determining stock value in the capital market.

Relationship between Current Ratio (CR) and Firm Value

The current ratio (CR) is related to firm value through the company's ability to meet short-term obligations. Good liquidity can increase investor confidence because it indicates lower risk. However, this relationship is not always positive because excessive liquidity can indicate unproductive funds. Research shows that CR often has no significant effect on company value or even an insignificant negative effect. This indicates that investors do not always consider liquidity as a primary factor in company valuation.

Relationship between Debt-to-Equity Ratio (DER) and Company Value

The Debt-to-Equity Ratio (DER) is related to company value through capital structure and financial risk levels. An optimal DER can increase company value because the use of debt can provide tax benefits and increase returns for shareholders. Research shows that DER can have a positive effect on company value, especially when the company is able to manage debt effectively. However, if the debt level is too high, this can increase the risk of bankruptcy and decrease the company's value.

Relationship between Company Growth and Company Value

Company growth has a positive relationship with company value because it reflects investment opportunities and future prospects. Companies experiencing high growth tend to be more attractive to investors due to the potential for increased revenue and profits. However, growth that is not accompanied by good financial performance can reduce its impact on company value. Therefore, this relationship is conditional, depending on the company's efficiency and profitability.

The Relationship between Inflation and Company Value

Inflation has a negative relationship with company value because it can increase operational costs and reduce purchasing power. This condition can suppress company profits, thereby reducing company value. Research shows that inflation has a negative and significant effect on company value. Furthermore, inflation can also influence investment decisions by increasing economic uncertainty.

The Relationship between Inflation as a Moderating Variable

Inflation, as a moderating variable, plays a role in strengthening or weakening the relationship between financial variables (ROA, CR, DER, and company growth) and company value. Under conditions of high inflation, the effect of profitability on company value can weaken due to increased production costs. Conversely, under conditions of low inflation, this relationship can become stronger. Furthermore, inflation has also been shown to affect company profitability, thus indirectly affecting company value.

3. METHOD

Research Approach

This study employs a quantitative approach with a causal associative approach to examine the relationship and influence between the independent variables (ROA, CR, DER, and company growth) on the dependent variable (firm value), with inflation as a moderating variable. The quantitative approach was chosen because this study uses numerical data analyzed statistically to test the formulated hypotheses.

Population and Sample

The population in this study was all pharmaceutical companies listed on the Indonesia Stock Exchange (IDX) during the 2019–2023 period. The sampling technique used was purposive sampling, with the following criteria:

- a. Pharmaceutical companies consecutively listed on the IDX during the study period (2019–2023).
- b. Companies that published complete annual financial reports during the study period.
- c. Companies with complete research variable data.

Based on these criteria, nine companies were selected as samples with a five-year observation period, resulting in a total of 45 panel data observations.

Data Collection Sources and Techniques

This study uses secondary data, namely data obtained indirectly through intermediaries. The data sources in this study include:

- a. Annual financial reports of pharmaceutical companies were obtained from the official website of the Indonesia Stock Exchange (www.idx.co.id) or company websites.
- b. Inflation data obtained from official publications of Bank Indonesia (BI) or the Central Statistics Agency (BPS).

The data collection technique used is documentation, namely by collecting, recording, and processing financial report data and macroeconomic data relevant to the study.

Operational Definitions and Measurement of Variables

- a. Dependent Variable

Company Value (Y) : Company value is measured using the Price to Book Value (PBV) ratio.

$$PBV = \frac{Stock\ Value}{Book\ Value}$$

b. Independent Variable

- 1) Return on Assets (ROA) (X1) : Measuring a company's ability to generate profits from total assets

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

- 2) Current Ratio (CR) (X2) : Measuring the company's ability to meet short-term obligations

$$CR = \frac{Current\ Assets}{Current\ Liability}$$

- 3) Debt to Equity Ratio (DER) (X3) : Measuring a company's capital structure

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

- 4) Company Growth (X4) : Measured using asset growth

$$Growth = \frac{Total\ Asset_t - Total\ Asset_{t-1}}{Total\ Asset_{t-1}}$$

c. Variabel Moderasi

Inflation (Z): Inflation is measured based on the annual inflation rate (%) obtained from official data from Bank Indonesia/BPS.

Data Analysis Method

The data analysis in this study used panel data regression with the aid of statistical software (EViews). The analysis stages include:

- a. Descriptive Statistical Analysis : To obtain a general overview of the research data.
- b. Panel Data Regression Model Selection Test
 - 1) Chow Test (Common Effect Model vs. Fixed Effect Model)
 - 2) Hausman Test (Fixed Effect Model vs. Random Effect Model)
 - 3) Lagrange Multiplier Test (Common Effect Model vs. Random Effect Model)
- c. Hypothesis Testing
 - 1) t-test (partial)
 - 2) F-test (simultaneous)

3) Coefficient of Determination (R^2)

Note: Based on the research results, the best model employed is the Random Effect Model (REM), thus eliminating the need for classical assumption testing.

Panel Data Regression Model

The regression model used in this study consists of two equations:

a. Model without moderation (Sub-Structure I)

$$Z = \alpha + \beta_1 ROA + \beta_2 CR + \beta_3 DER + \beta_4 Growth + \varepsilon$$

b. Model with moderating variables (Sub-Structure II)

$$Y = \alpha + \beta_1 ROA + \beta_2 CR + \beta_3 DER + \beta_4 Growth + \beta_5 Inflasi + \varepsilon$$

The stronger moderation model (interaction) can be developed into:

$$Y = \alpha + \beta_1 ROA + \beta_2 CR + \beta_3 DER + \beta_4 Growth + \beta_5 Inflasi + \beta_6 (ROA \times Inflasi) + \dots + \varepsilon$$

4. RESULT AND DISCUSSION

Sub-Structural Model Selection I

a. Chow Test

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.145894	(8,32)	0.9961
Cross-section Chi-square	1.612086	8	0.9907

$0.9907 > 0.05 = \text{Model CEM}$

b. Hausman Test

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	1.167154	4	0.8835

$0.8835 > 0.05 = \text{Model REM}$

c. Lagrange Multiplier Test

Lagrange Multiplier Tests for Random Effects

Null hypotheses: No effects

Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided
(all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	4.719882 (0.0298)	155.6341 (0.0000)	160.3540 (0.0000)
Honda	-2.172529 (0.9851)	12.47534 (0.0000)	7.285188 (0.0000)
King-Wu	-2.172529 (0.9851)	12.47534 (0.0000)	8.931763 (0.0000)

Standardized Honda	-1.903541 (0.9715)	13.95105 (0.0000)	5.801268 (0.0000)
Standardized King-Wu	-1.903541 (0.9715)	13.95105 (0.0000)	7.830986 (0.0000)
Gourieroux, et al.	--	--	155.6341 (0.0000)

$0.0298 < 0.05 = \text{Model REM}$

Selection Of Sub-Structural Model II

a. Chow Test

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	10.117958	(8,31)	0.0000
Cross-section Chi-square	57.780383	8	0.0000

$0.0000 < 0.05 = \text{Model FEM}$

b. Hausman Test

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	0.000000	5	1.0000

1.0 .05 = Model REM

c. Lagrange Multiplier Test

Lagrange Multiplier Tests for Random Effects

Null hypotheses: No effects

Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided
(all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	33.41779 (0.0000)	0.679381 (0.4098)	34.09717 (0.0000)
Honda	5.780812 (0.0000)	-0.824246 (0.7951)	3.504821 (0.0002)
King-Wu	5.780812 (0.0000)	-0.824246 (0.7951)	2.664559 (0.0039)
Standardized Honda	6.561652 (0.0000)	-0.260430 (0.6027)	1.630074 (0.0515)

Standardized King-Wu	6.561652 (0.0000)	-0.260430 (0.6027)	0.799094 (0.2121)
Gourieroux, et al.	--	--	33.41779 (0.0000)

$0.0000 < 0.05 = \text{Model REM}$

Note:

Classical Assumption Test

Common Effect Model (CEM) (Ordinary Least Squares)

1. Multicollinearity Test (Correlation Coefficient Value must be <0.80)

2. Heteroscedasticity Test (Sig. Value must be >0.05)

Fixed Effect Model (FEM) (Least Squares Dummy Variable)

No classical assumption test required

Random Effect Model (REM) (Generalized Least Squares)

No classical assumption test required

Because the selected model for Sub-Structural Models I and II is the REM (Random Effects Model), no classical assumption test is necessary.

Hypothesis Test

Sub-Structural 1

The selected model is REM

a. t-test (Partial Effect)

Dependent Variable: Z

Method: Panel EGLS (Cross-section random effects)

Date: 04/30/26 Time: 11:16

Sample: 2019 2023

Periods included: 5

Cross-sections included: 9

Total panel (balanced) observations: 45

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.565395	0.529457	4.845332	0.0000
X1	-0.003385	0.019904	-0.170051	0.8658
X2	0.106490	0.218404	0.487584	0.6285
X3	0.138243	0.105142	1.314823	0.1961
X4	-0.008323	0.026157	-0.318197	0.7520

- ✓ The X1 probability value is $0.8658 > 0.05$, so H_a is rejected and H_0 is accepted. It means that variable X1 has no effect on variable Z.
- ✓ The X2 probability value is $0.6285 > 0.05$, so H_a is rejected and H_0 is accepted. It means that variable X2 has no effect on variable Z.
- ✓ The X3 probability value is $0.1961 > 0.05$, so H_a is rejected and H_0 is accepted. It means that variable X3 has no effect on variable Z.
- ✓ The X4 probability value is $0.7520 > 0.05$, so H_a is rejected and H_0 is accepted. It means that variable X4 has no effect on variable Z.

b. F-test (Simultaneous influence)

Effects Specification	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	1.552558	1.0000

Weighted Statistics

Root MSE	1.332894	R-squared	0.062524
Mean dependent var	2.878000	Adjusted R-squared	-0.031224
S.D. dependent var	1.392180	S.E. of regression	1.413748
Sum squared resid	79.94732	F-statistic	0.666939
Durbin-Watson stat	2.853578	Prob(F-statistic)	0.618698

Unweighted Statistics

R-squared	0.062524	Mean dependent var	2.878000
Sum squared resid	79.94732	Durbin-Watson stat	2.853578

The probability value (F-statistic) is $0.618698 > 0.05$, so H_a is rejected and H_0 is accepted. It means that variables X_1 , X_2 , X_3 , and X_4 do not influence variable Z simultaneously.

c. R-Square

Effects Specification

	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	1.552558	1.0000

Weighted Statistics

Root MSE	1.332894	R-squared	0.062524
Mean dependent var	2.878000	Adjusted R-squared	-0.031224
S.D. dependent var	1.392180	S.E. of regression	1.413748
Sum squared resid	79.94732	F-statistic	0.666939
Durbin-Watson stat	2.853578	Prob(F-statistic)	0.618698

Unweighted Statistics

R-squared	0.062524	Mean dependent var	2.878000
Sum squared resid	79.94732	Durbin-Watson stat	2.853578

Variables X1, X2, X3, and X4 indicate that the regression model is very poor at explaining data variation. This indicates that the independent variables are unable to explain the dependent variable, even worse than using only the average value.

Sub-Structural 2

The selected model is REM

a. T-Test (Partial effect)

Dependent Variable: Y

Method: Panel EGLS (Cross-section random effects)

Date: 04/30/26 Time: 11:41

Sample: 2019 2023

Periods included: 5

Cross-sections included: 9

Total panel (balanced) observations: 45

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.459491	0.579114	2.520216	0.0159
X1	0.028259	0.012900	2.190634	0.0345
X2	0.369677	0.185732	1.990381	0.0536
X3	-0.002590	0.067151	-0.038570	0.9694
X4	0.009533	0.015228	0.626028	0.5349
Z	-0.090117	0.095297	-0.945648	0.3502

- ✓ The X1 probability value is $0.0345 < 0.05$, so H_0 is rejected and H_a is accepted. It means that variable X1 has an effect on variable Y.
- ✓ The X2 probability value is $0.0536 > 0.05$, so H_a is rejected and H_0 is accepted. It means that variable X2 has no effect on variable Y.
- ✓ The X3 probability value is $0.9694 > 0.05$, so H_a is rejected and H_0 is accepted. It means that variable X3 has no effect on variable Y.
- ✓ The X4 probability value is $0.5349 > 0.05$, so H_a is rejected and H_0 is accepted. It means that variable X4 has no effect on variable Y.
- ✓ The Z probability value is $0.3502 > 0.05$, so H_a is rejected and H_0 is accepted. It means that variable Z has no effect on variable Y.

b. F- Test (Simultaneous effect)

Effects Specification		
	S.D.	Rho
Cross-section random	0.793517	0.4701
Idiosyncratic random	0.842558	0.5299

Weighted Statistics

Root MSE	0.862224	R-squared	0.181856
Mean dependent var	0.976953	Adjusted R-squared	0.076966
S.D. dependent var	0.964018	S.E. of regression	0.926178
Sum squared resid	33.45439	F-statistic	1.733772
Durbin-Watson stat	1.415706	Prob(F-statistic)	0.149763

Unweighted Statistics

R-squared	0.257252	Mean dependent var	2.277556
Sum squared resid	81.84005	Durbin-Watson stat	0.578709

The prob. value (F-statistic) is $0.149763 > 0.05$, so H_a is rejected and H_0 is accepted. This means that variables X_1 , X_2 , X_3 , X_4 , and Z do not affect variable Y simultaneously.

c. R-Square

Effects Specification		
	S.D.	Rho
Cross-section random	0.793517	0.4701
Idiosyncratic random	0.842558	0.5299

Weighted Statistics

Root MSE	0.862224	R-squared	0.181856
Mean dependent var	0.976953	Adjusted R-squared	0.076966
S.D. dependent var	0.964018	S.E. of regression	0.926178
Sum squared resid	33.45439	F-statistic	1.733772
Durbin-Watson stat	1.415706	Prob(F-statistic)	0.149763

Unweighted Statistics

R-squared	0.257252	Mean dependent var	2.277556
Sum squared resid	81.84005	Durbin-Watson stat	0.578709

Variables X1, X2, X3, X4, and Z explain variable Y by 0.07 or 7%. The remainder is explained by other variables.

The following is an analysis and discussion based on the results of panel data regression using the Random Effects Model (REM) method for Sub-Structures I and II:

a. Analysis of Sub-Structure I ($X_1, X_2, X_3, X_4 \rightarrow Z$)

Based on the estimation results using REM, it is known that all independent variables, namely X_1, X_2, X_3 , and X_4 , do not have a significant effect on variable Z . This is evident from the probability values for each variable, which are greater than 0.05. Thus, there is no partial empirical evidence supporting the influence of these variables on Z .

Simultaneously, the F-test results also indicate a probability value of 0.618698 (>0.05), thus concluding that X_1, X_2, X_3 , and X_4 collectively have no significant effect on Z . This indicates that the model constructed is unable to explain the strong relationship between the independent and dependent variables.

The coefficient of determination (R^2) of 0.0625, or 6.25%, indicates that the model's ability to explain variation in variable Z is very low. It means that approximately 93.75% of the variation in Z is explained by factors outside the research model. This condition indicates that the model lacks fit and that there may be other variables that are more relevant in explaining Z .

In general, these results indicate that variables X_1, X_2, X_3 , and X_4 are not the main determinants of variable Z in the context of this study. This could be due to data characteristics, the research period, or inaccurate variable selection.

b. Sub-Structural Analysis II ($X_1, X_2, X_3, X_4, Z \rightarrow Y$)

In Sub-Structural Analysis II, the partial test results indicate that only variable X1 has a significant effect on Y, with a probability value of 0.0345 (<0.05). This means that X1 has a significant contribution in explaining changes in variable Y. In other words, an increase or decrease in X1 will have a direct impact on Y.

Meanwhile, variables X2, X3, X4, and Z have probability values greater than 0.05, so it can be concluded that these variables do not have a significant effect on Y partially. Specifically for variable Z, these results indicate that it is unable to act as an effective intervening variable in mediating the relationship between X and Y.

The simultaneous test (F test) results reveal a probability value of 0.149763 (>0.05), meaning that variables X1, X2, X3, X4, and Z collectively have no significant effect on Y. It indicates that the overall model is unable to explain the strong relationship between the independent and dependent variables.

The Adjusted R^2 value of 0.0769, or approximately 7%, indicates that the model is only able to explain a small portion of the variation in variable Y, while the remaining 93% is explained by other variables outside the model. It indicates that the model has weak explanatory power.

c. General Interpretation and Implications

From the two sub-structures, it can be concluded that the research model used still has limitations in explaining the relationship between variables. In Sub-Structural I, no significant effect was found, either partially or simultaneously, while in Sub-Structural II, only variable X1 had a partial effect on Y.

The insignificance of variable Z in Sub-Structural II indicates that this variable does not act as an intervening (mediating) variable in the research model. It means that the indirect relationship between X and Y through Z is not empirically proven.

The low coefficient of determination values in both models indicate the possibility of omitted variable bias, that is, the presence of other important variables not included in the model. Therefore, researchers are advised to consider adding other relevant variables, extending the research period, or using a different modeling approach.

5. CONCLUSION

Based on the results of panel data regression analysis using the Random Effects Model (REM) for Sub-Structure I and Sub-Structure II, the following conclusions can be drawn:

- i. In Sub-Structure I, variables X1, X2, X3, and X4 did not have a significant effect on variable Z, either partially or simultaneously. This indicates that the four independent variables were unable to explain changes in variable Z in this study.
- ii. In Sub-Structure II, only variable X1 was shown to have a significant effect on variable Y, while variables X2, X3, X4, and Z did not have a significant effect.
- iii. Simultaneously, variables X1, X2, X3, X4, and Z did not have a significant effect on variable Y, indicating that the overall research model was unable to explain the strong relationship between the variables.

- iv. Variable Z in this study was not proven to be an intervening (mediating) variable because it was unable to bridge the influence of the independent variables on the dependent variable.
- v. The coefficient of determination (Adjusted R²) values for both models are relatively low, indicating that most of the variation in the dependent variable is influenced by factors outside the research model.
- vi. Therefore, this research model still has limitations in explaining the phenomena studied, requiring further model development by adding additional variables, improving variable measurement, or expanding the research period.

References

- Ismawati, A. F. (2025). Analisis Pengaruh Profitabilitas terhadap Nilai Perusahaan pada Periode 2020, 2021, 2022, dan 2023 pada Perusahaan yang Terdaftar di SRI-KEHATI. *Jurnal Performa*, 10(1). <https://doi.org/10.37715/performa.v10i1.5578>
- Subandi, F. A., & Sutanti, S. (2025). Pengaruh CR, ROA, Dan DER Terhadap Nilai Perusahaan Farmasi di BEI 2019-2023. *Jurnal Review Pendidikan Dan Pengajaran*, 8(2), 5307–5316.
- Subandi, F. A., & Sutanti. (2025). Pengaruh CR, ROA, dan DER terhadap Nilai Perusahaan Farmasi di BEI 2019–2023. *Jurnal Akuntansi Muhammadiyah (JAM)*, 15(1). <https://doi.org/10.37598/jam.v15i1.2347>
- Wati, Y., Putri, D. E., Syahputri, A., & Sari, E. P. (2022). Pengaruh Rasio Keuangan terhadap Nilai Perusahaan (Studi Empiris Perusahaan Sub Sektor Farmasi yang Terdaftar di BEI Periode 2014–2020). *Jurnal Ilmiah Edunomika*, 6(2). <https://doi.org/10.29040/jie.v6i2.6227>
- Safitri, R., & Widodo, H. (2024). Pengaruh profitabilitas, struktur modal, dan ukuran perusahaan terhadap nilai perusahaan (Studi pada perusahaan farmasi yang terdaftar di Bursa Efek Indonesia tahun 2015–2020). *Jurnal Ekonomi, Bisnis dan Pendidikan*, 3(5), 233–243. <https://doi.org/10.17977/um066v3i52023p233-243>