THE EFFECT OF FINANCIAL RATIOS ON PHARMACEUTICAL INDUSTRY STOCK PRICES ON IDX

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Abstract – The development of the pharmaceutical industry in Indonesia has increased quite rapidly, especially with the Covid-19 pandemic in 2020. This has made people aware of the importance of the availability of medicines and other supporting equipment, resulting in high demand for pharmaceutical products. The capital market is one of the fund investment options in the hope of getting benefits from the companies invested, either in the form of increasing share prices or getting dividends on the profits of the companies they own. This study aims to analyze the effect of financial ratios on stock prices of companies that are Pharmaceutical Sector Companies for the 2016-2022 period. The financial ratios are represented by the Current Ratio (CR), Debt to Equity Ratio (DER), and Debt to Asset Ratio (DAR) and Return on Assets (ROA). The data used in this study are panel data, which has cross section and time series characteristics. There are 7 (seven) companies listed on the Indonesia Stock Exchange used as samples. The analysis technique uses a panel data regression approach with the fixed effect method. The results of the study concluded that CR and DAR partially had a negative and significant effect on the stock prices of pharmaceutical sector companies, while DER and ROA partially had no significant effect on the stock prices of pharmaceutical sector companies. Simultaneously CR, DER, DAR and ROA have a significant effect on the stock prices of pharmaceutical sector companies.

Keywords: Investment, Financial Ratios, Stock Price

I. INTRODUCTION

The capital market is one of the choices of investors to invest, with the hope of benefiting from the company invested, in the form of an increase in stock prices in the form of dividends from the profits of the companies owned. To get these benefits, investors must analyze the company's performance, so that the investment is really right on target and minimizes the risk of loss on speculation in buying shares. The pharmaceutical industry is one of the sectors contained in the capital market. Financial ratios are a tool that can be used in measuring the Company's financial performance and can explain the comparison between a certain amount with other amounts in the financial statements. In the process of analyzing financial statements, ratios will be used which become information related to company performance. According to Neni Nur'aeni dan Gusganda Suria Manda (2021), CR affects the stock price of the pharmaceutical industry, but according to I Sulistya D (2019) and Elizabeth Dwi L. (2022), CR does not affect the stock price of the pharmaceutical industry. According to Dwi Fitrianingsih dan Yogi Budiansyah (2019) DER affects the stock price of the pharmaceutical industry, but according to I Sulistya D (2019) and Elizabeth Dwi L. (2022), DER does not affect the stock price of the pharmaceutical industry. According to W Sari (2018) and Yason N. (2021), DAR affects the stock price of the pharmaceutical industry, but according M. Ashadi Ridha (2019) DAR does not affect the stock price of the pharmaceutical industry. According to R

Arifiani (2021) and R Uli Manulang (2021). ROA affects the stock price of the pharmaceutical industry, but according to I. Sulistya (2019) ROA does not affect the stock price of the pharmaceutical industry. Based on the research gap from previous research, the author is interested in examining the effect of Financial Ratios on pharmaceutical industry stock prices on the Indonesia Stock Exchange.

II. METHODS

The research method to be used in this study is a descriptive and verifiative method, looking for relationships and objectives in a structured, factual, and accurate manner from the influence of Current Ratio, Debt to Equity Ratio, Debt to Asset Ratio, and Return on Assets on stock prices both simultaneously and partially. The unit of analysis in this study is a pharmaceutical company on the Indonesia Stock Exchange, which has complete financial statements during the research time of 2016 – 2022. The independent variables in this study are Current Ratio, Debt to Equity Ratio, Debt to Asset Ratio. The dependent variable in this study is stock price.

Population and Sample In conducting this study, the population used was all companies in the pharmaceutical sector listed on the Indonesia stock exchange. Sample selection is based on the nonprobabilty sampling method, precisely the purposive sampling method. The type of data used in this study is secondary data, obtained from the Indonesia Stock xchange website. Literature studies are obtained through literature used as reference material to compile literature reviews or research theories. The data used in this study are time series and cross section data or commonly called panel data. The time interval in this study was from 2016 - 2022.

Data Analysis The data analysis used in this study is multiple regression analysis with the help of Eviews software version 12, by determining the Regression Equation Model:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Where:

Y = Stock Price of Pharmaceutical Company

X1 = Current Ratio

X2 = Debt to Equity Ratio

X3 = Debt to Asset Ratio

X4 = Return on Assets

e = error

Classical Assumption Test Classical assumption tests are used to test the feasibility of regression models conducted in this study, including (Ghozali, 2016: 27-159) :

- Normality Test

- Heteroscedasticity Test

- Autocorrelation Test

Model Due Diligence To test whether the regression function is statistically correct in measuring units of actual value. The feasibility test of the model consists of (Ghozali. 2016: 97-98):

- Test Coefficient of Determination (R2)

- Statistical Test F

Hypothesis Testing To test the effect of the independent variable on the dependent variable, Ghozali (2018), with the following steps:

Hypothesis formulation

H0: dependent variables (firm size, concentration of ownership, and profitability) has no effect on the independent variable (biological asset disclosure)

Ha: the independent variable (disclosure of biological assets) affects the dependent variable (company size, concentration of ownership, and profitability).

Decision making criteria:

- If the probability value (sig) > 0.05 then H0 is accepted and Ha is rejected.

- If the probability value (sig) ≤ 0.05 then H0 is rejected and Ha is accepted.

Frame of Mind
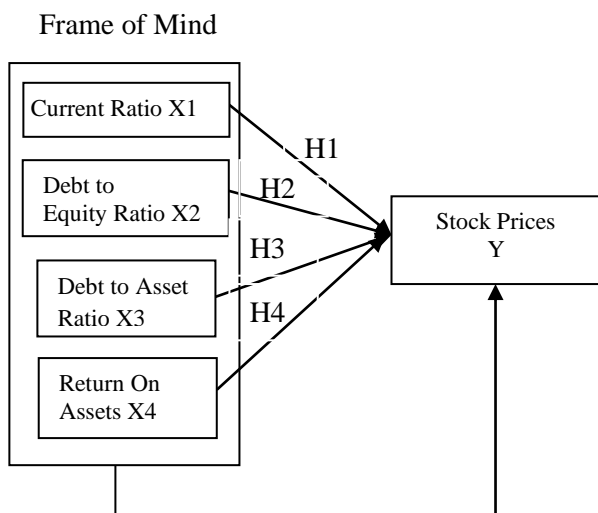
Hypothesis:

H1: There is a positive and significant influence of Current Ratio on pharmaceutical stock prices

H2: There is a positive and significant influence of Debt to Equity Ratio on pharmaceutical stock prices

H3: There is a positive and significant effect of Debt to Asset Ratio on pharmaceutical stock prices

H4: There is a positive and significant effect of Return on Assets on pharmaceutical stock prices

H5: There is a positive and significant effect of CR, DER, DAR and ROA on pharmaceutical stock prices

III. RESULTS AND DISCUSSION

Panel Data Regression Model Selection

Chow Test

Table 1. Chow Test Results

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

Effects Test	Statistic	d.f.	Prob.
Cross-section F	6.436396	(6,37)	0.0001
Cross-section Chi-square	34.309508	6	0.0000

Source: Data processed

The probability value of cross-section F of 0.0001, being below the significance level ($\alpha = 0.05$), it can be concluded that the selected panel data regression method is the Fixed Effect method.

Hausman Test

Table 2. Hausman Test Results

Correlated Random Effects - Hausman Test			
Equation: REM			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	19.392377	4	0.0007

Source: Data processed

Obtained Chi square probability value of 0.0007, above the significance level ($\alpha = 0.05$), it can be concluded that the fixed effect model is better than the random effect

Lagrange Multiplier (LM) Test

Tabel 3. Lagrange Multiplier Test Results

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	14.40767 (0.0001)	1.444583 (0.2294)	15.85225 (0.0001)

Source: Data processed

Obtained the probability of Breusch Pagan Both of 0.000, below the level of significance ($\alpha = 0.05$), it can be concluded that the random effect method is better than the common effect method. Based on the Chow and Hausman Test, the Lagrange multiplier Test is ignored because it has been determined that the fixed effect model is the best model.

Classical Assumption Test

Normality Test

Figure 1. Normality Test Results
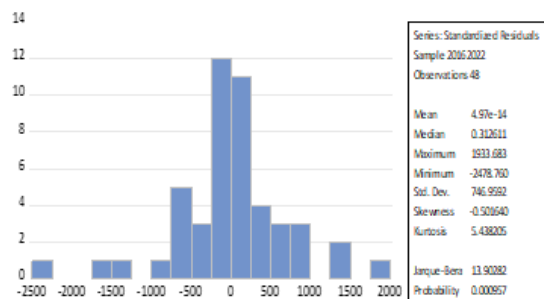
Source: Data processed

The data has been normally distributed, shown by a probability value of 0.0000 smaller than 0.05, the author uses a central limit theory approach which states that data that has a sample number of more than 30 is considered normal, because basically the normality test is intended for data that has a small sample. In this study, the number of samples used amounted to 120 samples, so the data used was considered normal.

Multicollinearity test

Tabel 4. Multicollinearity Test Results

	X1	X2	X3	X4
X1	1.000000	-0.341709	-0.813250	0.390532
X2	-0.341709	1.000000	0.632294	-0.436605
X3	-0.813250	0.632294	1.000000	-0.521648
X4	0.390532	-0.436605	-0.521648	1.000000

Source: Data processed

Obtained correlation value is not < 0.9, it can be concluded that there is no problem in multicollinearity.

Heteroscedasticity Test

Tabel 5. Heteroscedasticity Test Results

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	1.785442	Prob. F(4,43)	0.1493
Obs*R-squared	6.836712	Prob. Chi-Square(4)	0.1448
Scaled explained SS	11.00387	Prob. Chi-Square(4)	0.0265

Source: Data processed

Obtained results that show no heteroscedasticity problems due to the value of prob. Chi-Square 0.1448 above 0.05.

Autocorrelation Test

Table 6. Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	1.805891	Prob. F(2,41)	0.1772
Obs*R-squared	3.886092	Prob. Chi-Square(2)	0.1433

Source: Data processed

Obtained value Prob. Chi-Square is 0.1433>0.005 so it can be concluded that in linear regression models have free from autocorrelation test problems.

Test the hypothesis

Statistical Test

Table 7. Statistical Test Results F

Dependent Variable: Y
Method: Panel Least Squares
Date: 07/26/23   Time: 23:23
Sample: 2016 2022
Periods included: 7
Cross-sections included: 7
Total panel (unbalanced) observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5043.985	981.0968	5.141170	0.0000
X1	-357.5490	152.3015	-2.347640	0.0244
X2	-76.48397	87.47197	-0.874383	0.3876
X3	-5511.418	2108.808	-2.613523	0.0129
X4	-807.0551	993.1488	-0.812623	0.4216

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	739.1374	R-squared	0.656024
Mean dependent var	1876.188	Adjusted R-squared	0.563058
S.D. dependent var	1273.600	S.E. of regression	841.8698
Akaike info criterion	16.50718	Sum squared resid	26223559
Schwarz criterion	16.93600	Log likelihood	-385.1723
Hannan-Quinn criter.	16.66923	F-statistic	7.056569
Durbin-Watson stat	2.170251	Prob(F-statistic)	0.000004

Source: Data processed

Obtained value Prob. (F-statistic) of 0.000004 can be concluded that the regression model is feasible and the four variables X affect the stock price of pharmaceutical companies

Table 8. Hypothesis test results

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Dependent Variable: Y
Method: Panel Least Squares
Date: 07/26/23   Time: 23:23
Sample: 2016 2022
Periods included: 7
Cross-sections included: 7
Total panel (unbalanced) observations: 48
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Variable	Coefficient	Std. Error	t-Statistic	Prob.
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X3	-5511.418	2108.808	-2.613523	0.0129
X4	-807.0551	993.1488	-0.812623	0.4216

Source: Data processed

H1 = There is a negative influence of CR on the stock price. The value of the coefficient is -357.55 and the probability is 0.0244>0.05, meaning that there is a significant negative influence of CR on the stock price, the first hypothesis is accepted.

H2 = There is a positive influence of DER on the stock price. The value of the coefficient is -76.48 and the probability is 0.38763<0.05, meaning that there is no significant effect of DER on the stock price, the second hypothesis is rejected.

H3 = There is a positive influence of DAR on stock prices. The value of the coefficient is -5511.42 and the probability is 0.0129>0.05, meaning that there is a significant and negative influence of DAR on the stock price, the third hypothesis is accepted.

H4 = There is a positive influence of ROA on stock prices. The value of the coefficient is -807.05 and the probability is 0.4216<0.05 which means that there is no significant effect of ROA on the stock price, the fourth hypothesis is rejected.

H5 = There is a positive influence of CR, DER, DAR, and ROA on stock prices. The value of Prob(F-statistic) 0.00004<0.05, means that there is a significant effect of CR. DER, DAR, and ROA simultaneously to the stock price, the fifth hypothesis is accepted.

Coefficient of Determination Test (R^2)

Tabel 9. Coefficient of Determination Test Results (R^2)

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Cross-section fixed (dummy variables)
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Root MSE	739.1374	R-squared	0.656024
Mean dependent var	1876.188	Adjusted R-squared	0.563058
S.D. dependent var	1273.600	S.E. of regression	841.8698
Akaike info criterion	16.50718	Sum squared resid	26223559
Schwarz criterion	16.93600	Log likelihood	-385.1723
Hannan-Quinn criter.	16.66923	F-statistic	7.056569
Durbin-Watson stat	2.170251	Prob(F-statistic)	0.000004

Source: Data processed

Obtained adjusted $R2$ results of 0.5630, variations in stock price variables can be explained together by variables CR, DER, DAR and ROA by 56.3% while the remaining 43.7% is explained by other variables outside the research variables.

IV. CONCLUSION

From the results of multiple linear analysis, it is known that CR and DAR have a significant effect on stock prices, but DER and ROA do not have a significant effect on stock prices, where:

- The CR variable has a negative and significant influence on the Stock Price.

- The DER variable has a significant influence on the Stock Price.

- The DAR variable has a negative and significant influence on the Stock Price

- The variable ROA does not have a significant influence on the Stock Price

- The variables CR, DER, DAR, and ROA simultaneously have a significant influence on the Share Price of Pharmaceutical companies. This shows that these four variables together are the main considerations for investors in making investment decisions in companies included in the pharmaceutical sector industry on the IDX for the period 2016 to 2022

V. ACKNOWLEDGEMENT

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