



The Influence of ROA, ROE, NPM, EPS and PER to Market Price on Public Listed Manufacture of Food Products 2018-2022

Mila Hiswatus Sholihah ¹⁾, Heru Tjaraka ²⁾

Magister Akuntansi Universitas Airlangga

Email: ¹⁾ mila.hiswatus.olihah-2022@feb.unair.ac.id, ²⁾ heru.tjaraka@feb.unair.ac.id

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ABSTRACT

This study aims to provide empirical evidence in financial ratios which include ROA, ROE, NPM, EPS and PER for significance in predicting market prices on public listed food manufacture of food products in the 2018-2022 to minimize information asymmetry, increase transparency and accuracy between management and stakeholders that occur in a stock market. The research samples in this study are public food manufacturing companies in Indonesia in 2018-2022. This study uses panel data with cross-sectional data for 45 companies and time series data from 2018-2022. The total sample in this study is 201 samples. The results of this study indicate that H1 ROA has no significant effect on market price. Meanwhile, H2 ROE, H3 NPM, H4 EPS and H5 PER have a significant effect on market price

INTRODUCTION

The capital market has an important role in economic growth in a country (Wibowo, 2018). The capital market refers to a place or mechanism whereby investors buy and sell shares, bonds, mutual funds and so on for the purpose of investing (Wibowo, 2018). Investing in the capital market through buying shares is a mechanism for investing/ channeling funds made by investors with the aim of gaining return/ profit (Wibowo, 2018). In practice, there are several risks that arise either directly or indirectly from investing in the capital market (Putri, 2018). So we need an analysis in predicting the price of a stock (Wibowo, 2018).

Broadly speaking, there are two analyzes in predicting the price of a stock, namely technical analysis and fundamental analysis (Wibowo, 2018). Technical analysis refers to using a stock's market data using technical chart analysis to determine the stock's future

price (Wibowo, 2018). while fundamental analysis is an analysis of fundamental factors in predicting stock prices based on financial ratios in a financial report (Wibowo, 2018).

According to (Bunea et al., 2019) analysis of financial ratios is an instrument used by managers or investors in making a decision related to corporate finance, investment management and commercial loans. This study focuses on the instruments in financial ratios in predicting stock prices, namely ROA, ROE, NPM, EPS, and PER in public food manufacturing companies in the 2018-2022 period.

The purpose of this study is to provide empirical evidence on the instruments in financial ratios which include ROA, ROE, NPM, EPS, and PER on stock price predictions in a public food manufacturing company in the 2018-2022 period. The selection of sampling objects for food manufacturing companies is based on the increase in food manufacturing production in line with population growth in Indonesia and the need for food consumption during the Covid-19 pandemic (Handyansyah, 2019). In addition to this, the selection of the period in 2018-2022 is to determine the effect of the significance level on ROA, ROE, NPM, EPS, and PER before and after the covid-19 pandemic at the price of a share in a food manufacturing company in Indonesia.

LITERATURE REVIEW

a. Return on Assets (ROA)

Return on Assets (ROA) is a financial ratio that refers to the use of a company's assets in generating profits, the higher the ROA in a company, the more efficient a company is in using its assets to generate profits (Schabek, 2020). This financial ratio on ROA can also indirectly affect the stock price of a company, so that the first hypothesis built in this study is as follows:

H1 : LONG effect on stock prices.

b. Return on Equity (ROE)

Return on Equity (ROE) is a financial ratio that measures net income for each capital invested by shareholders, the higher the level of RO, the more efficient the company is in generating a profit (Xu et al., 2022). This financial ratio on ROE can also indirectly affect the stock price of a company, so that the 2nd hypothesis built in this study is as follows:

H2: ROE has an effect on stock prices.

c. Net Profit Margin

Net Profit Margin refers to financial ratios to measure a company's efficiency in generating profits on the sale of goods and services (Chakri et al., 2023). Top financial ratios net profit margin This, indirectly can also affect the stock price of a company, so that the 3rd hypothesis built in this study is as follows:

H3: NPM effect on stock prices.

d. Earnings Per Share (EPS)

Earnings Per Share (EPS) is a financial ratio that serves to measure the level of success in achieving profits for shareholders (Fee et al., 2023).. This financial ratio for EPS can also indirectly affect the stock price of a company, so that the 3rd hypothesis built in this study is as follows:

H4 : EPS has an effect on stock prices.

e. Price Earnings Ratio

Price Earnings Ratio have a connection with Earning Per Share (EPS) Where Price Earnings Ratio is a financial ratio used to identify and evaluate the price of a stock (Triawan, 2017). Top financial ratios Price Earnings Ratio This, indirectly can also affect the stock price of a company, so that the 5th hypothesis built in this study is as follows:

H4: PER has an effect on stock prices.

f. Signal Theory (Signaling Theory)

In analyzing stock price predictions in food manufacturing companies in Indonesia, researchers look at how the parties involved, including investors, shareholders and company management, provide information related to instruments in financial ratios. This study uses signal theory, Signaling theory refers to how the company discloses information about the company's performance and financial condition to stakeholders (Wolks, 2001).. Broadly speaking, this signal theory focuses on how companies provide signals in influencing market perceptions to users of financial statements with the main objective of minimizing information asymmetry so as to increase transparency and accuracy between management and stakeholders that occur in a stock market (Wolks, 2001).

METHODS

The type of research used in research is a type of quantitative research. This type of quantitative research is a type of research that has a tendency to be analyzed using statistical techniques (Sugiyono, 2015). The research objects and samples in this study are public food manufacturing companies in Indonesia in 2018-2022. This study uses panel data with data cross section 45 companies and data time series from 2018 to 2022. The data is selected and has gone through a process cleaning data fortunately removed outlier. So that the total sample in this study was 201 samples. Data collection techniques through OSIRIS data where the search criteria are at public listed companies in Indonesia, manufacture of food products in 2018-2022.

This study has independent variables and dependent variables. Independent Variable (Independent Variable) refers to variables that affect other variables, this variable is often also called stimulus variable due to being a cause or arising variable bound. The independent variables in this study are ROA, ROE, EPS, NPM and PER While the dependent variable (Dependent Variable) namely the variable that is affected or which is the result because of the independent variable (Sugiyono, 2015). The dependent variable in this study is price market or stock price.

Data analysis techniques in this research use Panel Data Regression Model Selection, in election panel data regression model, according to (Gujarati, 2009) There are several stages of testing, namely:

a. Test Chow

This chow test aims to determine whether to use Pooled Least Square (PLS) or Fixed Effects. The hypothesis in Test Chow is H_0 : PLS model; H_1 : FEM models. Rule her refusal ie H_0 is rejected if the p-value $< \alpha$ or F-statistics $> F$ -table.

b. Hausman test

Hausman test was performed to choose between models Fixed Effects and models Random Effects. The hypothesis in the Hausman Test is H_0 : Model Random Effects (REM); H_1 : Model Fixed Effects (FEMS). The rejection rule is that H_0 is rejected if the p-value $< \alpha$.

c. Uji Lagrange Multiplier (LM)

The Lagrange Multiplier test aims to choose between models Common Effects and models Random Effects. Common Effects Model also called Pooled Least Square. The hypothesis in the Lagrange Multiplier Test is H_0 : Nonrandom effect (PLS models); H_1 : Yes random effect (REM models). The rejection rule is that H_0 is rejected if the p-value $< \alpha$.

1. Classic assumption test

a. Multicollinearity Test

This study used the VIF test (Variance Inflation Factor) to detect the presence or absence symptoms multicollinearity. A VIF value of more than 10 indicates a multicollinearity problem.

b. Heteroscedasticity Test

Breusch-Pagan/ Cook-Weisberg test needs to be done to detect whether there is a heteroscedasticity problem, so study it uses Breusch-Pagan/ Cook-Weisberg test in detecting whether there is a heteroscedasticity problem. The hypothesis in this test is H_0 : there is no heteroscedasticity in the data distribution; H_1 : there is heteroscedasticity in the data distribution. The rejection rule is that H_0 is rejected if $\text{Prob} > \chi^2$ less than α .

2. Parameter Significance Test

a. Simultaneous Test

The simultaneous test provides an overview of the overall linear relationship (together) with the parameters in the model. The hypothesis in this test is H_0 : $\beta_1 = \dots = \beta_n = 0$; H_1 : there is at least 1 influential variable. The rejection rule is that H_0 is rejected if the F statistic $> F$ table or $\text{Prob} > F$ is less than α .

b. Partial Test

Partial test was conducted to see whether variable X has an effect on variable Y. The hypothesis in the partial test is $H_0 = \beta_n = 0$ (variable X has no significant effect on variable Y); $H_1 = \beta_n \neq 0$ (variable X has a significant effect on variable Y). The rejection rule is that H_0 is rejected if the p-value $< \alpha$ or T-statistics $> T$ -table.

RESULTS

This study uses panel data with data cross section 45 companies and data time series from 2018 to 2022. The data is selected and has gone through a process cleaning data fortunately removed outlier. So that the total sample in this study was 201 samples.

a. Descriptive statistics

Statistical description in this research is as follows.

Table 1. Descriptive Statistical Test Results

Variable	Obs	Mean	Std.Dev	Min	Maks
MP	201	1075.04	1789.62	0	7925
ROA	201	4.87	9.85	-22.80	51.62
ROE	201	7.99	25.26	-100.70	123.35
EPS	201	20931.30	120803.80	-38912.14	1124653
PM	201	3.55	11.77	-49.82	35.15
PER	201	21.16	41.18	0	257.36

Source: STATA 14 Estimation Results, data processed (2023)

Based on Table 1. it can be seen that the highest average value is owned by EPS of 20931.30. While the lowest average value is owned by ROA. EPS has the largest standard deviation and max value with values of 120803.80 and 1124653 respectively. ROA has the smallest standard deviation value of 9.85.

b. Panel Data Regression Model Selection

a. Test Chow

The results of the chow test in this study are shown in the following table.

Table 2. Test ResultsChow

Results	
F (44, 151)	1.46
Prob > F	0.0497

Source: STATA 14 Estimation Results, data processed (2023)

Based on table 2. the test resultsChow it can be seen that the valueProb>F more than α ($0.0497 > 0.01$). Therefore H_0 is accepted. This means that in this test it concludes that the PLS model is appropriate.

b. Hausman test

The results of the Hausman test in this study are shown in the following table.

Table 3. Hausman Test Results

Results	
chi2(4)	6.84
Prob>chi2	0.1448

Source: STATA 14 Estimation Results, data processed (2023)

F test that all u_i=0: F(44, 151) = 1.46	Prob > F = 0.0497
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Based on table 3, the Hausman test was conducted to select the best model between the REM model and the FEM model. Based on these results, it can be seen that the valueProb>F more than α ($0.1448 > 0.01$). Therefore H_0 is accepted. So this test provides the conclusion that the REM model is selected.

c. Uji Lagrange Multiplier (LM)

The last test is the Lagrange Multiplier Test which aims to choose between the PLS model and the REM model. As for the results of the Lagrange Multiplier Test are as follows.

Table 4. Lagrange Multiplier (LM) Test Results

Results	Breusch and Pagan Lagrangian multiplier test for random effects
chibar2(01)	3.86
Prob > chibar2	0.0247

Source: STATA 14 Estimation Results, data processed (2023)

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chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
        = 6.84
Prob>chi2 = 0.1448
    
```

Based on table 4. these results, it can be seen that the value Prob>F more than α ($0.0247 > 0.01$). Therefore H0 is accepted. So this test gives the conclusion that the PLS model is selected.

Table 5. Conclusion of Model Selection Test

Uji	Hypothesis	Conclusion
Test Chow	H0: PLS Model	PLS Model
	H1: FEM Model	
Hausman test	H0: REM Model	REM Model
	H1: FEM Model	
Lagrange Multiplier Test (LM)	H0: PLS Model	PLS Model
	H1: REM Model	

Source: STATA 14 Estimation Results, data processed (2023)

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Test: Var(u) = 0
      chibar2(01) = 3.86
      Prob > chibar2 = 0.0247
    
```

Based on table 5. it is concluded that the PLS model is the best model in this study. The PLS model is a model based on the OLS model. Thus, a classical assumption test is needed to ensure that the results are BLUE.

c. Classic assumption test

a. Multicollinearity Test

The first classic assumption test is to detect whether there is a multicollinearity problem using the VIF test (Variance Inflation Factor). As for VIF test results are as follows:

Table 6. Multicollinearity Test

Variable	VIF	1/VIF
ROA	3.5	0.28575
ROE	2.48	0.40324
PM	1.86	0.53865
EPS	1.05	0.94789
PER	1.02	0.97581
Mean VIF	1.98	

Source: STATA 14 Estimation Results, data processed (2023)

```

. vif
-----+-----
Variable |      VIF      1/VIF
-----+-----
   roa   |    3.50    0.285747
   roe   |    2.48    0.403236
   pm    |    1.86    0.538646
   eps   |    1.05    0.947894
   per   |    1.02    0.975810
-----+-----
Mean VIF |    1.98
    
```

Based on table 6. it can be seen that the variables ROA, ROE, PM, EPS, and PER have a VIF value of less than 10 with an average VIF value of 1.98, meaning that the estimation is free from multicollinearity.

b. Heteroscedasticity Test

This research uses Breusch-Pagan/ Cook-Weisberg test to detect whether there is a heteroscedasticity problem. As for test results can be seen in the following table:

Table 7. Heteroscedasticity Test

Conclusion	Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
<i>chi2(1)</i>	20.80
<i>Prob > chi2</i>	0.0000

Source: STATA 14 Estimation Results, data processed (2023)

```

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of mp

chi2(1)      =    20.80
Prob > chi2   =    0.0000
    
```

Based on table 7. it can be seen that the value Prob > chi2 less than α ($0.0000 < 0.01$). So that H0 is rejected. This means that there is a problem of heteroscedasticity in the data distribution because there is still a problem of

heteroscedasticity, so it must be done robust to improve the estimation results. PLS model estimation results after robust can be seen in Table 8.

d. Parameter Significance Test

PLS Model Estimation Results after robust shown in Table 8. The next step is to conduct simultaneous and partial tests of the estimation results.

Table 8. After PLS Model Estimation Results Robust

Variable	Coefficient	Robust Std. Err.	t	p> t
Independent Variable				
Constant	1098.72	149.636	7.34	0.000*
ROA	-30.381	20.546	-1.48	0.141
ROE	15.9746	7.81651	2.04	0.042**
PM	25.5483	12.9035	1.98	0.049**
EPS	-0.0021	0.00054	-3.79	0.000*
PER	-2.3998	1.29945	-1.85	0.066***
Dependent Variable: MP				
F (5195)	4.57			
Prob > F	0.0006			
R-squared	0.0557			

*shows significant at 1% level, **shows significant at 5% level, ***shows significant at 10% level.

Source: STATA 14 Estimation Results, data processed (2023)

DISCUSSION

a. Simultaneous Test

In the simultaneous test of variables one can see the value of F or Prob > F. At the α level of 1%, the results show that the value of Prob > F is less than α ($0.0006 < 0.01$). So that H_0 is rejected. This means that in this study there is at least one variable that influences MP.

b. Partial Test

Partial test in this study using α 1%, 5%, and 10%. The results of the partial test of this study are as follows:

1. First Hypothesis = H_1

ROA p-value > α ($0.141 > 0.10$). So that H_0 is accepted. This means that ROA has no significant effect on stock prices, this is in line with research conducted by. which states that the ROA variable has no significant effect on stock prices.

2. Second Hypothesis = H_2

ROE p-value < α ($0.042 < 0.05$). So that H_0 is rejected. This means that ROE has a significant effect on stock prices. The ROE coefficient shows a value of 15.97, which means that when ROE rises 1 percent, it will increase the stock price by 15.97 rupiah assuming ceteris paribus. The results of this study are in line with research

conducted by, which mentions that ROE influential significant to the market price/stock price.

3. Third Hypothesis = H3

Net Profit Margin p -value $< \alpha$ ($0.049 < 0.05$). So that H_0 is rejected. This means that the net profit margin has a significant effect on stock prices. This study shows that the net profit margin has a significant effect on stock prices at a significance level of 5%. The net profit margin coefficient of 25.54 implies that when the net profit margin rises 1 percent, the stock price will increase by 25.54 rupiah assuming *ceteris paribus*. The results of this study are in line with research conducted by

4. Fourth Hypothesis = H4

EPS p -value $< \alpha$ ($0.000 < 0.01$). So that H_0 is rejected. This means that EPS (Earning Per Share) has a significant effect on stock prices. This study shows that EPS (Earning Per Share) is significant at the 1% level. The coefficient value of -0.0021 indicates that when EPS increases by 1 rupiah, the stock price will decrease by 0.0021 rupiah assuming *ceteris paribus*. The results of this study are in line with research conducted by

5. Fifth Hypothesis = H5

The p -value of PER $< \alpha$ ($0.066 < 0.10$). So that H_0 is rejected. This means that PER (Price Earnings Ratio) has a significant effect on stock prices. The R-Squared coefficient shows a value of 0.0557. This means that 5.57% of stock prices are influenced by ROA, ROE, Net Profit Margin, Earnings Per Share, Price Earnings Ratio, while 94.43% is influenced by other variables. This study shows that this variable is significant at the 10% level. The PER coefficient value is -2.3998, which means that when PER increases by 1 percent, MP will decrease by 2.3998 rupiah, assuming *ceteris paribus*

CONCLUSION

The capital market has an important role in economic growth in a country. Investing in the capital market through the purchase of shares is a mechanism for investing/funding carried out by investors with the aim of getting returns/profits, so an analysis is needed to predict the price of a stock. Analysis of financial ratios is an instrument used by managers or investors in making decisions related to corporate finance, investment management and commercial loans.

The results of this study indicate that H1 ROA has no significant effect on stock prices. H2 ROE has a significant effect on stock prices where the ROE coefficient shows a value of 15.97, which means that when ROE rises 1 percent, it will increase the stock price by 15.97 rupiah assuming *ceteris paribus*. H3 net profit margin has a significant effect on stock prices at a significance level of 5%. The net profit margin coefficient of 25.54 implies that when the net profit margin rises 1 percent, the stock price will increase by 25.54 rupiah assuming *ceteris paribus*. H4 EPS (Earning Per Share) has a significant effect on stock prices where EPS (Earning Per Share) is significant at the 1% level. The coefficient value of -0.0021 indicates that when EPS increases by 1 rupiah, the stock price will decrease by 0.0021 rupiah assuming *ceteris paribus*. Meanwhile, H5, namely PER (Price Earnings Ratio) has a significant effect on stock prices. The R-Squared coefficient shows a

value of 0.0557. This means that 5.57% of stock prices are influenced by ROA, ROE, Net Profit Margin, Earnings Per Share, Price Earnings Ratio, while 94.43% is influenced by other variables. This study shows that this variable is significant at the 10% level. The PER coefficient value is -2.3998, which means that when PER increases by 1 percent, MP will decrease by 2.3998 rupiah, assuming ceteris paribus.

The results of this study provide empirical evidence on instruments in financial ratios which include Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin, Earning Per Share (EPS) and Price Earnings Ratio on significance in predicting the stock price of a public food manufacturing company in the 2018-2022 period so as to minimize information asymmetry and accuracy, transparency of information between company management and stakeholders that occur in a stock market

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