

The Influence Of Profitability On Stock Return With Inflation As A Moderating Variable (Empirical Study On Automotive Companies And Components Listed In Indonesia Stock Exchange 2013 - 2017)

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Abstract—This study aims to analyze the effect of profitability on stock returns with inflation as a moderating variable. The variables tested in this research are profitability proxy for Return On Assets (ROA), Return On Equity (ROE) and Net Profit Margin (NPM), inflation and stock returns. The sample of this research uses 12 automotive companies and automotive components that consistently published financial statements in the Indonesia Stock Exchange period 2013-2017. Samples were taken by purposive sampling method which is a method of samples based on certain criteria. These variables analyzed using panel data regression. In this study, testing hypotheses used the t test, F test and regression used Moderated Regression Analysis (MRA). Panel data regression results showed Adjusted R-squared of 0.153836, which means that the magnitude of the influence of the independent variable moderated by inflation on the dependent variable that can be explained by this equation model is 15.38%. While the remaining 84.62% is influenced by other factors not taken into account in this regression model. The conclusions of this research show that ROA has a significant positive effect on stock returns, ROE has a negative effect on stock returns, NPM has no effect on stock returns, ROA moderated by inflation has a negative effect on stock returns, ROE moderated by inflation has a significant positive effect on stock returns, and NPM moderated by inflation does not affect stock returns.

Keywords—: Profitability, ROA, ROE, NPM, inflation and stock returns on economic.

Continuity of operations of a company as well as expanding the company's business must be available financial funds. Additional company financial funds can be obtained through various ways including: additional investment from company owners, funds from loans and funds from selling shares to the public (companies go public). [3] Fahmi (2013: 36) capital market is a market where capital funds, such as equity and debt are traded. The main objective of investors conducting stock investment activities in the capital market is to obtain profits from the shares they bought. These benefits include: investors get payment of profit sharing or dividends from the company and also gain a difference in the price of shares (capital gains), namely the selling price of shares reduced by the purchase price of shares.

Investors try to obtain maximum stock returns, then investors use various methods to analyze the behavior of stock trading and by analyzing other economic information related to expected profits. Investors in investing in stocks, choose companies with the ability to generate high profits or profits. Profitability is a financial ratio that can be used to measure the level of profit with assets, investments and sales. Companies that have a high level of profitability ratio are considered as companies that have good performance.

Stock return is influenced by several factors, one of the factors that influence it is the inflation factor. The amount of inflation has fluctuated every year, this can be caused by government policies such as an increase in fuel prices, electricity increases, changes in transportation rates and others. With the increase

INTRODUCTION

Background

in prices of goods, the company will experience an increase in operating costs so that the company's profits will fall. With a decrease in profits of a company, it means that profits distributed to investors (dividends) will also go down or small. Dividends obtained by small investors can be interpreted as stock returns to small investors.

The automotive industry is one of the mainstays of national industry policy, the automotive industry can provide great value in gross domestic product. The automotive industry is expected to not only prioritize their business, but must support the government's program to have a strong automotive production base. This is in line with the government's decision, namely the requirement of the Indonesian automotive industry to use a certain number of locally made components and local ingredients. Here is a table of stock returns of 5 automotive companies and components in development for 3 years:

Table 1.1.
Table Stock Returns

Code	Year	Profitability (%)			Inflation	Stock returns
		ROA	ROE	NPM		
ASII	2015	6.36	12.34	8.48	6.38	-16.81
	2016	6.99	13.08	10.11	3.53	40.72
	2017	7.82	14.77	11.22	3.81	2.54
AUTO	2015	2.25	3.18	2.75	6.38	-61.26
	2016	3.31	4.59	3.77	3.53	30.31
	2017	3.71	5.09	4.04	3.81	2.73
INDS	2015	0.08	0.10	0.12	6.38	-78.13
	2016	2.00	2.40	3.03	3.53	145.71
	2017	4.67	5.30	5.77	3.81	67.90
NIPS	2015	1.98	5.04	3.10	6.38	-12.73
	2016	3.69	7.80	6.32	3.53	-16.71
	2017	2.32	5.02	4.10	3.81	41.24
SMSM	2015	20.78	32.03	16.46	6.38	10.74
	2016	22.27	31.78	17.44	3.53	-9.24
	2017	22.73	30.38	16.63	3.81	33.37

Source: idx.or.id

LITERATURE REVIEW

Review Previous Research Results

[11] Heryanto (2018) used the variables Infesting Policy Ratio (IPR), Return On Assets (ROA) and stock return variables. The method used is the multiple linear regression analysis method. The results of the study concluded that the variable IPR and ROA had a significant effect on stock returns.

[12] Khan et al. (2017) used the variables ROA, Growth, Interest, Inflation and stock return. The method used is multiple linear regressions. And the results of the study that the variable ROA, Growth and Interest have a significant positive impact on stock returns while the Inflation variable has a significant negative impact.

Simanjuntak et al. (2019) used the variables capital structure, NPM, CR, PER and stock return variables. The method used is multiple linear regression method. The results of the conclusion that the variable capital structure, capital structure, NPM, CR, PER partially have no effect and are not significant on stock returns.

[1] Aryanti et al. (2016) used the variables ROA, ROE, NPM, CR and stock returns. The method used is multiple linear regression analysis method. The conclusions in his research are that ROE and CR partially have a significant negative effect on stock returns, while ROA has no significant positive effect on stock returns. And NPM has no significant effect on stock returns.

[14] Mulya & Turisna (2016) used the variables LTDR, ROE, EPS, PER, PBV and stock return variables. The method used is multiple linear regression analysis. The results of the conclusion in the study that the LTDR variable has a negative effect on stock returns, ROE variable shows the direction of a negative relationship to stock returns, varibale PER and PBV has no effect on stock returns, while the EPS variable has a positive effect on stock returns.

[18] Safitri & Julianto (2015) used the variables CR, DER, NPM, TATO and total stock return variables. The method used is multiple regression analysis. The results of the conclusions in the study are the CR and NPM variables do not affect the total stock return, while the DER and TATO variables affect the total stock return.

Adisetiawan (2015) used the variables IHSG, inflation, SBI, exchange rates and stock mutual fund returns. The method used is multiple linear regression analysis. The results of the conclusions in the study are the JCI variable, inflation, SBI and the exchange rate have a positive effect on stock mutual fund returns.

[7] Gumilang et al. (2016) used the variables inflation, interest rates, and currency exchange rates. ROE, CR and stock returns. The method used is the panel data linear regression method. The conclusion results are inflation, CR and currency exchange rates have no effect on stock returns, while interest rates have a significant effect on stock returns.

[10] Haryani & Priantinah (2018) used the variables inflation variables, the exchange rate of the rupiah per us dollar, BI interest rates, DER, ROA, CR, NPM and stock returns. The method used is multiple linear regression analysis method. The results of inflation research, the exchange rate of rupiah per US dollar and BI interest rates have a negative and significant effect on stock returns, DER has a positive and not significant effect on stock returns, ROA and NPM have a positive and significant effect on stock returns, CR has an influence negative and not significant to stock returns.

[15] Raningsih & Putra (2015) used the variables ROA, DER, CR, ITO, SIZE and stock returns. The method used in this research is multiple linear regression analysis method. The results of the study stated that the ROA and DER variables positively influence stock returns, CR variables negatively affect stock returns, and ITO and SIZE variables have no effect on stock returns.

Theoretical Basis

Signalling theory

[4] Godfrey et al. (2010: 375) states that accounting information is used to show how the company's value and claims against it will change. Accounting reports are used to monitor or confirm events and transactions that have occurred. In studies of capital markets managers are assumed to provide information for decision making by investors. This hypothesis regarding accounting information is closely related to signaling theory, where managers use accounts to signal their expectations and goals in the future.

Share Prices

[13] Kieso et al. (2011: 526) Public company shares are traded on organized exchanges, the interaction between buyers and sellers determines the price per share. [9] Hartono (2015: 179) some values related to shares are book value which is the value of shares according to the issuer's company books. While the market value is the value of shares in the stock market. And intrinsic value (intrinsic value) is the true value of shares or the true value of the company.

Profitability

[6] Gitman & Zutter (2012: 79) there are many measures of profitability. As a group, these steps allow the analyst to evaluate the company's profits with respect to increasing sales levels, certain asset levels, or owner investments. Without profit the company cannot attract outside capital. Owners, creditors, and management pay close attention to increasing profits because of the importance of market steps to income, so that investors get a good return. Profitability is a ratio that illustrates the ability of companies to get profits through all the capabilities and existing sources [8] (Harahap, 2013: 304).

Dividend Discount Model

[9] Hartono (2015: 190) dividend discount model is a model for calculating the intrinsic value of shares (the actual value of traded shares) by discounting future dividend flows to present values.

Return On Assets (ROA)

[16] Ross et al. (2010: 55) ROA is a measure of earnings per dollar of assets of a company and it can be defined in several ways but the most common is a company's net profit divided by total assets. According to [22] Sunyoto (2013: 116) the easiest form of profitability ratio analysis is to link net income or net income with total assets on the balance sheet. Meanwhile according to [8] Harahap (2013: 305) this ratio also shows asset turnover measured by sales volume. The greater this ratio the better because assets can spin faster and make profits.

Return On Equity (ROE)

[8] Harahap (2013: 305) ROE ratio is used to measure the return on investment of shareholders. This figure shows how well management utilizes the investment of shareholders. The ROE level has a positive relationship with stock returns, so the greater the ROE the greater the stock returns because the amount of ROE gives an indication that the returns to be received by investors will be high so investors will be interested in buying these shares.

Net Profit Margin (NPM)

[22] Sunyoto (2013: 114) NPM is a relationship between net income after tax and net sales shows the ability of management to drive the company quite successfully, not only to recover the cost of inventory or services, operating expenses including depreciation and loan interest costs, but also to leave certain margin as a reasonable compensation for owners who have provided their capital with a risk. Meanwhile, according to [8] Harahap (2013: 304) this ratio shows how much percentage of net income earned from each sale.

Inflation

Sukirno (2015: 14) inflation is as a process of rising prices that apply in an economy. According to [2] Bank Indonesia inflation is defined as an increase in prices in general and continuously within a certain period [2] (Bank Indonesia, 2019). An increase in the price of one or two items alone cannot be called inflation unless it increases and affects and results in an increase in the price of other goods. BPS states that inflation is an increase in the price of goods and services in general, which means that the goods and services are the people's basic needs or a decline in the selling power of a country's currency (Statistics Indonesia, 2019).

Stock Returns

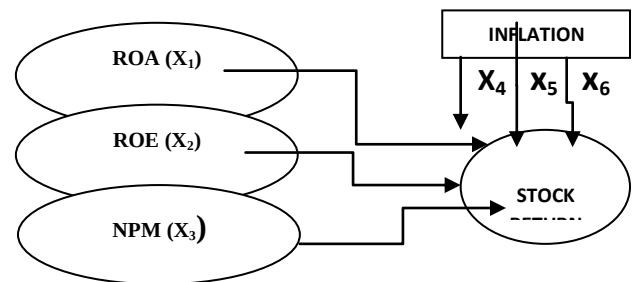
[9] Hartono (2015: 263-265) return is the result obtained by investors from investment funds. Returns can be either realized returns that have already occurred or expected expectations that have not yet occurred but which are expected to occur in the future. Realized returns are calculated using historical data. Total return is the return of the entire investment in a given period. Total return consists of capital gain (loss) and yield.

Relationships between Research Variables

The relationship between the variables of this study is a cause and effect relationship of the independent variable with the dependent variable. The basis of this research is to use financial statements from automotive and components companies, state inflation data and company stock returns. The data will be analyzed by variables of ROA, ROE, NPM, and the effect of inflation will be compared with the value of the company's stock returns.

Research Conceptual Framework

The conceptual framework in this research can be seen in the figure below:



H₉

Figure 2.1 Research Conceptual Framework

RESEARCH METHOD

Research Strategies

This research uses quantitative causality. [24] Walliman (2011: 10) causal statements explain what is sometimes called a cause and effect relationship. The cause is called the independent variable while the affected variable is called the dependent variable. Meanwhile, according to [19] Sanusi (2014: 14) kasuality is a research design that is prepared to be used to examine the possibility of a causal relationship between variables.

Population and Sample

Research population

[21] Sujarweni (2015: 15) states the population is a group of people or objects that have similarities in one or several things and forms the main problem in a particular research. The population in this study are automotive companies and components listed on the Indonesia Stock Exchange during 2013 to 2017 The population in this study is 13 companies.

Research sample

Sampling in this study using a purposive method. According to [23] Sugiyono (2010: 126) purposive sampling is a technique used to determine research samples with certain considerations with the aim that the data obtained will be more representative. The sample used in this study were 12 companies. One company with the BOLT code was not sampled because the company was listed on the IDX in 2015, so the company did not publish financial statements on the IDX in 2013 and 2014.

Data Analysis Method

The method used in collecting data in this study uses non-participant observation. While the data analysis method uses panel data regression data analysis techniques. To calculate the accuracy and reduce errors (human errors), researchers do not do the calculations manually, but the authors use a computer through the Eviews application program. Determination of the level of significance at the 95% confidence level or α 0.05. Eviews application program besides getting accurate, precise results and also data processing can be done quickly. Before testing panel data regression analysis, the data must pass some classic assumption tests

RESULTS AND DISCUSSION

Descriptive Statistics of Research Variables

Based on the results of the statistical description analysis, the following Table 4.1 shows the characteristics of the samples used in this study

Table 4.1
Descriptive Data Analysis Results

	ROA	ROE	NPM	INF	RETURN
Mean	0.049698	0.058213	0.032067	0.054215	0.094930
Median	0.023214	0.049644	0.030979	0.063825	0.002326
Maximum	0.716023	0.829414	0.174817	0.069658	1.853664
Minimum	-0.134015	-1.241156	-0.451773	0.035308	-0.781259
Std. Dev.	0.110585	0.221942	0.096097	0.014598	0.301169
Observations	60	60	60	60	60

Source: Secondary data processed

With the size of the deviation of data shows the high data fluctuations in variable ROA, ROE, NPM, inflation and stock returns during the observation period in the study.

Research Results

Classical Assumption Test

The classic assumption test is a test conducted to ensure that the research data does not experience interference so that the data is feasible to test the feasibility of a regression model used.

Multicollinearity Test

Multicollinearity test is used to test the regression model to find whether there are any similarities or strong correlations between independent variables. A regression model is declared free from multicollinearity if it has a VIF value produced between 1-10 and a tolerance value of more than 0.10 [21] (Sujarweni, 2015: 185).

Table 4.2

Variance Inflation Factors

Date: 07/18/19 Time: 17:53

Sample: 1 60

Included observations: 60

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.069136	16.96541	NA
ROA	0.915506	3.256442	2.701565
ROE	0.601144	7.645105	7.145205
NPM	2.145389	5.321946	4.780598
INF	20.75839	16.03985	1.067487

Source: Secondary data processed

Based on table 4.2 it is obtained that all independent variables have a VIF value below the number 10, so that the data in this model does not have multicollinearity.

Heterokedasticity Test

Heteroscedasticity test is used to test whether in the regression model there is an unequal variance from the residuals of one observation to another. If the variance from one observation residual to another observation is fixed, then it is called homoscedasticity and if it is different will be called heteroscedasticity.

Table 4.3

Heteroskedasticity Test: Breusch-Pagan-[4]

Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.245675	Prob. F(4,55)	0.9111
Obs*R-squared	1.053220	Prob. Chi-Square(4)	0.9016
Scaled explained SS	2.178148	Prob. Chi-Square(4)	0.7030

Source: Secondary data processed

From table 4.3 above the p value is shown by the Prob value. chi square (4) in Obs * R-Squared which

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is 0.9016. Because the p value is $0.9016 > 0.05$, H_0 is accepted, which means the regression model is homoscedasticity or in other words there are no symptoms of heteroscedasticity. [26] Winarno (2015: 5.12-5.18) If the value of p value is indicated by the value of Prob. chi square on Obs * R-Squared is greater than 0.05, the regression does not occur heteroscedasticity.

Autocorrelation Test

Autocorrelation test to determine whether there is a correlation between the confounding variable at a certain period with the previous variable.

Table 4.4
Uji Durbin-Watson

R-squared	0.047489	Mean dependent var	0.094930
Adjusted R-squared	-0.021785	S.D. dependent var	0.489178
S.E. of regression	0.494478	Akaike info criterion	1.509026
Sum squared resid	13.44795	Schwarz criterion	1.683554
Log likelihood	-40.27077	Hannan-Quinn criter.	1.577293
F-statistic	0.685527	Durbin-Watson stat	2.104769
Prob(F-statistic)	0.605028		

Source: Secondary data processed

Based on table 4.4 above the durbin-watson test value = 2.104769, the value is then compared with the durbin-watson table. In the regression model it is known that the number of observations ($N = 60$) and the number of independent variables ($K = 4$) are obtained in the Durbin-Watson table the value of $dL = 1.443$ and the value of $dU = 1.7274$. Then the value of the Durbin-Watson test can be calculated as follows:

$$\begin{aligned} dU &< d < 4-dU \\ 1.7274 &< \mathbf{2.104769} < 4-1.7274 \\ 1.7274 &< \mathbf{2.104769} < 2.2726 \end{aligned}$$

The calculation results above, the Durbin-Watson value is not rejected, which means there is no positive or negative autocorrelation.

Panel Data Regression Analysis

The analysis of this study was conducted using panel data regression analysis. Panel data regression is a combination of cross section data and time series data. This analysis is used to determine the magnitude of the influence of the independent variable namely profitability which is proxied by ROA, ROE, NPM and inflation as moderating the dependent variable, namely stock returns. This study uses moderated regression analysis (MRA) which in calculating the equation contains elements of interaction or multiplication.

Common Effect Model

[25] Widarjono (2013: 355) common effect model is a model that can produce the same intercept and slope for each individual. So this model assumes that there are no differences in characteristics between individuals.

Table 4.5
Panel Data Regression Results Using the Common Effect Model

Dependent Variable: RETURN

Method: Panel Least Squares

Sample: 2013 2017

Periods included: 5

Cross-sections included: 12

Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.348710	0.297187	1.173367	0.2460
ROA	14.09150	6.734015	2.092585	0.0413
ROE	-13.89602	4.376476	-3.175162	0.0025
NPM	9.763212	6.735065	1.449609	0.1532
INF	-6.661109	5.240495	-1.271084	0.2094
ROA_INF	-385.5264	178.8901	-2.155102	0.0358
ROE_INF	366.8158	109.0058	3.365104	0.0014
NPM_INF	-198.8080	117.8181	-1.687415	0.0975

R-squared	0.254229	Mean dependent var	0.094930
Adjusted R-squared	0.153836	S.D. dependent var	0.489178
S.E. of regression	0.449981	Akaike info criterion	1.364343
Sum squared resid	10.52911	Schwarz criterion	1.643589
Log likelihood	-32.93029	Hannan-Quinn criter.	1.473571
F-statistic	2.532352	Durbin-Watson stat	2.201102
Prob(F-statistic)	0.025495		

Source: Secondary data processed

Based on table 4.5 can be seen the value of adjusted R-squared common effect model = 0.254229. So that the ROA and ROE variables significantly influence stock returns with inflation variables that moderate both ROA and ROE. This can be seen from the probability value of ROA of 0.0413 and ROE of 0.0025 whose value is smaller 0.05

Fixed Effect Model

Fixed effect model is a model that pays attention to individual heterogeneity using the help of dummy variables. Fixed effect is based on differences in intercepts between companies but the intercepts are the same over time [25] (Widarjono, 2013: 356).

Table 4.6
Panel Data Regression Results Using the Fixed Effect Model

Dependent Variable: RETURN

Method: Panel Least Squares

Sample: 2013 2017

Periods included: 5

Cross-sections included: 12

Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.319964	0.322384	0.992491	0.3268
ROA	14.21331	7.829480	1.815358	0.0768
ROE	-20.65754	5.918402	-3.490391	0.0012
NPM	22.48872	12.14483	1.851712	0.0713
INF	-8.508968	5.329483	-1.596584	0.1180
ROA_INF	-382.0158	220.1983	-1.734872	0.0903
ROE_INF	510.4646	135.0647	3.779409	0.0005
NPM_INF	-414.2071	202.0661	-2.049859	0.0468

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.443292	Mean dependent var	0.094930
Adjusted R-squared	0.198884	S.D. dependent var	0.489178
S.E. of regression	0.437839	Akaike info criterion	1.438631
Sum squared resid	7.859833	Schwarz criterion	2.101840
Log likelihood	-24.15894	Hannan-Quinn criter.	1.698049
F-statistic	1.813736	Durbin-Watson stat	2.690699
Prob(F-statistic)	0.057468		

Source: Secondary data processed

Based on Table 4.6 the value of adjusted R-squared fixed effect regression model is 0.443292, meaning the value of R-squared is higher than the value of the common effect model. ROE variable has a significant effect on stock returns with inflation variable moderating ROE because the probability value of ROE is 0.0012 whose value is smaller than the level of significance (= 0.05).

Random Effect Model

Random effect model is a model by considering random conditions between averages and individual characteristics that are random [25] (Widarjono, 2013: 356). The random effect model aims to overcome the weaknesses of fixed effects which include dummy variables in the fixed effect model.

Table 4.7

Panel Data Regression Results Using the Random Effect Model

Dependent Variable: RETURN

Method: Panel EGLS (Cross-section random effects)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.371194	0.296058	1.253786	0.2155
ROA	14.57727	6.817213	2.138304	0.0372
ROE	-14.58426	4.478853	-3.256248	0.0020
NPM	10.13189	7.033787	1.440460	0.1557
INF	-7.218603	5.149267	-1.401870	0.1669
ROA_INF	-401.1509	182.6724	-2.196013	0.0326
ROE_INF	386.9953	111.3782	3.474605	0.0010

NPM_INF -208.1713 122.2407 -1.702962 0.0945

Effects Specification

Cross-section random	0.133486	0.0850
Idiosyncratic random	0.437839	0.9150

Weighted Statistics

R-squared	0.262480	Mean dependent var	0.078438
Adjusted R-squared	0.163198	S.D. dependent var	0.474989
S.E. of regression	0.434505	Sum squared resid	9.817309
F-statistic	2.643790	Durbin-Watson stat	2.336701
Prob(F-statistic)	0.020439		

Unweighted Statistics

R-squared	0.252721	Mean dependent var	0.094930
Sum squared resid	10.55040	Durbin-Watson stat	2.174336

Source: Secondary data processed

Based on Table 4.7 the value of the adjusted R-squared random effect model is 0.262480, meaning that the value is lower than the fixed effect model. ROA and ROE variables significantly influence stock returns with inflation variables that moderate ROA and ROE, because the probability value of ROA is 0.0372 and ROE of 0.0020 whose value is smaller than the level of significance (= 0.05)

Test Chow

[25] Widarjono (2013: 362) Chow test is used to determine whether panel data regression techniques with fixed effects are better than common effects. Hypothesis criteria to determine the assessment of the chow test are the results that show if both Ftest and Chi-square with p-value > 0.05 then H0 is accepted and if p-value < 0.05 then H0 is rejected.

Table 4.8
Chow Test Results

Redundant Fixed Effects Tests

Equation: UJI_FIXED

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.265818	(11,41)	0.2779
Cross-section Chi-square	17.542703	11	0.0928

Source: Secondary data processed

Based on Table 4.8 shows that the Chi-square Cross-section probability value is 0.0928 > 0.05. This means that H0 is accepted and H1 is rejected, so the estimation of the regression model uses the common effect model.

Lagrange Multiplier Test

Lagrange multiplier test or commonly referred to as lagrangian multiplier test is an analysis conducted with the aim of determining the best method for panel data regression, whether to use common effects or random effects.

Table 4.9
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	0.011107 (0.9161)	0.176110 (0.6747)	0.187217 (0.6652)

Source: Secondary data processed

The p-value is indicated by a figure of 0.9161 where the value is above 0.05. So lagrange multiplier test shows that accepting H0, which means the best estimation method is to use the common effect.

Hypothesis Test

A research needs to be done to test the hypothesis whether there is an influence or not simultaneously or partially between the independent and dependent variables. In this study to test the hypothesis using the simultaneous significance test (F test) / model test and the significance of individual parameters (partial t test)

Simultaneous Test (F test) / Model Test

The results of the F statistical test are used to see the effect simultaneously or together between independent variables on the dependent variable.

Table 4.10
Simultaneous Significance Test (Test F)

Dependent Variable: RETURN

R-squared	0.254229	Mean dependent var	0.094930
Adjusted R-squared	0.153836	S.D. dependent var	0.489178
S.E. of regression	0.449981	Akaike info criterion	1.364343
Sum squared resid	10.52911	Schwarz criterion	1.643589
Log likelihood	-32.93029	Hannan-Quinn criter.	1.473571
F-statistic	2.532352	Durbin-Watson stat	2.201102
Prob(F-statistic)	0.025495		

Source: Secondary data processed

Based on table 4.10, the F probability value is 0.025495. Because the probability value F is smaller than 0.05, the regression model is feasible to use for estimation. [21] Sujarweni (2015: 154) states that if

the significance probability value < 0.05 then H0 is rejected and H1 is accepted, which means that the independent variable simultaneously influences the dependent variable. The results of table 4.13 which is the result of the F test with a probability value of F of $0.025495 < 0.05$, then simultaneously that ROA, ROE and NPM moderated by inflation have a significant effect on stock returns.

Coefficient of Determination (R2)

Coefficient of determination (R2) which means to measure how far the model's ability to explain the variation of the dependent variable. [17] Rusli (2014: 65-66) states that R square is a comparison between the variations of Y explained by X1 and X2 together compared to the total variation of Y. Based on table 4.10 that the calculation results obtained an Adjusted R-squared value of 0.153836 which means that the magnitude of the effect of the independent variable moderated by inflation on the dependent variable that can be explained by this equation model is 15.38%. This shows that the influence of the variable ROA, ROE and NPM which is moderated by inflation on stock returns that can be explained by this equation model is 15.38%. While the remaining 84.62% is influenced by other factors not taken into account in this regression model, such as political factors, changes in currency rates, macroeconomic factors of the country and so forth.

Partial Test (t Test)

Partial Test (t test) is used to determine the effect of each independent variable on the dependent variable, namely profitability moderated by inflation on stock returns. The results of the partial significance test (t test) can be seen in table 4.11

Tabel 4.11

Nilai ttabel pada Taraf Signifikansi 0,05

Dependent Variable: RETURN

Variable	t-Statistic	Prob.
C	1.173367	0.2460
<u>ROA</u>	2.092585	0.0413
ROE	-3.175162	0.0025
NPM	1.449609	0.1532
INF	-1.271084	0.2094
ROA_INF	-2.155102	0.0358
ROE_INF	3.365104	0.0014
NPM_INF	-1.687415	0.0975

Source: Secondary data processed

Hypothesis 1: Effect of ROA on Stock Returns

The first hypothesis proposed states that ROA has a positive effect on stock returns. Based on table 4.11 above, obtained a tcount of 2.092585 with a probability value of 0.0413. While the value of ttable

obtained 2.005 with $df = nk-1 = 60-5-1 = 54$. The value of t is greater than the table that is 2.092585 > 2.005 and the probability value is smaller than α that is 0.0413 < 0.05 then H1 received ROA has a positive and significant effect on stock returns .

Hypothesis 2: Effect of ROE on Stock Returns

The second hypothesis proposed states that ROE has a positive effect on stock returns. Based on table 4.11 above, we obtained a $tcount$ of -3.175162 with a probability value of 0.0025. While the value of $ttable$ obtained 2.005 with $df = nk-1 = 60-5-1 = 54$. T value is smaller than t table that is -4.692248 < 2.005 and probability value is smaller than α that is 0.0025 < 0.05 then H2 is rejected, ROE has a negative effect on stock returns.

Hypothesis 3: Effect of NPM on Stock Returns

The third hypothesis proposed states that NPM has a positive effect on stock returns. Based on table 4.11 above, obtained a $tcount$ of 1.449609 with a probability value of 0.1532. While the value of $ttable$ obtained 2.005 with $df = nk-1 = 60-5-1 = 54$. The value of t is smaller than $ttable$ is 1.449609 < 2.005 and the probability value is greater than α that is 0.1532 < 0.05 then H3 is rejected, NPM has no significant effect on stock returns.

Hypothesis Test 4: Inflation moderates ROA on Stock Returns

The fourth hypothesis proposed states that inflation moderates ROA on stock returns. Based on table 4.11 above, obtained $tcount$ ROA_INF (b3) of -2.155102 with a probability value of 0.0358. The value of $ttable$ is obtained 2.005 with $df = n-k-1 = 60-5-1 = 54$. The value of $tcount$ is smaller than $ttable$ that is -2.155102 < 2.005 and the probability value is smaller than α that is 0.0358 < 0.05. ROA value (b1) is smaller than α that is 0.0413 < 0.05 means ROA (b1) is significant, and INF value (b2) is greater than α that is 0.2094 > 0.05 which means that INF is not significant while ROA_INF (b3) is significant, so the moderation type the ROA is pure moderation. [20] Solimun et al. (2017: 83) states that the existence of a pure moderation variable is only a moderating variable and does not act as an explanatory / predictor variable. H4 is accepted, inflation negatively moderates ROA on stock returns.

Hypothesis 5: Inflation moderates ROE on Stock Returns

The fifth hypothesis proposed states that inflation moderates ROE on stock returns. Based on table 4.11 above, obtained $tcount$ ROE_INF (b3) of 3.365104 with a probability value of 0.0014. The value of $ttable$ was obtained 2.005 with $df = n-k-1 = 60-5-1 = 54$. The value of $tcount$ was greater than $ttable$ of 3.365104 > 2.005 and the probability value was

smaller than α of 0.0014 < 0.05. ROE value (b1) is smaller than α that is 0.0025 < 0.05 means ROE (b1) is significant, INF value is greater than α that is 0.2094 > 0.05 which means that INF (b2) is not significant while ROE_INF (b3) is significant, so the moderation type is pure moderation (pure moderation). H5 is accepted, inflation moderates ROE positively to stock returns.

Test Hypothesis 6: Inflation moderates NPM on Stock Returns

The sixth hypothesis proposed states that inflation moderates the NPM on stock returns. Based on table 4.11 above, obtained $tcount$ NPM_INF (b3) of -1.687415 with a probability value of 0.0975. The value of $ttable$ is obtained 2.005 with $df = n-k-1 = 60-5-1 = 54$. The value of $tcount$ is greater than $ttable$ of -1.687415 < 2.005 and the probability value is greater than α of 0.0975 > 0.05. NPM value (b1) is greater than α that is 0.1532 > 0.05 means that NPM (b1) is not significant, INF value (b2) is greater than α that is 0.2094 > 0.05 which means that INF (b2) is not significant while NPM_INF (b3) is not significant , then this type of moderation is a potential moderation (homologiser moderation), does not function as a moderating variable and also does not act as an explanatory variable. H6 is rejected, inflation does not moderate NPM on stock returns.

Moderated Regression Analysis (MRA)

Moderate regression analysis (MRA) is used to test moderating variables using the interaction test. [5] Ghazali (2013: 213) moderation variable is an independent variable that will strengthen or weaken the relationship of the independent variable to the dependent variable

Table 4.12
Moderate Regression Analysis

Dependent Variable: RETURN

Variable	Coefficient	Std. Error
C	0.348710	0.297187
ROA	14.09150	6.734015
ROE	-13.89602	4.376476
NPM	9.763212	6.735065
INF	-6.661109	5.240495
ROA_INF	-385.5264	178.8901
ROE_INF	366.8158	109.0058
NPM_INF	-198.8080	117.8181

Based on panel data regression testing in table 4.12 obtained values at the output after inputting into the panel data regression equation are as follows:

$$\text{Stock returns} = 0.348710 + 14.09150\text{ROA} - 13.89602\text{ROE} + 9.763212\text{NPM}$$

$$-6.661109\text{INF}-385.5264\text{ROA_INF}+366.8158\text{ROE_INF}-198.8080\text{NPM_INF}+0.297187\text{eit}$$

Discussion

Effect of ROA on stock returns

Based on the results of panel data regression testing shows the first hypothesis is accepted that the ROA variable has a significant effect on stock returns in a positive direction. The results of this study indicate that the signaling theory has been used by investors in investing shares in companies. This is evident that the calculation of ROA is used by investors to measure the ability of corporate assets in generating future profits. The results of this test support the results of previous studies conducted by [15] Raningsih & Putra (2015), research by [12] Khan et al. (2017) and [11] Heryanto's research (2018) which states that the ROA variable positively influences stock returns.

Effect of ROE on stock returns

Based on the results of panel data regression testing shows the second hypothesis is rejected, namely ROE variables significantly influence stock returns in a negative direction. Companies that increase their capital by reserving corporate profits rather than dividing profits into shareholders, investors respond negatively to the additional capital from the profit reserves. The results of this test support the results of [14] Mulya & Turisna (2016) and [1] Aryanti et al. (2016) which states that ROE has a negative and significant effect on stock returns.

Effect of NPM on stock returns

Based on the panel data regression test results, the third hypothesis is rejected, namely the NPM variable has no significant effect on stock returns in a positive direction. The company increases sales with high sales promos at the end of the year, the profit of the year rises, but the costs incurred for the promo are charged the following year, so that investors are not affected by the large sales results, because profits fall next year. The results of this test support the research of [18] Safitri & Julianto (2015) and the study of Simanjuntak et al. (2019) which states that NPM has no effect and is not significant on stock returns.

Inflation moderates ROA on Stock Returns

Based on the panel data regression test results, the fourth hypothesis is accepted, namely the ROA variable moderated by inflation has a significant effect on stock returns in a negative direction. The results of this test mean that ROA moderated by inflation has a significant negative effect on stock returns. The results of this test support the research results of [12] Khan et al. (2017) and [10] Haryani & Priantinah (2018) research which states that the inflation variable has a significant negative impact.

Inflation moderates ROE on Stock Returns

Based on the panel data regression test results, the fifth hypothesis is accepted, namely the ROE variable moderated by inflation has a significant effect on stock returns in a positive direction. The results of this test indicate that ROE moderated by inflation has a significant positive effect on stock returns. Inflation rises, the company tries to be as efficient as possible to manage its own capital in increasing company profits so that ROE goes up. An increase in inflation will strengthen ROE on stock returns. The results of this test support the results of research conducted by Adisetiawan (2015) which states that inflation has a positive effect on stock mutual fund returns.

Inflation moderates NPM on Stock Returns

Based on the panel data regression test results, the sixth hypothesis was rejected, namely the NPM variable moderated by inflation had no significant effect on stock returns in a negative direction. The company makes a profit from the sale is not affected by rising inflation or decreasing inflation, so that stock returns owned by investors are not affected by inflation. The results of this study indicate that if inflation rises will not strengthen NPM on stock returns, and the value of inflation will not weaken NPM on stock returns. The results of this test support the research results of [7] Gumilang et al. (2016) which states that partially, inflation does not have a significant effect on stock returns.

CONCLUSIONS AND SUGGESTIONS

Conclusions

The results of hypothesis testing using panel data regression analysis with profitability independent variables (proxy by ROA, ROE, and NPM), moderating variables for inflation and the dependent variable stock returns can be concluded that:

1. ROA has a significant positive effect on stock returns. The increase in ROA shows the company's performance is getting better, so investors are interested in owning the company's shares. Investors assume that high ROA will increase the level of return that can be obtained by investors.
2. ROE has a negative effect on stock returns. Investors assume that if a company raises ROE, investors assume negatively that is that the company distributes dividends to be reduced or small, because the profits will be reserved to increase company capital, so the rate of return decreases.
3. NPM has no effect on stock returns. Investors assume that if a company raises

NPM with a large promo at the end of the year it will affect large expenses in the future so that an increase in NPM cannot increase the level of return it gets.

4. ROA moderated by inflation has a negative effect on stock returns. Rising inflation will weaken the ability of company assets to increase profits because the costs incurred become large so that profits fall which will result in stock returns obtained by investors to fall.
5. ROE moderated by inflation has a significant positive effect on stock returns. Rising inflation spurs companies to manage their own capital to increase profits, companies are more efficient by reducing capital loans from outside parties. So that rising inflation will strengthen ROE. With the increase in ROE profits rise and stock returns obtained by investors rise.
6. NPM which is moderated by inflation does not affect stock returns. Inflation rises or falls does not affect the level of profit on sales. The company always maintains the quality of goods to be of good quality, so with the price of goods rising due to rising costs, these goods will remain in demand by consumers, so that profits on sales are not affected by fluctuations in inflation. Means there is no increase or decrease in NPM, then stock returns are not affected.

Suggestions

Suggestions that the author can give in connection with the results of research that has been done are as follows:

1. As a material for consideration in making future policies aimed at providing relevant information to stakeholders and potential investors.
2. Investors should make a decision not only to rely on internal financial data of the company such as profitability (ROA, ROE and NPM), but also need to pay attention to external factors such as (inflation, political conditions, changes in currency rates, economic policies and others) that can affect stock returns.

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