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THE EFFECT OF DIVIDEND POLICY AND MACROECONOMICS ON STOCK PRICES
(Empirical Study on Basic and Chemical Industry Sector Companies Listed on the Indonesia Stock Exchange 2016-2020 Period)

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Abstract

This study analyzes the Effect of Dividend Policy and Macroeconomics on Stock Prices. Dividend Policy is calculated using the Dividend Payout Ratio (DPR), while Macroeconomics is proxied by inflation, interest rates, and exchange rates, and the Stock Price is measured by the closing price. The population in this study is all manufacturing companies in the basic and chemical industrial sectors listed on the Indonesia Stock Exchange in 2016-2020. The technique used in this study was purposive sampling with five criteria as consideration and 11 company samples with a five-year period were obtained, so that 55 observational data were obtained. Data analysis in this study used panel data regression with the help of windows Eviews-9. The results of this study can be seen simultaneously that the variables of DPR, inflation, interest rates, and exchange rates have a significant influence on stock prices. However, partially only the exchange rate variable has a significant influence on the stock price, while the DPR variable, inflation, and interest rate do not affect the stock price.

Keywords: *Dividend Policy, Exchange Rates, Inflation, Interest Rates, Stock Price*

1. INTRODUCTION

When investors want to make an investment, they will naturally pay close attention and carefully consider everything in order to minimize risk, especially losses for which opportunities are likely. Prior to deciding whether to buy, hold, or sell shares in the capital market, the stock price is the most important factor for investors to consider. The stock price is the price formed in the stock trading market as a result of simultaneous demand and supply and is typically a closing price. The Indonesian capital market faces many challenges, both domestically and internationally. Each year, the price per share of each company's stock fluctuates. By analyzing the stock price, it is necessary to conduct additional research to determine the causes of price fluctuations. Investing entails delaying current consumption for a period of time so that the funds can be used for more efficient production. When investing in stocks, there will always be a large number of investors who expect the same and substantial returns, despite the fact that not every investment will be profitable. It is not uncommon for individuals to engage in manipulative practices, such as stock manipulation, insider trading, etc., in order to generate a profit.

When PT Semen Baruraja Tbk's share price is compared to the share prices of all other companies in the basic and chemical industries that are listed on the IDX, it has decreased quite dramatically over the past two years, despite the fact that SMBR shares had previously

experienced a quite fantastic increase in 2018 up until the closing price reached 1.750. This was due to SMBR's stock experiencing an oversupply as a result of a large number of foreign players entering the Indonesian market, as well as the stagnant demand and growth in cement consumption in 2019 (CNBC Indonesia, 2018).

The macroeconomic environment is one of the factors that impact the company's daily operations (Camara, 2012; Erel et al., 2012). By predicting the future state of the macroeconomic environment, it is quite useful for companies and investors to make decisions before investing in the capital market (Hu et al., 2013). Investors typically evaluate macroeconomic factors first because macroeconomic conditions can influence the capital market's direction and condition. Before making an investment, these indicators that affect the macroeconomic environment may cause investors to exercise greater caution (Aminah, 2021). This study refers to inflation, the rupiah exchange rate or exchange rate, and interest rates as macroeconomic indicators.

Shares are securities or evidence of a person's or shareholder's ownership of a company's paid-up capital. This stock price movement is influenced by a number of factors, one of which is dividend policy information. A dividend policy is a determination of the amount of a company's profits or income that will be distributed or paid to shareholders, as determined and agreed upon by the shareholders' meeting. Profitability, liquidity, company growth rate, and company size are factors that can influence dividend policy.

Based on the preceding discussion, this study aims to obtain empirical evidence of the effect of dividend policy, inflation, interest rates, and exchange rates on the stock prices of Basic and Chemical Industry Sector Companies listed on the Indonesia Stock Exchange in order to expand information or knowledge sources and scientific contributions. Likewise, in order to make a wise investing decision, consider how the company's stock price is impacted by its dividend policy and the macroeconomic environment.

2. LITERATURE REVIEW

The signal theory utilized in this study explains that good financial statements are a signal or sign to external parties, particularly users of financial statements, that the company has also been operating effectively. This signal theory discusses the fluctuations of market prices, such as stock and bond prices, which influence the decisions of investors. The other party will respond well to a strong signal. If the company provides good information to external parties, it can be considered a positive signal, and if it does not have good information on its financial performance, it can be considered a negative signal. The signal is also an action taken by the company to provide investors with information about the company's future prospects. Information Asymmetry appears and is discussed most frequently in signal theory. Information asymmetry refers to information that differs from the information disclosed by company managers about the company's condition. Generally, managers wish to convey accurate information about their company to external parties as quickly as possible, but external parties are unaware of the veracity of the information submitted by the manager.

According to Musdalifah Azis et al. (2015), the stock price is the price in the actual market. It is the easiest price to determine, as it is the price of a stock in the active market, or if the market is closed, the closing price. In addition, stock prices can reveal a company's

level of development and advancement, as well as its wealth. The share price can also indicate how effectively management fulfills its responsibilities on behalf of shareholders. According to Nugrahani & Ruhiyat (2018), the unit of measurement for the stock price in this study will be the rupiah, which will be valued based on the stock's closing price.

The dividend policy determines whether the company's annual profit will be distributed to shareholders in the form of dividends or retained to increase capital for future investment financing. The higher dividends distributed to shareholders will reduce the company's ability to obtain internal sources of funds for reinvestment, thereby decreasing the company's value over the long term (Fenandar & Raharja, 2012). Investors favor companies that can consistently distribute dividends, as dividend stability increases investor confidence in capital investments (Erri & Dwi, 2018).

Inflation can be defined as the persistent rise in general prices in an economy. Inflation can be considered a monetary phenomenon due to the depreciation of a commodity's monetary unit of measure. If the price of only one or two goods increases, it cannot be considered inflation unless the price rises for other goods as well. This type of price increase is not regarded as an economic problem or disease and does not necessitate the implementation of special policies. Deflation is the antithesis of inflation.

The interest rate is the interest expressed as a percentage of the capital. There is a strong correlation between interest rates and investment, with higher interest rates resulting in less investment. While the exchange rate is the stated value or price of a country's currency that can be exchanged for the currency of another country, the value of a currency is its purchasing power. The Bank Indonesia rate (standard rate=tax rate) is based on the exchange rate in Jakarta and is determined by Bank Indonesia. The exchange rate itself also plays a significant role in international trade, as it is used to compare the prices of goods and services produced or produced in different countries. The national trade balance is an important factor that affects foreign exchange rates.

The hypotheses in this study are:

H1: Dividend Policy Affects Stock Prices

H2: Inflation affects stock prices

H3: Interest Rates Affect Stock Prices

H4: Exchange rate affects stock prices

3. RESEARCH METHOD

This type of research uses a quantitative approach, namely research on problems in the form of current facts from a population, using descriptive methods. The data used in this study is secondary data because it uses data on the financial statements of companies in the basic and chemical industry sectors listed on the Indonesia Stock Exchange (IDX) which can be accessed through the website (www.idx.co.id) for 2016-2020.

3.1. Data Collecting Technique

This study collects data from the 2016-2020 financial statements of companies listed on the Indonesia Stock Exchange in the basic and chemical industries. In addition, a literature review of several books, previous research, and other sources pertinent to the problem and research objectives is included.

3.2. Operational Research Variables

The dependent variable is a variable whose value is affected or determined by the independent variable. This study's dependent variable is the Indonesia Stock Exchange-listed stock prices of companies in the basic and chemical industries. While the independent variable, or independent variable, is commonly referred to as such. In this investigation, the independent variables are dividend policy, inflation, interest rates, and exchange rates.

The share price is calculated using *Closing Price*. Meanwhile, Dividend policy is measured using the ratio:

$$DPR = \frac{Total\ Dividen}{Net\ Income} x100\%$$

Furthermore, Inflation is measured using *Annual inflation announced by Bank Indonesia in December during the 2016-2020 period*. Meanwhile, Interest rates are measured using: *BI Rate announced by Bank Indonesia in December during the 2016-2020 period*. The exchange rate is measured using *JISDOR Rate (Jakarta Interbank Spot Dollar Rate) at the end of the year for the period 2016-2020.*

3.3. Sampling Technique

The population in this study are all manufacturing companies in the basic and chemical industrial sectors listed on the Indonesia Stock Exchange from 2016 to 2020. The sampling technique in this study uses a purposive sampling technique, which is a sampling technique with certain considerations and criteria as follows:

1) Manufacturing companies in the basic and chemical industry sectors listed on the Indonesia Stock Exchange from 2016 to 2020.
2) Complete financial report data is available during the research period.
3) The company did not experience sector changes during the period 2016 to 2020.
4) The company did not experience any losses during the period studied.
5) The company distributes dividends during the period under study.

3.4. Data analysis technique

This study uses quantitative analysis techniques and calculations using descriptive methods assisted by windows Eviews-9. There are several stages in the testing, namely:

1) Descriptive Statistical Analysis
   This descriptive statistical analysis provides an overview or description of a data that can be measured by the average (mean), minimum, maximum and standard deviation values contained in the study.
2) Estimation of Panel Data Regression Model
   This panel data regression model is carried out to predict how far the value of the dependent variable changes, when the value of the independent variable increases and decreases its value. There are three models that must be carried out in this test, including; Common Effects, Fixed Effects, Random Effects.
3) Panel Data Regression Selection

This panel data regression test is to select approximately which model is the best among the three estimates of the panel data regression model. The tests that must be carried out are: Chow test, Hausman test, and Lagrange Multiplier test.

4) Classical Assumption Test
Classical assumption test aims to test whether the regression model can be used or not. This classical assumption test consists of; Normality Test, Non-Multicollinearity Test, Non-Heteroscedasticity Test and Non-Autocorrelation Test.

4. RESULT AND DISCUSSION

4.1. Panel Data Regression Model Selection

4.1.1. Chow Test

Table 1 Chow test

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

Effects Test	Statistic	d.f.	Prob.
Cross-section F	42.540609	(10,40)	0.0000
Cross-section Chi-square	134.971699	10	0.0000

The results of the Chow test show the probability value of the cross-section F of 0,0000 <0,05, which means that the appropriate model is fixed effects.

4.1.2. Hausman Test

Table 2 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	4	1.0000

Hausman test results show a probability value of 1.0000 > 0,05, which means that the appropriate model is random effects.

4.1.3. Lagrange Multiplier Test (LM Test)

Table 3 LM Test

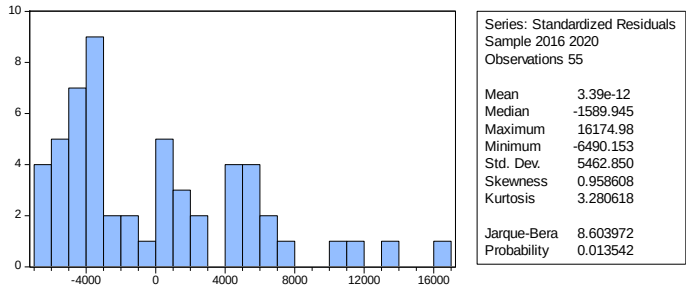
Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	85.54249	2.021223	87.56371
	(0.0000)	(0.1551)	(0.0000)

The results of the Lagrange Multiplier test show that the p value (indicated by the number below it) is 0,0000 <0,05, which means that the appropriate model is random effects.

4.2. Classic Assumption Test

4.2.1. Normality Test



Normality Test After Natural Logarithm

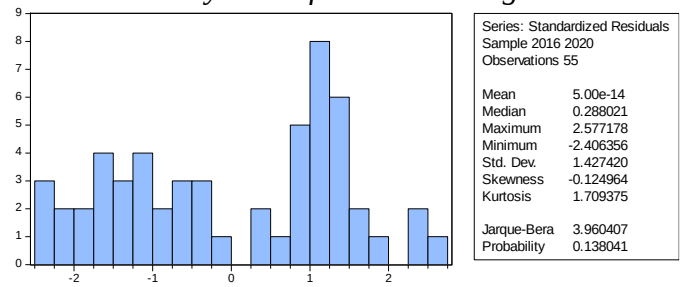


Figure 1 Normality test result

The first histogram graph has a Jarque-Bera value of 8,603972 and a probability value of 0,013542 <0,05, so the data is declared not normally distributed. According to Dedi Rosyadi (2012) in (Zakki & Permatasari, 2020) to normalize data, one of them can use data transformation with NL (Natural Logarithms). Based on the second normality test after using the NL (Natural Logarithm) test, the histogram graph results show that the Jarque-Bera value is 3,960407 and the probability value is 0,138041 > 0,05, hence the data is considered to be normally distributed.

4.2.2. Non-Heteroscedasticity Test

Table 4 Non-Heteroscedasticity test result

Dependent Variable: RESABS
Method: Panel EGLS (Cross-section random effects)
Date: 07/06/22 Time: 12:10
Sample: 2016 2020
Periods included: 5
Cross-sections included: 11
Total panel (balanced) observations: 55
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-38.52828	23.80913	-1.618214	0.1119
LOGX1	0.028496	0.038924	0.732104	0.4675
LOGX2	-0.021144	0.284658	-0.074279	0.9411
LOGX3	-0.052353	0.486795	-0.107547	0.9148
LOGX4	4.175281	2.536385	1.646154	0.1060

Heteroscedasticity test Glejser method shows the probability value of each independent variable is greater than 0,05, it can be concluded that the data has met the requirements and there is no heteroscedasticity problem.

4.2.3. Non-Multicollinearity Test

Table 5 Non-Multicollinearity Test result

Variance Inflation Factors
Date: 07/06/22 Time: 11:57
Sample: 1 55
Included observations: 55

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	13605.20	346081.4	NA
LOGX1	0.017507	5.113019	1.071985
LOGX2	1.978190	54.76701	3.447233
LOGX3	5.798020	356.0070	3.677472
LOGX4	154.3041	357147.0	2.903501

Multicollinearity test results show that the VIF value for each independent variable is < 10, so it can be concluded that each independent variable is not affected by multicollinearity problems.

4.2.4. Non-Autocorrelation Test

Table 6 Non-Autocorrelation Test result

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.099411	Prob. F(2,47)	0.9056
Obs*R-squared	0.227471	Prob. Chi-Square(2)	0.8925

This autocorrelation test uses the *Breusch Godfrey* test or commonly refers to the Lagrange Multiplier. Based on the results of this autocorrelation test, it can be seen with a chi-square probability value of 0,8925 > 0,05. So, it can be concluded that in the regression model used, there is no autocorrelation problem.

4.3. Hypothesis Test

Table 7 Hypothesis test result

Dependent Variable: LOGY
Method: Panel EGLS (Cross-section random effects)
Date: 07/06/22 Time: 12:04
Sample: 2016 2020
Periods included: 5
Cross-sections included: 11
Total panel (balanced) observations: 55
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-93.23124	38.64150	-2.412723	0.0195
LOGX1	-0.069582	0.064631	-1.076606	0.2868
LOGX2	0.113735	0.461614	0.246385	0.8064
LOGX3	-0.589125	0.789327	-0.746363	0.4589
LOGX4	10.69160	4.116426	2.597302	0.0123

Effects Specification	S.D.	Rho
Cross-section random	1.453551	0.9009
Idiosyncratic random	0.481963	0.0991

Weighted Statistics

R-squared	0.208226	Mean dependent var	1.136649
Adjusted R-squared	0.144884	S.D. dependent var	0.517741
S.E. of regression	0.478768	Sum squared resid	11.46096
F-statistic	3.287324	Durbin-Watson stat	0.963673
Prob(F-statistic)	0.018106		

The panel data regression equation with the random effects model on the dependent variable of stock prices is as follows:

Y = -93.23124 – 0.069582 (DPR) + 0.113735 (Inflation) – 0.589125 (Interest rate) + 10.69160 (Exchange rate)

1) The constant value of the panel data regression model is -93.23124. If the dividend policy, inflation, interest rates, and exchange rates are zero, then the share price is -93.23124.
2) The coefficient value in the panel data regression model for dividend policy is -0.069582, for inflation is 0.113735, for interest rates is -0.589125, and the exchange rate is 10.69160. Hence, if there is an increase of one in the dividend policy variable, the stock price value will increase to 0.069582, in inflation the stock price value increases to 0.113735, at interest rates the stock price value increases to 0.589125, and the exchange rate then the stock price value increases to 10.69160.
3) From the value of Prob (F-statistic) 0.018106 < 0.005, which shows that dividend policy, inflation, interest rates, and exchange rates have a significant simultaneous effect on stock prices.
4) From the research results, it is shown that the value of dividend policy (X1) is 0.2868 > 0.05, it means that the dividend policy variable has no effect on stock prices. Inflation value (X2) is 0.8064 > 0.05, it means that the inflation variable has no effect on stock prices. Interest Rate Value (X3) is 0.4589 > 0.05, it means that the interest rate variable has no effect on stock prices. However, the value contained in the exchange rate (X4) is 0.0123 < 0.05, then the exchange rate has an effect on stock prices.
5) The value of the coefficient of determination in this study is 0.208226 or 20,82%. Thus, it can be concluded that 20,82% of stock prices are influenced by dividend policy, inflation, interest rates and exchange rates. However, the remaining 79,18% is influenced by other variables.

4.3.1. The Effect of Dividend Policy on Stock Prices

The first hypothesis in this study is that dividend policy partially has no effect on stock prices. The results of this study are strengthened through previous research conducted by Latifah & Suryani (2020) which states that dividend policy has no effect on stock prices, how regularly dividends are paid by the company, it will not affect stock prices. However, this study is inversely proportional to the study of Samosir et al. (2019) which states that dividend policy has a positive and significant effect on stock prices.

4.3.2. The Effect of Inflation on Stock Prices

The second hypothesis in this study is that inflation partially has no effect on stock prices. The results of this study are also strengthened through previous research conducted by Aini (2022) which states that inflation has no effect on stock prices, high or low inflation that occurs will not affect stock prices. However, this research is inversely proportional to the research by Kennedy & Hayrani (2018) which results in that inflation has a positive and significant effect on stock prices.

4.3.3. The Effect of Interest Rates on Stock Prices

The third hypothesis in this study is that interest rates partially have no effect on stock prices. The results of this study are also strengthened by previous research conducted by Khalim & Hermanto (2019) which states that interest rates have no effect on stock prices, high and low interest rates will not affect stock prices. However, this study is in contrast to the research of Nurasila et al. (2020) have the result that interest rates have a positive and significant effect on stock prices.

4.3.4. The Effect of Exchange Rates on Stock Prices

The fourth hypothesis in this study is that interest rates partially have no effect on stock prices. The results of this study were also strengthened through previous research conducted by Kennedy & Hayrani (2018) which stated that the exchange rate had an effect on stock prices. The exchange rate has an influence, the strength or the weakening of the rupiah exchange rate against the US dollar will affect changes in the company's stock price. However, this research is inversely proportional to research conducted by Aini (2022) which has the result that the exchange rate has no effect on stock prices.

5. CONCLUSION

Based on the research conducted, several conclusions can be drawn as follows:

1) Dividend policy as measured by the DPR partially has no effect on stock prices in manufacturing companies in the basic and chemical industry sectors in 2016-2020. No matter how often a company distributes dividends to shareholders, it turns out that it cannot guarantee an increase in stock prices.
2) Inflation partially has no effect on stock prices in manufacturing companies in the basic and chemical industrial sectors in 2016-2020. Inflation is an increase in the price of goods in general and the increase occurs continuously. Hence, from this interpretation it can be concluded that general price increases that occur only occasionally cannot be considered as inflation.
3) Interest rates partially have no effect on stock prices in manufacturing companies in the basic and chemical industrial sectors in 2016-2020. The interest rate is a reward or remuneration provided by the bank to its customers for money loans that have been previously given.
4) Exchange rates partially have a significant effect on stock prices in manufacturing companies in the basic and chemical industrial sectors in 2016-2020. The exchange rate is the exchange rate or price held by the currency of a country as measured by the currency of another country. The strength of a country's exchange rate reflects the economic condition of that country.

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