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Mining Stock Price Index on Macro Economic Indicators

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Abstract

This study aims to examine the effect of the BI Rate, exchange rate and inflation on the stock price index of building mining sector companies listed on the Indonesia Stock Exchange for the period January 2015 to December 2018. The data analysis technique used in this study is the regression model. The test results prove that the BI Rate (X1) has an effect on the IHSP with a statistical t value of -5.697072 > t-table 2.01537 and a probability value of 0.00 < 0.05, then H1 is accepted. The exchange rate (X2) has an effect on the IHSP with a statistical t value of 4.263165 > t-table 2.01537 and a probability value of 0.0001 < 0.05, then H1 is accepted. The exchange rate has a negative effect on the IHSP with a statistical t value of -1.321528 < t-table 2 0.01537 and 01932 probability value > 0.05, then H1 rejects. To determine the effect of jointly used F test where the results of BI Rate, Exchange Rate and Inflation simultaneously affect the IHSP which is indicated by F-count 54.35844 > F-Table l2.21 and the probability value of F-statistics is F-statistic 0.0000 < 0.05 , then H1 is accepted, with a simultaneous effect of 58.33%. while the remaining 41.67% is explained by other variables not examined in this study.

I. INTRODUCTION

The capital market is a place for companies to get capital from the public. The capital market has an important role in advancing the wheels of the Indonesian economy. The development of a company's price in the capital market can be monitored from the fluctuating stock price index traded. The stock price will change depending on the demand and supply of investors on the trading floor. Monitoring the stock price index can make it easier for investors to obtain information that can be used to predict how much income (return) will be obtained in the future. This is because investors buy a number of shares at this time in the hope of benefiting from rising stock prices in the future (Tandelilin in Adelima, 2017).

There are several factors that can affect the price of a stock, namely from internal and external factors. Internal factors come from conditions within the company while external factors come from outside the company. External factors include economic policies, interest rates, inflation, commodity prices, exchange rates and others (Puspitarani, 2016).

The mining sector is one of the important sectors in the capital market. is one of the pillars of a country's economic development, because of its role as a provider of energy resources that are indispensable for the economic growth of a country. It is one of the pillars of a country's economic development, because of its role as a provider of energy resources that are indispensable for the economic growth of a country. signaling the falling or rising economy of a country.

Due to the issue of a tax reshuffle and amnesty, the government experienced a global economic slowdown that affected investment. This condition will certainly influence investors to invest in the capital market, especially stocks and affect macroeconomic variables such as interest rates, inflation and exchange rates, which have changed, thus making this research interesting to be re-examined.

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Interest rate is a policy that reflects the monetary policy stance or stance set by Bank Indonesia and announced to the public. The BI rate is announced by the Board of Governors of Bank Indonesia at every Monthly Board Meeting and is implemented in monetary operations carried out by Bank Indonesia through liquidity management in the money market to achieve monetary policy operational targets (Bank Indonesia, 2018). Interest rates are one of the advantages that investors can get when choosing investments in deposits or bonds. When interest rates are high, of course, investors will be more interested in investing in deposits or bonds so that it will cause stock prices to fall because they do not sell well in the market. Conversely, low interest rates will make investors more interested in investing in stocks than in deposits or bonds.

Research conducted by Rabia and Khakan (2017) shows that interest rates have a positive relationship with the Karachi stock exchange. Emi Kurniawati (2015) which states that interest rates have a significant effect on the stock price index. Similar results are shown from research conducted by Aliyah, (2016) which shows the BI rate has a significant effect on the Jakarta Islamic Index (JII) stock price index. The results of research conducted by Taufiq & Kefi (2015) show that the BI rate has a negative and significant effect on the Composite Stock Price Index (JCI).

Another variable that becomes a macroeconomic indicator is the exchange rate. The exchange rate or what is often referred to as the exchange rate (foreign exchange rate) can be defined as the price of a country's currency relative to other countries' currencies. Because this exchange rate includes two currencies, the balance point is determined by the supply and demand sides of the two currencies, or in other words the exchange rate is the amount of money of a certain currency that can be exchanged for one unit of the currency of another country (Mahyus Ekananda, 2015:168). The value of the rupiah strengthens when the exchange rate declines, this indicates that the economy is in an unfavorable condition, so that investors will not be interested in investing in stocks, because it is related to the profits or returns they will get. Meanwhile, the value of the rupiah decreases when the exchange rate increases. A high exchange rate will make investors prefer investing in stocks.

Previous studies have shown mixed results, including the results of research by Ginanjar Firdaus (2015) and Robert D. Gay, Jr. (2016) which shows that the exchange rate has a significant positive effect on the stock index. However, in contrast to the results of research by Rihfenti Ernayani and Adi Mursalin (2015) they found that the exchange rate had no effect on the JCI.

Another factor that can affect stock prices is inflation. Inflation occurs because the amount of money in circulation is not matched by the number of products needed by the community, so prices rise because people have sufficient money but the goods they need are limited. If inflation is higher, it will cause an imbalance in the capital market, causing a decline in investment growth. Excessive inflation can harm the economy as a whole, which can make many companies go bankrupt (Irham Fahmi 2012: 80). The results of this study are supported by previous research from Meidina and Ekaputra (2018) that inflation has a negative and significant effect on the JCI variable. While the results of Susanto's research (2015) state that there is no partial significant effect of the inflation variable on stock prices of property and real estate sector companies.

II. Related Works/Literature Review (Optional)

According to Raharjo and Elida (2015:43) “BI rate is BI policy interest rate which reflects the monetary policy stance set by BI. The BI rate is announced to the public so that the public can use it as a reference in taking steps in the economic field”.

According to Mahyus Ekananda (2014:168) that: "the exchange rate is the price of a currency relative to the currencies of other countries. The exchange rate plays an important role in spending decisions, because it allows us to translate prices from different countries into the same language.

According to Keynes' theory, inflation can occur when a group of people wants to live beyond the limits of their economic capacity by buying goods and services in excess. According to the law of economics, the more the demand while the supply remains, the prices will rise.

JCI is a reflection of capital market activities in general. An increase in the JCI indicates that the capital market is bullish, on the other hand, if it decreases, it indicates that the capital market is bearish. The incident was influenced by several factors, both micro and macroeconomic.

III. Methods

This study uses quantitative methods, according to Sugiono (2017:7) quantitative methods, namely research data that uses numbers and analysis using statistics. This research is causal associative, which is looking for a causal relationship (influence) between the independent variable (X) and the dependent variable (Y). The source of data used in this study is secondary data obtained from the official website www.bi.go.id, www. .idx.co.id,

www.idinvesting.com and www.sahamok.com which are listed on the Indonesia Stock Exchange for the period 2015 – 2018. This study was conducted to obtain as much data and theoretical basis as possible that can be used as a basis for thinking in discussing problems. . Document searches are carried out by searching for and reading journals that can be used as references in this research.

The object in this study is the stock price index of the mining sector listed on the Indonesia Stock Exchange (IDX) during the period January 2015 to December 2018. While the variables of this study consist of the dependent variable the mining sector stock price index and the independent variable is the BI Rate, Exchange rate. and inflation. The software used in assisting data processing as needed is the Eviews software.

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IV. RESULTS

a. Descriptive Statistics

Test Table 1. Descriptive Statistical Test

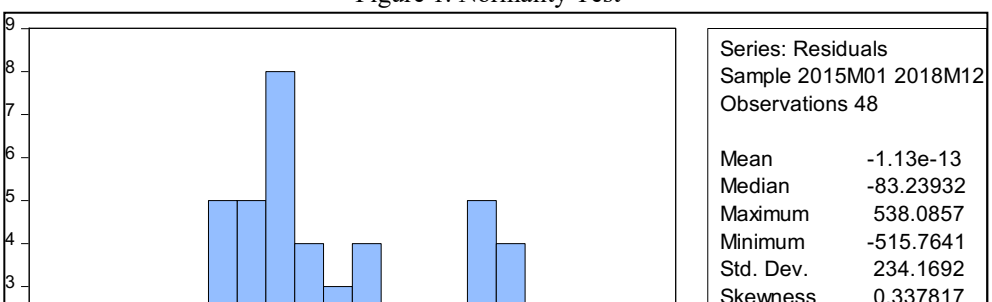
	HIS PERTA	BI RATE	KURS	INFLASI
Mean	1393.063	5.786458	13613.23	4.230000
Median	1390.970	5.375000	13458.50	3.590000
Maximum	2114.420	7.750000	15227.00	7.260000
Minimum	785.2900	4.250000	12625.00	2.790000
Std. Dev.	374.9281	1.295440	556.4489	1.428874
Skewness	0.154095	0.241197	1.027456	1.189895
Kurtosis	1.998576	1.424622	3.663990	2.846788
Jarque-Bera	2.195662	5.429039	9.327097	11.37375
Probability	0.333594	0.066237	0.009433	0.003390
Sum	66867.04	277.7500	6533435.0	203.0400
Sum Sq. Dev.	6606841	78.87370	14552862	95.95900
Observations	48	48	48	48

(Source: data processed using E-Views, 2018)

- The lowest IHSP value is Rp. 785.29 and the highest was Rp. 2,114,42. Meanwhile, the Mean value is 1.393.06 which is bigger than the Standard. Deviation Rp. 374.92.
- The lowest BI Rate is 4.25% and the highest is 7.75%. Meanwhile, the Mean value is 5.78% greater than the Standard. Deviation 1.29%,
- The lowest exchange rate is Rp. 12.625% and the highest is Rp. 15.227. Meanwhile, the Mean value is Rp. 13,613 which is bigger than the Standard. Deviation Rp.556.44.
- The lowest inflation rate is 2.79% and the highest is 7.26%. Meanwhile, the Mean value is 4.23% greater than the Standard. Deviation 1.42%.

b. Normality test

Figure 1. Normality Test



(Source: data processed using E-Views, 2018)

Based on the normality test, it is known that the Jarque-Bera value is 1.542962 with a probability of 0.462328. If the probability of Jarque-Bera <0.05, it means that the residuals are not normally distributed. While the probability of Jarque-Bera > 0.05, it means that the residuals are normally distributed. The value of the probability of Jarque-Bera 1.542962 > 0.05, meaning that the residuals are normally distributed.

c. Multiple Regression

Test Table 2. Multiple Regression Test

Dependent Variable: HIS_PERTAMBANGAN				
Method: Least Squares				
Date: 02/02/2019 Time: 22:59				
Sample: 2015M01 2018M12				
Included observation: 48				
Variable	Coefficient	Std. Error	t-statistic	Prob.
C	-1428.137	938.6669	-1.521453	0.1353
BI_RATE	-225.0547	39.50357	-5.697072	0
KURS	0.287618	0.067466	4.263165	0.0001
INFLASI	49.18611	37.21912	1.321528	0.1932
R-squared	0.609911	Mean dependent var		1393.063
Adjusted R-square	0.583314	S.D. dependent var		374.9281
S.E. of regression	242.0206	Akaike info criterion		13.89558
Sum Squared resid	2577255	Schwarz criterion		14.05151
Log like lihood	-329.4939	Hannan-Quinn criter		13.95451
F-statistic	22.93161	Durbin-Watson Stat		0.423714
Prob (F-statistic)	0			

(Source: data processed using E-Views, 2018)

Based on table 4, the equation for multiple linear regression analysis is as follows:

Y= -1.428,137 – 225,0547 X1 + 0,287618 X2 + 49,18611X3 + e

The equation of the multiple linear line above has the following meaning:

- If BI Rate (X1), Exchange Rate (X2) and Inflation (X3) = Rp. 0, then the IHSP (Y) is equal to the constant value, namely - . 1,428,137
- If BI Rate (X1) = 1, Exchange Rate (X2) = 0 and Inflation (X3) = 0, then every increase in BI Rate (X1) is = Rp. 1 will reduce the IHSP by the value of 225.0547

- If BI Rate (X1) = 0, Exchange Rate (X2) = 1 and Inflation (X3) = 0, then each additional inflation (X2) is = Rp. 1 will reduce the IHSP by the value of 0.287618
- If BI Rate (X1) = 0, Exchange Rate (X2) = 0 and Inflation (X3) = 1, then each additional exchange rate (X3) is = Rp. 1 will reduce the IHSP by 49.18611

d. Hypothesis testing
a. F Uji test
The F test is intended to test whether all the independent variables contained in the model have a joint influence on the dependent variable

Tabel 3. Uji F

F-statistic	22.93161
Prob (F-Statistic)	0

(Source: data processed using E-Views, 2018)

Table 3 shows that the F-statistic or F-count is 54,35844, while the F-table with a level of = 5%, df1 (k-1) = 3, df2 (n-k) = 44. The F-table value is 2, 21 and the probability value of F-statistic 0.0000 < 0.05, then H1 is accepted, so it can be concluded that the BI Rate, Exchange Rate and Inflation jointly affect the IHSP. The results of this study are supported by previous research from Rosana, et al (2018) which says that Exchange, Inflation and Interest Rates affect stock prices.

b. Coefficient of determination test
Testing the coefficient of determination (R2) aims to measure how far the model's ability to explain the variation of the dependent variable. The value of the coefficient of determination is between zero and one. If the coefficient of determination of a model is close to one, it means that the independent variables can provide almost all the information needed to explain variations in the dependent variable (Arry, 2017).

Tabel 4. Uji Koefisien Determinasi

R-squared	0.60911
Adjusted R-squared	0.583314

(Source: data processed using E-Views, 2018)

Table 4 shows that the Adjusted R-squared value is 0.5833, meaning that the variation in the fluctuation of the JCI can be explained by the BI Rate, Inflation and Exchange Rate of 58.33%. while the remaining 41.67% is explained by other variables not examined in this study.

c. t test
To show how far the influence of one explanatory or independent variable individually in explaining the variation of the dependent variable, partial testing is needed (Gozali, 2016). The partial test is a test that measures the effect of each independent variable, namely the BI Rate, Inflation and Exchange rate variables on the dependent variable, namely the IHSP.

Tabel 5. Uji t

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	-1428.137	938.6669	-1.521453	0.1353
BI- Rate	-225.0547	39.50357	-5.697072	0
KURS	0.287618	0.067466	4.263165	0.0001
INFLASI	49.18611	37.21912	1.321528	0.1932

(Source: data processed using E-Views, 2018)

- Effect of BI Rate on mining stock price index

The t-statistic or t-count value of the BI Rate is -5.697072, while the t-table value with a level of = 5%, df (n-k) = 44, the t-table value is 2.01537. Thus, the t statistic is -5.697072 > t-table .01537 and the probability value is 0.00 < 0.05, then H1 is accepted so that it can be concluded that the BI Rate has an effect on the IHSP.

The BI Rate has a negative effect on the IHSP, which means that if the BI Rate increases, the IHSP will decrease, where high interest rates will attract investors to invest in deposits or bonds. Conversely, if the BI rate decreases, the IHSP will increase, where investors who do not like low profits will tend to choose stocks that are able to provide high profits, so the stock price will increase.

Research conducted by Rabia and Khakan (2017) shows that interest rates have a positive relationship with the Karachi stock exchange. Emi Kurniawati (2015) which states that interest rates have a significant effect on the stock price index. Similar results are shown from research conducted by Aliyah, (2016) which shows the BI rate has a significant effect on the Jakarta Islamic Index (JII) stock price index. The results of research conducted by Taufiq & Kefi (2015) show that the BI rate has a negative and significant effect on the Composite Stock Price Index (JCI).

- Effect of Exchange Rate on Mining Stock Price Index

  The value of the t-statistic or t-count of the exchange rate is 4.263165, while the value of the t-table with a level of = 5%, df (n-k) = 44, the t-table value is 2.01537. Thus, the t statistic is 4.263165 > t-table 2.01537 and the probability value is 0.0001 < 0.05, then H1 is accepted so that it can be concluded that the exchange rate has an effect on the IHSP. Based on the research results, it is known that the higher the exchange rate, the higher the stock price. This is because if investors buy foreign exchange when prices are high, investors will not benefit and prefer to buy stocks that promise large profits. In addition, the company's income from abroad in the form of foreign currency causes the value of the company's income to be greater when the foreign currency is transferred into rupiah. Previous studies have shown mixed results, including the results of research by Ginanjar Firdaus (2015) and Robert D. Gay, Jr. (2016) which shows that the exchange rate has a significant positive effect on the stock index. However, in contrast to the results of research by Rihfenti Ernayani and Adi Mursalin (2015) they found that the exchange rate had no effect on the JCI.
- Influence of Inflation on Mining Stock Price Index

  The t-statistic or t-count value for inflation is 1.321528, while the t-table value with a level of = 5%, df (n-k) = 44, the t-table value is 2.01537. Thus, the t statistic is -1.321528 < t-table 2.01537 and the probability value is 01932 > 0.05, so H0 is accepted so that it can be concluded that inflation has no effect on the IHSP. There is no effect of inflation on the IHSP because a lot or a small amount of money in circulation held by the public will not affect the interest in investing in a stock that is able to generate high profits. The results of this study are supported by previous research from Susanto (2015) which states that there is no partial significant effect of the inflation variable on stock prices of property and real estate sector companies. In contrast to the results of research conducted by Meidina and Ekaputra (2018) that inflation has a negative and significant effect on the JCI variable.

V. CONCLUSIONS

Based on the analysis that has been done, there are several conclusions in this study.

1) BI Rate has an effect on IHSP. This can be seen from the t-statistic or t-count value of the BI Rate of -5.697072, while the t-table value with a level of = 5%, df (n-k) = 44, the t-table value is 2.01537. Thus, the t statistic is -5.697072 > t-table 2.01537 and the probability value is 0.00 < 0.05, then H1 is accepted.
2) Exchange rate has an effect on IHSP. This can be seen from the t-statistic value or t-count Exchange rate of 4.263165, while the t-table value with a level of = 5%, df (n-k) = 44, the t-table value is 2.01537. Thus, the t statistic is 4.263165 > t-table 2.01537 and the probability value is 0.0001 < 0.05, then H1 is accepted.
3) Inflation has no effect on the IHSP. This can be seen from the t-statistic or t-count value of Inflation of 1.321528, while the t-table value with a level of = 5%, df (n-k) = 44, obtained the t-value table of 2,01537. Thus, the t statistic is -1.321528 < t-table 2.01537 and the probability value is 01932 > 0.05, so H1 rejects so that it can be concluded that
4) the F-statistic or F-count is 54,35844, while the F-table with a level of = 5%, df1 (k-1) = 3, df2 (n-k) = 44. The F-table value is 2.21 and F-statistic probability value is 0.0000 < 0.05, then H1 is accepted, so it can be concluded that the BI Rate, Exchange Rate and Inflation jointly affect the IHSP

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