IDX Interest Rate, Inflation, Exchange Rate and Its Effect on the Composite Stock Price Index (JCI) for the Period January 2016 to August 2020

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Abstract. The impact of globalization in the economic field allows the existence of interrelated and mutually influencing relationships between capital markets in the world. This study uses quantitative methods. The data used in the form of secondary data. The variables used are divided into two, namely the independent variable (Interest Rate, BEI, and inflation rate) and the dependent variable (JCI growth rate). The JCI data used is the monthly JCI closing price data published by the IDX from January 2016 to August 2020. In this study, the rupiah exchange rate was measured by the rupiah exchange rate against the US dollar at the end of January 2016 to August 2020. The method of collection The data in this study used saturated sampling. Data analysis in this study used the Classical Assumption Test and Hypothesis Testing (Multiple Linear Regression Test and T-Test). Based on the discussion that has been carried out in the previous chapter, the following conclusions and suggestions are obtained: a) Simultaneously the independent variables of inflation rate, rupiah exchange rate, and SBI interest rate have a positive and significant effect on the composite stock price index (CSPI) on the stock exchange Indonesia (IDX) with a probability of 0.000; and b) Partially, inflation and rupiah exchange rate variables have a positive and significant effect on the JCI on the IDX for the period January 2016 to August 2020.

Keywords: Inflation, BI Interest Rate, Exchange Rate, JCI.

1. Introduction

Globalization's economic influence has been followed by economic liberalization, which means that any investor can invest anywhere in this global market [1]. The Composite Stock Price Index is a leading indication of the capital market's performance, indicating whether it is increasing (bullish) or declining (bearish) [2].

If a country's economic situation is favorable, the Composite Stock Price Index will naturally show an upward trend; but, if a country's economic situation deteriorates, the Composite Stock Price Index will deteriorate as well [3]. Capital Markets, as defined by the Capital Markets Law No. 8 of 1995, these include the provision and selling of securities to the public, public securities-related corporations and securities-related institutions and professions. Where the term "security" refers to debt acknowledgments, Commercial securities, equities, bonds, debt proof, collective investment deposit units, futures securities

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and other securities derivatives [4]. As this composite stock price index tracks the price variations of all Indonesian stock-listed securities (IDX), it affects all Indonesian stock-exchange investors as it affects investors' perspectives. Investors decide if to buy, keep or sell their equity [5].

Additionally, apart from the increase and decrease in the foreign exchange rate versus the rupiah, the increase and fall in the Stock Exchange Composite Price Index is a measure of market perception [6]. Simultaneous fluctuations in the Rupiah exchange rate, interest rates, inflation, and exchange rates all have a substantial impact on the share prices of business entities in Indonesia during the economic crisis [7]. During the economic crisis, only interest rates and currency exchange rates had a substantial impact on stock values.

2. Literature Review

Indonesia's capital market is a developing market that is particularly subject to general macroeconomic conditions at this stage of its growth [8]. The economic crisis that occurred in 1998 was the beginning of the collapse of the pillars of the Indonesian national economy. This crisis storm resulted in high inflation resulting in the collapse of economic sectors, especially the capital market [9]. Moreover, in the Indonesian banking system a crisis of confidence arose, notably by mass retirements (rush) by depositors to deposit overseas (capital flight) [10]. As a result of interest rates reaching 70% and depreciation of the rupiah against the US dollar by 500%, almost all economic activities were disrupted [11]. Stock prices fell sharply, causing significant losses for investors. For potential investors in making investments, they can use the stock price as an investment signal [12].

Stock prices are a reflection of capital market activities in general [13]. An increase in stock prices indicates that the capital market is bullish, on the other hand, if it decreases, it indicates that the capital market is bearish [14].

H1: The Inflation Rate Has a Positive and Significant Effect on the JCI on the IDX
H2: The Rupiah Exchange Rate Has a Positive and Significant Effect on the JCI on the IDX
H2: There is no positive and significant effect between the level of the SBI rate on the JCI on the IDX

3. Methodology

This study employs quantitative techniques. The data was obtained through secondary sources. The variables are classified as follows: the independent variable (Interest Rate, BEI, and inflation rate) and the dependent variable (JCI growth rate) [15]. The JCI data used is the monthly JCI closing price data published by the IDX from January 2016 to August 2020. In this study, the rupiah exchange rate was measured by the rupiah exchange rate against the US dollar at the end of January 2016 to August 2020. The method of collection The data in this study used purposive sampling. Data analysis in this study used the Classical Assumption Test and Hypothesis Testing.

4. Result and Discussion

Descriptive statistics

The results of the descriptive statistical test of the study are presented in table 1 below:

Table 1. Descriptive Statistical Results

Variable	N	Min.	Max.	Mean	Std.deviation
Inflation	56	.0242	.1215	.061126	.0277933
Exchange rate	56	7325.35	9566.01	8595.8352	592.00326
IDX Interest Rate	56	.0581	.0951	.071697	.0107652
JCI	56	1242.55	4181.74	2921.2597	899.19545

Source: Data processed

The inflation rate variable with 56 months of data (N) (January 2016 to August 2020) Has the lower or least 0.0242 value and the greatest or greatest value of 0.1215. The average value (mean) of the inflation rate from 56 months of observation is 0.061126 with a standard deviation of 0.027793. The rupiah exchange rate variable (BI middle rate) with 56 months of data (N) (January 2016 to August 2020) has the smallest or minimum value of Rp. 7325.35 and the largest or maximum value of Rp. 9566.01. The average value (mean) of the rupiah exchange rate from 56 months of observation is Rp. 8595.8352 with a standard deviation of 592.00326.

The SBI interest rate variable with 56 months of data (N) (January 2016 to August 2020), a value of 0.0581 at the minimum or the smallest and 0.0951 at the maximum or maximum. The median value of the SBI interest rate is 0.071697 with a standard variation of 0.0107652, which is 56 months after observation. 56 months of the JCI variable of data (N) (January 2016 to August 2020) has the smallest or minimum value of 1242.55 and the largest or maximum value of 4181.74. The average value (mean) of the inflation rate from 56 months of observation is 2920.2596 with a standard deviation of 899.15945.

Classic assumption test

Multicollinearity Test

The multi-linearity test is used to determine whether or not a correlation between independent values has been found in the regression model [16]. As a result of the significant standard error, when the coefficient is tested, the t-count will be less than the t-table. This shows that the independent factors influenced by the dependent variable and the dependent variable itself have no linear connection [17].

The tolerance value and the variance inflation factor can be used to determine the existence or absence of multicollinearity in the regression model (VIF). The tolerance value represents the quantity of variability in the selected independent variables that other separate variables cannot explain. As a result, a low tolerance value corresponds to a high VIF value, as VIF = 1/tolerance shows a strong collinearity. The cutoff value is 0.10 or more than ten VIFs. Table 2 below sums up the results of this multi-linearity study:

Table 2. Multicollinearity test results

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Inflation	.305	3.294
	Exchange rate	.487	2.061
	IDX Interest Rate	.198	5.035

The multicollinearity test on the research data resulted in a Tollerance value above 0.1 or a VIF value less than 10 which indicated that there was no multicollinearity in the regression model of this study.

Autocorrelation Test

The autocorrelationship test is used to determine if the difference between the residuals of one observation and the residuals of another observation in the regressional model is different from the usual assumption of autocorrelation. It is necessary to avoid autocorrelation of the regression model [19]. The Durbin-Watson test is a method often employed (DW test). Table 4 below summarizes the autocorrelation test results for this study:

Table 4. Autocorrelation Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.938[a]	.878	.871	324.62092	1.697

DW autocorrelation test produces a value of 1.69Y. Therefore, the value of DW = 1.697 is greater than 1.67(du) and less than 4-1.67 (4-du), which indicates that statistically there is no autocorrelation.

Hypothesis testing

Multiple Linear Regression Test

The effect of several predictor variable (independent variable) was measured using the multiple linear regression analysis [20]. Table 5 below presents the results of several linear regression tests in the study:

Table 5. Multiple Linear Regression Results

Variabel	Standardized Coef. Beta	Std. Error	t	Sig.
(Constant)	0	724.495	-1.051	.298
Inflation	.108	1619.627	2.106	.041
Exchange rate	.133	.073	2.819	.008
IDX Interest Rate	-,115	6833.418	-1.403	.168

The hypothesis in this study was tested using multiple linear regression equations with a 95% confidence degree or 5% deviation degree. The analysis findings of the elements which affect JCI in particular, for example inflation rate, Rupee exchange rate and SBI interest rate, can be shown based on results of the regression analyzes in table 6. The regression model is then obtained:

$$\hat{Y} = 0{,}107\ X_1 + 0{,}132\ X_2 - 0115\ X_3 + \varepsilon$$

The equation of regression is the following: (a) The coefficient of inflation value (β1) is 0.108, meaning that assuming the rupiah exchange rate variable (X2) and the SBI interest rate (X3) are fixed, if the inflation rate increases by 1 percent it will be able to increase JCI was 0.108 percent. This suggests that if inflation rates are favorable, the JCI will rise to allow investors to invest more in banks to limit investment losses; b) The coefficient value of the rupiah exchange rate (β2) is 0.133, meaning that with the assumption that the inflation rate variable (X1) and the SBI interest rate (X3) are fixed, the JCI will grow in order to encourage investors to engage in the Indonesian stock market on the IHSG; and c) The coefficient value of the SBI interest rate (β3) is -0.116, meaning that with the assumption that the inflation rate variable (X1) and the rupiah exchange rate (X2) are fixed, if the SBI interest rate increases by 1 percent, it will be able to reduce the JCI by 0.116 percent.

T-test

The t-test technique is equivalent to the F-test by comparing t-count with t-table or by examining the significance column of each meter (see SPSS Coefficient Regression Full Model/Enter). The results can be compared. The test was done in order to examine the impact on the IDX of the JCI of inflation, rupia exchange rate and SBI.

Table 6. Results of t-test

Variable	T-count	T-table	Significance	Information
Inflation rate	2.106	1.676	0.041	H1 Accepted
Rupiah exchange rate	2.819	1.676	0.008	H2 Accepted
IDX Interest Rate	-1.403	1.676	0.168	H3 Rejected

As shown in the table above, the following is true: a) The Influence of Inflation Rate on the JCI on the IDX. The first hypothesis is that the JCI is unaffected by inflation. As shown in Table 7, tcount = 2.106>t_{table} = 1.676 with a significance threshold of 0.041 (less than 0.05), H0 is rejected and H1 is accepted. This implies that inflation has a large effect on the JCI. The Rupiah Exchange Rate's Effect on the JCI and the IDX; b) According to the second hypothesis (H2), the rupiah exchange rate has a positive and significant effect on the JCI and IDX. As shown in Table 7, if tcount = 2.819 > t_{table} = 1.677 with a significance level of 0.007 less than 0.05, H0 is rejected and H1 is accepted. This indicates that the rupiah exchange rate has a large positive effect on the JCI; and c) The effect of the SBI Interest Rate on the JCI on the IDX. The third hypothesis (H3) asserts that there is no positive and statistically significant influence of the SBI interest rate on the JCI or IDX. According to Table 7, tcount = -1.403 and ttable = 1.676, respectively, with a significance threshold of 0.124 greater than 0.167, H0 is accepted and H1 is denied, indicating that the SBI interest rate has no significant effect on the JCI.

5. Conclusion

Based on the discussion in the preceding chapter, the following conclusions and suggestions are made: a) With a probability of 0.000, Independent inflation rates of factors, rupia and SBI rates all have a beneficial effect on the Indonesian stock market composite price index; and b) For the period January 2016 to August 2020, the inflation and rupiah exchange rate variables have a positive and substantial effect on the JCI on the IDX, however the SBI interest rate variable has no significant effect on the JCI on the IDX.

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