



## THE EFFECT OF EXCHANGE RATE AND INFLATION ON THE COMPOSITE STOCK PRICE INDEX

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**Abstract:** The Composite Stock Price Index is the main board index that reflects the stock index listed on the capital market. Macroeconomics is the benchmark to determine the movement of the Composite Stock Price Index in the capital market, one of which in this study is the exchange rate and inflation. The purpose of this study is to find out how much influence the exchange rate variable has on the Composite Stock Price Index, to find out how much influence the inflation variable has on the Composite Stock Price Index, and to find out how much influence the exchange rate and inflation variables have on the Composite Stock Price Index. The research method used in this study is descriptive and verification method and the type of sample used is random sampling where all populations are entitled to be part of the sample with the analytical method used is multiple linear regression. The results of this study indicate that the exchange rate has a negative effect on the Composite Stock Price Index and inflation partially has no effect on the Composite Stock Price Index, while simultaneously in this study, the Composite Stock Price Index responds to the influence of the exchange rate and inflation.

Keywords: Composite Stock Price Index; Exchange Rate; Inflation

### INTRODUCTION

In the capital market, there are instruments, namely stocks which are now quite popular among investors, because the purchase rate is doubled if investors have good knowledge and strategies to invest and generate profits. In addition, the Composite Stock Price Index can Also be a benchmark to see how well or not a country's economy is. This Composite Stock Price Index (CSPI) contains an indicator of the movement of a stock that is incorporated in the Indonesia Stock Exchange (IDX).

Sunaryo (2019) stated that the index represents the movement of stock prices on the stock market that occurs through the auction trading system. the calculation is carried out per day where after the closing of the trading transaction, the share price used to measure the composite stock price index is the share value in the regular market based on the trading price of the auction system. composite stock price index always fluctuates very quickly either per year, per day, or even per second. therefore, the composite stock price index has always been the center of attention for investors to find out how good a country's economy is. sunariyah (2011) argues that the stock price index can fluctuate along with changes in existing macroeconomic assumptions. several factors or variables can affect stock prices, including GDP growth, industrial production, inflation, interest rates, rupiah exchange rates, unemployment, and budget deficits.

The variable that is always used as a comparison with other countries and used as an analysis to see whether or not the economy of a country is good is the exchange rate variable. The exchange rate itself is the exchange rate of one currency with another currency that has a different value and always fluctuates very quickly. An increase in the value of the exchange rate in a domestic one is called appreciation, which means that foreign currency is cheaper or depreciates. Depreciation itself is the weakening or decrease in the value of a domestic currency. According to Granger in Suci (2012) him

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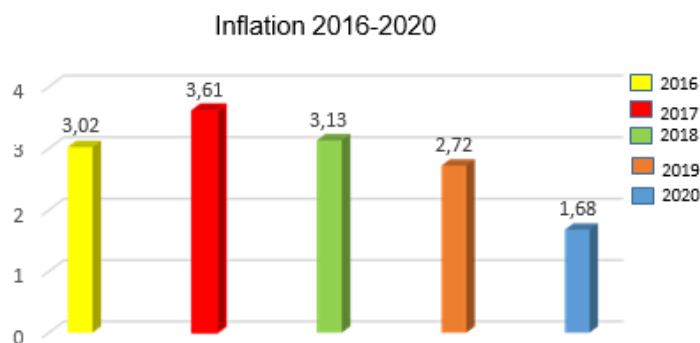
that theoretically the difference in the direction of the relationship between exchange rates and stock prices can be explained by the traditional approach and the balanced portfolio model.

According to Husnul (2017), the exchange rate is the exchange between two different currencies, which is a comparison of the value or price between the two currencies. Meanwhile, Sukirno (2017), states that the exchange rate is how much money is needed to obtain one unit of foreign currency. From the theory above, broadly speaking, the exchange rate is a currency value that fluctuates between two different currencies, which is a fundamental factor for the economy of a country. The phenomenon of fluctuating exchange rates will lead to inflation and vice versa. The interrelated relationship between foreign exchange rates, composite stock price index, and inflation rates is a controversial phenomenon.

The relationship between the exchange rate and the composite stock price index variable is quite significant, where when the rupiah exchange rate fluctuates, both appreciate and depreciate, it can cause the composite stock price index to fluctuate. if the rupiah exchange rate appreciates against the dollar, the composite stock price index may rise, and vice versa if the rupiah exchange rate depreciates, the composite stock price index may weaken or decline. several factors cause exchange rate fluctuations, including the comparison of inflation rates between two countries, comparison of interest rates between two countries, trade balance, public debt (public debt), comparison of export and import prices as well as political & economic stability. According to Miskhin in Wuri (2018,) states that several factors influence exchange rate fluctuations, including inflation rates, exports and imports of goods, interest rates, tariffs and quotas (trade barriers), and productivity.

In addition to the exchange rate variable that causes the composite stock price index to fluctuate, another variable that significantly affects the composite stock price index is the inflation variable. inflation itself is defined as an increase in the value of products, both clothing, food, and housing, as well as services with periodic increases. inflation is a tendency to increase prices in general and continuously where if the price increase occurs in only one or two goods, then it cannot be said to be inflation unless the increase in the price of one item has an impact on the decline in the price of other goods (bank Indonesia)., (2018). in addition, inflation is defined as an increase in general prices prevailing in an economy from one period to another (sukirno, 2017). meanwhile, according to nursalam (2019) inflation is an excess in aggregate expenditure over aggressive spending on full labor consumption which causes a shortage of goods and continuous price increases.

The impact of this inflation will cause investors or investors to be reluctant to invest their capital in a company, this condition if allowed to continue will be a danger to the economy of a country, looking at the history of Indonesia itself, massive inflation occurred in 1998 where the cause is, of course, economic and political. , where in 1998 the rupiah exchange rate depreciated greatly against the US dollar. The other cause that leads to inflation, namely the money in circulation, as happened in the State of Zimbabwe. In Indonesia, inflation has experienced significant fluctuations from year to year, namely from the 2016-2020 period which we can see from the graph below:



**Figure 1. Inflation Data**

Source: (BPS, 2021)

The purpose of this study is to find out how much influence the exchange rate variable has on the Composite Stock Price Index, to find out how much influence the inflation variable has on the Composite Stock Price Index, and to find out how much influence the exchange rate and inflation variables have on the Composite Stock Price Index

## METHODS

In this research, the researcher used descriptive analysis and verification analysis. There are several stages to conducting this research, the first is the descriptive analysis which aims to find out how the condition of the exchange rate and inflation variables in Indonesia for the 2016-2020 period and the COMPOSITE STOCK PRICE INDEX variable on the IDX for the 2016-2020 period. While the second stage is verification analysis, verification analysis is used to find out how much influence the exchange rate and inflation variables have on the dependent variable, namely the COMPOSITE STOCK PRICE INDEX on the IDX for the 2016-2020 period.

The data used in this research is data sourced from data from the Indonesia Stock Exchange (IDX), Bank Indonesia (BI), and the Central Statistics Agency (BPS) where this data is secondary data, namely data from a second party that has been collected. The form of data used in this paper is in the form of quantitative data, which means that the data processing is data in the form of numerical units. Secondary data in this study were obtained from exchange rate fluctuations and inflation which can be seen on the websites [www.bi.go.id](http://www.bi.go.id) and [www.bps.go.id](http://www.bps.go.id) and the composite stock price index variable data itself is sourced from [finance.yahoo.com](http://finance.yahoo.com). In collecting data, researchers took various sites on the internet or official websites related to related variables, regarding the theory above, namely, researchers took documents from the official website by researching and reprocessing them. In this study, the population used is the fluctuation of the composite stock price index value on the IDX, exchange rate, and inflation from 2016-2020. The sampling method used is using the random sampling method because the sample used is all the composite stock price index population from 2016-2020.

In this study, verification analysis is used to determine whether there is an effect of the exchange rate and inflation variables on the composite stock price index variable for the 2016-2020 period, with the following steps: (1) the classical assumption test is



used to determine whether or not there is normality, multicollinearity and heteroscedasticity, and autocorrelation which is a test. prerequisites before conducting the hypothesis testing process in a study; (2) The coefficient of determination in this study aims to determine how much influence the independent variables together have on the dependent variable which is presented in percentage form. The greater the value of  $R^2$ , the greater the ability of the independent variable in explaining the dependent variable. The coefficient of determination ( $R^2$ ) is used to measure how far the ability of the dependent variables is; (3) The coefficient of determination in this study aims to determine how much influence the independent variables together have on the dependent variable which is presented in the form of a percentage. The greater the value of  $R^2$ , the greater the ability of the independent variable in explaining the dependent variable. The coefficient of determination ( $R^2$ ) is used to measure how far the ability of the dependent variables is; (4) In this hypothesis test, the researcher formulates a partial hypothesis test using a t-test to partially test the hypothesis and f test to test the hypothesis simultaneously. Below is a hypothesis Partially and simultaneously:

**Table 1. Partial Hypothesis Test**

The hypothesis of the Effect of Inflation on the composite stock price index	
Ho: $\beta_1 \geq 0$	Inflation has no significant positive effect on the composite stock price index
H1: $\beta_1 \leq 0$	Inflation has a significant positive effect on the composite stock price index
The hypothesis of the effect of the rupiah exchange rate on a composite stock price index	
Ho: $\beta_2 \leq 0$	The rupiah exchange rate does not have a significant positive effect on the composite stock price index
H1: $\beta_2 \geq 0$	The rupiah exchange rate has a significant positive effect on the composite stock price index

Source: Data processed by the author (2021)

The t-test is a partial test that aims to determine how far the influence of the independent variable on the dependent variable is. The significance level is 5%.

H0: there is no effect between variable x on variable y

Ha: there is an effect between variable x on variable y

Sugiyono (2017) states that the decision-making criteria in the t-test are:

(1)  $t_{table}$  determined by looking at the t distribution table at the real level used, namely 0.05 which is based on a two-way test, namely  $0.05: 2 = 0.025$  with degrees of freedom, namely df ( $df = n-k$ ); (2)  $t_{table}$  compared with obtained from the test results and compared the sig value obtained with the real level ( $\alpha = 0.05$ ) using the following criteria: (a) If  $>$  with a sig value.  $< 0.05$  then reject at H0; (b) If  $<$  with sig.  $> 0.05$  then do acceptance at H0.



**Table 2. Simultaneous Hypothesis Testing**

Ho : $\beta_1\beta_2 = 0$	Simultaneous inflation and exchange rate have no significant effect on the composite stock price index
H1: $\beta_1\beta_2 \neq 0$	Inflation and the rupiah exchange rate simultaneously have a significant effect on the composite stock price index

Source: Data processed by the author (2021)

The F-test was used in this study to find out how much influence the independent variables had on the dependent variable simultaneously. The F test is used to determine the feasibility of the data used in the study. The decision-making rules in the F test are: H0: not eligible; Ha: meet the eligibility. The F test criteria that can be used in this study are taken from the criteria proposed by Sugiyono (2017), namely: (1) is determined by looking at the F distribution table which uses a real level of 0.05 (5%) with  $df_1 = k$ ,  $df_2 = n - k$ ; (2) Compare with from the test results and by looking at the value of sig. which is compared to the real level ( $\alpha = 0.05$ ) with the following criteria: (a) If  $F_{count} > F_{table}$  and the significance value is  $< 0.05$ , then reject H0; (b) If  $0.05$  then accept H0.

## RESULTS AND DISCUSSION

### Analysis Description

In this descriptive analysis, the researcher explains how the state of each variable which includes elements that have been processed through IBM SPSS Statistics 25. In processing the data there are elements, namely the lowest and highest values, the average (mean), and the standard deviation. of each variable, both dependent and independent with standardized data taken is data per year. The data can be seen in the table below.

**Table 3. Analysis Description**

Variable	Year	Minimum	Maximum	Mean	Std. Deviation
EXCHANGE RATE	2016	12.95	13.96	13.3022	.24615
	2017	13.16	13.62	13.3825	.09855
	2018	13.29	15.24	14.2335	.53577
	2019	13.88	14.53	14.1413	.12541
	2020	13.57	16.58	14.5166	.65114
INFLATION	2016	2.79	4.45	3.5308	.54226
	2017	3.30	4.37	3.8092	.33337
	2018	2.88	3.50	3.2058	.15198
	2019	2.72	3.49	3.0292	.34073
COMPOSITE STOCK PRICE INDEX	2020	1.32	2.98	2.0358	.63318
	2016	4.41	5.47	5.0303	.29730
	2017	5.25	6.36	5.7387	.25315
	2018	5.63	6.69	6.0867	.27321
	2019	5.83	6.55	6.2961	.14905
	2020	3.94	6.33	5.2458	.54979

Source: Bank Indonesia (BI), Badan Pusat Statistik (BPS) dan Ekonomi Finance data that has been processed (2021)



Based on the results of the descriptive statistical test in table 3 which was processed through IBM SPSS Statistics 25, it can be explained as follows: (1) During the 2016-2020 period the highest depreciation of the rupiah against the dollar occurred in 2020 were 1 USD Dollar = 16,580 with average inflation averaged 2.98%, this was because in 2020 the Indonesian economy experienced a setback due to a worldwide pandemic that had an impact on GDP declining due to uneven supply and demand; (2) The highest appreciation of the rupiah exchange rate against the dollar occurred in 2016 where the minimum value of the exchange rate variable showed that 1 USD Dollar = Rp. 12,950.00 with the lowest average inflation of 2.79% accompanied by an increase in the composite stock price index at 5,470; (3) the maximum value for the composite stock price INDEX variable occurred in the 2018 period with a maximum level of 6,950.

### Verification Test

A classical assumption test is used to determine the presence or absence of normality, multicollinearity, heteroscedasticity as well as autocorrelation. In this normality test the researcher uses the Kolmogorov-Smirnov method where this test uses the IBM SPSS-25 with the following results:

**Table 4. Kolmogorov Smirnov**

N	Unstandardized Residual	
		60
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	2.08998307
Most Extreme Differences	Absolute	.077
	Positive	.077

Source: Data processed by the author (2021)

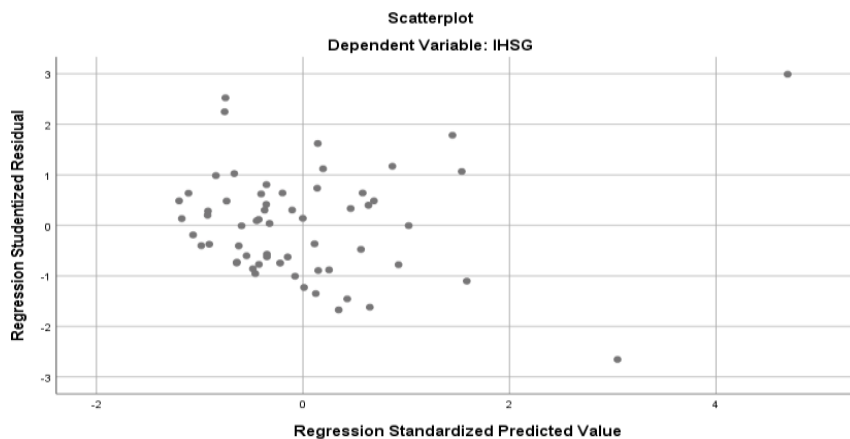
Table 4 shows the Asymp level. Sig. (2-tailed) of 0.200 with Asymp conditions. Sig. (2-tailed) > 0.05 can be said to be a normal distribution. So, in the table above the processed data can be said to be normally distributed, with the Asymp level. Sig. (2-tailed) of 0.200 > 0.05. In this study, the results of the multicollinearity test can be seen in table 5:

**Table 5. Multicollinearity Test**

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
EXCHANGE RATE	.964	1.037
INFLATION	.964	1.037

Source: Data processed by the author (2021)

Table 5 shows the tolerance value of the exchange rate and inflation variable of 0.964 > 0.1 with a VIF value of 1.037 < 10, it can be said that there is no multicollinearity of each variable. Following are the results of the heteroscedasticity test in this study using the IBM SPSS-25.



**Figure 2. Heteroscedasticity Test**

Source: Data processed by the author (2021)

Figure 2 above, shows the scatterplot on the dependent variable of the points spread and it can be interpreted that the data being studied does not occur heteroscedasticity. In this autocorrelation test the researchers got the following results:

**Table 6. Autocorrelation test**

Model	Durbin-Watson
1	1.703

Source: Data processed by the author (2021)

In table 6 in the autocorrelation test where the results of Durbin-Watson are 1.703 > 0.05, the statement can be interpreted that the data under study does not occur autocorrelation. Here are the results of multiple linear regression processed through, IBM SPSS-25 software;

**Table 7. Multiple Linear Regression**

Model		Unstandardized Coefficients	
		B	Std. Error
1	(Constant)	4.490	1.273
	EXCHANGE RATE	.760	.123
	INFLATION	-.895	.380

Source: Data processed by the author (2021)

In table 7 above, it can be explained that the constant value is 4.490 with the regression coefficient  $X_1$  of 0.760 and  $X_2$  of -0.895. With this explanation, the following equation can be made:

$$Y = a + b_1 \cdot x_1 + b_2 \cdot x_2 + e$$

$$Y = 4.490 + 0.760x_1 + (-0.895) x_2 + e$$



The multiple linear regression equation above can be interpreted or explained as follows: (1) if the constant value is 4.490, which means when the exchange rate ( $X_1$ ) and inflation ( $X_2$ ) variables are 0, then the composite stock price index fluctuation ( $y$ ) is 4.490; (2) if the regression coefficient of the exchange rate ( $X_1$ ) is 0.760, it means that if the other variables have a fixed value and the rupiah exchange rate appreciates against the dollar or increases by 1%, it can increase by 0.760. the coefficient is positive, meaning that there is a positive relationship between the exchange rate and the composite stock price index, the more appreciation the rupiah exchange rate against the USD dollar, the higher the composite stock price index will be. (3) the regression coefficient of the inflation variable ( $X_2$ ) is -0.895, meaning that if other variables have a fixed value and inflation has increased by 1%, the composite stock price index variable ( $y$ ) will experience a decline of 0.895, which means that a coefficient with a negative value will experience a negative relationship. between inflation and the composite stock price index, because the higher the inflation, the lower the composite stock price index. The following is the result of the coefficient of determination ( $r^2$ ) which is processed in the IBM SPSS-25 software:

**Table 8. Coefficient of Determination**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.687 <sup>a</sup>	.471	.453	2.12633

Source: Data processed by the author (2021)

In table 8 above, the number  $R^2$  (R Square) is 0.471 or 47.1%. Where this shows that the percentage of the contribution of the influence of the independent variable (Exchange and Inflation) on the dependent variable (Composite Stock Price Index) is 47.1% and the remaining 52.9% is influenced or explained by other variables not included in this study. The following are the results of partial data processing or in the t-test which were processed using the IBM SPSS-25 software.

**Table 9. T-Test Results**

Model	Standardized Coefficients		
	Beta	t	Sig.
1 (Constant)		3.527	.001
EXCHANGE RATE	.605	6.165	.000
INFLATION	-.231	-2.352	.022

Source: Data processed by the author (2021)

Based on table 9 the results of the t-test were obtained by looking at the  $t_{table}$  with  $t_{count}$  on the IDR/USD exchange rate variable of 6.165 and  $t_{count}$  on the inflation variable of -2.352 with a  $t_{table}$  value of 1.671. So, it can be interpreted that the  $t_{count}$  on the exchange rate variable is  $6.165 > 1.671$ , while the  $t_{count}$  on the inflation variable is  $-2.352 < 1.671$ . this means that the partial hypothesis test explains that the independent variable exchange rate ( $X_1$ ) affects the composite stock price index dependent variable (Y) while the inflation variable ( $X_2$ ) does not partially affect the composite stock price index variable (Y).





Based on the results of the partial hypothesis test, the value of  $t_{count}$  on the exchange rate variable is 6.165 with  $t_{table}$  1.671 or  $t_{count}$  greater than  $t_{table}$ , meaning that the first hypothesis shows that the exchange rate variable has a negative and significant effect on the composite stock price index variable, in other words, the higher the depreciation of the rupiah exchange rate on dollar USD has an impact on the decline in the value of the composite stock price index in the capital market. this study supports research from yuliana (2019) according to which the exchange rate variable has a negative and significant influence on the composite stock price index. this is because if the value of foreign currencies decreases against the rupiah, on the other hand, stock prices increase and encourage investors' decisions to invest in the capital market. however, this research is contrary to Pahlevi's research (2019) which suggests that the rupiah and dollar exchange rates have a positive effect or have a dynamic relationship with the composite stock price index (composite stock price index), changes in the rupiah and dollar foreign exchange rates will cause an imbalance in the composite stock price index because due to changes in the demand or supply of shares.

In this study, it can be concluded that the first hypothesis is accepted by being proven in partial hypothesis testing. This means that the exchange rate variable that experiences fluctuations in both appreciation and depreciation can identify the good and bad of the country's economy. The exchange rate that strengthens or appreciates against the USD dollar can make many investors buy shares, on the contrary, if the rupiah exchange rate depreciates, which means the dollar strengthens against the IDR, it indicates that the economy is not doing well. This can make investors divert their funds to other instruments such as bonds, savings, or deposits with conditions like this that can trigger a decline in the value of the COMPOSITE STOCK PRICE INDEX.

The second hypothesis testing shows that the analysis of hypothesis testing variably on the inflation variable shows the value at  $t_{count} < t_{table}$ , which means that there is no significant effect of the inflation variable with the composite stock price index variable, although, in the multiple linear regression results, the inflation variable has a negative effect on the composite stock price index. this means that inflation has no significant effect on the composite stock price index, but when the inflation rate is more than ten percent, the inflation variable can have a negative and significant effect on the composite stock price index variable. this study strengthens the results of research conducted by farouk & widiastuti (2017) suggesting that inflation does not affect the composite stock price index, according to him that inflation will affect the composite stock price index if the inflation rate in a country shows an inflation rate above 10.

Following are the results of simultaneous hypothesis testing (f test) which were processed using IBM SPSS-25 software:

**Table 10. F- Test Results**

<b>Model</b>	<b>F</b>	<b>Sig.</b>
Regression	25.414	.000 <sup>b</sup>
Residual		
Total		

Source: Data processed by the author (2021)



Based on table 10, the f-test was obtained. The f-test obtained by looking at the  $f_{table}$  with  $f_{count}$  of each independent variable is 25,414 with  $f_{table}$  of 3.159 while the significance is 0.000. From this statement, it can be explained that  $f_{count}$  is  $25.414 > f_{table}$  is 3.159 while the significance is  $0.000 < 0.05$ , which means that the test of the exchange rate variable ( $X_1$ ) and inflation ( $X_2$ ) simultaneously (together) affects the dependent variable, namely the composite stock price index (Y).

The third hypothesis testing shows that there is a simultaneous effect of the exchange rate and inflation variables on the composite stock price index variable, meaning that when the exchange rate and inflation variables are tested simultaneously or simultaneously, it can affect the composite stock price index variable assuming  $f_{count} > f_{table}$ . this indicates that macroeconomic factors can identify the good or bad of the capital market in a country, one of which is the Indonesian capital market which is reflected through the composite stock price index variable, meaning that when economic factors, either the exchange rate or inflation, experience significant fluctuations, it will affect the composite stock price index rate. this study supports the results of yuliana's research (2019) according to which the variables of inflation, exchange rate, sbi, and the amount of money in circulation simultaneously affect the composite stock price index.

### CONCLUSION

The exchange rate variable has a negative and significant effect on the composite stock price index variable, where when the rupiah exchange rate appreciates or depreciates, it can affect the composite stock price index movement. this can be assumed with a portfolio balance, which means that there is a negative relationship between stock prices and the exchange rate, where when there is an increase in domestic stock prices it will encourage investors to buy these shares accompanied by domestic demand for money which has an impact on the appreciation of the rupiah exchange rate against the dollar with thus, it will attract capital into the domestic market. the inflation variable has no significant effect on the composite stock price index, this is because the inflation rate is still considered normal, but when the inflation rate is above ten percent, the inflation variable will have a negative and significant effect on the composite stock price index variable.

Exchange rate and inflation variables have a negative and significant effect on the composite stock price index, which means that when the independent variables are tested simultaneously or together, they can affect the dependent variable. this is because when the exchange rate and inflation decrease or increase, it can affect the value of the composite stock price index.

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