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Inflation, Amount of Currency, Dollar Exchange Value, and Interest on IHSG in Indonesia Stock Exchange

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Abstract

This study aims to determine whether inflation, the amount of money in circulation, the dollar exchange rate and interest rates are factors that affect the Composite Stock Price Index. This research uses deductive, quantitative, and descriptive approaches. The population to be used for 5 years. The determination of the sample is saturated so that the data is 60 data, where 5 years x 12 months. The data analysis method uses multiple linear regression analysis, classical assumption test and hypothesis testing. The results showed that partially inflation and the dollar exchange rate had no impact on the JCI while the money supply had a significant positive impact on the JCI, interest rates had a significant negative impact on the JCI. Simultaneously, inflation, money supply, dollar exchange rate and interest rates have a significant impact on the JCI. Based on the results of the coefficient of determination test, the value of a Adjusted R Square is 0.709, which means that 70.9% of the variance of the JCI variable can be explained by the inflation variable, the amount of money in circulation, the dollar exchange rate and the remaining interest rate is influenced by other variables of 29.1%. for example world oil prices and GDP.

Keywords: Inflation, Money Supply, Dollar Exchange Value, Interest Rate, JCI

1. Introduction

The Composite Stock Price Index (JCI) can show the ups and downs of stocks in the capital market. A series of historical information regarding stock price movements can be seen from the JCI spread across various economic sectors owned by shareholders. The measuring instrument for the movement of shares listed on the Stock Exchange is also represented by the IHSG, which reflects macroeconomic conditions, whose developments can be directly monitored. The JCI's ability to reflect the market for funds and the global economic situation of a country, of course, cannot be separated from the influence of various variables such as inflation, money supply, dollar exchange rates and interest rates.

The problem in the world economy is the instability of currency values. In addition, prices for products and services sometimes tend to increase. This condition will cause the purchasing power of currency to decrease and cause inflation. If the inflation increases, the economy will also decline. This condition has an impact on decreasing the company's profits, and results in the movement of the equity effect on stock prices to be less profitable. Inflation control carried out by the government is very important. This policy can be pursued by imposing effective interest rates. One of the monetary tools that can be used to control the amount of demand and supply of the money supply in the economic system is the interest rate. If the money demand is too much, the circulation of money in society is too large, forcing the government to take policies to increase

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interest rates, so that money demand increases and money supply decreases. The government can also take policies to lower interest rates to provide support and stimulate growth in the economy & industry sector, which encourages increased production. This increase in productivity is expected to be able to suppress rising inflation and increase company profits, which will positively affect the development of the capital market.

Based on the article IHSG 2019 tends to decline where one of the causes is a decrease in foreign exchange reserves. In addition, demonstrations after the inauguration of new DPR members also influenced the JCI movement. Market participants are also waiting for the decision by the US central bank, the Federal Reserve, to lower its benchmark interest rate again so that it tends to take action, which tends to wait and see. Another stock expert said that the JCI on the Indonesian stock market was classified as very cheap. For a clearer picture of data on inflation, the amount in circulation, the dollar exchange rate and the interest rate on the JCI can be seen in Table 1 below:

Table 1. Inflation Data, Money Supply, Dollar Exchange Value, Interest Rates, IHSG

Year	Inflation (%)	Amount of money Circulating (Trillion)	Dollar Exchange Rate (IDR)	Interest Rate (%)	IHSG (unit)
2014	8,36	4.170,7	12.441,5	7,75	5.226,95
2015	3,35	4.546,7	13.795,0	7,50	4.593,01
2016	3,02	5.003,3	13.436,0	4,75	5.296,71
2017	3,61	5.418,5	13.548,0	4,25	6.355,65
2018	3,13	5.758,3	14.481,0	6,00	6.194,50

Based on the table above, it can be seen that the phenomenon of inflation in 2015 and 2018 has decreased but the JCI has also decreased, on the contrary, inflation in 2017 has increased, but the JCI has also increased. The money supply in 2016 and 2017 has increased, but the JCI has also increased. The 2017 dollar exchange rate increased but the JCI also increased. Interest rates in 2015 decreased but the JCI also decreased. Several studies have conducted research with various different research results, namely the research of Rizky et al. (2019) which shows the results of inflation research have a positive effect, the exchange rate has a negative effect / - while interest rates have a positive effect on the JCI. Research by Harsono and Worokinasih (2018) shows that the results of research on inflation have no effect, interest rates and the rupiah exchange rate have a negative impact on theIHSG. This study will examine whether inflation, the money supply, the dollar exchange rate and the interest rate are significant factors in influencing the JCI.

2. Literature Review

According to Harsono and Worokinasih (2018: 103), if there is inflation, it will affect several effects in the economy, one of which is investing in stocks, the occurrence of inflation can make investors as investors discourage their interest in investing in companies on the Indonesia Stock Exchange which affect the movement of the Stock Price Index. Combined. According to the opinion of Samsul (2006: 210), if the total money circulation increases, the interest rate will be increased and the Composite Stock Price Index (JCI) will decrease, but if the amount of money in circulation has decreased, the interest rate will be lowered and the Stock Price Index. Combined / JCI will rise. According to Sari (2019: 68), the dollar exchange rate is a macroeconomic variable that affects the volume of share prices. Domestic currency depreciation will increase the number of

exports. If the international market demand is elastic enough, this will increase the cash flow of domestic companies, which then increases the stock price, which is reflected in the increase in the JCI. Conversely, if the company buys products from outside in dollars, it will have high debt and its share price will fall. Depreciation of the exchange rate will increase share prices as reflected in the JCI in countries experiencing inflationary conditions. According to Sari (2019: 67) a rate policy that is too large will have an impact on the present value / flow of company funds, so that the existing investment opportunities will no longer be profitable. Interest rates that are too high will also increase the burden of equity that will be borne by the company and will also affect the risk that investors signal from an investment will increase. According to Rizky, et al. (2019: 22), the interest rate is high and has an impact on the allocation of investment funds for investors. The release of shares will simultaneously affect the reduction of share prices significantly.

Otorima and Kesuma (2016) The Influence of Exchange Rates, Interest Rates, Inflation, Total Money Supply and GDP on the JCI for the 2005-2015 Period. The secondary data used by them is daily data from 2005 to 2015 which is obtained from the website of the Central Bureau of Statistics, the website of yahooifinance and the website of Bank Indonesia. The conclusion from the results of this study is that not all macroeconomic indicators have a significant effect on the JCI movement. Indicators that have a positive impact are an increase in ibruto domestic product, while indicators of exchange rate depreciation, a decrease in gross domestic product, a decrease in the money supply and the global crisis have negative effects on the JCI. Rahmatika (2017) The Influence of the Amount of Circular Money, the US Dollar Exchange Rate and the Consumer Price Index on the IHSG in the Trade Sector on the Indonesian Exchange Exchange. The results showed that the amount of money circulated had a positive & significant effect on the Stock Price Index in the Trading Sector, while the Exchange Rate and CPI had a negative and significant impact on the Stock Price Index in the Trading Sector. Harsono and Worokinasih (2018) The Effect of Inflation, Interest Rates, and the Rupiah Exchange Rate on the JCI (Study on the Indonesia Stock Exchange_Period 2013-2017). The results showed that inflation has no effect on the Composite Stock Price Index, while interest rates and the rupiah exchange rate have a negative and significant effect on the JCI.

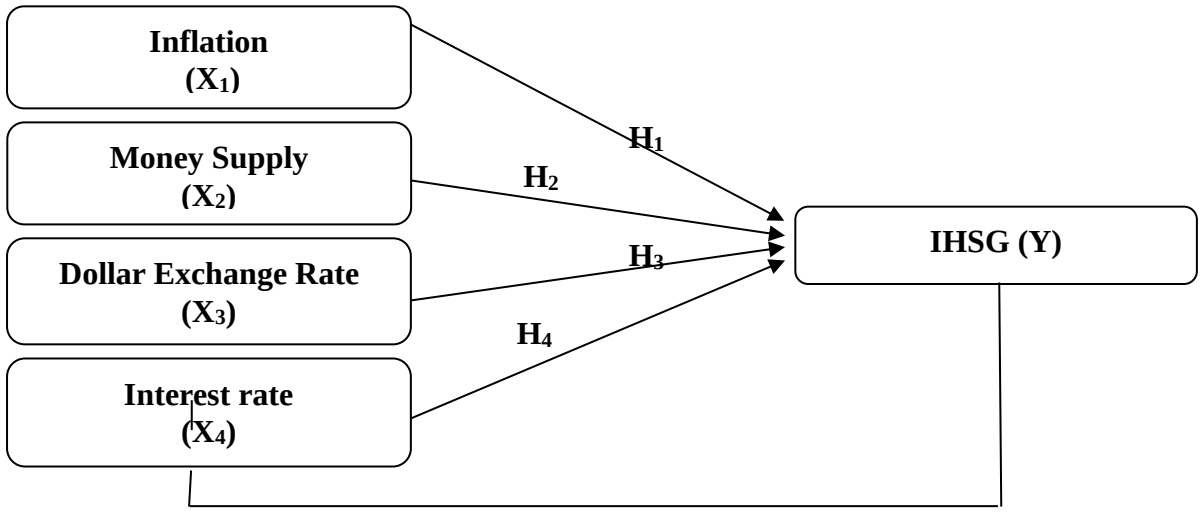

Figure 1. Conceptual Framework

3. Methodology

This research was conducted by observing the movement of the JCI on the Indonesia Stock Exchange through the website www.idx.co.id. This type of research is quantitative. Sujarweni (2014: 6) states that quantitative research is a type of research that produces findings that can be achieved using statistical procedures or other methods of quantification / measurement. The nature of this research is descriptive. Sujarweni (2014: 11) states that descriptive research is research conducted to determine the value of each variable, both one or more independent variables without making relationships or comparisons with other variables. This population is in the form of data related to the inflation variable, the amount of money in circulation, the value of the dollar exchange rate, interest rates and IHSG in 2014-2018. The technique used is a saturated sample so that the total data of this study are 60 data taken from the monthly inflation data report, the amount of money circulating, the dollar exchange rate, the interest rate and the IHSG January 2014-December i2018. The data collection method in this research is carried out by studying documentation by recording, studying, and collecting company data related to the problem being researched by sources from inflation reports, money supply, dollar exchange rates, interest rates and IHSG obtained through official websites and theories related to the variables studied. This type of research data uses secondary data. Secondary data was obtained from the sites iwww.bi.go.id, iwww.investing.com, www.bps.co.id.

4. Result and Discussion

The sample in this study amounted to 60 data (months), namely data from January 2014 to December 2018. The following is a descriptive description of each of the X and Y variables:

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
DER	60	2,79	8,36	4,6683	1,69195
Sales Growth	60	4498361,28	5760046,20	5212348,097	335544,5534
CR	60	11404	15227	13267,53	868,611
PMK	60	4,25	7,75	6,1375	1,35642
ROA	60	4223,91	6605,63	5351,2523	582,41469
Valid N (listwise)	60				

The minimum inflation rate of 2.79% occurred in August 2016 where the maximum inflation value, namely 8.36% occurred in December 2014. The average value of inflation for the 2014-2018 period was 4.6683. The minimum value of the money in circulation was IDR 4,498,361.28 in January 2016, while the maximum value of the money in circulation was IDR 5,760,046.20 in December 2018. The average value of the money in circulation for the 2014-2018 period was IDR 5,212,348,097. The minimum value of the dollar exchange rate was Rp. 11,404, - which occurred in March 2014, while the maximum value of the dollar exchange rate was Rp. 15,227, - which occurred in October 2018. The average dollar exchange rate for the 2014-2018 period was Rp. 13,267.53. The minimum interest rate is i4.25% which occurred in September-December 2017 and then January-May 2018, while the maximum interest rate was 7.75% November-December 2014- and January-2015. The average interest rate for the 2014-2018 period was 6.1375%. The minimum JCI value was 4223.91 in September 2015 while the maximum IHSG

value was 6,605.63 in January 2018. The average JCI value for the 20142018 period was 5351.2523.

The normality test was carried out with 2 methods, namely graphical and statistical tests. The results of the normality test in this study are:

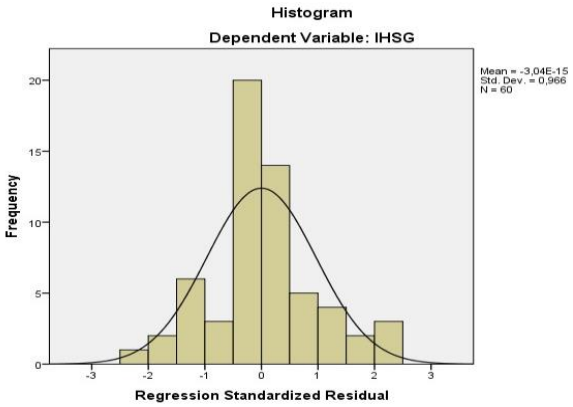

Figure 2. Histogram

From Figure 2 it can be concluded that the data has been normally distributed because the research data tends to be symmetrical, but to find out if the data in this study really has a normal distribution, it will be seen in the results of the P-P Plot graph test as follows:

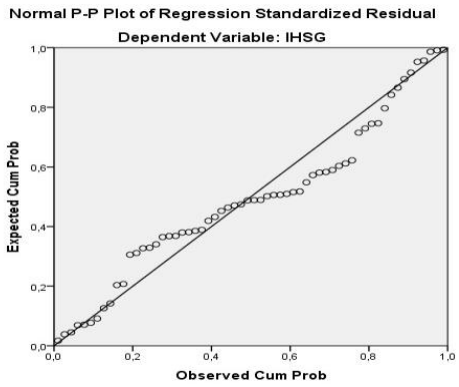

Figure 3. P-P Plot

From Figure 3 it can be seen that the data is around the diagonal axis, so it can be concluded that the idata in this study have a normal distribution.

Table 3. Kolmogorov Smirnovi

		Unstandardized Residual
N		60
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	303,1297637
Most Extreme Differences	Absolute	,140
	Positive	,140
	Negative	-,116
Kolmogorov-Smirnov Z		1,086
Asymp. Sig. (2-tailed)		,189

a. Test distribution is Normal.
b. Calculated from data.

From table 3 it can be seen that the significant value in the column is 0.189, where this value is <0.05, so the researchers conclude that the data tested has a normal distribution.

The multicollinearity test is the second test requirement after normality. To see whether there is no correlation between the independent variables, the tolerancei and iVIF values can be seen.

Table 4. Multicollinearitation

	Collinearity Statistics	
Model	**Tolerance**	**VIF**
LD_Inflation	,397	2,520
LN_MoneySupply	,968	1,033
LN_DollarExchangeRate	,703	1,422
LN_InterestRate	,455	2,200

The multicollinearity test results show that the data in this study is not multicollinearity because the tolerance value of all X variables> 0.10 and the VIF value of all X <ten variables, which means that there is no correlation between the independent variables used.
In time series research, an autocorrelation test is mandatory.

Table 5. Autocorrelation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,854[a]	,729	,709	313,95922	,402

a. Predictors: (Constant), InterestRate, MoneySupply, DollarExchangeRate, Inflation
b. Dependent Variable: IHSG

From the table above, the Durbin-Watson test results show that the Durbin-Watson value obtained is 0.402, which is between -2 and 2 or -2 <0.402 <2, so that the data of this study can be concluded that there is no autocorrelation.

The heteroscedasticity test in this study uses graphical and statistical methods, where the statistical method chosen uses the Park test.

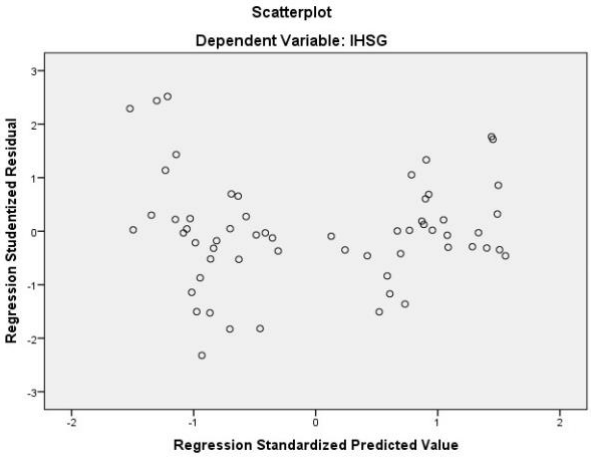

Figure 4. Scatterplot Heteroscedasticity Test

From the results of the scatterplot graph test the data shows that the plots have been scattered randomly so that the data in this study have fulfilled the requirements of the classical assumption test because there is no heteroscedasticity.

Table 6. Park Test

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-6,673	9,520		-.701	,486
	Inflation	,617	,354	,354	1,740	,088
	MoneySupply	5,363E-007	,000	,061	,469	,641
	DollarExchangeRate	,001	,001	,234	1,533	,131
	InterestRate	-,043	,413	-,020	-,104	,917

a. Dependent Variable: LnU2i

From the results of Park's test, it shows that the data in this study does not occur heteroscedasticity because the significant value of the four independent variables / X (inflation, money supply, dollar exchange rate and interest rates) is greater than the significant value limit of 0.05.

Table 7. The Equation of Multiple Linear Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4107,586	1030,001		3,988	,000
	Inflation	-41,635	38,352	-,121	-1,086	,282
	MoneySupply	,000	,000	,350	4,914	,000
	DollarExchangeRate	,009	,056	,041	,166	,868
	InterestRate	-302,527	44,695	-,705	-6,769	,000

a. Dependent Variable: IHSG

The multiple regression equation in this study is:
Financial Performance = -2,827 - 0.229 DER + 0.032 Sales Growth + 0.458 CR - 0.022 PMK

From the multiple regression equation, it can be explained that the constant (a) is -2,827, meaning that if the independent variables (DER, sales growth, current ratio and PMK) are constant or have a value of 0, then financial performance (ROA) will be worth -2,827 units. b1X1 of -0.229 means that every 1 unit increase in DER will cause a decrease in financial performance (ROA) of 0.229 units. b2X2 of 0.032 means that every 1 unit increase in sales growth will lead to an increase in financial performance (ROA) of 0.032 units. b3X3 of 0.458 means that every 1 unit increase in CR will lead to an increase in financial performance (ROA) of 0.458 units. b4X4 of -0.022 means that every 1 unit increase in PMK will cause a decrease in financial performance (ROA) of -0.022 units.

Table 8. Test of The Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,854[a]	,729	,709	313,95922

a. Predictors: (Constant), InterestRate, MoneySupply, DollarExchangeRate, Inflation

Based on table 8, the results of the determination coefficient test at the Adjusted R Square value is 0.709, which means that it is 70.9% of the JCI variation which can be explained by the inflation variable, the amount of money in circulation, the dollar exchange rate and the interest rate where the remaining 29.1% is influenced by the factor other.

Table 9. F test

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14591833,86	4	3647958,466	37,009	,000[b]
	Residual	5421371,566	55	98570,392		
	Total	20013205,43	59			

a. Dependent Variable: IHSG
b. b. Predictors: (Constant), InterestRate, MoneySupply, DollarExchangeRate, Inflation

By looking at table F for df1 (4) and df2 (55), the Fatabel is 2.54. Thus Fahitung (37.009)> Fatabel 2.54 and a significance level of 0.000 <0.05 then Ha is accepted, which means that

simultaneously inflation, the amount of money circulated, the dollar exchange rate and interest rates affect the IHSG on the Indonesian Stock Exchange.

Tabel 10. T Test

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4107,586	1030,001		3,988	,000
	Inflation	-41,635	38,352	-,121	-1,086	,282
	MoneySupply	,001	,000	,350	4,914	,000
	DollarExchangeRate	,009	,056	,014	,166	,868
	InterestRate	-302,527	44,695	-,705	-6,769	,000

b. Dependent Variable: IHSG

The amount of t table at 0.05 probability with a 2-way significance test level and df 55 is 2.00404. a Value -thitung> -ttabel ori -1.086> -2.00404 and a significant value of 0.282> 0.05 so that means Ho is accepted / Ha is rejected, meaning that inflation has no effect on the Composite Stock Price Index at BursaiEffect Indonesia. The total money in circulation has a value of tcount> ttable or 4.914> 2.00404 and a significant value of 0.000 <0.05 so that Ha is accepted / Ho is rejected, which means that the money supply has a positive / significant effect on the Composite Share Price Index1 in Indonesia Stock Exchange1. The dollar chair has a value of tcount <ttable or 0.166 <2.00404 and a significant value of 0.868> 0.05 so that Ho is accepted / Ha is rejected, which means that the dollar exchange rate has no effect on the Composite Stock Price Index in Indonesia Stock Exchange. The interest rate has a value-count <-ttable or -6.769 <-2.00404 and a significant value of 0.000 <0.05 so that Ha is accepted or Ho is rejected, which means that the interest rate has a negative / significant impact on the Composite-Stock Price Index on the Indonesia Stock Exchange.

5. Conclusion

The research results prove that inflation has no effect on the JCI. The results of this study are also in line with Wibowo et al. (2016), namely that inflation has no effect on the JCI. However, in contrast to the research results of Rizky et al. (2019), inflation has a positive and significant effect on the JCI. The research results prove that the money supply has a positive effect on the Composite Stock Price Index in the Indonesia Stock Exchange. The results of this study are also in line with Rahmatika's (2017) research, namely that the amount of money in circulation has a significant influence on the JCI. However, it is not in line with the research of Wibowo et al. (2016) that the money supply has no effect on the JCI. The research results prove that the dollar exchange rate has no effect on the Composite Stock Price Index on the Indonesia Stock Exchange. The results of this research are different from Rahmatika's (2017) research, namely that exchange rates have a significant negative effect on the JCI. The research results prove that interest rates have a negative effect on the Composite Stock Price Index in the Indonesia Stock Exchange. The results of this study are also in line with the results of research by Harsono and Worokinasih (2018), namely that interest rates have a significant negative effect on OIHSG. However, it is different - from the research results of Wibowo, et al. (2016) which show that interest rates have no effect on the JCI.

On a partial basis, inflation has no effect on the Composite Share Price Index on the Indonesia Stock Exchange. Partially the amount of money in circulation has a positive and

significant impact on the Merged Share Price Index in the Indonesia Stock Exchange. Partially, the dollar exchange rate has no effect on the SahamaGabung Price Index on the Indonesia Stock Exchange. Partially, interest rates have a significant negative effect on the Jakarta Efeka Indonesia Composite Stock Price Index. Simultaneously, inflation, money supply, dollar exchange rate and interest rates affect the Composite Stock Price Index on the Indonesian Stock Exchange. From the results of the determination coefficient test the magnitude of the adjusted r-square value is 70.9% of the JCI variation which can be explained by independent variables, the remaining 29.1% is explained by other variables such as world oil prices and GDP.

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