

Inflation Effects and World Crude Oil Prices on Combined Stock Price Index (CSPI) in Indonesia Stock Exchange (IDX) of 2015–2018 Period

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Abstract — The purpose of this study is to find the evidence of whether the World Inflation and Crude Oil Prices had an effect on the Composite Stock Price Index (CSPI) in the Indonesian Stock Exchange (IDX) of the 2015-2018 periods by taking samples for 4 years on the IDX. This method used in this research was descriptive and verification through a quantitative approach. The design of the analysis used was multiple linear regression using secondary data while the hypothesis testing used T-Tests and F-Tests. The findings of this study were fluctuations between inflation, world crude oil prices, and the Composite Stock Price Index (CSPI) in each year. Statistical analysis proves that simultaneously Inflation and World Crude Oil Prices have an effect on the Composite Stock Price Index (CSPI). Moreover, while partially shows that inflation affects the Composite Stock Price Index (CSPI) and World Crude Oil Prices affect the Composite Stock Price Index (CSPI). When income increases, prices become expensive, buying the community or company for the goods become less and will increase the profits earned by the company a little, and investors are reluctant to invest in the company. To determine the compilation of oil prices increases, the mining companies are in great demand because the number of oil demanders by the community will help to increase the company's profits and also investors will invest more in these companies as well as these two things will experience the increase in the Composite Index types every seconds that can help economic development in Indonesia.

Keywords— Inflation, World Crude Oil Price Stock Price Index (CSPI)

I. INTRODUCTION

Economic condition of the world's development ignites almost all countries in the world to pay attention to the capital markets to invest, where the performance of the capital markets can be seen through the stock price index. Stock price index that describes the state of the capital market in Indonesia is Combined Stock Price Index (CSPI). CSPI according Samsul are all types of stocks listed in Indonesia Stock Exchange that day or the second calculated during trading hours [1].

However, the rise and decline of CSPI does not escape the influence of several macroeconomic factors that include inflation, crude oil prices, exchange rate against the US dollar and interest rates [2]. Based on this view, it would require in-depth study of the factors that could affect the stock price changes as world crude oil prices and inflation.

World crude oil is one commodity item with an important role for the economy in Indonesia. The oil price raise will affect the supply to manufacturers as a raw material in the manufacture of its products, so that the oil price will rise. In addition, it will result in many requests to crude oil and will make mining companies increase its profits and push up stock prices in the Indonesian capital market and will affect the increase in CSPI. The increase in oil prices according to Raraga and Harjum reflects a transfer of welfare from the oil importing countries to oil exporting countries [3]. This will have an impact on the reception and welfare of society. Furthermore, it will have an impact on the economy. On the results of research conducted Hamam and Muharam stated that the price of crude oil has a positive effect on CSPI [4]. However, in contrast to a study conducted by MSY Mikiyal states that the price of crude oil has a significant negative impact on CSPI [5].

Later, other factors that can affect the CSPI is inflation. Inflation according to Yunita and Robiyanti is a process of increasing prices in general and continuously (related) with the market mechanism that can be caused [6]. The increase in inflation led to revenue and cost of participating companies has increased and consequently higher production costs from the price increase that can be enjoyed by the company, the profitability of companies participating has decreased. The decline in profitability will decrease the interest of investors to invest in the company or in the capital market. Thus, CSPI will also be decreased. According to the research conducted by Suprihati, states that inflation have a significant negative effect on CSPI [7]. From these three variables or from this research, it is based on empirical and theoretical gaps in which the movement or the effects of inflation and crude oil prices on CSPI has increased and decreased. In this case, from the research will certainly provide some benefit to the investor or owner of the company that will help to assess and make the right decisions in investing and managing the company that will have an impact on the Composite Stock Price Index (CSPI) in the future.

The purpose of this study is to find out whether inflation and world crude oil prices affect the Composite Stock Price Index (CSPI) on the Indonesia Stock Exchange (IDX) for the 2015-2018 period by taking a sample for four years at the beginning of each month, namely January 2015 to December

2018 with a monthly count so there are 48 data. This research used descriptive and verification approach with quantitative approach. The analysis design used Multiple Linear Regression using secondary data and testing the hypothesis used the T-Test and F-Test. Simultaneous statistical analysis proves that inflation and world crude oil prices have a significant effect on the stock together. Whereas a partial analysis shows that inflation has a negative effect on ihsg and world crude oil prices have a positive effect on IHSG.

When inflation rises, prices become expensive and the public or company purchases of these goods become small and will result in the profits obtained by the company are few and investors are reluctant to invest in the company. Conversely, when oil prices rise, mining companies are in great demand because of the large demand for oil by the community that will help increase the company's profits and ultimately investors will invest more in these companies and of these two things will have an impact on the increase and decrease in the JCI. record the types of shares every day and second that can affect the number of investors whether or not investing in shares in Indonesia which will have an impact on the development and economic decline in Indonesia.

II. METHODS

The method used in this research was descriptive method and verification using a quantitative approach that is a method that aims to describe and explain the relationship between inflation and crude oil prices against CSPI by collecting data, process, analyze, and interpret data in hypothesis testing statistics.

The data used was secondary to the population used in the form of source data on inflation, World Crude Oil Price and Stock Price Index (CSPI) in Indonesia Stock Exchange (IDX). While the sample in this study using data taken over four years at the beginning of every month from January 2015 until December 2018 with a monthly count so that there were 48 data.

Design analysis used in this research is multiple linear regression analysis, the correlation coefficient, coefficient of determination, and hypothesis testing. Partial hypothesis testing using t-test and test hypotheses simultaneously using F-test. Operationalization of variables are shown in Table 1 as follows:

TABLE I. OPERATIONALIZATION OF VARIABLES

Variables	Variable Concept Definition	Indicator	Unit Of Measure	Scale
Inflation (X1)	Inflation is the tendency of rising prices for the general and continuous. Boediono (2014: 155)	Consumer Price Index (CPI) $\Delta \text{ Inflation} = \frac{I_t - I_{(t-1)}}{I_{(t-1)}} \times 100\%$	%	ratios
World Crude Oil Prices (X2)	World Crude Oil Prices measured by the spot price of the oil market, which became a standard generally Intermediateatau Brent West Texas. Mara Sutan, et al (2015: 3)	<ul style="list-style-type: none"> ▪ Market price ▪ West Texas Intermediate <p style="text-align: center;">Crude oil Price</p> <p style="text-align: center;">=</p> $\frac{\text{Market Value}}{\text{West Texas Intermediate}}$	USD / barrel	ratios
Stock Price Index (CSPI) (Y)	CSPI is a value used to measure the combined performance of all shares listed sector in the stock market. According Sunariyah (2011: 140).	<ul style="list-style-type: none"> ▪ The total price of all the shares at the applicable time ▪ The total price of all the shares on the basis of time $\text{CSPI} = \frac{\sum H_t}{\sum H_o} \times 100\%$	USD / Lot	ratios

Source: [5, 7, 8]

Research Hypothesis:

H1 : Inflation affects the Composite Stock Price Index (CSPI)

H2 : World Crude Oil prices affect the CSPI

H3 : Inflation and World Crude Oil Prices influence simultaneously against CSPI

III. RESULTS AND DISCUSSION

To prove that the effect of inflation and crude oil prices to the composite stock price index performed a series of tests to see the coefficient of determination (R2) is the coefficient

of determination is basically to measure how far the ability of the model in explaining the dependent variable. Coefficient value of determination between zero to one (Maria, Albertus, and Thyophoida) [8]. The T test and F test empirical models estimates inflation, global crude oil prices, and the stock price index (CSPI), according to Ghozali [9], in journal (Maria, Albertus, and Thyophoida: 2017) stated that T test is The statistical test t basically shows the impact of one independent variable individually in explaining the variation of the dependent variable. Indonesian Stock Exchange (IDX) can be seen in Table 2 as follows:

TABLE II RESULTS OF COEFFICIENT OF DETERMINATION INFLATION AND WORLD CRUDE OIL PRICES AGAINST COMPOSITE STOCK PRICE INDEX (CSPI)

Model Summary ^b			
Model	R	R Square	Adjusted R Square
1	.727 ^a	.529	.508

a. Predictors: (Constant), Harga Minyak Mentah Dunia, Inflasi

b. Dependent Variable: IHSG

Based on the model equations in Table 3 (from evaluating), Rsquare value of 0.529 means the independent variable (CSPI) is affected as much as 52.9 percent by the dependent variables (inflation and World Crude Oil Prices) and 47.1 percent are influenced by other factors. According to Anistisia, Irni, and Aldilla (2016), inflation describes the conditions under which the price of goods increases and value currency weakening and can lead to worsening overall economic conditions [10]. Inflation has a significant impact on the economy in Indonesia caused when the price of goods rises, the demand for these goods decreases resulting in the goods sold by the company are not many and those can cause company losses, the needs of the community will also not be fulfilled properly.

Likewise, the price of oil that is used for daily life becomes either transportation fuel or other things that are quite influential to the community. The higher the oil needed, the better it will be for mining companies that will produce a lot of oil and can benefit companies that will also help the country's economy. In addition, the percentage given by the dependent variable is greater than other factors.

TABLE III. PARTIAL TEST RESULTS (T TEST) INFLATION AND WORLD CRUDE OIL PRICES ON STOCK PRICE INDEX (CSPI)

Model	Coefficients ^d			t	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
(Constant)	325.763	1294.951		.252	.803
1 Inflasi	-112.803	48.814	-.270	-2.311	.025
Harga Minyak Mentah Dunia	4.562	.959	.557	4.758	.000

a. Dependent Variable: IHSG

Based on Table 3, from the results of these calculations can be seen that the value of inflation amounted to -2.311 with a significant value of 0.025. Because $t_{count} (-2.311) > t_{table} (2.014)$, the error rate of 5% was decided to reject H_0 so that H_a is accepted. It can be concluded with a confidence level of 95%, a significant effect towards CSPI inflation. From the results of hypothesis testing partially (t test) above, together with the results of previous studies Dhira Dwijayanti Yogaswari, Anggoro Budi Nugroho, and Novika Candra Astuti entitled "*The Effect of Macroeconomic Variables on Stock Price Volatility: Evidence from Jakarta Composite Index, agriculture and Basic Industry Sector*" which states that there is a significant relationship between macroeconomic variables (inflation, interest rates, and exchange rates) with CSPI [12]. Inflation is seen from the increase in the prices of goods in general, so that it can weaken people's purchasing power, which will affect the decline in sales and profits of companies listed on the Stock Exchange which the CSPI is affected by the decline of inflation.

From the results of hypothesis testing showed, that t_{count} World Crude Oil price amounted to 4.578 with 0.000 significance. Because the value of $t (4.578) > t_{table} (2.014)$, the error rate of 5% was decided to reject H_0 so that H_a is accepted. It can be concluded that the 95% confidence level, the World Crude Oil Price significant positive effect on CSPI. From the results of the partial hypothesis testing (t test) above, together with the results of previous studies by Sugeng Wahyudi, H. Hersugondo, Rio Dhani Laksana, R. Rudy entitled "*Macroeconomic Fundamental and Stock Price Index in Southeast Asia Countries: A Comparative Study*" states that crude oil price has the positive effect in Indonesia, Malaysia, and Singapore, while in the Philippine and Thailand has a positive effect [11]. The increase in world crude oil prices could increase its profit mainly the mining sector. The increase in the revenue sector had a positive impact on the performance of issuers that would have an impact on the increase in stock prices, which also had an impact on the increase in the CSPI.

TABLE IV. SIMULTANEOUS TEST RESULTS (F TEST) INFLATION AND WORLD CRUDE OIL PRICES ON STOCK PRICE INDEX (CSPI)

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	8838300.283	2	4419150.142	25.285	.000 ^b
1 Residual	7864745.780	45	174772.128		
Total	16703046.063	47			

a. Dependent Variable: IHSG

b. Predictors: (Constant), Harga Minyak Mentah Dunia, Inflasi

Based on test results simultaneously, it is known that the value of $F(25.285) > (2.812)$, so H_0 is rejected and H_a is accepted which means inflation and World Crude Oil Prices simultaneously significant effect on CSPI. The test results are similar to results of previous studies conducted by Nur ISMI Faizah, Yanuar, and the banner Anoraga [13], entitled "*Analysis of Effects of Inflation, Oil Price and Value Exchange Dollars (USD / IDR) Against Composite Stock Price Index (CSPI) The Indonesia Stock Exchange (IDX)*" stated that simultaneously variable inflation, oil prices and exchange rates (USD / IDR) significantly affects the Stock Exchange Composite Index.

IV. CONCLUSION

Inflation negatively affects CSPI. The results of this study support previous research. When the value of inflation has increased quite dramatically, it will affect the increase of prices of goods led to reduced consumer purchasing power and income of the company lessened and will have an impact on stock prices and also CSPI decline in the stock exchanges of Indonesia. However, this is not like crude oil prices positively affects CSPI, which when crude oil prices rise, revenue for the mining increased, this will affect the increase in the stock price index in the Indonesia Stock Exchange. In addition, joint inflation and crude oil prices affect the Composite Stock Price Index in Indonesia Stock Exchange (BEI) in the 2015-2018 period.

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