

Investigation of Macro Factors Affecting The Indonesia Composite Index in The COVID-19 Pandemic

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ABSTRACT

The capital market has an important role in the economy of a country. The Indonesia Composite Index (JCI) is a reflection of the capital market. Several factors that influence the movement of the JCI are the BI rate, rupiah exchange rate, inflation, world oil prices, and world gold prices. The results of the t-test showed that the BI Rate, Inflation, and World Gold Price partially had no significant effect on the JCI, while the Exchange Rate and World Oil Price partially had an effect on the JCI. The results of the simultaneous test show that the BI Rate, Exchange Rate, Inflation, World Oil Prices, and World Gold Prices have an effect on the JCI.

Keywords: macroeconomic indicators, Indonesia Composite Index

1. INTRODUCTION

The capital market has an important role in the economy of a country. The capital market is a place to trade various long-term financial instruments. The two functions of the capital market are as a means of business funding and also as a means for the public to invest in financial instruments (idx.co.id).

The Composite Stock Price Index (JCI) is a reflection of the capital market. If the JCI has increased, it means that the capital market is in a bullish state, on the other hand, if the JCI is down, it means that the capital market is in a bearish state (Ratnasari, Muljaningsih, and Asmara, 2021). The JCI helps investors understand the ups and downs of stock prices in the capital market because this index is a composite index of all stocks on the Indonesia Stock Exchange (IDX).

The JCI experienced a significant decline due to the spread of the Covid-19 virus. The lowest point in the JCI occurred on March 24, 2020, which closed at the level of 3,937 and recorded a decline of 37.49% compared to the end of 2019. This level was the lowest level since June 28, 2012, at the level of 3,887 (katadata.co.id).



Image 1
JCI movement in 2019-2021
(Source: finance.yahoo.com)

Stock indices can be influenced by changes in central bank interest rates, global economic conditions, world energy prices, political stability of a country, and others (Blanchard, 2006). According to Samsul, 2008 apart from these factors, macroeconomic conditions are one of the factors that can affect the performance of companies in the country. Several factors that influence the movement of the JCI are the BI rate, rupiah exchange rate, inflation, world oil prices, and world gold prices.

The BI rate is a policy interest rate that describes the monetary policy stance decided by BI and then informed to the public. Changes in interest rates can trigger movements on the IDX (Anggriana and Paramita, 2020). The USD/IDR exchange rate affects the price of goods and results in investment in companies and the capital market so that the JCI can also be affected (Gumilang, et al., 2014). Inflation is a prolonged increase in prices over a certain period of time. Inflation is a factor that can affect the development of the JCI (Tesa, 2012). An increase in world oil prices can trigger an increase in the price of other necessities it can affect stock prices and the JCI (Handiani, 2014). The price of gold has an effect on the JCI because it is risk-free from inflation (Chabachib and Agung, 2011).

During the Covid-19 pandemic, there are more and more investors in the capital market, so various analyzes are needed to find out whether the investment made will provide benefits or not, therefore an analysis of the macro factors that affect the JCI during the Covid-19 pandemic is needed. Based on the explanation above and considering that there is a lack of research that examines the variables simultaneously, the researchers are interested in conducting research on "Investigating Macro Factors Affecting the Composite Stock Price Index during the Covid-19 Pandemic". The purpose of this study was to analyze the influence of macro factors that affect the JCI during the Covid-19 pandemic either partially or simultaneously.

2. THEORETICAL BASIS

2.1. Composite Stock Price Index

The stock price index is information that shows the performance of the stock market on an exchange and then summarized to form a stock market index that reflects daily stock price movements. There are four types of indices in the stock market, namely: 1) Composite Stock Price Index (CSPI), 2) Sectoral Stock Price Index (CSPI), 3) Partial Stock Price Index (IHSP), and 4) Individual Stock Price Index (IHSI). JCI, IHSS, and IHSP are formed from ISHI which changes every day (Imron, 2020).

JCI is an index that uses all listed companies as a component in the index calculation. The Indonesia Stock Exchange has the authority to issue and/or exclude listed companies in the JCI

calculation, taking into account that if the number of shares of a listed company owned by the public (free float) is relatively small while the market capitalization is large enough so that changes in the share price of the listed company will affect the fairness of the JCI movement (Ningsih and Waspada, 2018).

2.2. BI Rate

The BI Rate is a policy interest rate that shows the monetary policy stance or stance set by Bank Indonesia and announced to the public (Mamahit, Tumbel, and Mangindaan, 2019). The BI Rate is also used to respond to prospects for achieving the inflation target in the future through managing liquidity in the money market. The operational targets of monetary policy are reflected in the development of the Overnight Interbank Money Market (PUAB O/N) interest rate. Movements in interbank rates are expected to be followed by developments in deposit rates and in turn bank lending rates (Sunardi and Ula, 2017).

2.3. Exchange Rates

The currency exchange rate is the price of one country's currency expressed in another country's currency. Exchange rates are influenced by national and international politics, social levels, and economic indicators in developed countries (Tanusdjadja and Nariman, 2019). If economic conditions change, the exchange rate will also change. A decrease in the exchange rate of a country against another country is called depreciation, on the other hand, if an increase in the exchange rate of a country against another country is called appreciation.

There are two approaches to looking at the relationship of the exchange rate to the capital market. The first approach is the traditional approach, which means changes in exchange rates due to the imbalance of supply and demand for money. The second approach is the portfolio approach, which means that changes in exchange rates are caused by fluctuations in values in the capital market (Tanusdjadja and Nariman, 2019).

When investors invest in foreign stocks using foreign currencies, the investors will face exchange rate risk. The potential for a large decline in stock values due to exchange rate depreciation is more likely to occur in emerging markets, where the country's currency is highly volatile (Imron, Fitri, and Hendryadi, 2020).

2.4. Inflation

Inflation is the tendency of prices to increase in general and continuously. An increase in the price of one or two goods cannot be considered inflation unless the increase is widespread or causes an increase in other goods (Bank Indonesia). There are various types of inflation categorized according to their severity, namely 1) mild inflation (less than 10 per year), 2) moderate inflation (between 10% to 30% per year), 3) severe inflation (between 30% to 100% per year), years), and 4) hyperinflation (more than 100% per year) (Ningsih and Waspada, 2018).

2.5. World Oil

Crude oil is one of the most important resources today because processed crude oil can be a source of energy. The price of world crude oil can be measured from the spot price of the world oil market which generally uses the West Texas Intermediate or Brent water standard. There are three types of oil that are often traded in the world, namely West Texas Intermediate (WTI) oil for the Americas region, Brent oil for the European region, and Dubai oil for the Middle East region (Basit, 2020).

2.6. World Gold

The world gold price used as a reference worldwide since 1968 is the gold price based on the London gold market standard. Gold is a form of investment that tends to be risk-free. Gold has a value that tends to be stable and rising and it is rare for gold prices to decline (Sartika, 2017).

2.7. Hypothesis Development

2.7.1. BI Rate to JCI

Rising interest rates will negatively affect the capital market. The information published by the company as an announcement will give a signal to investors to make investment decisions. If the announcement is positive, it is expected that the market will respond positively at the time or after the announcement is received by the market. If the BI Rate increases, investors will get a greater return on the deposit rate invested so investors will tend to deposit their capital rather than invest it in shares (Sartika, 2017). The results of research conducted by Robiyanto (2018), Aditya, Sinaga, and Maulana (2018), and Mamahit, Tumber, and Mangindaan (2019), show that there is a negative effect on the JCI which means that when interest rates increase, stock prices will decrease and vice versa.

H₁: BI Rate has a negative effect on JCI

2.7.2. Exchange Rate against JCI

Determination of the exchange rate of a country's currency with the currency of another country is determined as well as goods, namely by the demand and supply of the currency concerned. When the rupiah depreciates, it results in an increase in the cost of raw materials, thus causing an increase in production costs and will affect the decline in the company's profit level. This will encourage investors to sell their shares. If many investors do this, it will certainly encourage a decrease in the composite stock price index (Witjaksono, 2010 in Anggriana, 2020).

H₂: Exchange Rate has a negative effect on the JCI

2.7.3. Inflation to JCI

Inflation is an economic factor that can affect the JCI movement. Inflation can be double information because inflation has information that is good news and bad news. When an economic condition is in crisis, inflation will rise so that the rupiah exchange rate against the dollar weakens because the cost of consumption is greater than before and the demand for dollars is higher which makes the rupiah exchange rate weaken. The results of the research by Sudarsana and Candraningrat (2014) show that inflation has a negative effect on the JCI, which means that if inflation increases, the JCI will decrease.

H₃: Inflation has a negative effect on the JCI

2.7.4. World Oil to JCI

Oil can affect capital markets. Rising oil prices will trigger higher prices for other necessities. The increase in world oil prices will lead to an increase in other necessities because oil is one of the most important needs. This has an impact on stock prices and also the JCI. Based on the results of research by Mara (2017) and Sartika (2017), shows that world oil has a positive effect on the JCI, which means that if world oil prices rise, the JCI will also increase.

H₄: World oil prices have a positive effect on JCI

2.7.5. World Gold to JCI

According to several theories and previous research, gold and stocks are substitutes for goods. That is, when stock investments are considered unprofitable, investors will divert their funds in the form of gold investments, and vice versa. If investors prefer to invest in gold, the JCI will decline due to investor selling. The results of research by Lestari et. al, (2016) showed that

declining gold prices led to an increase in the JCI on the IDX because that's when investors would choose to invest in gold because it can be a means of storing wealth that is resistant to inflation and deflation.

H₅: World Gold Price has a negative effect on JCI

3. RESEARCH METHODS

3.1. Research Design

The research method used is associative research with a causal relationship. Associative research aims to determine the effect or relationship between two or more variables, and a causal relationship is a causal relationship. Collecting data using secondary data in the form of time-series data from January 2019 to December 2021. In analyzing the data, SPSS software was used and the research instrument was tested in the form of classical regression assumption tests, multiple regression analysis, and hypothesis testing using a t-test to test the effect of variables individually. partial and F test to test the effect of variables simultaneously.

3.2. Data Collection Technique

The data collection technique used is secondary data from various sources regarding the BI Rate, Exchange Rate, Inflation, World Oil Prices, World Gold Prices, and the Composite Stock Price Index.

3.3. Population

The population used is data from the closing price of the JCI every month on the IDX throughout the month of observation, from January 2019 to December 2021.

3.4. Data Analysis Technique

3.4.1. The Classical assumption

The Classical assumption test is used to ensure that the regression model obtained is the best model in terms of estimation accuracy, unbiased and consistent. The classical assumption test aims to determine whether the regression model used is free from assumption deviations and meets the requirements to get good linearity.

3.4.2. T-Test

The t-test is used to test the effect of the independent variable on the dependent variable partially where according to Priyastama (2020) if the significance value is less than or <0.05, the independent variable has an effect on the dependent variable partially.

3.4.3. F-Test

The F test is used to simultaneously test the influence of the independent variable on the dependent variable where according to Priyastama (2020), a significance value of less than or <0.05 is needed so that the independent variable is said to have an effect on the dependent variable simultaneously.

4. RESULT AND DISCUSSION

4.1. Descriptive Statistics

To show a general picture of the dependent variable and the independent variable, descriptive statistical tests are used as shown in table 1. The BI Rate variable has the lowest value of 3.50, the highest value of 6.00 with an average of 4.4653. The exchange rate variable has the lowest value of 13,662 and the highest value of 16,367. The inflation variable has the lowest value of 0.0132 and the highest value of 0.0349. Then the world oil price variable has the lowest value at 22.74 and the highest value at 84.38. The world gold price variable has the lowest value of 1,340

and the highest value of 2,026 and the JCI variable has the lowest value of 4,538 and the highest value of 6,591.

Table 1
Descriptive statistics

Variable	Min	Max	Mean
BI Rate	3.50	6.00	4.4653
Exchange rate	13,662.00	16,367.00	14,366.9167
Inflation	0.0132	0.0349	0.022083
World Oil	22.74	84.38	59.2378
World Gold	1,340.00	2,026.90	1,678.69440
JCI	4,538.93	6,591.35	5,900.36580

Source: result of SPSS output (processed data)

4.2. Classic Assumption Test Results

4.2.1. Kolmogorov-Smirnov Normality Test (KS Test)

The KS test is used in the normality test to determine whether the data distribution is normally distributed or not. Based on table 2, the results of the KS test for each variable show Asymp. Sig. (2-tailed) is more than 0.05, then the residual data is normally distributed.

4.2.2. Multicollinearity Test

Testing the correlation between the independent variables with the regression model using the multicollinearity test. The test uses the Variance Inflating Factor (VIF) and Tolerance test. Based on table 2, the results of the multicollinearity test obtained that the overall VIF value is smaller than 10.00 and the tolerance value is greater than 0.10, so it can be concluded that there is no multicollinearity symptom in the regression model.

4.2.3. Autocorrelation Test (Durbin Watson)

Autocorrelation test between period t and the previous period ($t-1$). A good regression model is a regression that is free from autocorrelation symptoms. For the test, the Durbin-Watson test equipment was used. In table 2, it is obtained that the Durbin Watson value is 1.974 where based on the criteria $dU (1.7987) < dW (1.974) < (4-dU) (2.2013)$ it shows that there is no autocorrelation in the regression model.

4.2.4. Heteroscedasticity Test

This test aims to test whether there is a similarity in variance from the residuals of one observation to another observation. The test used is the Glejser method. In table 2, the results of data processing show that the Sig value for all variables is more than 0.05, which means that there is no heteroscedasticity in the regression model.

Table 2
Classic Assumption Test Results

Classic Assumption Test	Decision Making Basis	Test Results	
Normality Test	>0,05	0,200	
Multicollinearity Test	T > 0,10 and VIF < 10,00	Tolerance	VIF
		BI Rate	0,118 8,495
		Exchange Rate	0,485 2,062
		Inflation	0,224 4,474
		World Oil	0,334 2,993
		World Gold	0,116 8,600
Autocorrelation Test	dU < dW < (4-dU)	1,7987 < 1,974 < 2,2013	
Heteroscedasticity Test	>0,05	BI Rate	0,252
		Exchange Rate	0,250
		Inflation	0,693
		World Oil	0,245
		World Gold	0,643

Source: Results from SPSS Output (processed data)

4.3. T-Test

Based on table 3, the t-count value of the BI Rate variable is 3.514 with a significance of 0.896 so that the BI Rate does not affect the JCI. The t value of the exchange rate variable is -1.396 with a significance of 0.023 so the exchange rate has a negative effect on the JCI. The inflation variable has a t value of 0.484 with a significance of 0.632 which means that inflation does not affect the JCI. The t-value of the world oil price variable is 7.811 with a significance of 0.000, meaning that world oil prices have a positive effect on the JCI and the t-value of the world gold price variable is -1.346 with a significance of 0.188, meaning that the world gold price does not affect the JCI.

4.4. F-Test

Based on table 3, the F test results obtained a significance value of 0.000 so it can be said that the BI Rate, Exchange Rate, Inflation, World Oil Prices, and World Gold Prices have a simultaneous effect on the JCI.

4.5. Coefficient of Determination Test

The results of the determination coefficient test give the adjusted R2 result of 0.725 or 72.5% which means that the BI Rate, Exchange Rate, Inflation, World Oil Prices, and World Gold Prices variables in the study were able to explain the JCI variable of 72.5% and 27.5% explained by other variables that were not used in this study. The R-value of the coefficient of determination is 0.874 so the strength of the relationship between the independent variable and the dependent variable is 87.4%.

Table 3

Hypothesis Test Results					
	B	t	Sig.	R	Adjusted R Square
(Constant)	8856,851	3,514	0,001		
BI Rate	-13,368	-0,132	0,896		
Exchange Rate	-0,253	-2,396	0,023		
Inflation	4523,422	0,484	0,632		
World Oil	29,735	7,811	0,000		
World Gold	-0,662	-1,346	0,188		
T-Test			0,000		
Coefficient of Determination Test				0,874	0,725

Source: Results from SPSS Output (processed data)

4.6. Discussion

Based on the results of the analysis, shows that the BI Rate does not have a significant influence on the JCI from 2019 to 2021. When interest rates are high, this does not mean that investors will shift their investment from the stock exchange to the money market. This can be seen in the types of investors in Indonesia, who like to do stock business in the short term. This is in line with the results of research from Sartika (2017), Ningsih and Waspada (2018), and Anggriana and Paramita (2020).

Based on the results of the analysis showed that the exchange rate had a negative and significant effect on the JCI. JCI will weaken when the rupiah depreciates. For investors, this weakening indicates that the fundamental condition of the Indonesian economy is in poor or weak condition. When the economic outlook is bad, investors will sell their shares, this is because to avoid the effects that will be obtained. The selling activity of these shares will weaken the JCI. The results of this study are in line with the results of research by Husnul (2017), Tanusdjadja and Nariman (2019), and Anggriana and Paramita (2020).

Based on the analysis results show that inflation does not have a significant effect on the JCI. In the inflation data during the study period, the average inflation rate was 0.022083, which means the inflation rate was below 10%, so the market was still able to accept the inflation. If the inflation rate is above 10%, the stock exchange will be disrupted because BI will increase the BI Rate which will make investors switch their capital to the banking sector. The results of this study are in line with Tanusdjadja and Nariman (2019), and Anggriana and Paramita (2020).

Based on the analysis results show that world oil prices have a positive effect on the JCI. This shows that if there is a change in world oil prices, it will affect the JCI because oil is one of the important factors needed in life. The results of this study are in line with the results of Sartika (2017) and Basit (2020).

Based on the results of the analysis, it was found that the world gold price did not have a significant effect on the JCI. The world gold price has no effect on the JCI movement because gold is an alternative investment. Investments in gold are still considered to have not provided a higher rate of return than stocks, so if gold increases or decreases, it will not affect the JCI because investment decisions depend on investors and there are other investment options that can provide higher returns. This is in line with research from Sartika (2017) and Anggriana and Paramita (2020).

5. CONCLUSION

5.1. Conclusion

From the results of the research that has been carried out and the discussion that has been described previously, it can be concluded that the BI Rate, Inflation, and World Gold Price partially have no significant effect on the JCI, while the Exchange Rate and World Oil Price partially affect the JCI. The results of the simultaneous test show that the BI Rate, Exchange Rate, Inflation, World Oil Prices and World Gold Prices have an effect on the JCI.

5.2. Suggestion

The advice that can be given is to investors should pay attention to the JCI, Exchange Rate, and World Oil Prices before investing in the capital market. This is because based on the analysis results show that the exchange rate and world oil prices significantly affect the JCI. Thus, investors can avoid losses due to the fall in the JCI due to the increase in the exchange rate.

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