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Original Article

The Relationship between Macroeconomics and the Jakarta Composite Index (JCI) in Bearish Conditions during COVID-19

Yulis Nurul Aini[1*], Tri Yulistyawati Evelina[2], Tariq Tawfeeq Yousif Alabdullah[3], Ayu Sulasari[4], Khoiriyah Trianti[5]

[1,2,4]Politeknik Negeri Malang, Malang, Indonesia
[3]University of Basrah, Basrah, Iraq
[5]Universitas Islam Malang, Malang, Indonesia
Email: [1)] yulisnurulaini@polinema.ac.id

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Abstract

The purpose of this research is to investigate how macroeconomic factors influence the Composite Stock Price Index (JCI) in times of market decline due to the COVID-19 pandemic. Information for this study will be gathered from official sources such as the Indonesia Stock Exchange, the Central Bureau of Statistics, and Bank Indonesia. The information analyzed consists of monthly data on the Composite Stock Price Index, inflation, and interest rates. Multiple regression is the method employed in this study. The findings show that inflation has a notable positive impact on the Composite Stock Price Index, causing bearish trends during the COVID-19 pandemic, while interest rates have a significant negative impact, resulting in bullish trends during the COVID-19 pandemic.

Keywords: Macroeconomic Variables, Covid-19, Indonesia Stock Exchange.

1. Introduction

COVID-19 is a terrible pandemic. COVID-19 is an outbreak that quickly spread globally within a short period of time (a matter of months). The epidemic resulted in a significant number of fatalities and a variety of instances. By August 30, 2020, over 70 countries have reported more than 20,000 cases and 1,000 fatalities. Nations affected by the widespread outbreak encompass China, Indonesia, the United States, Russia, Brazil, India, Saudi Arabia, Israel, among others.

The COVID-19 pandemic has brought about various consequences, including adverse effects on human health and a significant slowdown in the global economy. The economic recession has significantly influenced Indonesia's economic development (Nasution et al., 2020). Specifically, Indonesia's economic growth has experienced a decline of 6.13 percent during this period of crisis. Consequently, this negative economic situation has influenced the movement of the Jakarta Composite Index (JCI), which is currently exhibiting a bearish trend. In financial terms, the condition of being bearish refers to a downward trajectory or decline in the stock market. This term is commonly used to describe a downturn in the business sector, global markets, and the prices of specific financial assets.

In 2020, the JCI movement encountered fluctuations in its performance. From June to the end of August, the JCI witnessed a significant rise of approximately 5371 points. Nonetheless, the increase in COVID-19 infections in Jakarta caused the JCI to go down. In

September 2020, the JCI saw two drops in performance, hitting 4870 points, marking a 9.34% decrease from its highest point. As a result, it suggests that the JCI decreased by 22.5% so far this year.

Various elements impact the fluctuations of the JCI, with the pandemic and macroeconomic factors playing significant roles. Macroeconomic elements like inflation and the SBI interest rates play a role in the fluctuation of the JCI. SBI Interest Rate is the rate of interest associated with Indonesian rupiah securities issued by Bank Indonesia. Inflation represents a widespread rise in prices of goods and services over a specific timeframe.

In the study conducted by Sahoo et al (2020), various items such as BSE SENSEX stocks, Dow Jones Average (DJIA), inflation, GDP, and Interest Rates were utilized to investigate the correlation between macroeconomics and JCI movements. The analysts determined that factors such as interest rates and inflation rates had a minimal and adverse effect on the stock prices of BSE SENSEX. However, they found that GDP was an important variable in this context. On the other hand, Khan (2018) conducted a separate study and found that the movement of JCI was found to be greatly impacted by the interest rates of SBI as well as inflation, resulting in a negative outcome. The key difference between the research conducted by Sahoo et al (2020) and Khan (2018) is that the macroeconomic influence on JCI was found to be both significant and insignificant in their respective studies.

One of the challenges encountered in current research is the necessity to impose limitations, particularly with regards to the data and discussion, in order to maintain a higher level of focus. This study looks at data collected on a monthly basis from a variety of sources such as the Indonesia Stock Exchange, the Central Statistics Agency (BPS), and Bank Indonesia. When it comes to the implications for investment decision making, the analysis solely considers the JCI during bearish conditions, inflation, and interest rates (SBI).

2. Literature Review

2.1. Jakarta Composite Index (JCI)

The stock market index is a crucial component of the financial market ecosystem (Jogiyanto, 2017). An index serves as a vital tool for tracking fluctuations in security prices. The Composite Stock Price Index, also known as the Jakarta Composite Index (JCI), is one such index in the capital market that monitors the price movements of various types of stocks. The JCI was established on April 1, 1983, with August 10, 1982, as the base date for comparison.

2.2. Capital Market Conditions

The state of the Indonesian stock market is closely linked to times of optimism and pessimism. During the 1998 financial crisis, the Indonesian capital market experienced bearish conditions marked by the decline of the JCI to below 400 and the market capitalization value also fell to only Rp175 trillion. This bearish condition was caused by a lot of foreign capital leaving Indonesia. Indonesian capital market conditions began to improve after 1998 with the JCI reaching over 1,000 at the end of 2004 and a capitalization value of Rp680 trillion (Husnan, 2019).

The Dow Theory approach bullish market conditions can occur when the movement of stock prices in the primary trend tends to move up, while bearish indicates the movement of stock prices in the primary trend tends to decline. The Dow Theory aims to identify stock price trends in the long term based on historical data on stock market prices in the past. The term bearish market is defined as a downward trend that occurs in the capital market. The

indication is if the new price (index) fails to break the previous high, or if the decline in price (index) that occurs is able to break the lower limit of the price (index) that occurred previously (Tandelilin, 2017). A bullish new high and low approach (technical analysis indicator) means that stocks reach their highest price over the past 52 weeks. Bearish conditions are defined as stocks that have experienced the lowest price decline for 52 weeks (Husnan, 2019).

Determining the expectation of bullish and bearish conditions is very important because if something goes wrong, it will have fatal consequences in the performance of the portfolio. In addition, these market expectations determine the choice of securities to be included in the portfolio. When the market is bullish, select high beta securities for the portfolio to outperform the market. When the market is bearish, choose low beta securities for the portfolio to decrease less than the market (Jogiyanto, 2017).

2.3. Economic Conditions

Investors who are interested in putting their money into the stock market should prioritize conducting an economic analysis. It is crucial to analyze the economy as it directly impacts how well the stock market performs (Tandelilin, 2017). When the capital market reflects what is happening in the macro economy because the value of the investment is formed by the expected cash flow and the required rate of return on investment. Fluctuations that occur on the stock exchange cannot be separated from changes in macro variables. This can be shown by the price of bonds will depend on the prevailing interest rate and the interest rate is influenced by changes in the macro economy or macro policies set by the government. Stock prices reflect investors' expectations of earnings, cash flow, and the required rate of return.

2.4. Effect of Inflation on JCI

Eduardus (2017) emphasize that a rise in inflation is seen as a drawback in the financial market. Inflation impacts the company's income and expenses. When production costs rise more than the prices the company can charge, it negatively affects the company's profitability. This decrease in profitability will affect the stock price.

2.5. Effect of Interest Rate (SB1) on JCI

A company's cash flow's current value will be impacted negatively by a high interest rate, which will make investment options less appealing. Moreover, a high interest rate will lead to higher expenses for the company, ultimately increasing the return demanded by investors (Tandelilin, 2017).

2.6. Previous Research

Previous research relevant to this research was conducted Tambunan & Aminda (2021), which revealed that the composite stock price index (JCI) is adversely impacted by inflation and interest rates. Research conducted by Khan (2018) said that inflation, interest rates, and exchange rates in the long term have a significant effect on stock prices in Karachi. The variable amount of money in circulation or inflation, interest rates, and exchange rates in the short term has an insignificant effect on stock prices in Karachi. Study by Astuti (2016), revealed that the composite stock price index (JCI) is notably impacted by inflation in a favorable way. Conversely, interest rates possess a detrimental impact on the JCI. Additionally, the JCI is significantly influenced by a combination of inflation, interest rates, and exchange rates.

3. Methods

The study utilized a descriptive quantitative research methodology. This method was chosen because the data had a numerical basis, which was examined to make inferences. The findings from these conclusions could potentially provide insights into the broader economic impact on the Composite Stock Price Index during the onset of the COVID-19 pandemic.

Operational variable definition is used by researchers to explain the variables they are studying. In this study, we are observing several variables. First, we have the bearish market, which refers to a downward trend in the stock market. This is indicated by the failure of the new price (index) to surpass the previous highest price limit, or by the ability of the price decline (index) to break the previous lower price limit (index) (Tandelilin, 2017).

Second, during the downturn in the market due to the COVID-19 pandemic, we are utilizing the Composite Stock Price Index (JCI). Our dataset includes monthly closing stock prices spanning from 2020 to 2022. The JCI information in bearish market situations was sourced from the Indonesia Stock Exchange.

Third, we are looking at inflation, which refers to the general and continuous increase in prices. In this study, during the COVID-19 pandemic, when the stock market was down, we collected and analyzed inflation data on a monthly basis, readjusted according to the JCI. The information was sourced directly from the website www.bi.go.id.

Lastly, the SBI interest rate level is used to indicate Bank Indonesia's stance on monetary policy. In this research, we will be analyzing monthly interest rate data that has been adjusted to account for market conditions during bearish periods.

This study utilized secondary data, specifically focusing on SBI interest rate data, inflation rates, and the Composite Stock Price Index (JCI) during bearish markets from 2020 to 2022. Data sources were obtained from Bank Indonesia publications, the Central Bureau of Statistics, and the Indonesia Stock Exchange.

All JCI change data recorded on the IDX was utilized in this study for analysis. Additionally, all data on changes in interest rates (SBI) and inflation available in publications from 2020 to 2022 were included. In this research, the sample was selected using judgment sampling, which entails choosing participants based on certain criteria. The sample criteria included the Composite Stock Price Index (JCI) experiencing bearish conditions during COVID-19 on the IDX from 2020 to 2022, and interest rates (SBI) and inflation were selected in accordance with the JCI during the COVID-19 bearish market conditions from 2020 to 2022.

Various data analysis techniques are used, including multiple regression analysis, to anticipate how various independent factors can affect a dependent variable like the Bearish Composite Stock Price Index (JCI) in the context of inflation and interest rates. The T test evaluates how specific explanatory factors impact the outcome, whereas the F test evaluates the combined influence of independent variables on the outcome. The coefficient of determination (R2) measures the model's ability to explain variations in the dependent variable. Classical assumption tests include normality tests to ensure normally distributed residual values and multicollinearity tests to detect linear relationships between independent variables. Autocorrelation tests use the Durbin-Watson test, while heteroscedasticity is assessed by examining patterns in residual variants. These analyses ensure the reliability and validity of regression models for predictive purposes.

4. Results and Discussion

4.1. Research Result

The JCI serves as a benchmark for evaluating the overall performance of companies trading on the Indonesia Stock Exchange. JCI experiences two conditions, namely bullish and bearish. A bearish condition occurs when the JCI forms a pattern of movement from top to bottom, indicating a weakening or declining market condition. A declining market can be interpreted where investors are psychologically pessimistic or cautious with economic conditions that are not yet convincing or the Dow theory put forward by Charles H. Dow which reveals the market index has fallen by 20 percent.

4.1.1. Multiple Regression Results

Table 1. Multiple Regression Calculation Results

Model	Unstandardized B	Coefficients Std. Error	Standardize Coefficients Beta
(Constant)	516,417	52,601	
Inflation	46,165	5,853	,935
SBI	-46,903	14,826	-,375

Source: Data processed 2023

Based on table 1, the multiple linear regression equation is as follows:

$$JCI= 516,417+46,165X1(Inflation)-46,903X2\ (SBI)+e$$

According to the model offered, it is suggested that inflation has a positive effect on the JCI during the Covid 19 bear market. This suggests that an increase in the inflation rate will result in a higher JCI value during a downward market. Conversely, during the Covid 19 bear market, the variable of interest rates negatively impacts the JCI. This indicates that as interest rates rise, the value of the JCI decreases in the Covid 19 bear market.

4.1.2. Statistical Test t (Partial)

Table 2. Partial Test Calculation Results

Model	T	Sig
(Constant)	9,818	,000
Inflation	7,887	,000
SBI	-3,164	,003

Source: Data processed 2023

Based on the data from Table 2, the inflation and interest rate factors have values that are less than 5%, with inflation having a significance of 0.000 and interest rates with a significance of 0.003. This suggests that both inflation and interest rates play a notable role in influencing JCI during periods of economic downturn caused by the Covid 19 pandemic.

4.1.3. F Statistical Test (Simultaneous)

Table 3. F Test Results

Model	Sum Of Squares	Df	Mean Square	F	Sig
1 Regression	118366,513	2	59183,256	31,599	,000[b]
Residual	61806,920	33	1872,937		
Total	180173,432	35			

Source: Data Processed 2023

Table 3 illustrates the impact of inflation and interest rates as independent variables on the variable JCI during bearish conditions in the Covid 19 period. The obtained F value of 31.599 indicates a significant effect with a significance level of 0.000. Since the significance value is less than 0.05, it can be inferred that both inflation and interest rates collectively influence the JCI in bearish conditions during the Covid 19 era.

4.1.4. Test Coefficient of Determination (R^2)

Table 4. Calculation Results of the Coefficient of Determination (R^2)

Model	R	R Square	Adjusted RSquare	Std Error Of The Estimate
1	,811[a]	,657	,636	43,27744

Source: Data processed 2023

The data from table 4 suggests that 63.6% of JCI Bearish conditions during Covid 19 are influenced by inflation and interest rate variables, with the remaining 36.4% being impacted by other factors outside the regression model.

4.1.5. Classical Assumption Test

a. Normality Test

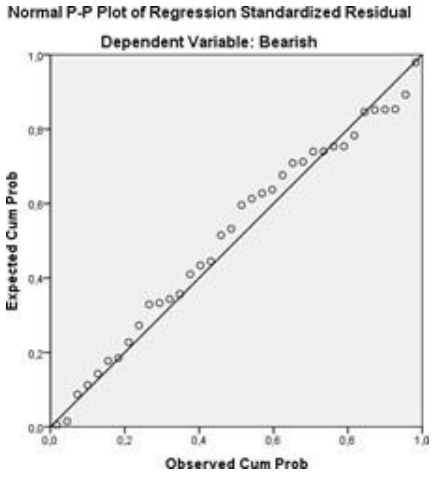

Figure 1. Normality Test Results

According to Figure 1, it is evident that the diagonal graph in the Normal P-P Plot of standardized residuals displays a variety of data patterns. This leads to the conclusion that the regression model is effective and has residuals that follow a normal distribution.

b. Multicollinearity Test

Table 5. Summary of SPSS output on the test of difference between VAR and TVA

Model	Collinearity Tolerance	Statistic VIF
Constant		
Inflation	,740	1,351
SBI	,740	1,351

Source: data processed 2023

Table 5 displays the Variance Inflation Factor (VIF) values for the independent variables, inflation and interest rates (SBI), which is 1.351. Having a VIF value of 1.351 well below the threshold of 10 suggests that multicollinearity is not present in this regression model.

c. Autocorrelation Test

Table 6. Autocorrelation Test Results

Model	R	R Square	Adjusted R Square	DurbinWatson
1	,811[a]	,657	,636	1,684

Source: data processed23

According to the data in table 6, the Durbin Watson value is 1.684, with N = 36 and K = 2. The Durbin Watson Table indicates that with a 5% confidence level, dl = 1.3537, du = 1.5872, 4-dl = 1.2358, and 4-du = 1.7245. The calculated Durbin Watson value is 1.590, which falls within the range of du and 4-du, indicating that this regression model does not exhibit autocorrelation.

d. Heteroscedasticity Test

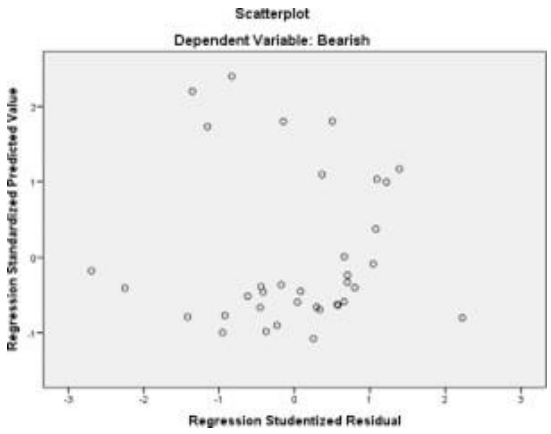

Figure 2. Heteroscedasticity Test Results

There is no discernible trend in Figure 2, as the dots are dispersed both above and below the zero point on the Y axis, indicating the absence of heteroscedasticity.

4.2. Discussion

4.2.1. Influence of Inflation on JCI Bearish Condition on COVID-19

The initial findings from the test reveal a significance level of 0.000, falling below the 5% threshold. The impact of inflation on the JCI in bearish markets is recorded at 46.417%. This suggests that inflation may have a favorable influence on the JCI's performance in bearish conditions amidst the Covid19 crisis, with an increase in inflation correlating with an increase in the JCI value. The findings of this research align with previous studies carried out by Khan (2018), which revealed that the variables of money supply or inflation, interest rates, and exchange rates in the long term have a significant effect on stock prices in Karachi. Also in accordance with the theory proposed by Eduardus (2017), which says Inflation has a dual impact on company finances, as it influences both revenues and expenses. When the rise in production costs outpaces the increase in prices, it can lead to a decline in the company's overall profitability. This decrease in profitability, in turn, can have a negative effect on the company's stock price.

4.2.2. Effect of Interest Rate (SBI) on JCI Bearish Condition on COVID-19

Partial test results show a significance value of 0.000 below the 5% tolerance. The effect of interest rates on JCI in bearish conditions amounted to -46.903%. Thus, it can be interpreted that interest rates have a negative effect on the movement of the JCI in bearish conditions during Covid19, where if interest rates increase, the JCI decreases. The results of this study are in accordance with this research conducted (Tambunan & Aminda, 2021), revealing Inflation and Interest Rates negatively impact the composite stock price index (JCI) in a significant way. The findings of this research align with the theory suggested by Eduardus (2017), which states that rising interest rates may lead investors to pull their money out of stocks and shift it into savings or deposits.

4.2.3. Effect of Inflation and Interest Rate (SBI) on JCI Bearish Condition on COVID-19

The outcome of various regression analyses indicate that inflation and interest rates (SBI) have a significant impact of 81.1% on the bearish conditions of the JCI during the Covid-19 pandemic. This suggests that both inflation and interest rates have a favorable influence on the movement of the JCI. In other words, when inflation and interest rates rise simultaneously, the composite stock price index also experiences an increase. The findings of this study align with research carried out by Khan & Khan (2018), which reveals inflation, interest rates, and exchange rates in the long term have a significant effect on stock prices in Karachi.

5. Conclusion

In summary, the analysis and discussion of the data reveal several key conclusions. Firstly, it is proven that inflation has a significant beneficial effect on negative market conditions for the JCI during the COVID-19 pandemic. This suggests that as inflation increases, the likelihood of JCI experiencing bearish conditions also increases. This finding highlights the importance of monitoring inflation rates and considering their potential impact on investment decisions.

Secondly, the research shows that interest rates play a crucial role in influencing JCI Bearish Conditions in a negative manner at the same time. This implies that as interest rates rise, the probability of JCI experiencing bearish conditions decreases. This finding emphasizes

the need to closely monitor interest rate movements and their potential influence on investment outcomes. Lastly, the analysis reveals that both inflation and interest rates collectively exert a significant influence on JCI in Bearish conditions during the COVID-19 era. This suggests that the interaction between these two macroeconomic factors plays a crucial role in determining the market conditions of JCI. Therefore, investors should carefully consider both inflation and interest rates when making investment decisions, as they can have a combined impact on the performance of JCI.

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