THE EFFECT OF GLOBAL STOCK PRICE INDEX AND RUPIAH EXCHANGE RATE ON IDONESIAN COMPOSITE STOCK PRICE INDEX (CSPI) IN INDONESIAN STOCK EXCHANGE (IDX)

Anita Damajanti
Yulianti
Rosyati
Faculty of Economics, Semarang University

ABSTRACT

Indonesian capital market through the Indonesia Stock Exchange is an integral part of the global stock exchange activities. The closer the relationship between Indonesian stock exchange and global stock exchanges is represented by the relationship between the stock price index. Composite Stock Price Index (CSPI) movement in Indonesia Stock Exchange has decreased for 2 (two) first quarter in 2018. This aim of this study to examine the effect of the global stock price index represented by the Dow Jones index, the Nikkei 225 Index, the Hang Seng Index and rupiah exchange rate against CSPI movement. The observation period uses daily data from 2 January to 31 August 2018. Samples are selected by using judgment sampling method, by taking the stock price index and rupiah exchange rate announced on the same day by all exchanges. There are 145 data samples and was analyzed by using linear regression. The results partially show that Hang Seng index and rupiah exchange rate have a significant effect on the CSPI, while Dow Jones index and the Nikkei 225 Index have no significant effect on the CSPI. Simultaneously all variables have a significant effect on the CSPI. The results of goodness of fit model examination show the ability of the independent variable in explaining the dependent variable is 40.3%, while 59.7% is explained by variables outside the model.

Keywords: Composite Stock Price Index (CSPI), Dow Jones Index, Nikkei 225 Index, Hang Seng Index, Rupiah Exchange Rate

INTRODUCTION

Capital markets are one of the country’s economy drivers because it provides capital in the long term without limits. The capital market was arranged to increasing public participation in the funds movement to support national funding. Highly integrated Capital market which is supported by advances information and communication technology lead to the development of exchanges that will affect other exchanges. (Christa & Pratomo, 2013). Indonesian capital market through Indonesia Stock Exchange is an integral part of global stock exchange activity. Closer relationship between Indonesian stock exchange and global stock exchanges is represented by the relationship between the stock price index. Indonesian stock exchanges are increasingly fast in responding to the movement of global stock market and bringing a positive influence. Indonesian stock exchange condition that responds too quickly to the movement of global stocks can also bring negative consequences, if global stock market declines, it will also quickly affect Indonesian stock market.

Summary of historical data accessed from http://investing.com shows that the ICI movement has declined until the semester I-2018. At the beginning of 2018, the ICI was recorded at the level of 6,339 and then increased until February 2018 with the highest level of 6,689 on 19/02/2018 or up by + 8.6%. On February to July 2018 it has decreased with the lowest value of 5,634 on 03/07/2018, or

1 anitadamajanti@usm.ac.id
decreasing by -11.1% from the beginning of the year. In August 2018 the ICI began increase with the highest level of 6,119 on 13/08/2018 and then declined to the lowest level of 5,782 and again increased at the end of August to the level of 6,018. The average decline during January to August 2018 was -0.03%. The ICI movement during January to August 2018 was illustrated in the following graph.

![ICI Movement on January-August 2018](http://investing.com)

Source: [http://investing.com](http://investing.com)

Figure 1. ICI Movement on January-August 2018

According to Muhammad Nafan Aji, at Binaartha Parama Sekuritas (Kontan.co.id, Sunday (6/24) on the first semester, several negative sentiments from inside and outside the country overshadowed the ICI movement. People purchasing power decreased, the government's policy not to raise the price of fuel (BBM), and the decisions related to the BI Board of Governors' Meeting which is likely to raise interest rates to become a burden for the stock price index. Negative sentiment from abroad occurs because of the decision of The Federal Reserve to raise interest rates twice and will make it double in the second semester. The trade war between the United States and Canada, China and North Korea is expected to affect the ICI. Nafan estimates that technically index will move at the support level of 5,490 for the resistance level of 6,690.

Another factor which is expected to affect the ICI movement is rupiah exchange rate. Historical data summarized from http://investing.com shows that rupiah exchange rate weakened during January to August 2018. Rupiah exchange rate against US dollar reach highest value at Rp.14,735 / USD while the lowest value was Rp.13.2655 / USD. Gom-Gom, (2015) states that external factors that can influence the stock price index include government announcements, legal announcements, securities industry announcements, domestic political turnover, fluctuations in exchange rates and various issues both domestically and abroad. According to Yustisia, (2016) several macro factors can affect the investment activities of stocks on the Stock Exchange such as inflation, the BI rate, American stock market index, international interest and others. The aim of this study to examine the effect of global stock price index represented by Dow Jones Index, NIKKEI225 Index and
Hang Seng Index and rupiah exchange rate against US Dollar on ICI movement during January to August 2018.

LITERATURE REVIEW

The index number is a number that can be used to make comparisons between the same activities (production, exports, sales proceeds, money supply, etc.) in two different times. The stock price index is kind of measurement based on statistical calculations to determine changes in stock prices at any time against the base year. The individual stock price index is used as a measurement for investors to determine the development of a company reflected in its stock price index. The composite stock price index is used as an indicator to measure the general situation of securities trading, securities trading in bearish or bullish situation. (Christa & Pratomo, 2013)

Composite Stock Price Index (CSPI) Indonesia Stock Exchange (IDX)

According to Astuti, Aprianti, & Susanta, (2013) The composite stock price index describes a series of historical information regarding to the movement of the composite stock price of all shares on a certain date. The composite stock price index of all shares is a value used to measure the composite performance of all shares listed on a stock exchange. The Indonesia Stock Exchange Composite Index (IDX ICI) or JSX CSPI is a Composite Stock Price Index issued by the Indonesian Stock Exchange (IDX). This IDX ICI took a basic day on August 10, 1982 and included all shares listed on the IDX. IDX ICI was first introduced on April 1, 1983 which is used as an indicator to monitor stock movements. This index includes all ordinary shares and preferred shares on the IDX. The calculation method used is the weighted average method.

Dow Jones Index

Dow Jones Index is an average value of 30 certain industrial companies known as the Blue Chip Stock traded on the New York Stock Exchange (NYSE). This index is a reflection of the performance of shares that have high quality and reputation. Dow Jones Index is also commonly used to describe the condition of the exchange globally. The Dow Jones index published on the New York Stock Exchange is the main index of the world’s largest exchange with a capitalization of almost $ 10 trillion or estimated to represent one third of all equity traded in the world. (Sudarsana & Candraningrat, 2014). Rising Dow Jones Index means that the economic performance of the United States has also improved. As one of Indonesia’s export destinations, the economic growth of United States can drive Indonesia's economic growth through both export and capital activities, both direct investment and through the capital market. (Ernayani, 2015)

Investors when choosing investments in the capital market, must have taken into consideration the factors that affect the stock market itself. One such factor is the stock index on the American market. Increase Dow Jones index can result in an increase stock index on the Indonesia Stock Exchange. This is caused by sentiment positive from investors regarding conditions world economy (Riantani & Tambunan, 2013). According to Wibowo, Arifati, & Raharjo, (2016) Dow Jones Index is the average of the largest stock index in the
world therefore the movement of the Dow Jones Index can affect almost all world stock indices including the ICI. The influence of the Dow Jones Index to the ICI which is expected to be positive in the sense that the Dow Jones Index will increase the ICI on the Indonesia Stock Exchange. Christa & Pratomo (2013), Ernayani (2015), Wibowo, Arifati, & Raharjo (2016) show that there is positive influence of Dow Jones Index on ICI. Based on the previous studies the following hypotheses were formulated:

H1 : Dow Jones Index has a positive effect on the CSPI

**Nikei 225 Index**

Nikei 225 is a stock market index on Tokyo Stock Exchange. This index has been calculated by the Daily Nihon Keizai Shimbun since September 7, 1950. The calculation method uses the average price calculation (units in yen), and the company's stock components listed in the index will be reviewed once a year. The company's shares listed in the Nikkei 225 Index are the most actively traded stocks in the Tokyo stock exchange. Nowadays, the Nikkei is the most widely used index as a guide for investors to invest (Chabachib & Witjaksono, 2011). Companies listed on the Nikkei 225 Index are large companies that have operated globally, including in Indonesia. With the rise of the Nikkei 225 index, this means that the performance of Japanese economy is improving. As one of Indonesia's export destinations, Japanese economic growth can boost Indonesia's economic growth through export activities and capital inflows both direct investment and through the capital market (Wibowo, Arifati, & Raharjo, 2016).

Sutanto, Murhadi, & Ernawati, (2013) and Astuti, Aprianti, & Susanta (2013) stated that Nikkei 225 Index had a positive effect on the ICI. Wibowo, Arifati, & Raharjo (2016) state that Nikkei 225 Index has no significant effect on the JCI. Based on the previous studies the following hypotheses were formulated:

H2 : The Nikkei 225 index has a positive effect on the ICI

**The Hang Seng Index (HSI)**

*Hang Seng Index* (HSI) is a cumulative index of 38 bluechip stocks from *Hong Kong Stock Market*, which is one of the trusted stock indices, which are used by investors and fund managers to invest. The 38 constituent stocks that are used as indicators, come from various sectors, such as industry, finance, properties, and so on. The total value of these shares constitutes 70% of the capitalization value of all shares listed on *The Stock Exchange of Hong Kong Ltd.* (SEHK). Because of that the rise or fall of the Hang Seng Index is a reflection of the performance of all traded shares (Wibowo, Arifati, & Raharjo, 2016). Research Results Christa & Pratomo (2013), Astuti, Aprianti, & Susanta, (2013), Sidiq (2010), Chabachib & Witjaksono (2011) stated that the Hang Seng Index had a positive effect on the JCI. Based on the theoretical review and the results of previous studies, the following hypotheses are formulated:

H3 : Hangseng Index has a positive effect on the CSPI
Exchange Rate
The exchange rate is the price of a currency expressed in another currency. Exchange rates are one of the indicators that affect activities in the stock market and in the money market because investors tend to be careful to make portfolio investments. Depreciation of rupiah exchange rate against foreign currencies, especially US dollar has a negative influence on the economy and capital markets. (Ernayani, 2015).

The weakening of rupiah exchange rate can affect the rate of investment return of a company, especially in companies with high levels of imports and foreign debt. The weakening of rupiah exchange rate will result in greater costs borne by the company so that it can reduce the level of profits which will ultimately reduce stock prices. The increase in US dollar exchange rate against rupiah will cause negative impact on issuers that have debt in US dollars, the stock price will decline. Meanwhile, export-oriented issuers will receive a positive impact from the increase in US dollar exchange rate, and stock prices will increase. Thus if rupiah depreciates against US dollar, the stock price tends to weaken and vice versa, if rupiah appreciates against US dollar, the stock price will experience a strengthening (Riantani & Tambunan, 2013). Astuti, Aprianti, & Susanta, (2013), Imbayani, (2015), Wibowo, Arifati, & Raharjo (2016), stated that rupiah exchange rate against US dollar negatively affected ICI. Based on the previous studies, the following hypotheses were formulated:

\( H_4 : \) The rupiah exchange rate against the US dollar negatively affected the ICI

METHOD, DATA AND ANALYSIS

Data used in this study is the Daily Composite Index (ICI), Dow Index Jones (Dow Jones Industrial Average), Nikkei 225 Index, Hangseng Index, and the exchange rate of rupiah against US dollar. The data is accessed from http://investing.com with an observation period of 2 (two) first quarter of 2018 which is from January 2, 2018 to August 31, 2018. Samples are selected by judgment sampling method, by taking stock price index and rupiah exchange rate against US dollar which announced on the same day by all exchanges. There are 145 samples were used and then analyzed by quantitative methods. The analytical tool used is multiple linear regression. Regression equations are formulated as follows:

\[
ICI = \alpha + \beta_1 \text{DJIA} + \beta_2 \text{N225} + \beta_3 \text{HSI} + \beta_4 \text{USDIDR} + e
\]

ICI = Composite Price Index
DJIA = Dow Jones Industrial Average (Dow Jones Index)
N225 = NIKKEI Index 225
HSI = Hang Seng Index (Hang Seng Index)
USDIDR = Rupiah exchange rate against dollar United States (USD / IDR)

Multiple linear regression models should meet the assumptions of residual normality, there is no autocorrelation, heteroscedasticity and multicollinearity. The results of testing the classical assumptions on the data showed autocorrelation and heteroscedasticity. To overcome this problem the data is transformed into different model and deletion of 5 data of outliers. The results show that the data is normally distributed, there is no autocorrelation, there is no heteroscedasticity, and there is no multicollinearity. The
Kolmogorov-Smirnov One-Sample test results showed value test of 0.715 with a significance level of 0.686. Statistically it can be concluded that H$_2$ rejected and H$_0$ accepted or data is normally distributed. The next test is the autocorrelation test by run test. The test results show a test value of 0.679 with a probability of 0.497. Statistically, these test results indicate H$_0$ accepted means residual random and no autocorrelation. The next test is heteroscedasticity test by carrying out the Glejser test. The Glejser test results show that there is no significant effect between the independent variable and the residual absolute value, which means there is no heteroscedasticity. Multicollinearity testing is done by analyzing the calculation of tolerance values and VIF using SPSS software. The result shows the value of tolerance all independent variables greater than 0.10 which means there is no correlation between independent variables whose value is more than 95%. The results of the calculation of VIF values indicate that there is no independent variable that has a VIF value of more than 10. This result shows there is no multicollinearity between the independent variables in the regression model.

The next step is to test the hypothesis of the effect of the independent variables partially by the t test and F test to test the effect of simultaneous independent variables on the dependent variable. The test results of t test and F test can be seen on table 1 and table 2 in appendix.

Table 1 shows the significance probabilities for DJIA variables are 0.279 and N225 0.927. So it can be concluded that the Dow Jones Index and the Nikkei 225 Index partially have no significant effect on the ICI. The probability of variable significance of HSI is 0.000 and USDIDR 0.008. Statistically, these results indicate that the Hang Seng Index has a significant positive effect on the ICI movement, and rupiah exchange rate against US dollar has a significant negative effect on the ICI movement. Table 2 shows the calculated F value of 9.865 with a probability of 0.000. So it can be concluded that simultaneously all the independent variables have a significant effect on the dependent variable. The test results of the determination coefficient on table 3 in appendix show the adjusted R$^2$ value of 0.403, which means that the IHSG variable can be explained by the independent variables of 40.3%. The remaining 59.7% is explained by other variables outside the model.

CONCLUSION

Based on data analysis using a regression model it can be concluded that Dow Jones Index partially have no significant effect to CSPI. The result is contrast to the study conducted by Christa & Pratomo (2013), Ernayani (2015), Wibowo, Arifati, & Raharjo (2016) but support the study conducted by Mansur, (2005). Nikkei 225 index partially has no significant effect on the ICI. The results of this study also contrast to the study conducted by Sutanto, Murhadi, & Ernawati (2013) and Astuti, Aprianti, & Susanta (2013) but support the study by Wibowo, Arifati, & Raharjo (2016). Hang Seng Index has significant effect on the ICI. These
results support the study of Christa & Pratomo (2013), Astuti, Aprianti, & Susanta, (2013), Sidiq (2010), Chabachib & Witjaksono (2011). Rupiah exchange rate against US dollar has significant effect on the ICI. These results support the research of Astuti, Aprianti, & Susanta, (2013), Imbayani, (2015), Wibowo, Arifati, & Raharjo (2016). Simultaneously Dow Jones Index, Nikkei 225 Index, Hang Seng Index, and Rupiah exchange rate against US dollar have significant effect on the ICI. The results of testing goodness of fit model show the ability of the independent variable in explaining the dependent variable is 40.3%, while the remaining 59.7% is explained by variables outside the model.

MANAGERIAL IMPLICATIONS

This study shows that Dow Jones Index and NIKKEI 225 Index have no significant effect on the ICI (Christa & Pratomo, 2013). Research conducted by Noer Azam Achsani (2000) in the article Christa & Pratomo (2013) concluded that if there is a shock in United States, regional exchanges will not respond it immediately, only in Singapore, Hong Kong, Japan, Taiwan, and New Zealand which will respond immediately and the response is not large enough. Conversely, if the shock in Singapore, Australia, or Hong Kong is quickly shocked, it will be transmitted to almost all stock exchanges in Asia.

For investors, the depreciation of the rupiah against US dollar indicates that the outlook for Indonesian economy is in a bad condition. Depreciation of rupiah can occur if Indonesia's economic fundamentals are in a bad condition. This condition certainly adds risk to investors when investing in the Indonesian stock exchange. Investors will tend to avoid risk so investors will tend to sell and wait until the economic situation is improve. Furthermore, selling by investors will ultimately encourage a decline in the stock price index on the IDX (Heriyanto & Chen, 2014). The results of this study are expected to help investors determine whether to sell, buy, or hold shares they have.

BIBLIOGRAPHY


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Appendix

Table 1. T test

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
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<tr>
<td></td>
<td>B</td>
<td>Std.Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>2,370</td>
<td>4,949</td>
<td>.633</td>
</tr>
<tr>
<td></td>
<td>DJIA</td>
<td>-.021</td>
<td>.019</td>
<td>-.087</td>
</tr>
<tr>
<td></td>
<td>.N225</td>
<td>-.002</td>
<td>.025</td>
<td>-.008</td>
</tr>
<tr>
<td></td>
<td>HSI</td>
<td>.016 .380.000</td>
<td></td>
<td>4,110</td>
</tr>
<tr>
<td></td>
<td>USDIDR</td>
<td>-.318</td>
<td>.117</td>
<td>-.222</td>
</tr>
</tbody>
</table>

a. Dependent Variable: CSPI

Table 2. Test F

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>129028,725</td>
<td>4</td>
<td>32257,181</td>
<td>9.865</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>441422,124</td>
<td>135</td>
<td>3269,794</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>570450,859</td>
<td>139</td>
<td>3269,794</td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: CSPI
b. Predictors: (Constant), USDIDR, N225, DJIA, HSI

Table 3. Test The Coefficient of Determination (R2)

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.676a</td>
<td>.426</td>
<td>.403</td>
<td>27,18211</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), USDIDR, N225, DJIA, HSI
b. Dependent Variable: CSPI