EFFECT OF RUPIAH EXCHANGE RATE, GDP GROWTH, AND DOW JONES INDEX ON COMPOSITE STOCK PRICE INDEX IN INDONESIA STOCK EXCHANGE

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Abstract
The capital market is a meeting place for stock sellers and buyers with the aim of getting maximum profits. To get these benefits, investors need information about the stock price index. Factors that influence the Stock Price Index are important information for investors. The composite stock price index (CSPI) is one of the main indicators that reflects the performance of the capital market whether it is experiencing an increase or is experiencing a decline. These factors include the rupiah exchange rate, GDP growth, and the Dow Jones index. This study aims to prove and analyse the effect of the rupiah exchange rate, GDP growth, and the Dow Jones index Average (DJIA) on the composite stock price index on the Indonesia stock exchange for the period 2012-2015. The population and sample of this study are forty-eight CSPI data from the Indonesia Stock Exchange. Data is collected by means of documentation and then analysed. The data analysis technique used in this study is multiple linear regression analysis techniques. Based on the results of the analysis it is known that the rupiah exchange rate has no effect on the Composite Stock Price Index (CSPI). While GDP growth and the Dow Jones index Average (DJIA) have affected the Composite Stock Price Index (CSPI). For further research, it is considered necessary to review other factors that can influence the movement of the stock price index, for example, the company's fundamental factors such as profit, loss, financial ratios, and others.

Keywords: Exchange Rate, GDP Growth, The Dow Jones (DJIA), Composite Stock Price Index (CSPI).

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INTRODUCTION
The development of the capital market in the world increasingly attracts investors to invest. According to Fahmi (2013: 1) mentioning the current era is an era of investment without the limits of space and time, where people can make connections anytime and anywhere. The rapid development of technology and information encourages investment science to undergo changes in order to adjust to the conditions that occur. The capital market is where sellers and buyers meet, and so the capital market has two functions, namely first as a means of funding business or as a means for companies to get funds from investors or investors who can be used to develop businesses, expand, increase working capital and others. Second, the capital market is a means for the community to invest in financial instruments such as stocks, bonds, mutual funds, etc. (IDX, January 9, 2017).

The Indonesian capital market, better known as the Indonesia stock exchange, has sever-
al products, namely stocks, bonds, mutual funds, and others. These products have a reference that can be used by investors in making decisions to invest, especially stocks, the reference is the stock price index. The stock price index is an indicator or reflection of stock prices on the stock exchange. The stock price index on the Indonesian stock exchange currently has 11 types of indices. Where the indexes have their respective criteria, one of which is the Composite Stock Price Index (CSPI). The CSPI is an index that uses all companies listed on the Indonesian stock exchange as a component in calculating the index. According to Mie Mie and Agustina (2014) the composite stock price index (CSPI) is one of the main indicators that reflect the performance of the capital market whether it is experiencing an increase or has decreased.

In the last 10 years, the Composite Stock Price Index (CSPI) has gained 193.36% which is the highest increase among the world's major exchanges (Steprader, 2016). Throughout 2016 until the end of year trading, the CSPI has risen 15.32% and closed at 5,296,711 points which is the highest in the history of the Indonesian Capital Market, the fifth highest among the world's major exchanges and the second highest in the Asia Pacific region. The amount of funds collected throughout 2016 reached the highest value in the history of the Indonesian Capital Market (IDX, 2017).

Based on the results of previous research, several factors that influence the composite stock price index (CSPI) include interest rates, exchange rates, inflation, regional stock index, SBI, inflation, and GDP growth. (Budiantara, 2012; Ekadjaja, 2016; Hismendi and Musnadi, 2013; Jayanti, Darminto, and Sudjana, 2014; Mie Mie and Agustina, 2014; Pratama, Hidayat, and Firdausi, 2015; Purnamawati, 2015). In this study, the factors that will be examined for its influence on the CSPI are the rupiah exchange rate, GDP growth, and the Dow Jones index (DJIA) factors. Thus, the purpose of the study is to prove and analyze whether the rupiah exchange rate, GDP growth, and the Dow Jones index (DJIA) has affected the composite stock price index on the Indonesia Stock Exchange for the period 2012-2015.

According to Fahmi (2013: 55) the capital market is a place where various parties, especially companies sell stocks and bonds with the aim of the sale will be used as additional funds or to strengthen the company's capital. Capital market performance is shown by the ups and downs of the Composite Stock Price Index (CSPI). According to May (2013: 77) stock index is the average of a set of stock prices in a particular sector. Whereas according to IDX (2010) "the stock price index is an indicator or reflection of price movements that guide investors in stock investing". While the composite stock price index is an index that uses all companies listed on the stock exchange (IDX: 2010).

One of the factors affecting the Composite Stock Price Index (CSPI) is Exchange Rate (Jayanti, et al, 2014). According to Bank Indonesia, the currency exchange rate is the price of one unit of a foreign currency in the domestic currency or can also be said to be the price of the domestic currency against the other domestic currency. That is the way to calculate the rupiah exchange rate (Bank Indonesia, January 2017). Fahmi (2013: 46) states that if the rupiah exchange rate weakens, foreign investors will ask for a large return from the stock on foreign exchange compensation or ham prices discounted so that the CSPI falls. The weakening of the rupiah exchange rate and the cost of issuing bonds is increasingly expensive, causing capital to come out of Indonesia to increase so that stock prices decline (Liputan6: 2017). Therefore, based on the description, the first hypothesis is:

**H1: The rupiah exchange rate has an effect on the Composite Stock Price Index (CSPI)**

According to Hismendi, et al. (2013), the factor that also affects the Composite Stock Price Index (IHSG) is Gross Domestic Product (GDP) growth. Hasim (2016: 10) indicates that Gross Domestic Product (GDP) is the total income generated by all people both citizens of their own country and citizens of foreign countries originating from goods and services of a country. The Gross Domestic Product (GDP) for developing countries has a greater GDP value because more foreign investment than the products abroad. So this makes the stock price index weaker in the capital market. GDP growth affects the strengthening of the CSPI because the demand for shares in the capital market is more than the stock offer. It can be concluded that the more share demand than stock offers in the Indonesian stock exchange, the CSPI will increase (Sindo, 2015; Sindo, 2016; Sindo, 2017). Based on the description, the second hypothesis is:
H2: Gross Domestic Product Growth has an effect on the Composite Stock Price Index (CSPI)

Besides the rupiah exchange rate and GDP growth, Sutanto, Murhadi, and Ernawati (2013) prove that the Dow Jones Index has a positive effect on the Composite Stock Price Index (CSPI). The Dow Jones Industrial Average (DJIA) index is one of the stock market indices established by the editor of The Wall Street Journal and founder of Dow Jones & Company Charles Dow. Dow makes this index a way to measure the performance of industrial components in the American stock market. Currently the DJIA is the oldest US market index that is still running (Wikipedia, 9 January 2017). The ups and downs of the DJIA will affect the psychological condition of investors because the DJIA represents the United States, which is a super power country. Changes in economic conditions in the US will affect the country more or less (Investing Ideas, 08/24/11). The increase in the Dow Jones does not necessarily have a positive effect on the CSPI because when the JCI fell, Dow Jones accelerated and experienced an increase (Investing Value Indonesia, March 8, 2011). It can be concluded that every movement of the Dow Jones will affect the Indonesian stock exchange both positive and negative influences because both of these indices are in the global market which will influence each other. Based on the description, the second hypothesis is:

H3: The Dow Jones Index (DJIA) has an effect on the Composite Stock Price Index (CSPI)

RESEARCH METHODS
The type of this research is quantitative research. In this study there are independent variables and dependent variables. This research was conducted to analyze and prove the effect of rupiah exchange rate, GDP growth, and Dow Jones index (DJIA) on the composite stock price index on the Indonesia Stock Exchange for the period 2012-2015. Thus, the independent variables are rupiah exchange rate, GDP growth, and Dow Jones index, while the dependent variable is the composite stock price index.

The population used by this study is the entire monthly time series data including the rupiah exchange rate, GDP growth, Dow Jones index (DJIA), and the Composite Stock Price Index (IHSG) for January 2012 - December 2015, which is 48 data. The sampling technique in the study this is the saturated sample method. Saturated sample technique is a sample of all members of the population used as the sample (Sugiyono, 2010: 124). The sample used in this study is the monthly time series data for 4 years, including rupiah exchange rate, GDP growth, Dow Jones index (DJIA), and Composite Stock Price Index (CSPI) data. Based on the information, sample (n) from monthly time series data is 48 samples (12 months x 4 years).

The type of data used in this study is secondary data in the form of statistical data, namely trends or patterns of movement of the composite stock price index which were used as research samples from 2012 - 2015. Judging from its nature, the type of data used in this study is quantitative data. The data source used in this study comes from the Indonesia Stock Exchange in the form of a composite stock price index, the rupiah exchange rate data comes from www.bi.go.id, GDP growth comes from www.bps.go.id, and the Dow Jones index (DJIA) from www.bapepam.com, and www.yahoo.finance.com. The data collection method used in this study is the documentation method. This method is done by collecting data and analyzing the movements of the composite stock price index on the Indonesia Stock Exchange from 2012 - 2015.

The data analysis method used in this study is a multiple linear regression analysis method. Regression analysis is an analysis to find out the relationship between two or more independent variables to one dependent variable. In addition, statistical data analysis was also carried out, which included normality tests and classic assumption tests. To test hypotheses, F-test (simultaneous) and t-test (partial) are implemented. In this study, data processing is using IBM SPSS Statistics 22 windows version data processing application. IBM SPSS Statistics 22 windows version (Statistical Package for the Social Sciences) is an application program for processing statistical data, which has high enough statistical analysis capabilities and data management systems in a graphical environment using simple descriptive menus and dialog boxes so it's easy to understand how to operate it.
RESULTS AND DISCUSSION

Results
Before the hypothesis is tested statistically, the first test is the classical assumption test so that multiple linear test is free of bias (Ghozali, 2016). The results of the normality test prove that the distribution of data on the IHSG variable (Y) is a normal distribution, because the significant level produced is greater than 5% (sig> 0.05). For multicolinearity test, Table 1 shows that all independent variables (X) used in this study X1, X2, and X3 have a Tolerance value around 1 and the VIF value under 10, so there is no multicollinarity in the regression equation.

Table 1. Test of Multicolinearity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tolerance</th>
<th>VIF</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rupiah exchange rate (X₁)</td>
<td>0.855</td>
<td>1.170</td>
<td>Free from multicolinearity</td>
</tr>
<tr>
<td>GDP growth (X₂)</td>
<td>0.190</td>
<td>5.255</td>
<td>Free from multicolinearity</td>
</tr>
<tr>
<td>DJIA (X₃)</td>
<td>0.195</td>
<td>5.138</td>
<td>Free from multicolinearity</td>
</tr>
</tbody>
</table>

Source: SPSS Output processed

Based on table 2 the DW-Test value is equal to 0.714, from this value we can compare it with a significant value of 5% and sample N = 48. In the Durbin-Watson table the value of DL is 1.4064 and DU is 1.6708. The DW value is smaller than the DU and DL values. This shows that positive autocorrelation occurs. So to overcome this, using the Orcutt Cochrane method to transform data until the data is stated that there is no autocorrelation. If autocorrelation occurs, it is necessary to solve it by means of a transformation using various methods, including the Durbin Watson method, Theil-Nagar, or Cochrane-Orcutt (Statistics, 2016).

Table 2. Test of Autocorrelation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Durbin-Watson</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rupiah exchange rate (X₁)</td>
<td>0.714</td>
<td>No positive autocorrelation</td>
</tr>
<tr>
<td>GDP growth (X₂)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJIA (X₃)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS Output processed

Based on the results of the autocorrelation test with the Orcutt Cochrane method in table 3, it can be seen that data no longer occurs autocorrelation between variables one with the other variables. Because the value of dU is smaller than the value of DW and the value of DW is smaller than the value of 4 - DU (DU <DW> 4 - DU).

Table 3. Test of Autocorrelation after Data Transformed

<table>
<thead>
<tr>
<th>Variable</th>
<th>Durbin-Watson</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rupiah exchange rate (X₁)</td>
<td>1.786</td>
<td>No Autocorrelation</td>
</tr>
<tr>
<td>GDP growth (X₂)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJIA (X₃)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS Output processed

Based on figure 1, it can be seen that the points do not form a clear pattern and spread above and below the zero on the Y axis, it can be concluded that there is no heteroscedasticity in
the regression model. Thus, the assumption that no heteroscedasticity can be fulfilled.

![Scatterplot](image)

**Figure 1. Heteroscedasticity Test**

Source: SPSS Output processed

**Multiple Linear Regression Analysis**

Based on table 4, the regression equation model can be formed as follows:

\[ Y = 1486.373 + 0.009 X_1 - 2.378 X_2 + 0.317 X_3 \] ............. (1)

**Table 4. Multiple Linear Regression Parameters**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Std Errr</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1486.373</td>
<td>388.785</td>
</tr>
<tr>
<td>Rupiah exchange rate</td>
<td>0.009</td>
<td>0.021</td>
</tr>
<tr>
<td>GDP growth</td>
<td>-2.378</td>
<td>0.803</td>
</tr>
<tr>
<td>Indeks Dow Jones (DJIA)</td>
<td>0.317</td>
<td>0.043</td>
</tr>
</tbody>
</table>

Source: SPSS Output processed

From the linear regression equation model, it can be explained as follows;

**Constant (α)**. The constant value (α) of 1486.373 shows that, if the rupiah exchange rate, GDP growth, and the Dow Jones index (DJIA) are constant, the composite stock price index is 1,486,373 units.

**Coefficient (β1)** For Variable Rupiah Exchange Rates. The value of the regression coefficient (β1) is 0.009. Positive value (β1) indicates that there is a unidirectional relationship between the variables of the Composite Stock Price Index (Y) and the rupiah exchange rate variable which means that if the rupiah exchange rate variable increases by one unit, the Composite Stock Price Index (Y) will increase by 0.009 units assuming other independent variables are constant.

**Coefficient (β2)** For Variable GDP Growth. The value of the regression coefficient (β2) is -2.378. Negative value (β2) shows that there is no unidirectional relationship between the variables of the Composite Stock Price Index (Y) and the GDP growth variable, which means if the GDP growth variable falls by one unit, the Composite Stock Price Index (Y) will decrease by -2.378 units with the assumption of other independent variables are constant.

**Coefficient (β3)** For the Dow Jones Index (DJIA) variable. The value of the regression coefficient
(\beta_3) is 0.317. A positive value (\beta_3) indicates that there is a unidirectional relationship between the variables of the Composite Stock Price Index (Y) and the Dow Jones index variable (DJIA), which means if the Dow Jones index variable increases by one unit, the Composite Stock Price Index (Y) will increase by 0.317 units assuming the other independent variables are constant.

The coefficient of determination test shows that the value of R Square is 0.745, which means that 74.5% of changes in the IHSG can be explained by the three independent variables, namely: the rupiah exchange rate, GDP growth and the Dow Jones index (DJIA). While the remaining 25.5% is influenced by other causes outside the regression model. This is due to the rupiah exchange rate, GDP growth, and Dow Jones Index (DJIA) which shows varying values that influence the increase or decrease in the Composite Stock Price Index (CSPI).

Based on table 5, it is showed that the calculated F value is 42.937 with a significant level of 0.000 (less than 0.05 or 5%). This shows that the resulting regression model is suitable to see the effect of the rupiah exchange rate, GDP growth and Dow index Jones (DJIA) on the Composite Stock Price Index (CSPI) on the Indonesia Stock Exchange (IDX), so that simultaneously the independent variables affected the dependent variables.

**Table 5. Simultaneous Relationship Variance Analysis**

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>Sig</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rupiah exchange rate (X_1)</td>
<td>42,937</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>GDP growth (X_2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJIA (X_3)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS Output processed

**Table 6. Hypotheses Test**

<table>
<thead>
<tr>
<th>Variable</th>
<th>t value</th>
<th>Sig</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rupiah exchange rate (X_1)</td>
<td>0.420</td>
<td>0.675</td>
<td>H1 not accepted</td>
</tr>
<tr>
<td>GDP growth (X_2)</td>
<td>-2.960</td>
<td>0.005</td>
<td>H2 Accepted</td>
</tr>
<tr>
<td>DJIA (X_3)</td>
<td>7.468</td>
<td>0.000</td>
<td>H3 Accepted</td>
</tr>
</tbody>
</table>

Source: SPSS Output processed

Based on table 6, it can be interpreted as follows:

**Effect of Rupiah Exchange Rate on CSPI.**

The amount of the t-value is 0.420 with a significant level of 0.675 (greater than 5%). In accordance with the stipulated provisions, this means that the rupiah exchange rate has no effect and is not significant on the Composite Stock Price Index (IHSG), meaning that the increase in the rupiah exchange rate does not increase the CSPI on the Indonesia Stock Exchange. So the hypothesis which states that the exchange rate of the rupiah has an effect on the IHSG on the Indonesia Stock Exchange has not been proven correct.

**Effect of GDP Growth on the CSPI**

The amount of the t-value is -2.960 with a significant level of 0.005 (smaller than 5%). In accordance with the stipulated conditions, this means that GDP growth has a negative and significant effect on the Composite Stock Price Index (CSPI), meaning that the increase in GDP growth will increase the CSPI on the Indonesia Stock Exchange. So the hypothesis which states that GDP growth has an effect on the CSPI on the Indonesia Stock Exchange is proven true.

**Effect of the Dow Jones Index (DJIA) on the CSPI**

The amount of t-value is 7.468 with a significant level of 0.000 (less than 5%). In accordance with the stipulated conditions, this means that the Dow Jones Index (CSPI) has a positive and significant effect on the Composite Stock Price Index (CSPI), meaning an increase in the Dow Jones index (DJIA) will increase the JCI on the Indonesia Stock Exchange. So that the hypothesis which states that the Dow Jones Index (DJIA) has an effect on the CSPI on the Indonesia Stock Exchange has proven true.
Discussion

Based on the results of multiple linear regression analysis, the F test shows that the resulting regression model is suitable for the variable rupiah exchange rate, GDP growth, and Dow Jones Index (DJIA) on the Composite Stock Price Index (IHSG) in the 2012-2015 period with F-value is 42.937 with a significant level of 0.000 (less than 5%). In addition, the value of R Square is 0.745, which means that 74.5% of changes in the JCI can be explained by the three independent variables, namely: the rupiah exchange rate, GDP growth and the Dow Jones index (DJIA). While the remaining 25.5% is influenced by other causes outside the regression model. This is due to the rupiah exchange rate, GDP growth, and Dow Jones Index (DJIA) which shows varying values that influence the increase or decrease in the Composite Stock Price Index (CSPI).

Effect of Rupiah Exchange Rate on the Composite Stock Price Index (CSPI).

The test results of t-test showed that there is no significant effect of the rupiah exchange rate variable on the composite stock price index on the Indonesia Stock Exchange, can be seen from the results of the t test on the rupiah exchange rate with t-value 0.420 with a significant level of 0.675 (sig> 5%). This indicates that changes that occur in the rupiah exchange rate will not affect the Composite Stock Price Index, meaning that even though the rupiah exchange rate increases, the Composite Stock Price Index will not increase. This is because, when the rupiah exchange rate declined in 2014-2015 the CSPI also declined and could be due to a period of time of only four years, so the results were not optimal or in accordance with the hypothetical expectations in the hypotheses. While the rupiah exchange rate has a negative effect on the CSPI which means that when the rupiah exchange rate decreases, the CSPI has increased or vice versa when the rupiah exchange rate rises (depreciates) the CSPI has decreased.

The result of this study is different from the results of previous studies, namely the results of research by Hismendi, et al. (2013) which showed a negative and significant effect. The negative sign indicates that when the rupiah exchange rate increases (the rupiah depreciates), the Composite Stock Price Index decreases. And the results of research by Jayanti, et al. (2014) which also showed the results of a negative and significant effect, which indicates that the increase in foreign currencies (local dollars) against local currency (Rupiah) has a negative impact on companies that have foreign debt because the company's cost burdened is greater for paying debt in US dollars, causing investors to be reluctant to invest and the CSPI to decline.

Effect of GDP Growth on the Composite Stock Price Index (CSPI).

The test results of t-test showed that there is a significant negative effect of the GDP growth variable on the JCI on the Indonesia Stock Exchange in the period 2012-2015. It can be seen the results of the t test on GDP growth with a tcount of -2.960 with a significant level of 0.005 (sig <5%). This shows that the changes that occur in GDP growth will affect the CSPI, which means that the higher GDP growth, the Composite Stock Price Index will increase.

The results of this study are also supported by the research of Hismendi et al. (2013) which shows that GDP growth has a significant influence on the CSPI which indicates that GDP growth reflects economic growth, if economic growth improves then people's purchasing power increases and investors buy shares to invest their capital so the CSPI increased.

Effect of Dow Jones Index (DJIA) on the Composite Stock Price Index (CSPI).

The test results of t-test showed that there is a significant effect of the Dow Jones Index (DJIA) variable on the Composite Stock Price Index (CSPI). Can be seen in the results of the Dow Jones Index t test (DJIA) with t-value 7.468 and a significant level of 0.000 (sig <5%). This shows that the changes that occur in the Dow Jones Index (DJIA) will affect the Composite Stock Price Index (CSPI), which means that if the Dow Jones Index (DJIA) rises, the JCI will also rise. The results of this study are also supported by the research of Jayanti, et al. (2014).

The results of the study show that the Dow Jones Industrial Average has a positive effect on the Composite Stock Price Index (CSPI), this is because the influence of the United States in the world economy provides information and shocks that can influence market players' decisions.
on the Indonesia Stock Exchange. It is supported by Venska, et al. (2014) research which shows that the Dow Jones index (DJIA) has a significant influence on the CSPI, this indicates that the United States capital market with the Indonesian capital market integrates with each other. In addition, both of these indices in the global market certainly have an impact on each other when there is a decrease or increase in the stock price index.

CONCLUSIONS
Based on the results of research on the effect of the rupiah exchange rate, GDP growth, and Dow Jones Index (DJIA) on the composite stock price index on the Indonesia Stock Exchange for the period 2012-2015, it can be concluded that GDP growth and Dow Jones Index (DJIA) influence the CSPI movement in Indonesia stock exchange. While the rupiah exchange rate does not affect the JCI movement on the Indonesia Stock Exchange.

Based on the results of research and discussions, the suggestions that can be given and are expected to be useful for future research, namely 1) Add the period of research in order to obtain maximum results and 2) For further research, it is considered necessary to review the other factors that can affect the movement of the CSPI, for example the company's fundamental factors such as profit, loss, and others.

REFERENCES


