THE RELATIONSHIP BETWEEN MACROECONOMIC VARIABLES (INFLATION, BI RATES AND RUPIAH TO U.S DOLLAR CURRENCY) ON JAKARTA COMPOSITE INDEX PRICE (Period 1 January 2009 – 31 December 2013)

Harris Setya Anugerah Pratama
Raden Rustam Hidayat
Nila Firdausi N
Fakultas Ilmu Administrasi
Universitas Brawijaya
Malang
E-mail: Yakubus_harris@yahoo.com

ABSTRACT:
The purpose of this research to analyze the effect of Interest Rates, Inflations, Exchange Rate of Rupiah on Jakarta Composite Index Price by using multiple linear regression analysis. In addition, to assess the goodness of fit from a model, we use coefficient of determination test, F test and t test. The data for this research were a monthly data from January 2009 – December 2013 for each variable. The results of this research indicate that Indonesia Bank Rates, and Rupiah Exchange rate have negatively effect on Jakarta Composite Index. While the variables inflations, have a positive effect on Jakarta Composite Index. For the F test, that’s all the independent variable affected on Jakarta Composite Index Price.

Key words : Inflation, BI Rates, Exchange Rate and Jakarta Composite Index

INTRODUCTION

Capital market as an economic instrument can not be separated from an influences of the environment, both the economic environment and non-economic. Influence of microeconomic environment such as the performance of the company, the announcement of financial statements or dividend by company always gets a response of market participants in the capital market. In addition, changes in the economic environment such as changes in bank rate, foreign exchange rates, inflation, and other economic policies issued by the government also affect the trading price and volume fluctuations in the capital market. JCI first introduced on 1 April 1983 as an indicator of price movements of stocks listed on the exchange.

Since the development and market dynamics, JCI is fluctuates caused by a variety of fundamental factors that come from inside and outside the country. Composite Index continues to increase from the level of 1332,67 in January 2009 to make all-time high record in May 2013 at the level 5068,63.

Fundamental factors that affect the value of JCI are inflation, BI rates and the Rupiah currency on US Dollar. Various fundamental factors are
considered can affect the movement of index value. Madura (1993). This research focused on the subject matter of "The Influence of Macroeconomic Variables on Jakarta Composite Index Price (JCI) The purpose of this research, to analyze the influence of the variable interest rate of Bank Indonesia (SBI), inflation and the Rupiah Currency on US Dollar against Composite Index for period 2009-2013.

THEORETICAL ASPECT

Capital Market

Tandelilin (2001) mentions that capital market is a place where the buying and selling of securities called stock exchanges. Therefore, the stock exchange is the meaning of physical capital market

Sunariyah (2000), the capital market in general is an organized of financial system including the commercial banks and all intermediary institutions in the financial sector and the overall securities.

BI Rates

Indonesia Bank Rate (BI Rate) is a policy instrument used for open market operation in the central bank. Open market policy includes measures to sell and buy securities in affecting the price. As a result, the level of common costs will also be affected at price value (Sunariyah, 2003: 29)

Inflation

Inflation is the increase in goods continuously. Rise that occurs only once in high percentage does not mean that is inflation (Nopirin, 2000: 25), Rahardja (1997) Inflation is the tendency of prices to raise in general and continues

Exchange Rate

Exchange rate is one of the indicators of affecting activity in capital market because investors tend to be careful to make an investment portfolio, depreciate of rupiah exchange rate against foreign currencies especially Dollars have negative influence on economic and capital market. Sitinjak and Kurniasari (2003), M.Samsul (2006:202) mentioned that change on one macro economic variables gave impact on stock prices, even a shares can be affected positive while other stock affected negative.

Jakarta Composite Index (JCI)

Composite index is a set of information about the historical stocks price movement, up to a certain date and reflects of value measurement of the combined shares on the stocks exchange Sunariyah (2003)

RESEARCH METHOD

Data Resources

The data used in this study were collected from official BI sites for inflation and the BI Rate, and yahoofinance.com for the exchange rate and JCI, the data collected monthly basis

Population

The population in this study are JCI, BI Rate, inflation, Rupiah currency on US Dollar for period 2009-2013.

Sample

The data used as a sample of this research are the data are JCI, BI Rate, Rupiah currency to US Dollar, and collected month basis for period of observation between years 2009-2013

Operational Variables Definition

a. Inflation (X1), the first, the tendency of prices to rise in general and continuously, data collected from BI reports as a second independent variable. Measurement in percentage

b. BI Rates (X2), is the price of securities issued by the Bank with the monthly returns to attract or increase the money supply. As the first independent variable. SBI is used in units of percent.

c. Exchange Rate Against US Dollar (X3) is the ratio of the rupiah against the US dollar. Derived from the financial economic statistics Indonesia as a third variable.

d. Jakarta Composite Index(Y) is a set of information about the historical stocks price movement, up to a certain date and reflects of value measurement of the combined shares on the stocks exchange.

DATA ANALYSIS AND RESULT

The analysis technique used in this research is multiple linear regression. Considering
the quantities different variables (exchange rate USD / IDR-dollars, inflation-percent interest rate SBI percent) adjustments are made to transform the data into natural log (ln).

1. Classic Assumption Testing

   Classical assumption used in this research in order to fulfill the assumptions of classical regression model (Gujarati, 2007: 210). Some classic assumption test used are test of normality, heteroscedasticity, multicollinearity, and autocorrelation.

2. Hypothesis Testing

   a. Determination Coefficient ($R^2$)

   The purpose of measuring the coefficient of determination is to measure the influence of independent variables on the dependent variable.

   b. Partial test (T-Test)

   T test is used to test the partial regression coefficients of the independent variables.

### Multiple Linear Regression

Results of multiple linear regression analysis presented in Table 1. Based on table 1, the regression equation as follows: $Y = 0.773X_1 - 0.984X_2 - 0.085X_3$

#### Table 1 Multiple Linear Regresion

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>12719.383</td>
<td>1150.018</td>
<td>11.096</td>
<td>.000</td>
</tr>
<tr>
<td>X1</td>
<td>41514.110</td>
<td>6103.833</td>
<td>.773</td>
<td>6.801</td>
<td>.000</td>
</tr>
<tr>
<td>X2</td>
<td>-15244.032</td>
<td>19255.698</td>
<td>-.994</td>
<td>-8.436</td>
<td>.000</td>
</tr>
<tr>
<td>X3</td>
<td>-.092</td>
<td>.114</td>
<td>-.085</td>
<td>-8.086</td>
<td>.424</td>
</tr>
</tbody>
</table>

a. From the regression equation above, it can be seen that the value $t$ count of inflation is 6.801 with a significance level of 0.000. Because the significance value less than 10% and the t value (6.801) is greater than t table (1.302) means that there is a positive significant influence between the variables of inflation to JCI.

$\beta_1 = 0.773$ The regression coefficient indicates that if there is an increasing in inflation by 1 unit of inflation and other variables are constant, there will be raises in the value of JCI at 0.773

This research was supported by previous that conducted by Aditya Setiawan (2010) that there are simultaneous influence from Inflation, Interest Rate and Exchange Rate on Composite Stock Price Index at the Indonesia Stock Exchange. While in partially only inflation that has significant effect on the JCI.

b. From the regression equation above, it can be seen that the value $t$ statistic of SBI is (-8.436) with a significance level of 0.000. Because the significance value less than 10% and the value of $t$ (-9.638) is greater than t table (1.302) means that there is a significant negative effect between the variable interest rate of SBI against JCI.

$\beta_2 = -0.984$

The regression coefficient indicates that if there is an increase in the BI Rate by 1 unit and other variables held constant, there will be a decline in the value of JCI at 0.984

Iswardono (1999) said that investors who will invest in the Indonesia’s capital market should concerned to BI rate.

These result have conducted and supported by many previous researchers. First was Sangkyun (1997) and Mok (2004) that the interest rate does not positively effect on stock returns. Second was Hooker (2004), Chiarella and Gao (2004) who found that the negative effect on the interest rate market return. Third was Gjerde and Sættem (1999) who obtained the results of changes in interest rates have negative affect
on stock price. Fifth was Kandir (2008) who find interest rates negatively affect the return of all research portfolio. Last was Bernanke and Kuttner (2003) which showed that the level of interest rates had negative effect on the stock price index.

c. From the regression equation above, it can be seen that the value of t-test of the exchange rate is at -0.806 with a significance level of 0.424. Because the significance value less than 10% and the value of t count equal to (-0.806) is greater than t table (1.302) means that there is significant influence between variable rate against JCI.

\[ \beta_3 = -0.085 \]

The regression coefficient indicates that if there is an increase of 1 point of exchange rate and other variables are still remain, there will be a decline in the value of JCI at 0.085

This research results was supported by previous research Buyuksalvarci (2010), Kewal (2012), Suyanto (2007) said the negative and not significant influence between exchange on stock price. When the Rupiah appreciate against the US dollar, the cost of production will decrease, especially the cost of imported raw materials and foreign debt that have a positive impact on corporate profits. In opposites, the depreciation of the currency has a major problem for importing product because the price of imported products would raised and decrease in profit which will ultimately affect the company's stock.

Exchange rate has no significant effect Hardiningsih (2002), Setyorini and Supriyadi (2000) and Setyadi (2012)

F Based on that data processed F statistical (29,507) is greater than the F table = 2.769, so it can be concluded that Ho refused meaning there is significant influence from Bank Indonesia Certificates, inflation, exchange rate simultaneously affect the value of JCI, it shows that the independent variables are appropriate to measure the dependent variable.

**CLASSIC ASSUMPTION TEST**

**Table 2 Normality Test**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Inflasi (X1)</th>
<th>IR SBI (X2)</th>
<th>Rupiah Exchange (X3)</th>
<th>Inflation (Y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Normal-Parameter</td>
<td>0.05200000</td>
<td>0.064533</td>
<td>0.06222088</td>
<td>0.05466666</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>0.17073435</td>
<td>0.0051698</td>
<td>0.16205774</td>
<td>0.0051695</td>
</tr>
<tr>
<td>Mean</td>
<td>1.15</td>
<td>1.72</td>
<td>1.72</td>
<td>1.74</td>
</tr>
<tr>
<td>Median</td>
<td>1.15</td>
<td>1.72</td>
<td>1.72</td>
<td>1.74</td>
</tr>
<tr>
<td>Positive</td>
<td>-0.05</td>
<td>-1.171</td>
<td>-1.171</td>
<td>-1.171</td>
</tr>
<tr>
<td>Negative</td>
<td>0.05</td>
<td>1.172</td>
<td>1.172</td>
<td>1.174</td>
</tr>
<tr>
<td>Kolmogrov-Smirnov Z</td>
<td>1.235</td>
<td>1.379</td>
<td>1.331</td>
<td>1.037</td>
</tr>
<tr>
<td>Asymp Sig (2-tailed)</td>
<td>0.054</td>
<td>0.044</td>
<td>0.358</td>
<td>0.233</td>
</tr>
</tbody>
</table>

The result of Kolmogrov Smirnov can be concluded that all the variables used in this research, JCI, the Interest Rate SBI, Rupiah exchange rate and inflation has a significance level above 0.05. It mean that the data used in this study had a normal distribution and indicate that the regression model proper to use due to meet the assumptions of normality.

**Picture 1 Heteroscedasticity Test**

Based on the picture showed that dots did not create specific pattern and these dots speeded randomly above and below 0, it can concluded that this result free from heteroscedastici
Table 4 Multicollinearity Test

<table>
<thead>
<tr>
<th>Model</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>1</td>
<td>X1</td>
</tr>
<tr>
<td></td>
<td>X2</td>
</tr>
<tr>
<td></td>
<td>X3</td>
</tr>
</tbody>
</table>

The result of multicollinearity test by using Variance Inflation Factor (VIF) on Inflation, BI Rate and Exchange rate variables. VIF value in X1 (1.866), X2 (1.966) and X3 (1.627) are less than 10, these shown that there are no multicollinearity problems.

Table 5 Autocorrelation Test

<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>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.785*</td>
<td>.613</td>
<td>.592</td>
<td>613.97744</td>
<td>1.945</td>
</tr>
</tbody>
</table>

From the results by using SPSS shows that the value of the Durbin Watson is 1.945. Value of du 1.69 and the 4-du is 2.31. Value Durbin Watson in this research located between du and 4-du, the regression models is free from autocorrelation problems and suitable to used.

not included in this equation or not described in this equation.

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the analysis and discussion that has presented, the conclusion are:

1. Simultaneously, that the independent variable of SBI rate, Exchange rate, and inflation significantly influence on Jakarta Composite Index Price Index (JCI)
2. Partially, Inflation gives significant positive influence on Jakarta Composite Price Index
3. Partially, BI Rate gives significant negative effect on Jakarta Composite Index Price
4. Partially, Exchange Rate gives not significant and have negative effect on Jakarta Composite Index Price (JCI).
5. The results describe the contributions or contributions of the independent variables included in the regression equation in explaining the diversity of variable Y, is equal to 61.3%, while 38.7% was contributed by other variables that are

Recommendation

Based on the conclusions and limitations in this study, it can be presented some suggestions as follows:

1. In addition, this research used an index option is JCI, given the limitations that have been described above, then in future studies may use other indexes such LQ45 or Syariah Index to get more complete picture of the condition of the capital markets in Indonesia, the usual or in accordance with Islamic Syariah.
2. For investors who will invest in Indonesia should also noticed other factors that also affect the value of JCI especially political factor, because every decision of the government with regard to foreign investment rules and permits given to foreigners may affect foreign interest in investing in Indonesia. Besides the presidential succession to be conducted in the month of July also may give positive influences in stock transaction in Indonesia Stock Exchange

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