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Analysis of the effect of SBI interest rates, world oil prices, world gold prices, and the Straits Time Index on the Composite Stock Price Index (IHSG) on the Indonesian Stock Exchange for the period January 2005-May 2010

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ABSTRACT

The Jakarta Composite Index (JCI) is an index that can be used to represent the situation of the Indonesian stock market. The movement of JCI can be caused by regional stock exchanges and macroeconomic conditions such as interest rates, energy prices, etc. The increase in JCI showed the market has a bullish condition, conversely a decrease in JCI would show the bearish condition. This study was intended to know and analyze the effect of SBI interest rates, Oil prices, Gold prices and the Straits Time Index (STI) which represents the Singapore stock market. The method used in this study is multiple linear regression analysis, T test, F test at a significance level of 5 % and performed with Statistical Package for Social Science (SPSS) version 17.0. This research focused on January 2005 until May 2010, using a monthly data. The results of this study showed that the SBI interest rate, Gold prices, and STI significantly affect the Jakarta Composite Index, while oil prices do not significantly affect the JCI. The SBI interest rate has a negative influence on JCI and the other variables (gold price and STI) have a positive influence on JCI.

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1. INTRODUCTION

The capital market is one of the means that has an important role in a country's economy, because seen through its function the capital market is a forum that brings together parties who need funds with those who have excess funds. The advantage of the capital market is that it provides funds in the long term so that companies can use these funds for business development, additional capital, and investment in other forms. In addition, through the capital market can encourage the creation of an efficient allocation of funds, because investors can choose investment alternatives that provide the most optimal return. Investment decisions made by investors are inseparable from the macroeconomic conditions that exist in a country, especially in Indonesia (Ridha, n.d.).

Changes in interest rates will cause investors to divert their funds to other forms of investment that are considered more profitable. Not only interest rates, there are several factors that affect stock indexes, namely global economic conditions, political stability in a country, foreign

market sentiment and world commodity prices such as oil and gold which also greatly affect the movement of stock indexes (LISA et al., 2006).

Fluctuations in world crude oil prices will have an impact on exports and imports of a country, where investors will tend to make profit taking, by selling their shares when world crude oil prices decline, whereas if they increase, investors will invest their funds in the mining sector. and various similar commodities, especially for oil-exporting countries so that it will affect stock prices (Tanuwidjaja, 2009).

Based on data from the Indonesia Stock Exchange as of December 2009, stock trading transactions on the stock exchange were dominated by the mining sector, namely 39.7% with a market capitalization value of 13.9%. The growth of the mining sector over the last five years also experienced the largest growth compared to other sectors, namely 264.47%, this was due to the growth in mining commodity prices such as oil which continued to increase and was driven by economic growth and world trade (Witjaksono, 2010).

Apart from oil, one of the commodities that are in great demand by investors is gold because it is a safe investment alternative and a type of investment that can be made in various forms ranging from gold coins, jewelery to gold bars with a value of 24 carat which is a type of gold. best gold. Until now, gold is an alternative investment besides the capital market and money market. The dominant percentage of foreign investors will cause the composite stock price index to experience a significant decline if there is a capital outflow. The development of global stock exchanges is inseparable from the improvement in macroeconomic conditions in the world, several exchanges used as a comparison against the JCI are stock exchanges in the United States, London, Japan, Hong Kong, Taiwan, Malaysia (Kristianto, n.d.).

Seeing the dissimilarity of the research results presented in previous studies regarding the influence of macroeconomic indicators and regional stock exchanges which can affect stock price movements in the capital market both overseas and domestically, the researcher is interested in conducting research entitled "Analysis of the Influence of SBI Interest Rates, Oil Prices The World, World Gold Prices, and the Straits Time Index Against the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange for the Period January 2005-May 2010"(Chabachib & Witjaksono, 2011).

2. RESEARCH METHOD

The object of this study is all company shares listed on the Indonesia Stock Exchange, or better known as the Composite Stock Price Index (IHSG). This research is quantitative in nature and is carried out by analyzing data using statistical methods. In this study, as explained earlier, we want to find out whether the SBI interest rate, world oil prices, world gold prices and the Straits Time Index have a significant influence on the IHSG on the Indonesia Stock Exchange.

Data Collection Methods. The data used in this study are secondary data, namely data obtained from certain sources and relevant data from various literature. In this study the data used are SBI interest rates, world oil prices, world gold prices and stock price indexes from the nearest regional exchanges. The index used is the index on the Indonesia and Singapore Stock Exchanges. The secondary data used is monthly price data for the period January 2005-May 2010.

Sampling method. The sample collection method in this study was purposive sampling, namely a sampling method based on certain criteria (Sekaran, 2006). The sample criteria used are all stocks listed on the Indonesia Stock Exchange, which is usually known as the Composite Stock Price Index (IHSG). The stock price used in this study is the closing price at the end of the month for the period January 2005-May 2010 so that accurate results are expected.

Data Collection Techniques This research uses secondary data, where the data is already available and can be obtained through the official website of Bank Indonesia (www.bi.go.id) for data on Bank Indonesia interest rates (SBI),www.indexmundi.comfor world oil prices (West Texas Intermediate), and www.goldfixing.com for world gold prices and www.finance.yahoo.com for the Straits Time Index and JCI.

Data Analysis Techniques This study uses multiple linear regression analysis techniques (multiple regression analysis). This analysis is used to see the direction of the relationship between two or more independent variables with the dependent variable whether they are positively or negatively related. Through this analysis it can be predicted the value of the dependent variable if the independent variable increases or decreases (Priyatno, 2008).

3. RESULTS AND DISCUSSION

Classic assumption test.

Normality test.

This normality test aims to find out whether in a regression model the data used which consists of the dependent variable and independent variables are normally distributed or not. This normality test was carried out by the One Sample Kolmogorov-Smirnov test with a significance level of 0.05.

Table .1 Normality Test Results

		Unstandardized Residuals
N		64
Normal Parameters,,b	Means	.0000000
	std. Deviation	.04188313
Most Extreme Differences	absolute	083
	Positive	057
	Negative	-.083
Kolmogorov-Smirnov Z		.663
asymp. Sig. (2-tailed)		.772

Source: Processed research data (2011)

From table 1 above, it can be seen that the Kolmogorov-Smirnov value at a residual value of 0.663 and a significance value of 0.772 is greater than α of 5%, so it can be concluded that the residuals are normally distributed.

Autocorrelation Test

The autocorrelation test in this study used the Durbin Watson test. To find out whether there is autocorrelation in a data, the following criteria are used: If d is less than dL or greater than (4-dL) then the null hypothesis is rejected, which means there is autocorrelation. if d lies between dU and (4-dU) then the null hypothesis is accepted, which means there is no autocorrelation. If d lies between dL and dU or between (4-dU) and (4-dL) then it does not produce a definite conclusion. By using the Durbin Watson autocorrelation test, an output with a Durbin Watson value is produced as shown in the following table:

Table 2. Autocorrelation Test Results

Model	R	R Square	Adjusted R Square	std. Error of the Estimate	Durbin-Watson
1	.990a	.980	.979	.0491389	1,046

Source: Processed research data (2011)

Based on table 2 above, using a significance level of 0.05, the number of independent variables (k=4) and the amount of data (n=65), results in a Durbin Watson value of 1.046 whereas in the DW table with k=4 and n=65, the size of the DW table; dL (lower limit DW) = 1.315 and dU

(upper limit DW) = 1.568; 4-dU = 2.432 and 4-dL = 2.685. Because the value of DW = 1.046 is below the value of dL = 1.315, there is a positive autocorrelation.

Multicollinearity Test

The multicollinearity test aims to determine whether in the regression model there is a linear relationship between the independent variables. The linear relationship between the independent variables in the regression model will give rise to a correlation, if it occurs it is called multicollinearity. A good regression model should not have multicollinearity or no correlation between independent variables.

Table 3. Multicollinearity Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	std. Error	Betas			tolerance	VIF
1	(Constant)	-1,607	.306		-5,248	.000		
	lnsbi	-.276	059	-.180	-4,680	.000	.601	1,665
	lnoil	043	046	.037	.942	.350	.590	1694
	lnemas	.625	045	.550	13,768	.000	.556	1,797
	lnSTI	.871	058	.557	14,912	.000	.637	1,571

Source: Processed research data (2011)

Based on table 4 above, when referring to Ghozali (2009), there is no multicollinearity in the variables in this research model. This is indicated by a VIF value of less than 10 and a tolerance value of more than 0.1 so that the regression model is feasible to use to predict the JCI on the Indonesia Stock Exchange with the independent variables SBI interest rates, world oil prices, world gold prices and STI.

Heteroscedasticity Test.

Based on the heteroscedasticity test carried out with the Glejser Test by regressing the absolute value of the residual to the independent variable, the output results are obtained as follows:

Table 4. Heteroscedasticity Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	std. Error	Betas		
1	(Constant)	-.064	.167		-.383	.703
	lnsbi	013	032	068	.419	.677
	lnoil	.009	.025	059	.358	.722
	lnemas	039	.025	.264	1,565	.123
	lnSTI	-.017	032	-.085	-.538	.593

From table 4 above, by regressing the residual absolute values to the independent variables, it can be concluded that there is no heteroscedasticity in this research model. This can be seen from the significance value of the independent variables which are greater than 5%, which means that none of the independent variables statistically significantly affect the dependent variable. Testing the

first hypothesis of this study using the T test has the following hypothesis: Ho: The SBI interest rate has no significant effect on the JCI. Ha: The SBI interest rate has a significant effect on the JCI.
With a significance level (α) of 5%, the criteria for testing this hypothesis are: If t count <t table, then Ho is accepted and Ha is rejected

a. if tcount > t table, then Ho is rejected and Ha is accepted
b. Ifsignificance > 0.05, then Ho is accepted and Ha is rejected
c. Ifsignificance <0.05, then Ho is rejected and Ha is accepted

This fifth test is carried out with the F test as shown in table 4.9 above. This test aims to determine whether the independent variables jointly have a significant influence on the JCI. By using a significance level (α) of 5%, degree of freedom 1 (number of variables-1) namely 5-1 = 4 and degree of freedom 2 (nk-1) namely 65-4-1 = 60 obtained F table of 2.368 . From the results of the F test in table 4.9 above, the F count is 266.466 so that the F count > F table (266.466 > 2.368). The significance value also shows less than 0.05 which is equal to 0.000 so that Ho is rejected. This means that the four independent variables (SBI interest rates, world oil prices, world gold prices, and the Straits Time Index) simultaneously have a significant influence on the JCI on the Indonesia Stock Exchange.

Multiple Regression Analysis.
This analysis is used to calculate the influence of the independent variables (SBI interest rates, world oil prices, world gold prices, Straits Time Index) on the dependent variable (IHSG) on the Indonesia Stock Exchange.

Table 5. Results of Multiple Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	std. Error	Betas	t	
1	(Constant)	-1,607	.306		-5,248	.000
	lnsbi	-.276	059	-.180	-4,680	.000
	lnoil	043	046	.037	.942	.350
	lnemas	.625	045	.550	13,768	.000
	lnSTI	.871	058	.557	14,912	.000

Source: Processed research data (2011)

Based on table 5 above, a multiple linear regression equation is obtained in the form of natural logarithms (Ln). This is done to reduce the large gap between the variables in this study, with the regression equation as follows:

LnIHSG = α + b1LnSBI + b2LnOIL + b3LnEMASs + b4LnSTI + ε
Where:
LnIHSG = JCI dependent variable
α= Constant
LnSBI = Independent variable of SBI interest rate
LnOIL = Independent variable of world oil prices
LnEMAS = Independent variable of world gold prices
LnSTI = STI independent variable
b1, bn = Regression coefficient

ε = Disturbance error (disturbing factor)

Coefficient of Determination (Adjusted R²).

Table 6 results of the Coefficient of Determination

Model	R	R Square	Adjusted R Square	std. Error of the Estimate	Durbin-Watson
1	.973a	.948	.944	.043280	1,670

Source: Processed research data (2011)

From table 6. above, it can be seen that the overall model produced has a very high Adjusted R² value of 94.4%. This shows that the independent variables used in the model (SBI interest rates, world oil prices, world gold prices, and the Straits Time Index) are able to explain 94.4% of the dependent variable (IHSG) and the remaining 5.6% is explained by factors other than this research model. The greater the value of Adjusted R² indicates that the regression model is more precise in predicting the JCI on the Indonesia Stock Exchange.

Hypothesis testing

The first hypothesis testing was carried out with the T test as shown in the table above. This test aims to determine whether there is an influence of the SBI interest rate on the JCI. Using a significance level of α = 5% and degrees of freedom = n – k – 1, namely 65 - 4 -1 = 60, a t table of 2,000 is obtained. From the test results in table 4.8 above, a t count of -4.680 is produced, which means - t count is greater than - t table and a significance value of 0.000 indicates less than 0.05 so Ho is rejected. This means that the SBI interest rate variable has a significant influence on the JCI.

Table 7. T test results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	std. Error	Betas		
1	(Constant)	-1,607	.306		-5,248	.000
	lnsbi	-.276	059	-.180	-4,680	.000
	lnoil	043	046	.037	.942	.350
	lnemas	.625	045	.550	13,768	.000
	lnSTI	.871	058	.557	14,912	.000

Source: Processed research data (2011)

The Effect of SBI Interest Rates on JCI

Theoretically, the relationship between the SBI interest rate and stock prices has a negative relationship, if the SBI interest rate increases, the stock price will decrease, and vice versa. This is because any increase in the SBI interest rate will have an impact on investor interest in investing, especially in the capital market. An increase in interest rates will increase interest expenses which will increase company costs and reduce profits which can cause a decrease in dividends received by investors.

Based on the results of partial hypothesis testing, because the calculated -t value is greater than -t table (- 4,680 > - 2,000) so that Ho is rejected, which means that the SBI interest rate has a significant influence on the JCI. The results of this study are in accordance with the theory put

forward earlier that the SBI interest rate has a negative effect on stock prices and the results of this study are also in accordance with the research conducted by Octavia (2007) and Witjaksono (2010) who concluded that the SBI interest rate has a negative influence significant to the JCI.

The Effect of World Oil Prices on JCI.

Theoretically, the relationship between world oil prices and stock prices has a negative relationship, if oil prices rise, stock prices will decrease. This is because oil is a source of energy that is widely used both for production (as engine fuel) and consumption (as vehicle fuel), so that an increase in the price of oil which is a production input will cause the profit margin received by the company to decrease and result in a return. company declines which in turn will cause the stock price to decrease. Every company or industry is very dependent on oil to run its business, so that changes in oil prices will affect the country's economy.

The results of this study contradict the theory put forward earlier which says that world oil prices have a negative relationship to stock prices and the results of this study are in contrast to research conducted by Lenny and Handoyo (2008) and Witjaksono (2010), who say that oil prices the world has a significant positive influence on the JCI, however the results of this study are in accordance with research conducted by Ewert and Hult (2006) who concluded that world oil prices do not have a significant effect on changes in stock prices in Indonesia.

The Influence of World Gold Prices on JCI.

Theoretically, the relationship between world gold prices and stock prices has a negative relationship, if the world gold price increases, the stock price will decrease, and vice versa. This is because the increase in the price of gold which is an alternative investment besides the capital market will attract investors to invest their funds by buying gold, besides that gold also has a smaller risk compared to stocks.

Based on the results of partial hypothesis testing, because t count is greater than t table (13,768 > 2,000) so Ho is rejected, meaning that world gold prices have a significant influence on the JCI. The results of this study contradict the previous theory which says that gold prices have a negative influence, but the results of this study are in accordance with research conducted by Witjaksono (2010) which says that world gold prices have a significant positive influence on the JCI.

The Influence of the Straits Time Index on the JCI.

Theoretically, the relationship between the Straits Time Index and the JCI has a positive relationship. can be seen through the Straits Time Index (STI) with stock exchanges in Indonesia which can be seen through the Jakarta Composite Index (IHSG). The results of this study are in accordance with the theory put forward earlier and the results of this study are in accordance with research conducted by Gultom (2007) which concluded that the Singapore stock index as reflected through the Straits Time Index (STI) has a significant positive effect on the JCI.

Discussion

The Composite Stock Price Index (IHSG) reflects the movement of all stocks listed on the Indonesia Stock Exchange and is an indicator used to assess capital market activities in Indonesia, where an increase in the JCI will indicate that the investment climate in the country is good and if it decreases it indicates that there is an indication of capital outflow. The JCI figure will be a reference for investors in making investment decisions in the capital market. Therefore, investors must pay attention to macroeconomic conditions that can affect the movement of the Jakarta Composite Index (IHSG).

Based on the research results, the macroeconomic variable SBI interest rates is one of the considerations for investors in making investment decisions because investors will seek yields that will provide a higher rate of return, so that changes in interest rates can cause changes in stock prices. In addition to interest rates, investors should also pay attention to macroeconomic conditions

which are considered relevant to stock prices. Almost the same as interest rates, the price of gold which has tended to increase over the last few years is a safe and popular investment alternative to stocks amid the current uncertainty of global economic conditions, so based on the results of this study changes in gold prices are one of the considerations for investors before investing. investing, especially in the capital market. This is because investors who have excess funds have various choices to maximize the desired profit whether by investing in stocks or gold.

Portfolio diversification carried out by investors can be carried out based on geographical location so that countries in the Southeast Asian region, especially Singapore, which almost have the same investment climate as in Indonesia, this is indicated by the movement of the Singapore Stock Index (STI) which is in the same direction as the JCI movement so that there is a relationship between the two indices, this shows that the STI variable can be one of the considerations for investors, especially foreign investors, in making investment decisions in the Indonesian capital market.

4. CONCLUSION

This study aims to determine and examine the effect of SBI interest rates, world oil prices, world gold prices and the Straits Time Index on the Jakarta Composite Index (IHSG) on the Indonesia Stock Exchange. Based on the tests that have been carried out, the authors conclude that: a. The SBI interest rate has a significant negative effect on the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange for the period January 2005-May 2010. This is because if the SBI interest rate increases it will encourage investors to sell their shares and invest their funds. in the form of other investments such as savings and time deposits. Conversely, if it decreases, investors will return to invest their funds in shares so that the stock price will increase again, b. World oil prices did not have a significant influence on the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange for the period January 2005-May 2010. This could indicate that world oil was not a consideration for investors in investing in the capital market, especially Indonesia. In making investment decisions, investors pay little attention to changes in world oil prices, market sentiment is more caused by changes in other macroeconomic variables such as interest rates, so it can be said that world oil prices are not a good parameter in assessing stock prices, c. The world gold price had a significant positive influence on the Jakarta Composite Index (IHSG) on the Indonesia Stock Exchange for the period January 2005-May 2010. This is because the public has the opportunity to diversify investments to reduce risk, so that gold can be an option or another alternative for investing, d. The Straits Time Index has a significant positive effect on the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange for the period January 2005-May 2010. This shows that the STI movement has an effect on the JCI movement, this is motivated by Singapore being the largest foreign investor in Indonesia and judging by Based on geographical location, Singapore is the closest regional area to Indonesia. So if there is a change in economic conditions in Singapore which can be seen through the STI, it will have an impact on the Indonesian economy which is reflected through the JCI so that gold can be an option or another alternative to invest, d. The Straits Time Index has a significant positive effect on the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange for the period January 2005-May 2010. This shows that the STI movement has an effect on the JCI movement, this is motivated by Singapore being the largest foreign investor in Indonesia and judging by Based on geographical location, Singapore is the closest regional area to Indonesia. So if there is a change in economic conditions in Singapore which can be seen through the STI, it will have an impact on the Indonesian economy which is reflected through the JCI so that gold can be an option or another alternative to invest, d. The Straits Time Index has a significant positive effect on the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange for the period January 2005-May 2010. This shows that the STI movement has an effect on the JCI movement, this is motivated by Singapore being the largest foreign investor in Indonesia and judging by Based on geographical location, Singapore is the closest regional area to Indonesia. So if there is a change in economic conditions in Singapore which can be seen through the STI, it will have an impact on the

Indonesian economy which is reflected through the JCI The Straits Time Index has a significant positive effect on the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange for the period January 2005-May 2010. This shows that the STI movement has an effect on the JCI movement, this is motivated by Singapore being the largest foreign investor in Indonesia and judging by Based on geographical location, Singapore is the closest regional area to Indonesia. So if there is a change in economic conditions in Singapore which can be seen through the STI, it will have an impact on the Indonesian economy which is reflected through the JCI The Straits Time Index has a significant positive effect on the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange for the period January 2005-May 2010. This shows that the STI movement has an effect on the JCI movement, this is motivated by Singapore being the largest foreign investor in Indonesia and judging by Based on geographical location, Singapore is the closest regional area to Indonesia. So if there is a change in economic conditions in Singapore which can be seen through the STI, it will have an impact on the Indonesian economy which is reflected through the JCI This is motivated by the fact that Singapore is the largest foreign investor in Indonesia and based on its geographical location, Singapore is the closest regional area to Indonesia. So if there is a change in economic conditions in Singapore which can be seen through the STI, it will have an impact on the Indonesian economy which is reflected through the JCI This is motivated by the fact that Singapore is the largest foreign investor in Indonesia and based on its geographical location, Singapore is the closest regional area to Indonesia. So if there is a change in economic conditions in Singapore which can be seen through the STI, it will have an impact on the Indonesian economy which is reflected through the JCI

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