Effect of World Gold Price, Crude Oil Price and Interest Rate to Jakarta Composite Index

Benny Budiawan Tjandrasa
Maranatha Christian University, Indonesia
benny.tjandrasa@gmail.com
0878-23-999-789

Rosemarie Sutjiati
Maranatha Christian University, Indonesia
rosemarie.sutjiati@yahoo.com
Postal: Jalan Ahmad 4 No 5 Bandung, Indonesia

Abstract

Jakarta Composite Index (JCI) is a measure of the health of the companies listed in Indonesia Foreign Exchange. It is important to know what variables that influence this index. Many studies have been carried out but had different results. This study aimed to confirm the variables which are the most significant effect on JCI. Some independent variables examined is world gold prices, crude oil price and interest rates. This research is quantitative research using e-view program. The hypothesis of this study is that world gold prices, crude oil prices and interest rates partially have significant effect on JCI, while simultaneously world gold prices, crude oil price and interest have significant effect to JCI. The result shows that partially only interest rate have significanteffect to JCI while simultaneously world gold price, crude oil price and interest rare have significant effect to JCI.

Keywords: JCI, world gold price, crude oil price, interest rates.

1. INTRODUCTION

In life people need to invest what they have in order to obtain the necessities of life and if possible achieve their dream. Some people invest their energy and time working for certain companies or organization, other people invest their money, land and other asset to open store, company and other businesses. Further, people can also invest by purchasing company shares listed in stock market. In common sense, all of these investors want to acquire profit as much as posible and avoid any loss therefore all of the investment made needs to be planned precisely.

Investors who want to buy shares of a company needs to ensure that the target company is a healthy and growing company that can generate profits for its shareholders either through dividends or capital gains. In order to do this the investor should do some pre-investment analysis either by themselves or by using the services of an expert analysis. One of the indices that could be a reference to the condition of the companies listed on the Indonesia Stock Exchange is the Jakarta Composite Index (JCI) which is often used as an illustration of the stock price movement in

Indonesia. JCI includes the movement of all the shares listed on the Stock Exchange either common stock or preferred stock.

Maximizing the value of a company is the purpose of the management of a company. The most common and fundamental step is to increase its profit either through increased sales and lower costs. Although it does not mean that the maximum profit necessarily always produce the maximum value of the company but it is important for a company to be in a favorable condition and keep growing. One measure of the value of the company is the stock price of the company. Therefore, the increase in the stock price may be a sign of the success of a company's management. However it turns out the price is not only influenced by internal factors such as how the company's management run the company. External factors were also able to affect the price of a stock.

Given JCI is a collection of stock price movements of all companies listed on the Indonesia Stock Exchange, the authors are interested to look at the external factors that may affect the JCI. The independent variables that the researchers assume to affect JCI are world gold prices, crude oil price and interest rates.

Gold is one form of investment which always captivate everyone from time to time and is regarded as a safe form of investment because the price is unlikely to drop drastically which is different from companies that could go bankrupt and the stock became worthless altogether. Therefore, movements in gold prices as rivals and competitor of stock investment can affect investors. Huynh and Inuiguchi (2015) states that the gold market plays an important role for investors, especially in difficult times and it is a safe haven for investors during times in which the investor would prefer to allocate funds in the gold market. Looking at the law of supply and demand, it certainly can make shares less attractive and the price may go down. As for the price of crude oil, Huynh and Inuiguchi (2015) suggest that the level of oil price movements that may change sharply can have a serious impact on the share price. As for the interest rate Wiedmann (2011) states that movements in interest rates affect stock prices through the relative attractiveness of bonds and stocks as well as through the principles of standard evaluation of present-value where the interest rate decline, it will reduce the discount factor considering dividends in the future assessed using present-value and the second with lower interest rates may eventually be able to improve the economic prospects, dividends and the value of equity investments. Tandelilin (2010: 343) states that the high rate of interest is a negative signal for the stock price. Interest rate usually follow inflation. Widoatmodjo (2007: 206) states that all investment instruments will be affected by inflation and for the movement of the stock price will usually follow the movement of inflation.

Nonetheless Sahu (2015) even suggested that the price of gold, crude oil prices, exchange rates and stock prices is like a stand-alone which means the price of gold does not significantly influence stock prices, crude oil prices is not significant to share price movements, and exchange rates does not significantly influence stock prices. Divianto (2013: 165) states that the inflation rate would have a positive and significant impact on the stock price index, while the interest rate has a significant negative effect on the stock price index. Therefore, From the theory and the difference between theory and findings and the findings with each other, the researcher is interested to examine and scrutinize **Effect of World Gold Price, Crude Oil Price and Interest Rate to Jakarta Composite Index**

1.2 Objectives
1. Determine the effect of world gold price to Jakarta Composite Index (JCI)
2. Determine the effect of crude oil price to Jakarta Composite Index (JCI)
3. Determine the effect of interest rate to Jakarta Composite Index (JCI)
4. Determine the effect of world gold price, crude oil price and interest rate to Jakarta Composite Index (JCI)

1.3 Hypotheses
1. World gold price has significant effect to Jakarta Composite Index (JCI)
2. Crude oil price has significant effect to Jakarta Composite Index (JCI)
3. Interest rate has significant effect to Jakarta Composite Index (JCI)
4. Simultaneously world gold price, crude oil price and interest rate have significant effect to Jakarta Composite Index (JCI)

2. LITERATURE REVIEW

2.1 Jakarta Composite Index (JCI)

Jakarta Composite Index (JIC) is one of the market index in the Indonesia Stock Exchange. This index includes the movement of the entire price of ordinary shares and preference shares listed on the Indonesia Stock Exchange. Ismanthono (2003: 111) states that the Jakarta Composite Index (JIC) is a stock market indicators which are calculated in the same manner as calculating the average, but using a sample of broader stocks. JCI data that is used for this research were taken from the data of the Indonesia Stock Exchange.

2.2 World Gold Price

Gold is a metal that becomes a medium of exchange that has existed since before money was invented. Therefore, there is the possibility of disruption in the distribution which then the price of gold can be vary between countries (Heilperin, 2007: 77). Nonetheless there is a standard which international gold prices are set and determined from time to time by international bodies of the London Bullion Market Association (LBMA) and the process involve many parties such as various international banks.

Huynh and Inuiguchi (2015) states that the gold market plays an important role for investors, especially in difficult times and it is a safe haven for investors during times in which the investor would prefer to allocate funds in the gold market.

2.3 Crude Oil Prices

Besides gold, the price of crude oil is often considered to affect the state of the economy. In this modern era where the means of transport and industry needs fuel in order to operate, the oil price movements often can affect the movement of the prices of the other. If there is an increase in oil prices, the fuel production and as a means of transportation will increase the prices of goods which then will be followed by wage increases and other rising prices. Park (2004) stated that the increase in oil prices could lead to several things:

1. Causes of revenue transfer from the importing country to the exporting country through trade.
2. Reduce industrial output due to higher production costs.
3. The impact of rising oil prices may be multiplied by secondary price effects where higher oil prices will directly improve consumer prices which will make consumers demanding more wage/salary increase which then further increases the cost of production which is then further followed again by consumers demand of wage increase and so on.

2.4 Interest Rate

Sukirno (2005: 387) states that interest rate is the income from savings made by public, stated in his presentation of the amount of savings made. The interest rate is often portrayed affected by inflation. The interest rate in this study were drawn from data from Bank Indonesia and in units of percent.

Wiedmann (2011) states that movements in interest rates affect stock prices through the relative attractiveness of bonds and stocks as well as through the principles of standard evaluation of present-value where the interest rate decline, it will reduce the discount factor considering dividends in the future assessed using present-value and the second with interest rates lower may eventually be able to improve the economic prospects, dividends and the value of equity investments.

3. METHODS
3.1 Data and Data Collection Methods

The data used in this research is secondary data. Data obtained and collected from the publication of Bank Indonesia, the Indonesia Stock Exchange and other reliable sources. All secondary data is collected and organized in order to clearly and used for subsequent analysis. The data used is data from early 2012 to mid 2016.

3.2 Population and Sample

The population in this study were all the data of JCI, world gold price, crude oil prices, interest rates, inflation and USD-Rupiah exchange rate. Samples derived from secondary data by using systematic sampling.

3.3 Data Analysis Techniques

The analysis in this study is using multiple regression test which is intended to determine the effect of independent variables on the dependent variable. Before performing the regression test classical assumption test must be done as a prerequisite of multiple regression test. The classic assumption test is the normality test, multicollinearity, heterocedasticity test, autocorrelation test. The test is using e-view program.

Normality test can be done either by using a computer program EViews. Multicoloniarity test done by looking VIF or by viewing the corelation between variables EViews program. Heterokedasticity test conducted by white test using Eview and if the F probability is larger than 0.5

then the data is free from heterokedasticuty. And autocorrelation test can be done by using the Durbin-Watson test.

Hypothesis testing is done by doing t test and F, it can be known whether the independent variables have a significant effect on the dependent variable or not. The independent variables are the world gold price (X1), crude oil price (X2), interest rate (X3), inflation rate (X4) and the exchange rate USD-Rupiah (X5) while the dependent variable is Jakarta Composite Index (JCI) (Y)

4. RESULT & DISCUSSION

In this test outliers was removed and sample numberd 35. Normality test is passed since p value > 0,1 . From the result it is known that the Durbin-Watson value is 1.9687 which is higher than table value du = 1.584 and lower than (4-du) = 3.416 which means the data is free from Autocorellation.

Table 1. Heterokedasticity test result by using White Test

Heteroskedasticity Test: White				
F-statistic	0.76241	Prob. F(14,20)		0.6943
Obs*R-squared	12.17917	Prob. Chi-Square(14)		0.5919
Scaled explained SS	8.914169	Prob. Chi-Square(14)		0.8365

From White test, probability F value is 0.6943 which is bigger than 0,5 which means data is free from heterokedasticity.

Table 2 Corelation between variable

	GOLD	INT	OILPRICE	JSX
GOLD	1	-0.75321	0.697097	-0.02159
INT	-0.75321	1	-0.40748	0.041241
OILPRICE	0.697097	-0.40748	1	-0.13729
JSX	-0.02159	0.041241	-0.13729	1

From the table above it is seen that corelation between variable is below 0.8 which means model is free from multicolinearity.

Table 3. f test & t test

Method: Least Squares				
Date: 05/22/16 Time: 00:54				
Sample (adjusted): 2013M02 2015M12				
Included observations: 35 after adjustments				
Convergence achieved after 11 iterations				
Variable	Coefficier	Std. Error	t-Statistic	Prob.
C	4.326147	1.438323	3.007771	0.0053
GOLD	0.155042	0.138321	1.120885	0.2712
INT	-1.1803	0.308442	-3.82663	0.0006
OILPRICE	0.007704	0.066247	0.116296	0.9082
AR(1)	0.887361	0.041251	21.51108	0
R-squared	0.816845	Mean dependent v		8.476997
Adjusted R-squared	0.792424	S.D. dependent va		0.075861
S.E. of regression	0.034563	Akaike info criteri		-3.76053
Sum squared resid	0.035837	Schwarz criterion		-3.538337
Log likelihood	70.80927	Hannan-Quinn crit		-3.683829
F-statistic	33.44891	Durbin-Watson sta		1.968672
Prob(F-statistic)	0			
Inverted AR Roots	0.89			

From the table above it is seen that:

1. t test probability of world gold price effect to JCI is 0.2712 which is bigger than 0.01 which is means world gold price effect doesnt have significant effect to Jakarta Composite Index (JCI)
2. t test probability of crude oil price effect to JCI is 0.9082 which is bigger than 0.01 which is means crude oil price doesnt have significant effect to Jakarta Composite Index (JCI)
3. t test probability of interest rate effect to JCI is 0.0006 which is smaller than 0.01 which is means interest rate has significant effect to Jakarta Composite Index (JCI)
4. f test probability of world gold price, crude oil price and interest rate simultan effect to JCI is 0 which is smaller than 0.01 which is means simultaneously world gold effect, crude oil price and interest rate has significant effect to Jakarta Composite Index (JCI). The effect of world gold price, crude oil price and interest rate simultaneously to JCI is 81,68% the rest of 18,32% is from other variable outside the model.

From the result above it is known that simultaneously with other independent variables world gold price have significant effect to JCI but partially world gold price doesnt have significant effect to JCI. After examine the theory and the actual condition we conclude that gold is indeed important for investor but especially in difficult times (Huynh and Inuiguchi, 2015). In the period examined which is 2012-2016 Indonesia has already managed to pass that difficult time of 2008 crisis and the economic condition is growing. This encourage investor to invest in stock market

instead of gold. From this finding the researcher conclude that the effect of gold price to stock price will be very intense in dificult time but might not be as much in normal of good economic condition.

Other result shows that crude oil price is also simultaneously with other independent variable have significant effect to JCI but partially, crude oil price doesnt have significant effect to JCI. After examining further we found that crude oil price movement was quite constant in 2012-2014 and only in 2015 there is big decrease in price. But the industry of course doesnt buy their energy need by that price rather by the gas price decided by the government which strangely during the world crude oil price is decreasing bit by bit the gas price in Indonesia is actually increased (44% in 2013). Following that during 2014-2016 the gas price in Indonesia is relatively doesnt have significant move. Therefore we conclude that even if the crude oil price is increased or decreased it is the government decision that affect the industry. If the government somehow capable to manage the domestic oil price well either by adding subsidy or reduce it or any other way it will maintain the situation controlled. We conclude that the Indonesian government is doing quite well in managing oil price policy.

For interest rate, the finding shows that interest rate have significant effect to JIC either partially or simultaneously with other independent variable. It is according to Wiedmann (2011) that states that movements in interest rates affect stock prices through the relative attractiveness of bonds and stocks as well as through the principles of standard evaluation of present-value where the interest rate decline, it will reduce the discount factor considering dividends in the future assessed using present-value and the second with lower interest rates may eventually be able to improve the economic prospects, dividends and the value of equity investments.

5. CONCLUSSION

From the result it is known that world gold price, crude oil price and interest reate simultaneously have significant effect to JCI. The external factors outside company management is capable to affect the company value therefore managers of the company need to pay attention to its movement from time to time. Understanding of how these external factors affect stocks can be very precious as input of decision making. We also conclude that world gold price will have significant effect to stock price of company if the situation is difficult while if the situation is good the investor will be encouraged to invest in a company. While for the oil price, we conclude that the effect is not direct but rather through how the movement of crude oil price will affect government policy in deciding domestic oil price.

Further research might need to be done for other external variables and also for other condition for ie: difficult cinditiion when prices are very volatile.

REFERENCES

Divianto (2013). Analisis Pengaruh Tingkat Inflasi, Tingkat Suku Bunga SBI, dan Nilai Kurs Dollar AS (USD) terhadap Indeks Harga Saham Gabungan (IHSG) di Bursa Efek Indonesia. *Jurnal Ekonomi dan Informasi Akuntansi (JENIUS)* Vol 3 (2), Mei 2013, hal 165-197

Heilperin, Michael A. (2007). *International Monetary Economics*. UK: Longman Greens & Co.

Huynh, Van-Nam. and Inuiguchi, Masahiro (2015). Integrated Uncertainty in Knowledge Modelling and Decision Making. *4th International Symposium, IUKM* 2015, Nha Trang, Vietnam, October 15-17, 2015, Proceedings

Ismanthono, Henricus W. (2003). *Kamus Istilah Ekonomi Populer*. Jakarta: PT Kompas Media Nusantara.

Park, Cyn-Young (2004*). Higher Oil Prices: Asian Perspectives and Implications for 2004-2005*. ERD Policy Brief No 28. Diane Publishing.

Rahardjo, Sapto (2006). *Kiat Membangun Aset Kekayaan*. Jakarta: PT Elex Media Komputindo.

Sahu, Tarak Nath (2015). *Macroeconomic Variables and Security Prices in India during the Liberalized Period.* New York: Palgrave Mac-Millan.

Sukirno, Sadono (2005). *Mikro Ekonomi Teori Pengantar. Ed. 3*. Jakarta: PT Raja Grafindo

Tandelilin, Eduardus (2010). *Portofolio dan Investasi*. Yogyakarta: Kanisius

Wiedmann, Marcel (2011) *Money, Stock Prices and Central Banks: A Cointegrated VAR Analysis*. Germany: Physica-Verlag

Widoatmodjo, Sawidji (2006). *Seri Manajemen Keuangan Pribadi: Cara Mudah merancang Sendiri Pensiun Anda*. Jakarta: PT Elex Media Komputindo

Widoatmodjo, Sawidji (2007). *Seri Membuat Uang Bekerja untuk Anda, Panduan Mempraktikkan Rich Dad, Poor Dad: Cara Benar Mencapai Puncak Kemakmuran Finansial A la Robert T. Kiyosak*i. Jakarta: PT Elex Media Komputindo.

Wiley (2016). *2016 Wiley CPA Excel Exam Review Course Outlines*. New Jersey: John Wiley & Sons.