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PREFACE

To make people are fascinated to us (either as a researcher or academician), we can make them keep asking about our research and project. The more interests from others, the more recognitions we get. The easiest way to learn about research and projects is by participating in an academic forum which discusses recent studies and facts from various disciplines. It is also a cost-effective way to build network with various researchers and academicians from various backgrounds.

On 5-7 December 2017, the 2017 International Multidisciplinary Conference on Productivity and Sustainability (IMPS 2017) is organized based on the fact that today's world demands better productivity due to the harsh competition, as well as the needs of sustainability as regards the scarce resources and global competition. Three sub-conferences are formed to accommodate the diversity of academic backgrounds: Science, Engineering and Technology (ICSET); Economics, Business and Management (ICEBM); and Social and Behavioural Science (ICSBS).

We have +250 papers submitted by authors from Indonesia, Malaysia, Taiwan, Japan, Vietnam, India, P. R. China, and USA, 154 papers were accepted, and 136 have registered to present their papers in the conference. **Selected authors are committed to publish their papers in the proceeding**, while the rest will continue their studies and publish their works in various reputable journals.

We would like to thank all the authors for participating in the IMPS 2017. Thanks to our invited speakers: Professor Naoki Kobayashi (Saitama Medical University, Japan), Professor Suganda Jutamulia (University of Northern California, USA), Professor Joewono Widjaja (Suranaree University of Technology, Thailand), Associate Professor Ferry Jie (Edith Cowan University, Australia), Dr. Hamin (Krida Wacana Christian University, Indonesia), Professor Sri Suryawati (UN; Gadjah Mada University, Indonesia), Dr. Pillar Ramos-Jimenez (Philippine NGO Council on Population Health and Welfare, Philippine), and Professor Johana Endang Prawitasari (Krida Wacana Christian University, Indonesia). We appreciate Professor Stuart Yin (Pennsylvania State University, USA) for his insightful invited paper. A heartfelt thank is given to the committee, moderators and reviewers who have been involved in the organizing conference with heart and soul.

Finally, thank you for our organizing partners for making this happen: Taiwan Education Centre, Chang Jung Christian University (Taiwan), Tunghai University (Taiwan), Parahyangan Catholic University (Indonesia), and Petra Christian University (Indonesia).

Jakarta, 20 March 2018

Dr. Oki Sunardi
Krida Wacana Christian University, Indonesia
General Chair

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Economic, Business and Management

Social and Behavioural Science

The Influence of Inflation Rate, Interest Rate, and Crude Oil Prices on LQ45 Stock Price

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The role of capital market in supporting development is very important, both as the entrance of foreign capital as well as a barometer of a country's economy. Indonesian capital market consists of various local stocks which must compete with global stocks. One of the factors of the competitiveness of a stock is the stock price, as investors expect the most optimal return from the difference between the purchase price and the selling price of the stocks. This research looks at the macroeconomic variables that affect stock prices. The results indicate inflation rates, and crude oil prices have a significant effect, either partially or simultaneously to the stock price. This research can be used by the government to increase the competitiveness of Indonesia Stock Exchange.

Keywords: *stock price, inflation rate, interest rate, crude oil price.*

1. Introduction

Capital market development is one measurement of success of a country's economy and also an indicator for foreign investors; consequently, the capital market is important in supporting the development of a country. Indonesian capital market is relatively new compared with the capital markets in Europe and the United States, but the development of capital market in Indonesia is quite good as proved by the many foreign investors who invested in the Indonesia Stock Exchange when the crisis in the United States occurred in 2008. The decision of investors to buy shares depends on several things, such as the condition of the company, macroeconomic conditions, and especially the price. In general, some investors expect optimal return when buying stocks, while some others expect to get dividends from shares they bought. The return is obtained from the difference between the purchase price and selling price of shares; therefore, this study focuses on variables that affect stock prices. Indonesia's capital market is increasingly in demand both by domestic and foreign investors so that this research is expected to provide a new knowledge. This research uses macroeconomic conditions as independent variables for several reasons. First, macroeconomic conditions which are very dynamic and the consequences affect overall stock prices. Second, as an input to the government in order to encourage the development of capital markets, especially in controlling stock prices, but this can only be done if variables that affect stock prices can be determined. Variables that reflect macroeconomic conditions in general are the inflation rate, interest rate, and crude oil prices. Literature studies need to be performed in order to understand the previous studies and theories on the influence of these variables on stock prices.

2. Literature Studies and Hypothesis Development

Astuti[12] (2016), Jubaedah, Yulivan, and Hadi[6] (2016), and Samadi, Bayani, and Ghalandari[14] (2012) find that inflation has a positive and significant impact on the Composite Stock Price Index. However, Ginting and Sulasmiyati[10] (2016), Kumalasari, Hidayat, and Azizah[13] (2016), Mudlofir, Andini, and Supriyanto[9] (2016), and Pradipta and Suardana[8] (2016) state that inflation has no significant effect on the stock price.

Denziana and Patmarina[1] (2015), Prasetiono[3] (2012), and Syarofi and Muharam[4] (2014) conclude that interest rates have a significant positive effect on stock prices. On the other hand, Astuti[12] (2016), Kumalasari, Hidayat, and Azizah[13] (2016), and Vejzagic and Zarafat[11] (2013) conclude that interest rates have a significant negative impact on stock price. Other research groups such as Gupta, Chevalier, and Sayekt[7] (2001), and Ginting and Sulasmiyati[10] (2016) conclude that interest rates do not have a significant effect on stock prices.

Research conducted by Samadi, Bayani, and Ghalandari[14] (2012) in Tehran Stock Exchange concludes the world oil prices do not affect stock return. It is against the findings made by Prasetiono[3] (2012), Rahmanto, Riga, and Indriana[5] (2016) and by Syarofi and Muharam[4] (2014) which state that world oil prices have a significant positive effect on stock returns in Indonesia.

Observing there are various findings among researchers, it is necessary to re-examine the relationship between the inflation rate in Indonesia, interest rate in Indonesia, and world oil prices to the stock price in companies consistently included in LQ45 period 2011 till 2015.

The hypothesis developed in this study are:

H_0: no significant effect partially or simultaneously between inflation, interest rate, and world oil prices on the price of shares in companies consistently included in LQ45 period 2011 till 2015.

H_1: there are significant influences partially or simultaneously between inflation, interest rate, and world oil prices on the price of shares in companies consistently included in LQ45 period 2011 till 2015.

3. Methods

3.1. Data Type, Scope and Type of Study

This study uses secondary data from the stock list LQ45 contained in www.idx.co.id, stock price data from http://finance.yahoo.com, data and macroeconomic variables of worldbank.org. The source of this research data is the Indonesia Stock Exchange on the issuers in Liquid-45 (LQ45) formed only from 45 shares that are actively traded. LQ45 is considered appropriate as a capital market indicator because the JCI that includes all listed shares is less actively traded so it is considered less precise as an indicator of capital market activity (Jogiyanto, 2010).

Using systematic sampling, a number of samples for dependent variables are taken with the criteria that the stocks are consistently contained in the index LQ45 from 2011- 2015. The closing price of each share at the end of each year from 2011 to 2015 is used as the dependent variable in this study. The independent variables are inflation, interest rate and world oil prices to form multivariable regression equation. This type of research is an explanatory study with a significance level of 5% t-test.

3.2. Operation Variables

Table 1. Operation Variables

No.	Variables	Variable Concept	Indicator	Measure	Scale
1	Stock Price	The value of the stock is measured in units of money	Stock closing price at the end of the period	Rupiah	Ratio
2	Inflation Rate	Rate of change in the price can be calculated monthly or yearly or on any other basis.	The consumer price index, a change in the price paid by consumers.	Percentage	Ratio
3	Interest Rate	The compensation paid by the borrower of the funds to the lender	Interest rate of Bank Indonesia	Percentage	Ratio
4	Crude Oil Price	The value of crude oil is measured in units of money	Crude oil prices in US Dollar per barrel	US Dollar	Ratio

4. Results and Discussion

From the data obtained, the rate of inflation has increased and decreased drastically from year to year. In 2011 the average annual inflation rate was 5.36% and then fell to 4.30% in 2012 and rose again in 2013 and 2014 with an average inflation rate of 8.38% and 8.36% sequentially. In 2015 new government succeeded in reducing the inflation rate to an average of 3.35% per year. The cause of the decline in the inflation rate in 2012 is Indonesia's economy which was weakening due to the world oil prices which were still high range of US $ 100/barrel and the sluggish global economic situation leading to a decline in exports.

In 2013, inflation increased due to the election campaign and the election approaching 2014. In 2014 spending on campaign materials such as campaign T-shirts, banners, and advertisements in the media caused inflation to increase. In 2015 the inflation declined quite dramatically from 8.36% in the previous year to 3.35%, which was due to the decline in world oil prices leading to a significant reduction in the cost of transport / freight costs which were then lower the rate of inflation.

Developments in interest rates usually correspond with the development of inflation. Higher inflation in 2013 and 2014 made the central bank raise interest rates to keep up, but in 2015 despite declining inflation rate, interest remained high. This is because the government intended to keep the outflow of foreign capital from Indonesia. The strengthening of the US Dollar and the development of the US economy was strong enough to pull foreign capital out of the Indonesian capital market; hence, the high interest rates of BI was required to attract foreign investors to put their funds in the banks in Indonesia. Explosion in demand for housing loans and apartments in the previous years (from 2012 till 2014) could cause significant bad debts so that it made the central bank tighten housing loans, and therefore the interest rate in 2015 was made to remain high. World oil prices in this study are taken based on crude oil price. Although it reached a price of US105.49 / barrel in 2013, in the following years crude oil prices continued to decline.

To test the influence between the variables in this study, multivariable regression is used with panel data. To find out whether the model of the panel data is of random effect or fixed effect, it must be tested using the Hausman Test. If the results are fixed effect, then estimate it using ordinary least squares, whereas when the results are random effect, then estimate it using generalized least squares. Based on Gujarati and Porter[2] (2009), random effect is used if p-value> 0.05 and Fixed Effect p-value is used if the value is of <0.05. Hausman test results showed p-value = 1; consequently, the panel data should use the random effect model. The next step is to estimate multivariable equation with a closing price as the dependent variable and the inflation rate, interest rate, oil prices as the independent variable.

Table 2. Cross-Section Test Equation Random Effects

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.816057	0.570885	17.19446	0.0000
INF	0.452738	0.176862	2.559838	0.0122
INT	-0.693737	0.568748	-1.219762	0.2258
OILPRICE	-0.411032	0.174481	-2.355739	0.0207

Adjusted R-squared 0.949877 Prob(F-statistic) 0.000000

The table above shows that some independent variables have a p-value under 0.05, so it can be concluded that the variable inflation rates and oil prices partially have significant effect on stock prices contained in LQ45 in the period of 2011-2015. It is concluded that 94.49% of variation in stock prices contained in LQ45 in the 2011-2015 period can be explained by the inflation rates, interest rates, and oil prices. The table above can be modeled as follows:

CLSPRICE = 9.816057 + 0.452738.INF - 0.693737.INT - 0.411032.OILPRICE

The inflation rate has a positive effect significantly by 0.452738, which means an increase (decrease) 1% in the rate of inflation will increase (decrease) the share price of 0.452738%. The effect of positive inflation rates significantly reinforces the research Astuti[12] (2016), Jubaedah, Yulivan, and Hadi[6] (2016), and Samadi, Bayani, and Ghalandari[14] (2012). The interest rate has no significant effect on share price, this result is in line with the results of the research from Gupta, Chevalier, and Sayekt[7] (2001), and Ginting and Sulasmiyati[10] (2016).

Crude oil price has a negative influence significantly by 0.411032, which means a change of 1% increase (decrease) in crude oil prices will decrease (increase) the share price amounted to 0.411032%. The influence of crude oil prices is significantly negative; therefore, this gives a new view for researchers. Besides, this also argues the view of the researchers who have stated previously that world crude oil prices had no effect (Samadi, Bayani, and Ghalandari[14], 2012) and that the world crude oil prices had a positive effect on stock prices, such as the study results of Prasetiono[3] (2012), Rahmanto, Riga, and Indriana[5] (2016), and Syarofi & Muharam[4] (2014).

5. Conclusion

The difference between this study and the previous studies is that the study is more effective because it uses panel data to estimate generalized least squared for the 23 stocks included in LQ45 consistently over a period of the last 5 years. Stocks that fall into the category LQ45 stocks are actively traded and have a large capitalization. The findings in this study show that the effect of crude oil prices is significantly negative towards LQ45 share price, meaning that if crude oil prices rise, the price tends to decline. This is because the increase in crude oil prices will trigger an increase in fuel prices which will automatically trigger an increase in raw material prices and transportation costs, with the subsequent effect is a demand increase in wages of employees in the company. Because many companies in Indonesia are still in the scale of medium and small industries, then all such costs will raise the cost of goods sold. Here the company has a dilemma whether to raise the price of goods or stick to the original price. When they raise the price of goods, the competitiveness of products will be reduced and the number of sales decreased, but if they do not raise the price of goods, the corporate earnings will be reduced. On the other hand, the increase in fuel prices will also lower the purchasing power, and this again reduces demand for the company's sales. Seen from the viewpoint of producers and consumers in Indonesia rise in world crude oil prices will lower corporate profits, which will also lower the value of the company in the eyes of investors and the company's stock price will decline.

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