

THE IMPACT OF FUEL PRICE INCREASE ON STOCK PRICE IN INDONESIA STOCK EXCHANGE

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ABSTRACT

The purpose of this research is to analyze the response of Indonesian Capital Market to increase in fuel price as announced by the Government on June 22nd, 2013. This study uses abnormal returns and trading volume activity as the indicators to observe investors' responses in the capital market. Event study is used in order to examine investors' responses. It measures the investors' response before and after the announcement of increase in fuel price. The sample used in this study includes all companies listed on the LQ-45 for the period of February to July 2013. The result indicates that there are significant negative abnormal returns before the announcement of increasing in fuel price and there are positive abnormal returns after the announcement of increasing in fuel price. However, there is no significant difference between the abnormal returns before and after the announcement. Additionally, there is an increase in activity shown by the increase in trading volume activity before and after the announcement. Yet, there is no significant difference between the activity before and after the announcement.

Key words: *Abnormal Return, Expected Return, Trading Volume Activity, Event Study.*

DAMPAK KENAIKAN HARGA BBM TERHADAP PERGERAKAN HARGA SAHAM DI BEI

ABSTRAK

Tujuan penelitian ini adalah menguji reaksi pasar terhadap kenaikan harga BBM yang diumumkan oleh Pemerintah pada tanggal 22 Juni 2013. Penelitian ini menggunakan abnormal return dan trading volume activity sebagai indikator reaksi investor di pasar modal. Untuk menguji reaksi investor digunakan event study yang mengukur perbedaan reaksi sebelum dan sesudah pengumuman kenaikan harga BBM. Sampel yang digunakan dalam penelitian ini adalah semua perusahaan yang terdaftar pada LQ-45 periode Februari sampai Juli 2013. Hasil yang diperoleh menunjukkan adanya abnormal return negatif signifikan sebelum pengumuman kenaikan harga BBM dan terdapat abnormal return positif setelah pengumuman kenaikan harga BBM. Namun tidak terdapat perbedaan yang berarti antara abnormal return sebelum dan sesudah diumumkannya kenaikan harga BBM. Sementara trading volume activity baik untuk kondisi sebelum maupun sesudah pengumuman kenaikan harga BBM terdapat peningkatan aktivitas yang berarti. Namun tidak terdapat perbedaan yang berarti antara aktivitas sebelum dan sesudah pengumuman kenaikan harga BBM.

Kata Kunci: *Abnormal Return, Expected Return, Trading Volume Activity, Event Study.*

INTRODUCTION

When the government planned to raise the price of fuel oil (BBM), it was finally realized on June 22, 2013. The plan has been going on a long hike, but the rejection of the fuel subsidy reduction always occurs. In 2012, the government decided to raise the price of subsidized fuel on April 1, 2012. However, the swift currents of rejection by all elements of society resulted in the Government to be forced to announce the cancellation of the March 30, 2012.

The fuel subsidy by the Government in 2012 had already reached Rp.137 trillion or 12.98% of the total suck Government expenditure (Kementerian Keuangan Republik Indonesia 2013). In 2013 the fuel subsidy is expected to reach Rp.193.8 trillion. This amount also contributes to the burden of the government's budget deficit in 2012, which has reached Rp.190 trillion. The increase in oil prices and the increasing number of domestic fuel consumption contributed to this condition.

Currently Indonesia is no longer a state oil-exporting country belonging to the OPEC members, but has become a net importer of oil. Total consumption in 2011 reached 394 052 thousand barrels while the amount of the national production reached only 238 957 thousand barrels of oil production is only 60.64% of the total consumption (Tim Litbang Kompas 2013). Total fuel consumption in the country is likely to increase. This increase will aggravate the burden of the government budget and at the same time will deplete reserves.

The government's decision to increase the price of subsidized fuel was welcomed by employers. Indeed, on one hand, this increase had an impact on the increase in cost of production and a decline in purchasing power. But on the other hand will also have an impact on ensuring the availability of fuel in the market. It is uncommon to get subsidized fuel, people are forced to do a long line. Fuel shortages in the regions could reach 6 months (Tim Litbang Kompas 2013). Scarcity is actually counter-

productive for both companies and for society.

The increase in fuel prices will trigger a rise in inflation. The increase in inflation is responded by Bank Indonesia to adjust the benchmark interest rate (BI Rate). BI rate hike will increase the interest rates on loans. The increase in lending rates will have an impact beyond a decrease in loans for both productive loan (investment credit and working capital loans) and consumer loans such as home mortgages and auto. So the fuel price hike will also indirectly impact on consumer purchasing power for residential and automotive products.

Thereby, it decreases turnover on property and automotive sector. With rising inflation, it can also have an impact on the decrease in purchasing power for consumer goods products. As a result, the sales turnover in the consumer goods sector will also decrease. Currently the stock market has become one barometer of success in the Indonesian economy. A measure of success in the Indonesian economy is reflected in the development of composite stock price index (JKSE). As one indicator of the Indonesian economy, JKSE is vulnerable to macro and micro economic development. The fuel price hike is part of macroeconomic policy. From the experience of the fuel price hike in October 2005, several indices showed negative performance.

The financial sector experienced a correction of up to 9.28% in the first month, the mining sector fell 6.45 %, miscellaneous industries including automotive sub-sector fell 5.27% and the property sector fell by 3.07% (Koran Jakarta, 19 April 2013). Fuel price hike will also have a direct impact on the cost of production. The transport sector will experience the impact of rising transport operating costs. Contribution of fuel costs in operating costs in the transport sector reached 15% - 25% (Setyawan 2006). With the decrease in turnover and increase in production costs and operating costs, this will ultimately have implications for the decline in net profit.

The decrease in net income this company will be responded negatively (bad news) by the market or investors. This is evidenced by Arisyahidin (2012) who conducted the study of oil price increase on 1 October 2005 gained positive abnormal return results before the announcement of fuel price increases.

On the contrary, the increase in fuel prices after the announcement, the abnormal returns are negative. Abnormal returns before and after the fuel price hike show significantly different results. This means that the increase in fuel prices that occurred in 2005 had a negative impact on stock returns. Instead the research Setyawan (2006) suggests that the market reaction to rising fuel prices in 2005 is not very reactive. This means that the market is anticipating bad news for possible fuel price increases as a result of the announcement. Although abnormal return several days before and after the announcement the change in stock price after the announcement showed no significant change. Otherwise, with the gap between the research Arisyahidin (2012) and Setyawan (2006), this motivated the researchers to conduct research on the investor reaction over the incident rising fuel prices.

The increase in fuel prices that occurred on June 22, 2013 got a mixed response from all elements of society. How is the response of investors in response to the increase in fuel prices is dated June 22, 2013? The purpose of this study attempts to test the reaction of investors to the fuel price hike announced on June 22, 2013.

THEORETICAL FRAMEWORK AND HYPOTHESIS

Market Efficiency

Maurice Kendall in 1953 stated that the movement of stock prices follows a random number that is always known as the random walk theory (Brealey, et al. 2008). Random walk theory states that the future stock price movements cannot be predicted by using past data. Fama on the movement in

1970 suggests the efficient market hypothesis.

Market is said to be efficient if there is no one who can get abnormal returns in the long term by using existing trade mechanisms. This means that the price of the existing shares in the market reflects the information available in the market. The market will react quickly to information available and will immediately make adjustments back to reach the new equilibrium price (equilibrium). Markets could react like this can be said is that an efficient market. Fama (1970) in Jogiyanto (2010) presents three different forms of market efficiency as follows:

1. Weak Form of Market Efficiency (Weak Form).

The market is said to be efficient in weak form if the prices of the securities is reflected in full (fully reflect) past information. Past information is information that is already happening. Weak form of market efficiency is related to the random walk theory that states past data is not related to the present value. If the market is weak form efficient, then the values of the past cannot be used to predict the price now. This means that for the weak form efficient market, investors cannot use past information to obtain the abnormal return.

2. Half Strong Form Market Efficiency (Semi Strong Form).

Semi - strong efficient market states that security prices fully reflect (fully reflect) all published information (all publicly available information) including information residing on the issuer's financial statements. The information could be published the following information:

a. Information published only affect the price of securities of companies that publish such information. The information published is information in the form of an announcement by the issuer company. This information generally relates to events that occurred at the company issuers (corporate events). The examples of those forms are earnings announcements, dividend payment

announcements, announcements of new product development, merger and acquisition announcements, and announcement of a change of accounting method, the announcement of change of leadership and so on.

b. Published information affects stock prices of a number of companies. This information can be the government regulations or rules of the regulator that only affects the prices of shares in companies affected by these regulations. For examples, the regulations to increase the reserve requirement (reserved requirements) that must be met all banks. This information will be reflected in the stock price is not only one bank alone but all issuers in the banking industry.

c. Published information affecting stock prices of all companies listed on the stock market. This information may include government regulations or rules of the regulator that affects all corporate issuers. An example of this is the regulation of accounting rules to include a cash flow statement should be done by all issuers. This information will have an impact not only to the issuer or group of issuers, but will have an impact on all listed companies in the stock market.

When the market is efficient in the semi- strong form, no investor or group of investors use the information that is published to benefit not normal (abnormal returns) in the long term.

3. Strong Form Market Efficiency (strong form).

The market is said to be efficient in the strong form if stock prices fully reflect (fully reflect) all available information, including private information. When the market is efficient in this form, no individual investor or group of investors can benefit the abnormal returns for obtaining private information.

Overreaction Theory

As noted that overreaction theory is a theory that describes the conditions in the face of reactive investor information. In this

sense, investors are anticipating excessive market volatility. To get the benefit of good news (favorable news) or to anticipate the bad news (unfavorable news), investors should immediately take action against that information. However, the tendency of investors in reacting to good news and the bad news is still excessive. This overreaction leads to stock prices to become too high or otherwise share price will be too low (Fabozzi 1999).

In fact, if the market is experiencing overreaction, investors could take advantage of the positive abnormal returns if they can do two things:

1. To identify extreme events.
2. to be sure when the market price condition will experience overreaction and how about if it is turned back to normal (Fabozzi 1999).

In that case, the strategy can be done immediately by the investors, such as buying shares at the time of the existence of the identified extreme events that are positive. They can also sell them back before the market correction due to overreaction. Conversely, if identified of extreme negative events, investors can short sell and buy back prior to the correction of the overreaction. The fuel price hike is negative news for most companies in Indonesia. If markets do negative response it would appear overreaction that will cause abnormal return.

Return Shares

A fluctuation in stock prices is an indicator of investor reaction to the condition of the company. The increase in stock prices showed positive reaction of investors to the company's condition. Conversely a decrease in stock prices has a negative reaction of investors to the company. On the other hand, such an increase would benefit investors. The difference towards the current share price of the stock price at the time of purchase is an advantage for investors. This advantage is commonly called the return. Stock return is the result obtained from an

investment. Return to the form of the return realization that has occurred or return an expectation that have not occurred but is expected to happen in the future (Jogiyanto 2010).

Return realization of a certain return that has already occurred and is calculated based on historical stock price data. This would also be useful to measure the value of the company. Return realization will also be the basis for measuring the return expectations. While the return expectations of a return that is expected to happen in the future. Thus, this return is a return that has not actually happened. Return realization is the sum of the returns of the stock price which s commonly referred to as a capital gain and return of the dividend yield, usually referred to as dividend yield. The capital gains yield formula is as follows (Brigham & Daves 2004):

$$\text{CapitalGainYield} = \frac{P_1 - P_0}{P_0} \quad (1)$$

In which:

P_1 : Price of stock for tomorrow.

P_0 : Current stock price.

Therefore, the capital gains yield provides an overview of the advantages or disadvantages of investors in investing. If the selling price is higher than the purchase price, the investor will realize a profit called capital gains. However, if the selling price is lower than the purchase price, then the investor will only obtain damages is called a capital loss. Not all forms of investments have either a capital gain or loss. For stocks and bonds do have either a capital gain or loss but for deposits and savings do not have capital gains.

In addition to capital gains, investors will also gain direct revenue. Bonds will have a coupon. Likewise, deposits and savings will earn interest. Yet, the stock will give dividends in the form of direct income. To calculate the amount of benefit in the form of dividends can be calculated with a dividend yield that is obtained by the formula:

$$\text{DividendYield} = \frac{D_0 (1 + g)}{P_0} \quad (2)$$

In which:

D_0 : current dividend.

g : growth.

In that case, the stock returns can be obtained from the sum of the capital gains yield that is the dividend yield (Jogiyanto 2010):

$$\begin{aligned} \text{ReturnTotal} &= \frac{P_1 - P_0}{P_0} + \frac{D_0 (1 + g)}{P_0} \\ &= \frac{P_1 - P_0 + D_t}{P_0} \end{aligned} \quad (3)$$

Expected Return to Approach Capital Asset Pricing Model (CAPM)

In addition to the realization of the return, there is also the so-called return expectation (Expected rate of return). Expected return is the expected revenue in the future. Approach Capital Asset Pricing Model (CAPM) is closely related to market risk, especially risk (β). The basic form of the CAPM approach is a linear relationship between the returns of individual stocks with stock market returns. By using least squares linear regression analysis can be made following formula (Brigham & Daves 2004):

$$K_j = \alpha + \beta K_m + e \quad (4)$$

In which:

K_j : Return on individual common stock of company.

α : Alpha, the intercept on the Y-axis.

β : Beta the coefficient.

K_m : Return on stock market.

e : Error term of regression equation.

The formula above uses historical data to calculate the beta coefficient (β) that is a measure of stock return performance compared with the performance of the market return. In this formula the stock return is determined from the intercept plus beta times the market return. Given investors face a greater risk, so they require a larger return as a premium for the risk faced by the so-called market risk premium. From the basic formulas are then developed a

formula that could accommodate the market risk premium as follows (Brigham & Daves 2004):

$$K_j = R_f + \beta (K_m - R_f). \quad (5)$$

In which:

K_j : Return on individual common stock of company.

R_f : Risk free rate of return.

β : Beta the coefficient.

K_m : Return on stock market.

$K_m - R_f$: Premium or excess return of the market versus the risk free rate.

$\beta (K_m - R_f)$: Expected return above the risk free rate for the stock of company.

Abnormal Return

According to Jogiyanto (2010), the event studies analyze abnormal returns (abnormal returns) of securities that may occur around the announcement of an event. Abnormal return or excess return is the excess of the return is really going to return to normal. Normal return is the return expectation (return expected by investors). Thus, abnormal returns (abnormal returns) is the difference between actual returns that occur with return expectations.

Formula which is used to calculate the abnormal return (Jogiyanto 2010) is as follows:

$$AR_{it} = R_{it} - E(R_{it}) \quad (6)$$

Notation:

AR_{it} : abnormal return of stock i at period t

R_{it} : actual return of stock i at period t

$E(R_{it})$: expected return of stock i at period t

Trading Volume Activity

The information contained in the capital markets could affect investors in making decisions. These decisions are taken as a reflection of investors' capital market reaction to the information. This can also be viewed by Trading Volume Activity (TVA). Ghoniyah et al. (2008) stated that Trading Volume Activity is an instrument that can be used to look at the stock market reaction to movement parameter informa-

tion through the activity of stock trading volume in the stock market. Trading Volume Activity calculation is done by comparing the number of shares traded companies in a given period by the total number of outstanding shares of the company at the same time, according to Jones, Charles P. in Ghoniyah et.al (2008):

$$TVA = \frac{\text{Volume of Stock Trading of Period } t}{\text{Total Existing Stocks Period } t} \quad (7)$$

Previous Research

This study uses event study to measure investor reaction to the information. In this case, the event containing information could have an impact on investor behavior while the event which does not contain information that would not give a meaningful impact for investors. As one of Indonesia's economic barometers, JCI is vulnerable to environmental changes including political environment. A political event in Indonesia is an event that is quite interesting to study.

For example, Suryawijaya and Setiawan (1998) have found a significant reaction from investors in the Jakarta Stock Exchange over the events of July 27, 1996. Zaqi (2006) conducted a study with event study and get significant results over the socio-political and economic events in Indonesia. Manurutng and Cahyanti (2007) found a significant reaction over political events in Indonesia. Likewise Sirait et al. (2010) also found a significant reaction over the turn of events the Minister of Finance of the Republic of Indonesia in 2010.

As has been noted earlier, the increase in fuel prices will trigger a rise in inflation. Accordingly, the increase in inflation will be responded by a variety of investors. Some studies such as Bodie (1976), Nelson (1976), Fama and Schwert (1977), Feldstein (1980) Fama (1981), Schwert (1981), Geske and Roll (1983), Kaul (1987), Pearce and Roley (1988), Shubita & Al Sharkas (2010), and Torrecilas &

Table 1
Research Sample

No	Sectors	Number of Issuers	%
1	Agriculture	3	6.67
2	Mining	7	15.56
3	Base-Chemical Industries	5	11.11
4	Miscellaneous Industries	2	4.45
5	Consumer Goods Industries	5	11.11
6	Property and Real Estate	5	11.11
7	Infrastructures, Utilities and Transportation	6	13.33
8	Finance	6	13.33
9	Trade, Services, and Investment	6	13.33
	Total	45	100.00

Jareno (2013) obtain the existence of a negative and significant relationship between announcements of rising inflation with stock price returns. This means that the increase in inflation in the future is information (bad news) and threats for companies that need to be avoided by investors. This will bring up a negative abnormal return. This result is also supported by research conducted by Arisyahidin (2012) who find negative abnormal returns after the announcement of fuel price increases on October 1, 2005.

On the contrary, the research by Setyawan (2006) found a positive abnormal return after the announcement of fuel price increases in 2005. The final results obtained Setyawan (2006) showed no significant difference between the abnormal returns before and after the announcement of fuel price increases. Instead Arisyahidin study (2012) it shows the significant results for the difference in abnormal returns before and after the announcement of fuel price increases on October 1, 2005.

To measure the quality of information, can be obtained not only through the emergence of abnormal returns, but also measure how actively traded stocks in the market with the use of trading volume activity (TVA). Both studies Setyawan (2006) and Arisyahidin (2012) found during the stock trading activity before the announcement of fuel price increases as well as the announcement of fuel price in-

creases did not show any significant difference.

Research Hypothesis

The research hypotheses can be formulated as the following hypothesis:

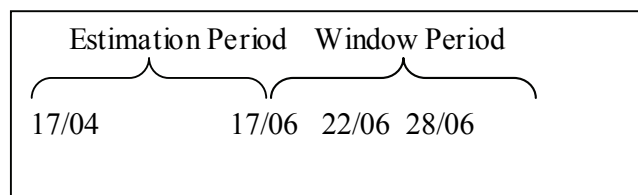
1. The negative abnormal returns would occur over the announcement of fuel price hike June 22, 2013.
2. There would be changes in stock trading volume activity over the fuel price hike announcement dated June 22, 2013.
3. There were differences in abnormal returns before and after the announcement of fuel price hike June 22, 2013.
4. There would be differences in the stock trading volume activity before and after the announcement of fuel price hike June 22, 2013.

RESEARCH METHOD

Population and Sample

The population was all companies listed on the Indonesia Stock Exchange (IDX) while the sample was taken from the companies registered in the LQ - 45 periods February 2013 to July 2013. This period was taken in accordance with the period of occurrence of rising fuel prices on June 22, 2013. Sample taken was all companies listed on the LQ - 45 are 45 companies. The companies listed on the LQ - 45 is considered as the best 45 companies and can represent all the existing companies because all sectors are represented on the list . Besides, according to the nature of the companies listed on the

Figure 1
Estimation Period



LQ - 45 is the companies' choice for the liquid in which the entire company's market capitalization LQ - 45 reached 74.53% of the market capitalization of all companies listed on the Indonesia Stock Exchange. The sectors included in this study are as in Table 1.

Types and Sources of Data

The data are secondary data from the shares of companies listed on the LQ - 45 in Indonesia Stock Exchange. They were derived from stock price movements banking records existing in the Indonesia Stock Exchange obtained from the site www.finance.yahoo.com and www.idx.co.id which includes the highest price, lowest price and closing price.

Observation Period

In the event study, the observation period is divided into two, namely the window period and the period of estimation. According to Jogiyanto (2010) window period (window period) or the event window (event window) or period is the period of occurrence of the event and its effects. On the other hand, the estimation period is the period prior to the event period. Period window and estimation period is shown in Figure 1.

From Figure 1, it can be seen that:

1. Estimation period started from April 17, 2013 to June 17, 2013, where the study was announced 60 days prior to the fuel price hike
2. Event day set on June 22, 2013, the date of onset of rising fuel prices.
3. Event period starts from the date of June 17, 2013 until June 28, 2013, where the study was conducted for 10 days i.e. 5 days before and 5 days after the announcement of fuel price increases.

The use of 5 days before and after the

announcement of the price of fuel is intended to be able to describe the actual investor reaction. If the time taken is too long, it is feared the influence of other events that would affect the study. It is expected that the retrieval time of 5 days before and after the announcement of fuel price increases are not contaminated by the effects of other events such as stock splits, dividend announcements and other events.

Hypothesis Testing

Hypothesis I

This testing is done for the presence of abnormal return. The formula used is as follows (Ghoniya et al. 2008):

Actual Return

$$R_{it} = \frac{P_t - P_{t-1}}{P_{t-1}} \quad (8)$$

R_{it} : individual stock return i at the period t

P_t : closing price at period t

P_{t-1} : closing price at period $t-1$

Market Return

$$R_{mt} = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}} \quad (9)$$

R_{mt} = expected return for Stock i at day t .

$IHSG_t$ = index of composite stock price at day t .

$IHSG_{t-1}$ = previous index of composite stock price.

Expected Return

$$E(R_{it}) = \alpha_i + \beta_i \cdot R_{mt} \quad (10)$$

$E(R_{it})$: Expected return for stock at period t

R_{mt} : market return at period t

Coefficients α and β obtained from

regression calculation of time series between stock return (R_{it}) and market return (R_m).

Abnormal Return

$$AR_{it} = R_{it} - E(R_{it}) \tag{11}$$

AR_{it} : abnormal return of stock at period t

R_{it} : actual return of stock at period t

$E(R_{it})$: expected return of stock at period t

Average Abnormal Return

$$\overline{AR_{it}} = \frac{\sum_{i=1}^n AR_{it}}{n} \tag{12}$$

$\overline{AR_{it}}$: average abnormal return of stock i at period t

AR_{it} : abnormal return of stock i at period t

n : number of sample

Cumulative Average Abnormal Return

$$CAAR = \sum \overline{AR_{it}} \tag{13}$$

CAAR : cumulative average abnormal return

$\sum \overline{AR_{it}}$: total average abnormal return of stock i at period t

Standard Deviation

$$\sigma_{ie} = \sqrt{\frac{\sum (AR_{it} - \overline{AR_{it}})^2}{n-1}} \tag{14}$$

σ_{ie} : standard deviation of security i

AR_{it} : abnormal return of stock i at period t

$\overline{AR_{it}}$: average abnormal return of stock i at period t

n = total sample

Standardized Abnormal Return

$$SAR_{nt} = \frac{AR_{it}}{\sigma_{ie}} \tag{15}$$

SAR_{nt} : standardized abnormal return of stock at period t

AR_{it} : abnormal return of stock i at period t

σ_{ie} : standard deviation of security i

One Sample t – Test

$$t = \frac{\sum SAR_{nt}}{\sqrt{n}} \tag{16}$$

$\sum SAR_{nt}$: total standardized abnormal return of stock at period t

n : total sample

Hypothesis II

Hypothesis testing II related to trading volume activity. The formula used here is the follows (Ghonyah et al. 2008):

Trading Volume Activity (TVA)

$$TVA = \frac{\text{Volume of Stock Trading of Period t}}{\text{Total Existing Stocks Period t}}$$

Average Trading Volume Activity

$$\overline{TVA} = \frac{\sum_{i=1}^n TVA}{n} \tag{17}$$

\overline{TVA} : average trading volume activity of stock at period t

TVA : trading volume activity of stock i at period t

n : total sample

Standard Deviation

$$\sigma_{ie} = \sqrt{\frac{\sum (TVA - \overline{TVA})^2}{n-1}} \tag{18}$$

σ_{ie} : standard deviation of security i

TVA : trading volume activity of stock i at period t

\overline{TVA} : average trading volume activity of stock i at period t

n : time period

Standardized Trading Volume Activity

$$STVA_{nt} = \frac{TVA}{\sigma_{ie}} \tag{19}$$

$STVA_{nt}$ = standardized trading volume activity of stock at period t

TVA = trading volume activity of stock i at period t

σ_{ie} = standard deviation of security i

One Sample t – Test

$$t = \frac{\sum STVA_{nt}}{\sqrt{n}} \tag{20}$$

$\sum STVA_{nt}$: total standardized trading volume activity of stock at period t
 n : total sample.

Hypothesis III

Hypothesis III is concerned with the test of differences of stock returns before and after the event. The formula is as the following (Ghonyiah et al. 2008):

Average Abnormal Return

Before announcement of fuel price increase:

$$\overline{AR}_{before} = \frac{\sum_{t=-5}^{t=-1} AR_{before}}{n} \tag{21}$$

After price increase announcement:

$$\overline{AR}_{after} = \frac{\sum_{t=+5}^{t=+1} AR_{after}}{n} \tag{22}$$

Standard Deviation

Before price increase announcement:

$$\sigma_{before} = \sqrt{\frac{\sum_{t=-5}^{t=-1} (AR_{before} - \overline{AR}_{before})^2}{(n-1)}} \tag{23}$$

After price increase announcement:

$$\sigma_{after} = \sqrt{\frac{\sum_{t=+5}^{t=+1} (AR_{after} - \overline{AR}_{after})^2}{(n-1)}} \tag{24}$$

Statistical testing (at $\alpha = 5\%$)

$$t = \frac{\overline{AR}_{after} - \overline{AR}_{before}}{\frac{\sigma_{after}^2}{n} + \frac{\sigma_{before}^2}{n}} \tag{25}$$

Hypothesis IV

The hypothesis IV is related to the test of differences between stock volume before and after the announcement of fuel price increase. The formula used is as follows (Ghonyiah et al. 2008):

Average TVA

Before fuel price increase announcement:

$$\overline{TVA}_{before} = \frac{\sum_{t=-5}^{t=-1} TVA_{before}}{n} \tag{26}$$

After fuel price increase announcement:

$$\overline{TVA}_{after} = \frac{\sum_{t=+5}^{t=+1} TVA_{after}}{n} \tag{27}$$

Standard Deviation

Before fuel price increase announcement:

$$\sigma_{before} = \sqrt{\frac{\sum_{t=-5}^{t=-1} (TVA_{before} - \overline{TVA}_{before})^2}{(n-1)}} \tag{28}$$

After fuel price increase announcement:

$$\sigma_{after} = \sqrt{\frac{\sum_{t=+5}^{t=+1} (TVA_{after} - \overline{TVA}_{after})^2}{(n-1)}} \tag{29}$$

Statistical testing (at $\alpha = 5\%$)

$$t = \frac{\overline{TVA}_{after} - \overline{TVA}_{before}}{\frac{\sigma_{after}^2}{n} + \frac{\sigma_{before}^2}{n}} \tag{30}$$

DATA ANALYSIS AND DISCUSSION

Hypothesis I

Hypothesis I stated that there were negative abnormal returns over the incident announcement of fuel price increases. The results obtained are as in Table 2.

As presented in Table 2, it indicates that from 5 days before the announced fuel price hikes of up to 5 days after the announced hike in fuel prices, there had been a fluctuation in the stock return volatility. At the time of Day- 5, it had already occurred positive abnormal return, and the abnormal return also occurred though insignificant. This indicates investors were beginning to respond positively to the planned increase in fuel prices announced by the government.

The increased investors' positive response was at the time of the Day-4. This is illustrated by the increase in significant positive abnormal return. The circumstances turned on when the Day-3 and Day+1 indicating a significant negative abnormal return. Investors began to give a

Table 2
The Test Results of Abnormal returns

Event	Means of Abnormal Return	Sig.	Conclusions
Day – 5	0.0088	0.082	Insignificant
Day – 4	0.0157	0.000	Significant
Day – 3	-0.0086	0.028	Significant
Day – 2	-0.0336	0.000	Significant
Day – 1	-0.0270	0.000	Significant
Day + 1	-0.0180	0.000	Significant
Day + 2	0.0067	0.118	Insignificant
Day + 3	0.0433	0.000	Significant
Day + 4	0.0168	0.001	Significant
Day + 5	0.0260	0.000	significant

positive response back from Day, Day although when the increase is not significant, but the start day until Day+5 the following day the investors tend to give positive response significantly.

Given the negative reaction of investors to the Day-3 prior to the announcement of the rise in fuel prices, it indicates that investors still doubt the firmness of the Government in deciding the fuel price hike. The planned increase in fuel prices was echoed by the Government and this had happened many times, but the Government was still back and forth in deciding the increase.

The last time occurred in 2012, which the Government had launched a fuel price increase on April 1, 2012, but this increase was canceled on March 30, 2012 due to the many rejection of society. Uncertainty in the Government decides fuel price hike impact on economic conditions. Limited supply of fuel resulting in fuel caused social unrest to line up in a variety of areas. Delays increase in fuel prices will also impact on the vulnerability of Indonesia's economic structure. Balance of payments deficit and the fiscal deficit will deepen.

The investors doubted the government's firmness in raising fuel prices. This is illustrated by the decline to negative abnormal returns. Negative abnormal return remains to continue until Day+1. This encourages government to decide the fuel price hike on June 22, 2013 new greeted

positively by investors after Day+2. According to Ito Warsito, President Director of Indonesia Stock Exchange, investors appreciation hike in fuel prices by the Government as this will improve the structure of the Indonesian economy, improving the balance of payments deficit and reduce the fiscal deficit (Antara, 30 April 2013). Appreciation given by the investors is reflected in the significant increase in abnormal returns from D +3 to D +5.

In theory, the increase in fuel prices will increase inflation. In accordance with research Bodie (1976), Nelson (1976), Fama and Schwert (1977), Feldstein (1980), Fama (1981), Schwert (1981), Geske and Roll (1983), Kaul (1987), Pearce and Roley (1988), Shubita & Al Sharkas (2010), and Torrecilas & Jareno (2013), the increase in inflation will have a negative impact for the company. The real impact is directly felt by the company is the increase in operating costs and a decrease in purchasing power.

CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

In general, it shows a negative reaction (bad news) over a planned increase in fuel prices. The reaction was indicated by a negative abnormal return at the time prior to the announcement of fuel price increases. The investors still give a positive reaction (good news) over the announcement of fuel price hike on June 22, 2014. This reaction is illu-

strated by the positive abnormal returns after the announcement of fuel price hike on June 22, 2013. However, given the reaction of investors before and after the announcement of fuel price increases, it still shows no significant difference.

The reaction of investors both before and after the announcement of fuel price increase indicates an increase in trading activity. This is illustrated by the trading volume activity (TVA) that is significant. Yet, trading activity before and after the announcement of the increase in fuel prices also showed no significant difference.

The purpose by the investors to buy shares in the stock market is to get the dividends and capital gains. However, most investors will hunt large capital gains. A large capital gain would be obtained if the investor market is inefficient (weak form). Capital market in Indonesia is more likely to form strong half (semi- strong form). For that investors should be more selective in choosing valuable information in order to obtain the excess return.

The announcement of the increase in fuel prices has given positive an abnormal return (good news) is quite meaningful to investors. However, given the abnormal return and trading volume activity (TVA) both before and after the announcement of the fuel price hike is not too different. As a result, if investors really want to hunt big capital gains, the information of this fuel price increase will not much help them.

The fact is that the time taken for observation was only 10 days: 5 days before the announcement of fuel price increases and 5 days after the announcement of fuel price increases. The purpose of making a short time is to minimize the effects of contaminated abnormal return of other factors. But by taking a short time is a limitation of this study. In addition, this research only considers the factor of announcement of fuel price hike alone as factor that influences investors' reactions. Therefore, the limitations of this study might be to the measurements such as how much the effect of the factor of the fuel

price increase announcements on investor reaction.

The uncertainty information regarding fuel price increase or hike will only give a negative signal to investors. In this condition, the government should be certain and decisive in making decision related to the fuel price hike. The investors responded positively to the government's decision to raise fuel prices on June 22, 2013 last. Despite the weight, but expectations of better economic structure and improving Indonesia's balance of payments deficit and the fiscal deficit is a positive signal and will provide fresh air for the business world.

However, this study does not support the theory of inflation as well as the results of previous studies. For that reason further research should reexamine the next consistency of this study to the case of the other factors that might also be included for more general conclusion.

REFERENCES

- Antara, 30 April 2013, *Kenaikan Harga BBM Positif Bagi Pasar Modal*, <<http://www.antara-news.com/berita/372249/kenaikan-harga-bbm-positif-bagi-pasar-modal>>, viewed 6 November 2013.
- Arisyahidin, HS 2012, 'Dampak Kebijakan Kenaikan Harga Bahan Bakar Minyak (BBM) terhadap Investasi Saham di Bursa Efek Indonesia (BEI)', *Jurnal Ilmu Manajemen, Revitalisasi*, Vol. 1, No. 2, September 2012.
- Bodie, Z 1976, 'Common Stocks as a Hedge Against Inflation', *The Journal of Finance*, 31(2): 459-470.
- Brealey, Richard A, Stewart C Myers, Franklin Allen, 2008, *Principle of Corporate Finance*, Mc Graw Hill, New York, America.
- Brigham, Eugene, Philip R Daves, 2004, *Intermediate Financial Management*, 8th edition, South Western, Thomson, USA.
- Bursa Efek Indonesia, 2013, *Fact Book 2013*.

- Fabozzi, Frank J 1999, *Investment Management*, Second edition, Prentice Hall International, Inc.
- Fama, EF 1981, 'Stock Return, Real Activity, Inflation, and Money', *The American Economic Review*, 71: 545-565.
- Fama, EF & Schwert, GW 1977, 'Asset Returns and Inflation', *Journal of Financial Economics*, 5 : 115-146.
- Feldstein, M 1980, 'Inflation and The Stock Market', *The American Economic Review*, 70 (5): 839-847.
- Geske, R, & Roll, 1983, The 'Fiscal and Monetary Linkage Between Stock Return and Inflation', *The Journal of Finance*, 38 : 1-33.
- Ghonyah, Nunung, Mutamimah and Jenar Widayati, 2008, 'Reaksi Pasar Modal Indonesia Terhadap Pengumuman Obligasi Syariah', *SNA XI 2008*.
- Jogiyanto HM 2010, *Teori Portofolio dan Analisis Investasi*, 7th Edition, BPFE, Yogyakarta.
- Kaul, G 1987, 'Stock Return and Inflation : The Role of The Monetary Sector', *The Journal of Financial Economics*, 18 : 253-276.
- Kementerian Keuangan Republik Indonesia, 2013, *Nota Keuangan dan Anggaran Pendapatan dan Belanja Negara Tahun 2013*.
- Koran Jakarta, 19 April 2013, *Kenaikan BBM: Hindari Saham Bank dan Otomotif*, <<http://koran-jakarta.com/index.php/detail/view01/117413>>, Viewed 6 November 2013.
- Manurung, Adler Haymans, and Cahyanti Ira K, 2007, 'Pengaruh Peristiwa Politik Terhadap Transaksi Saham di Bursa Efek Jakarta', *Jurnal Bisnis dan Manajemen*, Vol. 7 No. 2, 2007, pp.135-146.
- Nelson, CR 1976, 'Inflation and Rates of Return on Common Stocks', *The Journal of Finance*, 31 (2) : 471-483.
- Pearce, DK & Roley, VV 1988, 'Firm Characteristics, Unanticipated Inflation, and Stock Return', *The Journal of Finance*, 43 (4) : 965-981.
- Schwert, GW 1981, 'The Adjustment of Stock Prices to Information about Inflation', *The Journal of Finance*, 36(1) : 15-29.
- Setyawan, Tri Adi, 2006, 'Analisa Reaksi Pasar Modal Terhadap Kenaikan Harga BBM', *Post Graduate Thesis*, Universitas Diponegoro, Semarang.
- Shubita, MF, & Al Sharkas, Adel A 2010, 'A Study of Size Effect and macroeconomics Factors in New York Stock Exchange', *Applied Econometrics and International Development*, Volume 10-2.
- Sirait, Rica Syafitri, Wiwik Tiswiyanti and Fitriani Mansyur, 2010, 'Dampak Pergantian Menteri Keuangan RI Tahun 2010 terhadap Abnormal Return Perusahaan Perbankan yang Terdaftar di BEI', *e-journal Binar Akuntansi*, Volume 1 No. 1, September 2012.
- Suryawijaya, MA and Setiawan, FA 1998, 'Reaksi Pasar Modal Indonesia terhadap Peristiwa Politik Dalam Negeri, Even Studi pada Peristiwa 27 Juli 1996', *Kelola*, No. 18/VII/1998, pp.137-153.
- Tim Litbang Kompas, 2013, *Buku Pintar Kompas 2012*, Penerbit Buku Kompas, Jakarta.
- Torrecilas, M, Del Camino & Jareno, Francisco, 2013, 'Inflation News Impact on Stock Market : A Review', *Pensee Journal*, Vol. 75 No. 11 November 2013.
- World Bank, 2013, *Perkembangan Triwulan Perekonomian Indonesia, Menanggapi Berbagai Tekanan*, Juli 2013, <http://www-wds.worldbank.org/external/default/WDSContentServ-er/WDSP/IB/2013/07/18/000333037_20130718140624/Rendered/INDEX/795950WP0INDON0Box0377381B00PUBLIC0.txt>, viewed 6 November 2013.

Zaqi, Mochamad, 2006, 'Reaksi pasar modal indonesia terhadap peristiwa ekonomi dan peristiwa sosial politik dalam nege-

ri (Studi pada saham LQ-45 di BEJ periode 1999-2003)', *Post Graduate Thesis*, Universitas Diponegoro, Semarang.