MARKET REACTIONS TO DOMESTIC MARKET OBLIGATION (DMO) COAL PRICE POLICY CHANGES: EVIDENCE FROM INDONESIA

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Abstract: The announcement of the Domestic Market Obligation (DMO) coal price policy becomes the signal for investment decision making. The event was an announcement related to the government that can affect shares in the capital market. The form of capital market efficiency knows how equal the information that investors can absorb and the signal that indicates investors’ response, whether it is positive or negative. This research is a descriptive event study that uses twenty-one samples of coal mining subsector companies to determine capital market reactions to the Domestic Market Obligation (DMO) coal price policy announcement. During the observation period, there was a significant market reaction with a marked abnormal negative return. There is a leak of information before implementing policy, which makes the form of capital market efficiency is semi-strong form. Also, this is caused by the investor, which gets the difference of information degree based on the market efficiency hypothesis. The next research can use different event windows to increase the knowledge about the effect of the announcement of the Domestic Market Obligation (DMO) coal price policy towards market reaction.

Keywords: Event Study, Signaling Theory, Efficient Market Hypothesis, Abnormal Return, Domestic Market Obligation (DMO) Coal Price Policy

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The capital market is one of the places for market players or investors to invest in financial assets. In investing in the capital market, fluctuating stock price movements can provide both advantages and disadvantages for investors. These fluctuating stock price movements can be caused by several factors, one of which is the policies taken by the government (Danusatrio and Sulasmiyati, 2018; Hachenberg et al., 2017). On March 9, 2018, the Indonesian government, through the Ministry of Energy and Mineral Resources, renewed the coal DMO policy. The new DMO policy sets the domestic coal price at US$ 70 per metric ton with 6,322 kcal/kg calories or following the Global Reference Coal Price if it is below US$ 70 per ton (Hidayat, 2018; Keputusan Menteri Energi dan Sumber Daya Mineral Republik Indonesia No. 1395...
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k/30/MEM/2018, 2018). The existence of this policy is expected to reduce the production costs of PT. Perusahaan Listrik Negara (Persero) to prevent an increase in the basic electricity tariff and keep the purchasing power of the people in Indonesia from decreasing (Febrianto, 2018).

The policy that regulates the coal price of the Domestic Market Obligation (DMO) issued in March 2018 is considered a negative sentiment for investors in the capital market because this policy has had its pros and cons. On the one hand, this policy positively impacts people’s purchasing power, which is maintained because the basic electricity tariff will not fluctuate significantly and impact other sectors. But on the other hand, this policy will make the revenue of the coal mining sub-sector companies that supply coal to PT PLN will be depressed because coal prices are pegged at a price lower than the Global Reference Coal Price (Putra, 2018). The decline in the mining stock index is a form of market reaction in line with the announcement of the policy regarding the Domestic Market Obligation coal price.

Previous research that examined the influence of government policies on market reactions has been carried out in Indonesia and other countries (Anand and Singh, 2018; Anggariani and Suaryana, 2018; Chandra, 2013; Hachenberg et al., 2017; Xiao and Gao, 2017). The results of these studies indicate that policy changes lead to market reactions. On the other hand, there are several studies with different results. The events of changes in government policies are not responded to by the market so that there is no significant abnormal return (Purba, 2017; Wibowo and Darmanto, 2017). The above studies show that not all government events issued by the government can cause reactions in the capital market. That is what underlies the researchers to re-examine whether the events of the announcement of government policies can affect the capital market’s reaction.

This research discusses the impact of the announcement of the Domestic Market Obligation (DMO) coal price policy on market reactions (abnormal returns), which have never been studied before and are closely related to coal issuers. Coal itself is a natural resource that cannot be renewed and has a limited quantity. Currently, coal is still the belle of national energy and the primary energy source for electricity generation in Indonesia. As an export commodity, Indonesia’s coal production activities have benefited the country’s economy, namely being a source of state income (Nugroho, 2017). Therefore, researchers are interested in discussing shares in the coal mining subsector, which are closely related to the Domestic Market Obligation (DMO) coal price policy. Based on the explanation above, the writer is interested in knowing the effect of the announcement of the Domestic Market Obligation (DMO) coal price policy on market reactions, which are reflected through abnormal returns in the observation period. This research is an event study that examines the presence or absence of market reactions by describing the abnormal return due to the announcement of the Domestic Market Obligation (DMO) coal price policy. The estimation window used is 100 days, and the event window is 11 days. The hypotheses in this study are:

H0: There is no significant negative effect of the announcement of the Domestic Market Obligation (DMO) coal price policy on the abnormal return of shares in coal mining subsector companies listed on the Indonesia Stock Exchange (IDX) for the 2018 period.

METHOD

This research is a quantitative research that aims to investigate a problem based on testing a theory of the variables used, measured by numbers, and analyzed by statistical procedures so that it is known that the predictive generalization of the theory is true or not (Silalahi, 2015). The method used in this research is an event study, which is a study that studies market reactions to an event whose information is published as an announcement (Hartono,
An event study method is a tool that can help the author to determine the effect of the announcement of the Domestic Market Obligation (DMO) coal price policy.

In this study, there are two variables, namely the independent variable and the dependent variable. The independent variable (X) is a variable that affects other variables or variables which cause the occurrence/influence of other variables. The independent variable in this study is the announcement of the Domestic Market Obligation (DMO) coal price policy. Meanwhile, the dependent variable (Y) is a variable whose value is influenced by the independent variable. The dependent variable in this study is the market reaction, which is indicated by an abnormal return. The announcement of the Domestic Market Obligation (DMO) coal price policy occurred on March 9, 2018. Furthermore, this study uses an 11-day observation period divided into five days before the event, when the event occurred and five days after the event.

The population of this study is all coal mining sub-sector companies listed on the Indonesia Stock Exchange for the period 2018. The number of coal companies listed on the Indonesia Stock Exchange in the 2018 period is 25 companies. In this study, purposive sampling was used to determine the sample based on specific criteria. The sample selection criteria in this study are a) Coal mining subsector companies listed on the Indonesia Stock Exchange (IDX) for the 2018 period; b) Not being suspended by the Indonesia Stock Exchange (IDX) in 2018; c) Not taking Corporate Action; d) Companies did not conduct an IPO in 2018.

The data used by the author in this study is secondary data obtained from the website of the Indonesia Stock Exchange (IDX) (idx.co.id), yahoofinance.com, and online news that supports research sources. The data collection technique used in this research is the documentation technique. The documentation technique is collecting secondary data from various sources, both personally and institutionally (Sanusi, 2011). This study, using quantitative research analysis in descriptive statistics, data normality test, and hypothesis testing, assisted by the calculation of SPSS 24 for Windows and Microsoft Excel software.

**RESULTS**

Based on abnormal return data processing results from available secondary data, perform a normality test using Microsoft Excel. After that, looking for the t-test value using Microsoft Excel and proven by SPSS, the following data is known:

Based on Table 1, the null hypothesis is rejected with a significance level of 10%, 5%, and 1% during the t-5, t-4, t-2, t+2, t+3, and t+4 periods. This result indicates a significant market reaction during that period. Furthermore, the null hypothesis is rejected with a significance level of 5% at t-1 and is

| Event Window | Average Abnormal Return Score | Significance |
|--------------|--------------------------------|--------------|
| AR t-5       | -0.027810843                   | 0.005***     |
| AR t-4       | -0.010821269                   | 0.001***     |
| AR t-3       | 0.006117668                    | 0.285        |
| AR t-2       | -0.051705546                   | 0.000***     |
| AR t-1       | 0.025714909                    | 0.029***     |
| AR t0        | -0.002051121                   | 0.433        |
| AR t+1       | 0.005258803                    | 0.079*       |
| AR t+2       | -0.024553735                   | 0.000***     |
| AR t+3       | -0.025437411                   | 0.000***     |
| AR t+4       | -0.009523061                   | 0.007***     |
| AR t+5       | 0.000729228                     | 0.620        |

Note: significance level *)10% **)5% ***)1%
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rejected with a significance level of 10% at t+1. Based on the results of hypothesis testing and data on average abnormal returns, the strongest reaction was at t-2, which informed that investors gave the strongest negative response to the announcement of the Domestic Market Obligation (DMO) coal price policy.

Tabel 2. Results of Daily Cumulative Abnormal Return Hypothesis Test

| Event Window | CAR Score         | Significance |
|--------------|-------------------|--------------|
| CARt-5       | -0.030181488      | 0.000***     |
| CARt-4       | -0.038632112      | 0.000***     |
| CARt-3       | -0.032514443      | 0.000***     |
| CARt-2       | -0.084219989      | 0.000***     |
| CARt-1       | -0.05850508       | 0.000***     |
| CARt0        | -0.060556201      | 0.000***     |
| CARt+1       | -0.05297398       | 0.000***     |
| CARt+2       | -0.079851133      | 0.000***     |
| CARt+3       | -0.105288544      | 0.000***     |
| CARt+4       | -0.114811604      | 0.000***     |
| CARt+5       | -0.114082376      | 0.000***     |

Note: significance level *)10% **)5% ***)1%

Hypothesis testing in Table 2 shows that the null hypothesis is rejected at the 1% significance level in the entire observation period. The average cumulative abnormal return during the observation period was -0.070358215. This indicates that the announcement of the Domestic Market Obligation (DMO) coal price policy had a significant negative effect on cumulative abnormal return. The cumulative abnormal return data indicates an increase or decrease tendency during the observation period so that the data shows how the impact of an event, both positive and negative, of all types of stocks (Samsul, 2006).

DISCUSSION

Based on the results of the research in the previous section, it can be seen that the value of the abnormal return (AR) and cumulative abnormal return (CAR) during the observation period are not equal to zero (0). Furthermore, the hypothesis test shows that there is a cumulative abnormal return value with a significance level of 1%, which means that the announcement of the Domestic Market Obligation (DMO) coal price policy has a significant effect on market reactions before the event, during the event, and after the event. The results also showed that the average abnormal return and cumulative abnormal returns formed during the observation period were negative. The existence of the above effects is because the event contains information that can provide an abnormal return. Following the opinion of Hachenberg et al. (2017), all information related to government policies will affect stock price movements.

The efficient market hypothesis states that the market will absorb available information, and then this information will be reflected in changes in securities prices (Fama, 1970). Judging from the abnormal return (AR) and cumulative abnormal return (CAR) values during the observation period are not equal to zero (0), this indicates that the market always responds to announcements of an event during the specified observation period. This market reaction suggests that the Indonesian capital market is in the semi-strong-form category (Bodie et al., 2011). In this form, there are many mass media that current news related to events that make it easier for investors to obtain information, and prices change quickly along with the speed with which information signals are captured. The rapid develop-
The development of technology has also made it easier for investors to access news related to events and developments in their stock portfolios.

Furthermore, the signaling theory explains that the owner of the information will provide relevant information to the recipient, who will adjust his behavior according to his understanding of the signal (Spence, 1973). The recipient of the information or the market will respond to information obtained from both management and in the mass media as a signal of certain events that can affect the company’s value (Supragita, 2011). The assumption of asymmetric information states that decision-makers have complete information, while other people do not necessarily have the same information as the information available to the decision-maker. This assumption underlies the signaling theory. The policies taken by decision-makers will carry messages for investors. When the Domestic Market Obligation (DMO) coal price policy is announced, and all market players have received the information, market players will first analyze the information as good news or bad news. If the announcement is considered bad news for investors, it will give a negative abnormal return and vice versa (Hartono, 2010). The results also show that the CAR value during the observation period has a significance level of 1% and shows negative effects. These results indicate that the announcement of the Domestic Market Obligation (DMO) coal price policy did not generate profits for investors or investors, judging the event as a bad signal or bad news.

The announcement of the Domestic Market Obligation (DMO) coal price policy began with a complaint from PT PLN (Persero) about an increase in electricity consumption and an increase in the global benchmark coal price, which could affect the financial performance of PT PLN. Thus, to meet the national electricity needs, PT PLN must adjust by increasing the basic electricity tariff. On the other hand, the Indonesian government will not increase the basic electricity tariff until 2019. On March 9, 2018, the Indonesian government, through the Minister of Energy and Mineral Resources, updated the coal DMO policy to deal with this problem. With this new policy, coal companies are required to:

1) allocate 25 percent of the company’s production for domestic fulfillment and sell it at a price of US $70 per metric ton with 6,322 kcal/kg calories
2) or follow the Global Reference Coal Price if it is below US $70 per ton.

If observed during the observation period before, at the time of the occurrence, and after the Domestic Market Obligation (DMO) coal price policy announcement, the market response was negative. The policy announced on March 9, 2018, requires coal companies to allocate 25% of their production for sale domestically. The DMO allocation is also pegged at a price of US $70 per ton. With this policy, coal exports will be limited. Coal producers must also sell the coal they produce at a lower price than the price previously used, namely following the Reference Coal Price. Therefore, coal companies cannot enjoy the increase in prices on the global market. These things can cause the company’s revenue projection to decrease. When the company’s revenue projection falls, the ability to generate profits also decreases. There is a threat of reducing company profits, which will have an impact on company performance.

Director-General of Mineral and Coal of the Ministry of Energy and Mineral Resources, Bambang Gatot Ariyono, stated that the DMO coal price below the reference price would indeed decrease the profit of coal companies (Chandra, 2018). That is reinforced by news from the kontan.co.id newspaper on March 20, 2018, that the policy will negatively affect some state revenue posts. First, state revenues that are originating from Tax Revenue and Non-Tax State Revenue (PNBP). Second, from the income tax and royalties of coal companies. Third, a decrease in coal mining company profits will potentially reduce investment incentives in the coal sector. Investors will be cautious about company profits because this will affect the returns they will receive later. If there is a decrease in profit or even loss in a company, investors...
will be less interested in that company. In the end, coal investors decided to release shares to reduce the level of risk that investors would later bear. That is following the opinion of Mahmoudi et al. (2016), which states, “The market seems to consider earnings reductions as bad news.” Then it can be said that investors’ expectations are not based on reality, so most investors sell shares or sell coal shares.

Since March 2, 2018, information regarding the Domestic Market Obligation (DMO) coal price policy began to appear in newspapers. The market response is seen until March 5, 2018 (t-4), which shows negative abnormal returns. Furthermore, bisnis.com newspaper (March 7, 2018) informed that the regulation of the Domestic Market Obligation (DMO) coal price was blamed as the leading cause of the drop in the stock price index in the Indonesian capital market. President Director of Indonesia Stock Exchange (IDX) Tito Sulistio stated that government intervention on the coal price market was a negative sentiment for the stock market. That led to a decline in the mining sector and resulted in a decrease in other sectors. Due to market players’ concerns over this, the JCI closed down 2.03% or 131.84 points at the 6,368.27 level. The nine Jakarta Composite Index (JCI) sectoral indexes ended in the red zone, with the most significant pressure coming from the mining sector, which slumped 3.56%, followed by the consumer sector, which fell 3.07%.

The market reacted again by giving a negative response on the announcement day (t0) of the Domestic Market Obligation (DMO) coal price policy on March 9, 2018. Based on news from the newspaper detikfinance.com (2018), the Director-General of Budget, Askolani, stated, “With the adjustment of stone prices, the coal could potentially reduce state revenues in the form of Non-Tax State Revenues (PNBP) and taxes totaling up to IDR 6 trillion”. That is also supported by news from kumparan.com on March 9, 2019, which wrote, “The pace of mining stocks is under pressure from coal price regulations. This government policy gave negative sentiment towards mining companies listed on the Indonesia Stock Exchange (IDX).” Several stocks in the coal mining subsector that weakened when the announcement of the Domestic Market Obligation (DMO) coal price policy was Bukit Asam (PTBA), which fell 40 points (1.43%) to Rp 2,760 and Adaro Energy (ADRO) fell 30 points (1.37%) to IDR 2,160. That indicates that the mining sector’s performance is beginning to waver due to the changes that happen because of the announcement of the Domestic Market Obligation (DMO) coal price policy. Market players digest this information by interpreting that the mining sector was currently in a weak condition. Automatically, most investors decided to sell their shares, causing a negative abnormal return to form.

After only three days, it took effect. The Minister of Energy and Mineral Resources revised the policy by issuing Ministerial Decree No. 1410K / 30 / MEM / 2018. Based on tirto.id newspaper on March 13, 2018, this new policy revises the timing of implementing the reference coal price regulation for domestic interests (domestic market obligation/DMO), which was initially retroactive from January 1, 2018, to December 2019, changed to non-retroactive, namely starting March 12, 2018. Director-General of Mineral and Coal, Bambang Gatot Ariyono, confirmed that the new regulation was not retroactive or there would be no recalculation for January and February transactions. With the revision of the previously announced policy on March 9, 2018, investors feel that there is still uncertainty about this policy. According to Simamora (2006), the issue of policy uncertainty can affect the investment climate. Policies can increase the risk for the company, especially if the policy changes frequently. It will make it difficult for companies to make long-term decisions. Given this risk, investors choose to sell their shares and switch to stocks with less risk, causing a negative abnormal return.

This study has similar results with research conducted by Anggariani and Suaryana (2018), which found that there is information in the announcement of government policies for investors. The significant abnormal return indicates this in the observation period, namely t-1 and t+2. Furthermore, this study also has similar results with research by
Anand and Singh (2018), which shows that automobile policy announcements generate reactions in the form of a significant negative cumulative abnormal return in automobile companies listed on the Indian capital market. Another study by Chandra (2013) also shows a significant market reaction before and after announcing the fuel price hike announcement by the Indonesian government. However, the market reaction that appeared was different. The form of the event causes the difference in market reaction, whether the event is received positively or negatively by the market.

This research contradicts Wibowo and Darmanto (2017) research, which in their research results show that the tax amnesty policy announcement does not have an impact on abnormal returns. The policy is a long-term policy, which is the effect will be felt in the next few years so that investors do not need to respond to the tax amnesty policy immediately. This study also contradicts the research of Purba (2017), which shows that there is no significant difference in abnormal returns around the implementation of government policies. That is because the information contained in the event is not sufficient to influence investors’ decisions. Based on the above discussion, it can be concluded that research on market reactions due to events related to government policy has different results depending on the shape of the event, whether an event can have a positive, negative, or even no effect on the return movement. Investors will continue to analyze every event that occurs based on the information available to get a lot of profit.

**CONCLUSIONS**

Based on the results of the research and discussion above, it can be concluded that the announcement of the Domestic Market Obligation (DMO) coal selling price policy caused the market to react during the observation period due to the information content of the incident. If connected with the efficient market hypothesis, the market that is formed is a semi-strong-form market. The formation of a negative abnormal return, then based on the signal theory, shows that the announcement of the Domestic Market Obligation (DMO) coal selling price policy gave a negative signal (bad news) for investors.

**IMPLICATIONS**

The theoretical implication of this research is that it succeeds in proving the validity of the signaling theory and efficient market hypothesis.

**LIMITATIONS**

This study still has several limitations, including the abnormal distribution of the data, which requires the researcher to remove some outliers.

**RECOMMENDATIONS**

Based on the results of research and discussion in this study and the limitations of existing research, suggestions that can be given are about future research on this topic. Further research can create a longer event window for after the event because there is still a significant abnormal return after five days. That allows the abnormal return to continue for a longer period. Creating a longer event window allows researchers to know the number of days of market reactions to the event of the announcement of the Domestic Market Obligation (DMO) coal price policy more precisely.

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