Market Reaction Toward The Announcement of Domestic Market Obligation For Coal Price

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Abstract
This paper compares the impact of Domestic Market Obligation (DMO) on stock returns for coal mining company stocks for 10 event-days on March 2018. The study computes abnormal returns for 19 mining company using event study methodology and Trading Volume Activity to prove information content of Domestic Market Obligation for Coal Price. The result show that this event has information content, which caused the Indonesian capital market to react to the event. The number of Abnormal Returns that occurred in the window period was 4 times. Although the capital market seems to react, the capital market does not significantly provide Abnormal Return when the DMO policy takes place. However, Trading Volume Activity before and after the announcement of the DMO policy showed a significant change in the significance level of 5%.

Keywords — *Domestic Market Obligation (DMO), Event Study, Trading Volume Activity*

I. INTRODUCTION

Based on the commitment of the Indonesian government to the role of the Capital Market which is reflected in "Undang Undang Republik Indonesia Nomor 8 Tahun 1995" about the capital market, which stated that the capital market has a strategic role in national development, as one source of financing for the business world and a vehicle for investment for the community. As one of the instruments of the economy, the capital market is inseparable from the influence that develops in its environment, both those that occur in the microeconomic environment, namely the events or circumstances of the issuers, such as performance reports, dividend distribution, changes in corporate strategy or strategic decisions in general meeting of shareholders will be interesting information for investors in the capital market. Information held by investors will be transformed in the form of fluctuations in daily transaction volume and frequency of transactions. Volatility occurs because there is a portion of private information that is revealed through the transaction process, and not because of an increased dissemination of public information (Wibowo, 2004).

The government through the Ministry of Energy and Mineral Resources (ESDM) has issued Decree of the Minister of Energy and Mineral Resources Republik Indonesia No: 1395 K/30/MEM/2018 concerning the Selling Price of Coal for the Provision of Electric Power in the Public Interest on March 9, 2018, where the government has set a Coal Selling Price for the Provision of Electric Power for the Public Interest of USD 70 (seventy US dollars) per metric ton Free On Board (FOB) Vessel. The policy is called Domestic Market Obligation (DMO). In 2015 - 2016 coal prices were in a low position at US $ 50 - US $ 70 per ton and in recent months coal prices were at US $ 90 - US $ 100 per ton for CV 6.322 kkcal / kg GAR according to Newcastle Global Coal Index.

Based on the background of the phenomenon that has been described above, this research tries to test the strength of information (information content) of an event on the activity on the stock exchange, or observe the changing speed of the capital market to the selling price of coal for the supply of electric power for public interests below the market price.

II. LITERATURE STUDY AND HYPOTHESIS

A. Event Study

Event study is an observation of stock movements in the capital market to find out whether there is an Abnormal Return obtained by shareholders as a result of a certain event (Peterson, 1989). Event study was first proposed by Ball and Brown (1968) to examine the occurrence of Abnormal Return due to his reaction to an event (Lam et al., 2016; Tao, Liu, Gao, and Xia, 2017).

Market reaction is indicated by changes in prices of the securities concerned. This reaction can be measured by using Return as the value of price changes or by using Abnormal Return. If Abnormal Return is used, it can be said that an announcement which has information content will give Abnormal Return to the market.

The Efficient Market Theory (Efficient Market Hypothesis) states that securities are generally in an equilibrium condition that the stock is valued fairly in the sense that the price reflects all information about the stock available to the public. Based on the type of information, the efficient form of the market can be divided into 3 parts Brigham dan Houston:212).

1.Weak Form Of The Efficient Market Hypothesis

The market is said to be a weak form efficient if the prices of securities fully reflect past information. Past information is information that has already happened. If the market is formally weak, then past information cannot be used to predict current prices. Therefore investors cannot use past information to obtain Abnormal Returns.

2.Semi-Strong Form Of The Efficient Market Hypothesis

The market is said to be an efficient, half-strong form if the prices of securities reflect all published information. If the market is efficient in a semi-strong form, then no investor can use published information to obtain Abnormal Return for a long time.

3.Strong Form Of The Efficient Market Hypothesis

The market is said to be a strong form of efficiency if the prices of securities fully reflect all available information including private information. If the market is efficient in a strong form, then no investor can obtain Abnormal Return because it has privacy information.

B. Hypothesis Development

Abnormal Return is an excess of Return that actually occurs against the expected return or it can also be said that the Abnormal Return is the difference between the actual Return and the expected Return (Bi-Huei, 2018).

Based on research conducted by Kusumayanti (2018) about Donald Trump's victory over the capital market reaction in Indonesia shows that there is a significant abnormal return before and after Donald Trump's announcement of victory.

Hypothesis 1 (H_1) : There are significant differences in the average Abnormal Return before and after the DMO policy.

The size of the change in the average TVA between before and after the stock split reflects the impact caused by the stock split on stock trading volume (Suryawijaya dan Setiawan, 1998).

Research conducted by Ningsih, 2014 tested the Trading Volume Activity before and after the fuel price increase policy concluded that there were differences in the capital market reaction between before and after the announcement of the fuel price increase announcement in the study period.

Hypothesis 2 (H2): There are significant differences in average trading volume activity before and after the DMO policy.

C. Research Framework

The research framework used in this study is as follows:

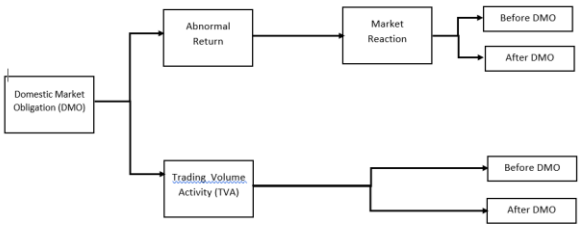

Fig. 1: Research Framework

III. RESEARCH METHODOLOGY

A. Data Types and Sources

In this study the authors used secondary data, because the data were obtained from published sources and were ready to use. So the writer only collects it. The author gets data from the Indonesia Stock Exchange (IDX) with a website tool that is www.idx.co.id, www.finance.yahoo.com and www.sahamok.com.

B. Population dan Sample

The population in this study is the overall shares of the mining subsector. In this study, the method used for sampling is purposive sampling. The companies sampled are companies included in the coal mining category in a row in the DMO policy event. The next criterion is when the coal stock companies do not do a stock split, dividend announcement, mergers, right issues. So this selected sample really shows that the stock return will be completely clean from the cofounding effect caused by the company.

C. Data Analysis Methods and Data Analysis Tools

This research uses event study analysis method which is widely used in previous event study studies that have been discussed. First, this study sets days as day 0 for each DMO policy event. The estimated interval is the period from day -260 to day -11, and the event interval is the period from the 10th day to the 10th day. For each firm i, the market model parameters, αi and βi are estimated using a regression of each firm's Return to Market return in the estimated period (250 days, ending 11 days before the event).

Before entering into the analysis method of the event study, the steps taken are Return data that are normally distributed. If Return data is not normally distributed, this will violate the basic assumptions of the statistical tools used. With this basis, then in this study it is necessary to test the normality of Return data. In tests t and f assume that the residual value follows the normal distribution. If this assumption is violated then the statistical test becomes invalid for a small number of samples. To determine the normality of data in this study using the Kolmogorov-Smirnov Test.

To test Abnormal Returns during the announcement of the DMO policy period, we use the

market model to analyze Abnormal Returns and Cumulative Abnormal Returns. Returns are defined as price changes divided by initial prices. Therefore, the positive rate of return comes from the price increase and the negative rate of return comes from the price decrease. In this thesis, we use stock returns to show changes in stock prices during the DMO policy announcement period.

IV. RESULT AND DISCUSSION

D. Return Calculation Result

The pattern of stock returns that occurred 261 days before the announcement until 10 days after the announcement of fluctuations in stock returns that are not so large. However, in the DMO policy announcement up to 10 days after, there was a significant fluctuation in stock returns which even tended to decline. Changes in Abnormal Return of shares and TVA that occurred around the announcement of the DMO policy are as follows:

TABLE I

Period	*Abnormal stock returns on DMO Policy*	Period	TVA on DMO Policy
-10	-0.0050	-10	0.5535
-9	-0.0014	-9	0.5146
-8	-0.0167	-8	0.5914
-7	0.0021	-7	0.3677
-6	-0.0083	-6	0.2950
-5	-0.0177	-5	0.2319
-4	-0.0134	-4	0.3235
-3	0.0156	-3	0.2814
-2	-0.0134	-2	0.6396
-1	-0.0197	-1	0.4708
+1	-0.0009	+1	0.2396
+2	-0.0132	+2	0.1822
+3	-0.0218	+3	0.3621
+4	-0.0001	+4	0.1839
+5	0.0053	+5	0.1562
+6	0.0071	+6	0.1813
+7	-0.0020	+7	0.1040
+8	-0.0027	+8	0.6834
+9	0.0046	+9	0.3460
+10	0.0032	+10	0.2040

All title and author details must be in single-column On the announcement of March 9, 2018, the 10 days before the announcement showed negative Abnormal Returns, while the average Abnormal Returns on the 9 days before the announcement until 1 day before the announcement only when t-7 and t-3 occurred the positive stock Abnormal Return value while the rest tends to occur negative stock Abnormal Return value. This shows that prior to the announcement there was a tendency for negative reactions from investors. It is possible that there are already issues with the existence of a DMO policy.

Meanwhile, 10 days after the announcement of the DMO policy, investors' reactions tend to be fluctuating where at t + 1 to t + 4 a negative Abnormal Return will occur then t + 5 and t + 6 a positive reaction which means a positive reaction from the investor. It is possible that investors have learned a lot from the experience of previous increases that the DMO policy will usually take effect at the beginning and end of the month.

E. Normality Test

TABLE III

		Sebelum	Sesudah
N		10	10
Normal Parameters[a,b]	Mean	-.0077900	-.0020500
	Std. Deviation	.01093500	.00900287
Most Extreme Differences	Absolute	.196	.271
	Positive	.196	.155
	Negative	-.138	-.271
Kolmogorov-Smirnov Z		.620	.858
Asymp. Sig. (2-tailed)		.837	.454

a. Test distribution is Normal.

b. Calculated from data.

Based on the normality test results of the DMO policy announcement data after the announcement shows the results of 0.454> 0.05 which means that Ha is rejected and accepts H0, which means the data is normally distributed.

F. Hypotesis Test

TABLE IIIII

Day	Date	Abnormal Return	t-statistic	
-10	23/02/2018	-0.0050	-0.2654	
-9	26/02/2018	-0.0014	-0.3151	
-8	27/02/2018	-0.0167	-2.1535	**
-7	28/02/2018	0.0021	0.2124	
-6	01/03/2018	-0.0083	-0.8657	
-5	02/03/2018	-0.0177	-2.4439	***
-4	05/03/2018	-0.0134	-1.7207	**
-3	06/03/2018	0.0156	1.7548	**
-2	07/03/2018	-0.0134	-1.8140	**
-1	08/03/2018	-0.0197	-2.5222	***

0	09/03/2018	0.0012	0.2570	
1	12/03/2018	-0.0009	0.3491	
2	13/03/2018	-0.0132	-1.4076	*
3	14/03/2018	-0.0218	-2.9449	***
4	15/03/2018	-0.0001	0.2514	
5	16/03/2018	0.0053	0.7508	
6	19/03/2018	0.0071	0.8957	
7	20/03/2018	-0.0020	-0.2515	
8	21/03/2018	-0.0027	-0.5386	
9	22/03/2018	0.0046	0.7543	
10	23/03/2018	0.0032	0.3115	

* : Significance at the 10% level (t>1.282)
** : Significance at the 5% level (t>1.645)
*** : Significance at the 1% level (t>2.326)

The test results show Negative Abnormal Returns appear during the DMO Policy Event period. From the table above, it appears that the Negative Abnormal Return appears more before the announcement of the entry into force of the DMo policy which is March 9, 2008. This shows that investors reacted negatively to the plan for the entry into force of the DMO policy on March 9, 2019.

1. Hypothesis 1 (H1):

TABLE IVV

	Abnormal stock returns before the announcement	***Abnormal stock returns after the announcement***
Mean	-0,00779	-0,00205
Std. Dev	0,01093	0,00900
T	-1,227	
Sig t	0,251	
	Not Significant	

The average Abnormal Return of shares for 10 days before the announcement of the DMO policy March 9, 2018 (t-10 to t-1) was obtained for -0.00779 while after the announcement of the DMO policy (t + 1 to t + 10) obtained an average of -0.00205. The average value of Abnormal Return After Announcement is greater than the average value of Abnormal Return Before announcement.

Test the significance of differences in stock returns statistically obtained value of t = -1,227 with a significance of 0.251 sig t value obtained greater than 0.05. This means that at the 5% level there is no significant Abnormal Return difference before and after the announcement of the DMO policy March 9, 2018. The average Return before and after the DMO policy announcement is statistically considered constant (unchanged) even though there is a Negative Abnormal Return. From the results of these studies indicate that before and after the announcement of the DMO policy March 9, 2018, changes in stock price reactions were not significant. Thus Hypothesis 1 of this study was rejected.

2. Hypothesis 2 (H2):

TABLE V

	TVA shares before the announcement	**TVA shares after the announcement**
Mean	0,42694	0,26427
Std. Dev	0,14481	0,16786
t	2,382	
Sig t	0,041	
	Significant	

The average TVA of shares for 10 days before the announcement of the DMO policy March 9, 2018 (t-10 to t-1) was obtained at 0.42694, while after the announcement of the DMO policy (t + 1 to t + 10) an average of 0 , 26427.

The average TVA after the announcement is smaller than the average TVA before the announcement. This shows that the trading volume after the announcement of the DMO policy is smaller than before the announcement of the DMO policy. However, the results of the significance test of the TVA difference were statistically obtained the value of t = 2.382 with a significance of 0.041 The value of sig t obtained was less than 0.05. This means that at the 5% level there is a significant TVA difference before and after the announcement of the DMO policy March 9, 2018.

In the announcement of the DMO policy, a sharp increase occurred 8 days after the announcement of the DMO policy. When viewed from the transaction volume of the sampling company on H + 8.

The average value of TVA on issuers DEWA on the 8th day was 11. This caused the overall TVA average of the companies in the coal mine to rise. After the DMO policy, investors made many transactions at this company because the company was not included in the biggest coal supplier at PLN. The results of these studies indicate that before and after the announcement of the DMO policy March 9, 2018, changes in TVA were significant. Thus Hypothesis 2 of this study was accepted.

V. CONCLUSIONS

The DMO policy event on March 9, 2018 shows that this event has information content, which caused the Indonesian capital market to react to the event, this can be seen in the DMO policy window period (D-10 to D + 10). The number of Abnormal Returns that occurred in the window period with a significance level of 5% (t> 1645) was 4 times, 3 (three) times appeared Negative Abnormal Return and 1 (one) time appeared Positive Abnormal Return.

Although the capital market seems to react, the capital market does not significantly provide Abnormal Return when the DMO policy takes place,

this is evidenced by testing hypothesis I that before and after the announcement of the DMO policy March 9, 2018, changes in the reaction of stock prices are not significant. However, Trading Volume Activity before and after the announcement of the DMO policy showed a significant change in the significance level of 5%, this is evidenced by the testing of hypothesis II.

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