Syntax Literate: Jurnal Ilmiah Indonesia p–ISSN: 2541-0849 e-ISSN: 2548-1398
Vol. 7, No. 10, Oktober 2022

STOCK MARKET REACTION DURING COAL EXPORT BAN POLICY

Nicodemus Halim
Universitas Bina Nusantara, Indonesia
E-mail: nco_mz@ymail.com

Abstract

The Indonesian government decided to ban coal export activities from 1-31 January 2022. This was done because the domestic coal stock was almost depleted, so coal companies had to fill the domestic coal stock first. Then the government announced that after 11 days, the coal export ban policy was eased. The coal export ban policy and its easing have caused the coal stock market to experience various reactions. This study aims to analyze the market reaction based on abnormal return and trading volume activity before and after the coal export ban policy and its easing. Hypothesis testing using paired sample t-test for data that is normally distributed and Wilcoxon signed-rank test for data that is not normally distributed with an observation period of 3 days before and 3 days after. The result of this research shows that there is no difference in market reaction based on abnormal returns and trading volume activity before and after the coal export ban policy and its easing.

Keywords: Stock market reaction, Coal export ban, Government policy.

Introduction

Coal companies have an important role as a source of energy for power generation. The coal sub-sector company decides to issue shares in the capital market as one of the company's funding, then the company will be listed as a public company on the Indonesia Stock Exchange. Indonesia is one of the largest coal producing and exporting countries for many years. In 2020, Indonesia was ranked 2nd as the largest coal producing country and largest coal exporter according to BP statistical review (2021) in Table 1.

How to cite:	Nicodemus Halim (2022) Stock Market Reaction During Coal Export Ban Policy, *(7) 10,* http://dx.doi.org/10.36418/syntax-literate.v7i10.13090
E-ISSN:	2548-1398
Published by:	Ridwan Institute

Table 1
Coal Production and Coal Export in the World

Country	Production / Exajoule	Export / Exajoule
Australia	12.42	9.25
Indonesia	13.88	8.51
Colombia	1.46	1.66
South Africa	5.97	1.64
US	10.71	1.62
Canada	0.89	0.97
Mongolia	0.82	0.79
Russian Federation	8.37	0.56
China	80.91	0.18
India	12.68	-

Source : BP Statistical Review of World Energy (2021)

The large frequency of coal export activities makes the Indonesian state not pay attention to the domestic coal stock which is almost depleted. Realizing this situation, Indonesian government has issued Decision of Minister of EMR Number 139.K/HK.02/MEM.B/2021, which specifically regulates the obligation to fulfill domestic coal needs. Bekkers, et al, (2017) argue that government policy can be described as set of means and resources that are used to solve problems in planned ways. In this situation, the Indonesian government has decided to ban coal export from 1-31 January 2022 for holders of Mining Business License (IUP), Operation-Production Special Mining Business License (IUPK), IUPK as a continuation of Contract/Agreement Operations, and Coal Mining Concession Work Agreement (PKP2B).

The announcement of the government's policy regarding the ban on coal exports can be a negative sentiment for coal companies whose sales are mostly from export activities. These companies may face a significant amount of income reduction as a result. Not only for the companies, this information may be a bad news for the market. There are several companies that have the potential to be negatively affected by this policy, namely PT Harum Energy Tbk. (HRUM), PT Indo Tambangraya Megah Tbk. (ITMG), PT Adaro Energy Tbk. (ADRO), PT Indika Energy Tbk. (INDY) (cnbcindonesia.com). The contribution of coal export sales from the four companies reached an average of one-third of the total revenue.

Table 2
Closing Stock Price

Company	Closing Price						
	28-Dec-21	29-Dec-21	30-Dec-21	03-Jan-22	04-Jan-22	05-Jan-22	06-Jan-22

	D-3	D-2	D-1	D+0	D+1	D+2	D+3
ADRO	2,300	2,310	2,250	2,370	2,240	2,240	2,300
ITMG	21,375	21,125	20,400	19,625	19,925	20,050	19,625
HRUM	10,975	11,000	10,325	10,500	10,500	10,300	10,000
INDY	1,630	1,630	1,545	1,475	1,560	1,580	1,585

Source : Yahoo Finance

Table 2 shows the closing stock price movements of ADRO, ITMG, HRUM, INDY companies. On January 3, 2022, ITMG and INDY companies have decreased by 3.80% and 4.53%, respectively. However, ADRO and HRUM companies have increased by 5.33% and 1.69% which should have decreased due to the bad news. From January 4, 2022 to January 6, 2022 , INDY's stock price has increased which previously had a decreased, which should has decreased because the bad news of the coal export ban.

After 11 days, The Indonesia government agreed to easing the coal export ban policy. The easing will be implemented on January 12, 2022. The announcement of the easing of the coal export ban policy can be a positive sentiment so that it can increase the value or restore the value of the company which has fallen due to the bad news of the coal export ban policy.

Table 3
Closing Stock Price Before and After Easing of The Export Ban Policy

Company	**Closing Price**						
	7-Jan-21	**10-Jan-21**	**11-Jan-21**	**12-Jan-22**	**13-Jan-22**	**14-Jan-22**	**17-Jan-22**
	D-3	D-2	D-1	D+0	D+1	D+2	D+3
ADRO	2,430	2,400	2,340	2,310	2,280	2,270	2,260
ITMG	20,025	20,050	20,175	20,175	20,600	20,700	21,125
HRUM	10,625	10,750	10,900	11,600	10,900	11,000	10,900
INDY	1,675	1,645	1,645	1,610	1,645	1,670	1,665

Source : Yahoo Finance

Table 3 shows the closing stock price movements of ADRO, ITMG, HRUM, INDY companies. There are 2 companies that have decreased after the easing of the coal export ban policy, ADRO and HRUM. It can be seen that ADRO still decreased from before the easing to after easing which should have increased due to the good news. After the easing, HRUM's stock has decreased which previously had a increased, which should has increased because the good news of easing the coal export ban.

Information is one of the most important things for investors to make investment decisions and also for the market to operate. While the information may influence market movement, the market speed in absorbing new information into security prices is varied. According to Beaver (1981), the market will be said to be efficient if the price of securities

acts as if everyone knows the available information. The information is divided into three forms, past information, current information, and private information. Fama (1970) divides market efficiency into 3 forms, weak form of market efficiency, semi strong form of market efficiency, and strong form of market efficiency. The market defined as having weak form efficiency if the current stock price fully reflects the information contained in the movement of historical data. The market is defined as having semi-strong form efficiency if public information is fully reflected in the current stock price. Meanwhile, the market is determined to have strong form efficiency if public information and private information are fully reflected in security prices. A market that has a strong form of efficiency does not allow investors to create abnormal returns because the market absorbs all information quickly so there will be no element of surprise or unexpected element that will cause a market reaction. The market will react if there is an element of surprise or an unexpected element in the information. Market reaction can be seen from abnormal returns and trading volume activity.

On this occasion the researcher wants to examine the market reaction by using abnormal returns and trading volume activity. By using abnormal returns, it can be concluded that an event that contains information will provide an abnormal return to the market. If there is no abnormal return, then there is no information in the event. Trading volume activity is used as a measure that reflects stock trading activity. How much the market reacts can be seen from the amount of trading volume activity in a company. Activity volume is an approved segment in technical analysis so that transactions that occur greatly affect stock price movements. Thus, when trading activity has a high volume, it can be interpreted as a sign that the market will improve.

There are several event study researches on a policy carried out by several researchers. Purnasari, et al (2015) conducted an event study on the impacts of indonesia raw minerals export ban on abnormal return and trading volume of metals and minerals companies listed in Indonesia Stock Exchange. The results show that there are no significant differences in abnormal returns before and after the ban on the export of raw minerals in Indonesia. Thus, there are no differences of abnormal return can be evidence that the market did not react to the ban on exports of raw minerals.

Asriyatuzzahra, et al (2021) researched government stimulus policy facing the covid-19 pandemic on abnormal share returns (Study on LQ-45 Shares). Stimulus policy is an economic policy in terms of finance imposed by the government to overcome the economic crisis, in this case due to the COVID-19 pandemic. Asriyatuzzahra, et al (2021) find that there was a market reaction when the announcement of the economic stimulus event occurred during covid19. This market reaction can be seen from the difference in abnormal returns before the announcement and after the announcement.

Likewise, research conducted by Handayani (2020), abnormal return of Indonesian banking shares in the time of COVID 19: An event study on the announcement of government regulation, POJK 11 of 2020 in banking sector. This regulation contains countercyclical

policies regarding the impact of the spread of COVID-19. Countercyclical policies are policies to reduce spending and increase taxes when the economy is in good shape, as well as increase spending and raise tax collections when in a recession. The results in this research indicate that the market reacts to the banking sector on the announcement of government regulation (POJK 11 of 2020) with a significant negative movement of abnormal return in all event periods.

Those researches may indicate that the capital market in Indonesia has semi-strong market efficiency. It happens because abnormal returns are generally found on the date of the event and around the event. According to Machmuda, et al. (2020), the capital market in Indonesia is categorized as a semi-strong form of market efficiency because the company's stock price adjustments occur quickly. Thus, this research needs to be carried out with a period of events that should not be too short so that the market reaction with a semi-strong efficient market form can be captured as a whole.

From the explanation above, the researcher has a research objective to find out whether there are differences in abnormal returns and trading volume activitiy before and after the coal export ban policy. This research uses an event study to see whether there is a significant difference between abnormal returns and trading volume activity before and after the coal export ban policy.

Hypothesis Development

The ban on coal exports is a policy established by the government. Government policies are formed to solve problems on a large scale in the country (Bekkers, et al, 2017). This export ban policy has been taken to ensure supplies to power plants. Specifically, it is implemented to ensure a sufficient supply for the state-owned electric company which its stock was running critically low. The announcement of the government’s policy regarding the ban on coal exports can be a negative sentiment for coal companies whose sales are mostly from export activities. These companies may face a significant amount of income reduction as a result. Not only for the companies, this information can also be bad news for the market. According to Mujib & Candraningrat (2021), the Indonesian capital market is categorized as a semi-strong market because the market price is formed starting from past information as well as current published information. Thus, the market will react when it gets bad news from the coal export ban event.

Minzani, et al (2021) assume that the market reaction can be seen by using abnormal returns. Abnormal return is the difference between the actual return and the expected return. The market reaction that occurs when there is bad news will make investors feel worried about their investment in coal companies so that it is possible for investors to sell their shares. The decision to sell shares made by investors will affect the actual return formed so that it will change the abnormal return value to be lower. This is suported by research conducted by Asriyatuzzahra, et al (2021) on the analysis of government stimulus policies in the face of

the COVID-19 pandemic on abnormal returns. The study stated that there was a significant difference between abnormal returns before and after the government's stimulus policies in dealing with COVID-19.

The market reaction that occurs when there is good news will make investors less worried about their investment in coal companies, thus allowing investors not to sell their shares or other investors will feel interested in investing in coal companies. Easing of the coal export ban policy is good news for investors and companies. The decision not to sell shares made by investors or the decision to buy shares made by other investors will affect the actual return formed so that it will change the abnormal return value to be higher. This is supported by Wibowo & Sukmaningrum (2019) research regarding the market reaction to a policy formed by the government in the form of a tax amnesty. The study stated that there was a significant difference between abnormal return before and after the tax amnesty policy.

Trading volume activity is a tool to observe the reaction of the capital market through the movement of trading volume in the capital market. Trading volume represents a critical characteristic of financial markets, as it enables price discovery and financial risk-sharing (Ante, 2020). The concerns experienced by investors over the policy of the ban on coal exports will influence investors to sell shares of coal companies so that they can move the trading activities of the stocks of the companies concerned. The impact of this incident will create a difference between trading volume activity before and after the coal export ban policy. This is supported by Suratna, et al (2021) research regarding trading volume activity react to the government policy namely large-scale social restrictions during covid-19 pademic. The study stated that there was a significant difference between trading volume activity before and after large-scale social restrictions.

The easing of the coal export ban policy by the government will be good news for companies and investors and will be an opportunity for other investors or traders to start investing in coal companies. This will create movement in the trading volume activities of the company concerned.. The impact of this incident will cause a difference between trading volume activities before and after the coal export ban policy. This is suported by research conducted by Agustina, et al (2018) on the impact of tax amnesty announcement towards share performance and market reaction in indonesia. The study stated that there was a significant difference between trading volume activity before and after the tax amnesty announcement.

Based on the argument and previous research findings, The hypotheses formed are as follows::

H1 : There is a difference between abnormal return before and after the coal export ban policy.

H2 : There is a difference between trading volume activity before and after the coal export ban policy.

H3 : There is a difference between abnormal return before and after easing of the coal export ban policy.
H4 : There is a difference between trading volume activity before and after easing of the coal export ban policy.

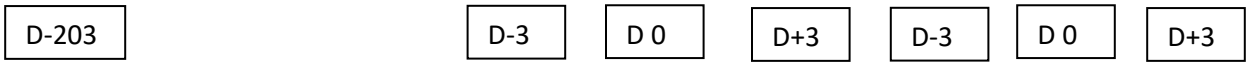
Research Method

The research used in this study is event study research. Event study is research that involves analyzing the behavior of securities prices around the time of the incident or announcement of information (Hartono, 2018). The type of method used in this study is a quantitative method. The researcher evaluates the stock data of coal companies at the time of the coal export ban policy and at the time of easing of the coal export ban policy. Daily historical data on coal companies listed on the Indonesia Stock Exchange were collected and used as data analysis in this study. From the data obtained, the researcher conducted a statistical test using paired-sample t-test to compare the two sample averages before and after coal ban policy. The requirement for conducting the paired sample t-test is that the sample data must be normally distributed, therefore the researcher will conduct a normality test. If the sample data is not normally distributed, a nonparametric test will be performed using the Wilcoxon signed rank test. Besides that, the researcher also added several additional analyzes with different samples on oil and gas sub-sector companies in Indonesia and coal sub-sector companies in Australia and the USA.

The sampling technique used in this study is purposive sampling, the technique of determining the sample with certain considerations. The event period becomes 2 period, period 1 which is the coal export ban policy period and period 2 which is easing of the coal export ban policy period. The event of period 1 that has been determined is 7 days (d-3 to d+3) and the event of period 2 that has been determined is 7 days (d-3 to d+3). In the research by Jegarut, et al (2021) regarding the market reaction, using an event period of 7 days with 3 days before the event and 3 days after the event. The purpose of the short-term window period is to avoid confounding effects so that the results of the study are not biased. The estimated length of the estimated period is 200 days (d-203 to d-4). The effective date of the coal ban policy is January 1, 2022 and the effective date of easing of the coal ban policy is January 12, 2022. The sample collected is 21 companies with criteria for coal sub-sector companies listed on the Indonesia Stock Exchange and their shares are actively traded in the period March 2021 - January 2022

Estimate Period and Event Period

Estimate Period	Event Period 1		Event Period 2	



The formula used to calculate abnormal return according to Chen & Liew (2019) is as follows:

$$AR = Rit - E(Rit)$$

Description:

AR = Abnormal return stock i in period t.
Rit = Actual return stock i in period t.
E(Rit) = Expected return stock i in period t.

According to Jogiyanto in Suryanto (2015), the formula that can be used in calculating the actual return is as follows:

$$Rit = \frac{\text{Current Period Stock Price} - \text{Previous Period Stock Price}}{\text{Previous Period Stock Price}}$$

Calculation of the expected return using the Market Model according to Marisetty, et al (2020) is as follows:

$$E(Rit) = \alpha i + \beta i \,.\, Rm, t + \varepsilon i, t$$

Description:

α_i = intercept, independent on $R\,m\,.t$
β_i = slope, systematic risk, dependent on $R\,m\,.t$
$R_{m,t}$ = Market return in period t.
$\varepsilon_{i,t}$ = Securities residual error i in estimation period t.

The following is the formula for trading volume activity according to Foster in Rahadi & Rahmi (2018):

$$TVA_{i,t} = \frac{\sum the\ number\ of\ shares\ of\ issuers\ listed\ in\ day\ t}{\sum the\ number\ of\ shares\ of\ issues\ that\ are\ recorded\ in\ ISSI\ on\ day\ t}$$

Additional Analysis

The policy of banning coal exports can create market reactions to other energy sectors. Apart from coal, oil and gas are also included in the energy sector which produces fuel. So the researchers will add oil and gas companies as an additional test. Thus, there will additional several coal companies in other countries that carry out large-scale coal export activities. According to the BP Statistical Review (2021), there are several countries that carry out large-scale coal export activities besides Indonesia, such as Australia and USA. Thus, the researchers will add several samples such as oil and gas sub-sector companies in Indonesia and coal sub-sector companies in Australia and the USA. The sample collected for

oil & gas companies listed on Indonesia Stock Exchange (IDX) is 11 companies, for coal companies listed on Australia (ASX) Stock Exchange is 15 companies, and for coal companies listed on NYSE & NASDAQ is 10 companies.

Result and Discussion

A. Descriptive Statistic

Table 4
Descriptive Statistics on IDX Coal Companies

Variable	Obs	Mean	Std. Dev.
AARBeforePeriod1	21	0.1119212	0.7958186
AARAfterPeriod1	21	-0.2903360	1.0602940
AARBeforePeriod2	21	-0.3077932	2.1171280
AARAfterPeriod2	21	0.7505031	2.3869770
ATVABeforePeriod1	21	0.0042590	0.0113938
ATVAAfterPeriod1	21	0.0028410	0.0062715
ATVABeforePeriod2	21	0.0026869	0.0047182
ATVAAfterPeriod2	21	0.0047551	0.0112013

Source : Output Stata 15

The results of the descriptive analysis in Table 4 show that the abnormal return mean decreased from 0.1119 menjadi -0.2903 after the coal export ban. Likewise, trading volume activity has decreased from 0.0028 to 0.0026. Different results are shown by abnormal return mean and trading volume activity mean increased after the easing of the ban on coal exports from -0.3077 to 0.7505 and from 0.0026 to 0.0047. This means that the coal export ban will reduce abnormal return and trading volume activity. On the contrary, the easing of the coal export ban will increase abnormal returns and trading volume activity.

B. Normality Test

Table 5
Descriptive Statistics on IDX Coal Companies

Shapiro-Wilk W test for normal data								
Variable	**COAL (IDX)**		**OIL & GAS (IDX)**		**COAL (ASX)**		**COAL (NYSE & NASDAQ)**	
	Obs	**Prob>z**	**Obs**	**Prob>z**	**Obs**	**Prob>z**	**Obs**	**Prob>z**
AARBeforePeriod1	21	0.21665	11	0.00376	15	0.16656	10	0.79530
AARAfterPeriod1	21	0.21781	11	0.87544	15	0.08667	10	0.22582

AARBeforePeriod2	21	0.00271	11	0.22496	15	0.56121	10	0.93206
AARAfterPeriod2	21	0.02114	11	0.56984	15	0.41393	10	0.16877
ATVABeforePeriod1	21	0.08784	11	0.35085	15	0.02557	10	0.20390
ATVAAfterPeriod1	21	0.21185	11	0.04230	15	0.06609	10	0.81665
ATVABeforePeriod2	21	0.12983	11	0.14311	15	0.37692	10	0.31902
ATVAAfterPeriod2	21	0.45199	11	0.08207	15	0.01638	10	0.88663

Source : Output Stata 15

In Table 5 there are normality test results for IDX coal companies, the results of Prob>z on abnormal return data for period 1, trading volume activity for periods 1 and 2 have a value of more than α (0.05), which means the data is normally distributed. While the abnormal return data for period 2 is not normally distributed because the results of Prob>z on abnormal return period 2 are 0.00271 and 0.02114 which is not more than α (0.05). There are normality test results on IDX oil & gas companies, Prob>z results on abnormal return data and trading volume activity for period 2 have a value of more than α (0.05) which means the data is normally distributed. While the abnormal return and trading volume activity data for period 1 are not normally distributed because the results of Prob>z on abnormal returns and trading volume activity for period 1 are 0.00376 and 0.04230 which is not more than α (0.05). There are normality test results on ASX coal companies, the results of Prob>z on abnormal return data for periods 1 and 2 have a value of more than α (0.05) which means the data is normally distributed. While the trading volume activity data for periods 1 and 2 are not normally distributed because the results of Prob>z on trading volume activity periods 1 and 2 are 0.02577 and 0.01638 which is not more than α (0.05). There are normality test results on NYSE & NASDAQ coal companies, Prob>z results on abnormal return and trading volume activity data for periods 1 and 2 have a value of more than α (0.05) which means the data is normally distributed.

C. Hypothesis Test

The researcher used paired sample t-test to test variables that had data that were normally distributed, but for variables that had data that were not normally distributed, they were tested using the Wilcoxon signed-rank test. To see the test results can be seen in table 6.

Table 6
IDX Coal Companies Test Result

Test	Paired Variable		Obs	t	Sig 2 tailed
Paired Sample T-test	AARBeforePeriod1	AARAfterPeriod1	21	1.3886	0.1802

Paired Sample T-test	ATVABeforePeriod1	ATVAAfterPeriod1	21	1.2390	0.2297
Wilcoxon Signed-rank Test	AARBeforePeriod2	AARAfterPeriod2	21	-	0.3945
Paired Sample T-test	ATVABeforePeriod2	ATVAAfterPeriod2	21	1.2390	0.2297

Source : Output Stata 15

The results of the paired sample t-test show that the significance value of period 1 abnormal return is 0.1802 with a sample of 21 companies. It can be concluded that H0 is accepted and H1 is rejected because the value of sig. (2-tailed) 0.1802 > level of significant (0.05). This shows that there is no difference in market reaction based on abnormal returns before and after the coal export ban policy. The results of this research are in accordance with research conducted by Fauziah & Venusita (2021) that there is no market reaction based on abnormal returns between before and after the lockdown policy issued by the government during Covid-19. This proves that government policies that are bad news are not necessarily a market reference for overreacting in the form of panic selling so as to create large abnormal returns on a regular basis.

In trading volume activity period 1, the results of the paired sample t-test show that the significance value is 0.2297 with the sample used as many as 21 companies. It can be concluded that H0 is accepted and H2 is rejected because the value of sig. (2-tailed) 0.2297 > level of significant (0.05). This shows that there is no difference in market reaction based on trading volume activity before and after the coal export ban policy. The results of this research are in accordance with research conducted by Purnasari, et al (2015) that there is no market reaction based on trading volume activity between before and after raw minerals export policy. This proves that the government's policy in the form of an export ban is not a reference for investors to invest or maintain their investment.

Data on abnormal return period 2 were not normally distributed, therefore the researcher used the Wilcoxon signed-rank test for testing. The results of the Wilcoxon signed-rank test in table 6 show that the significance value of abnormal return for period 2 is 0.3945 with a sample of 21 companies. It can be concluded that H0 is accepted and H3 is rejected because the value of sig. (2-tailed) 0.3945 > level of significant (0.05). This shows that there is no difference in market reaction based on trading volume activity before and after easing of the coal export ban policy. The results of this research are in accordance with research conducted by Adnan (2019) that there is no market reaction based on abnormal return between before and after tax reduction. Tax reduction is one of the programs to provide relief to taxpayers. Likewise with the easing of the policy on the ban on coal exports, which is to make it easier for coal companies to get income from exports. Tax reduction is one of the programs to provide relief to taxpayers. Likewise with the easing of the policy on the ban on coal exports, which is to make it easier for coal companies to get income from exports. This proves that the easing of policies that become good news does not necessarily contain

important information that can create significant abnormal returns. Therefore, policy easing is not a reference for investors to make investment decisions.

Data on trading volume activity period 2 is normally distributed so that the paired sample t-test can be used. The results of the paired sample t-test show that the significance value of trading volume activity for period 2 is 0.2297 with a sample of 21 companies. It can be concluded that H0 is accepted and H4 is rejected because of the sig. (2-tailed) 0.2297 > level of significant (0.05). This shows that there is no difference in market reaction based on trading volume activity before and after easing of the coal export ban policy. The results of this research are in accordance with research conducted by Muthaharia & Yunita (2021) that there is no market reaction based on trading volume activity between before and after announcement new normal policy. One of the purposes of the new normal is to reduce the policy of imposing restrictions on community activities during the covid-19. This proves that the easing of a government policy does not make the market react by moving trading volume activity because the easing is not a reference for investors to invest.

D. Additional Analysis

IDX Oil & Gas Companies

Table 7
IDX Oil & Gas Companies Test Result

Test	Paired Variable		Obs	t	Sig 2 tailed
Wilcoxon Signed-rank Test	AARBeforePeriod1	AARAfterPeriod1	11	-	0.5937
Wilcoxon Signed-rank Test	ATVABeforePeriod1	ATVAAfterPeriod1	11	-	0.7897
Paired Sample T-test	AARBeforePeriod2	AARAfterPeriod2	11	-2.8313	0.0178
Paired Sample T-test	ATVABeforePeriod2	ATVAAfterPeriod2	11	1.2828	0.1142

Source : Output Stata 15

Testing of abnormal return and trading volume activity variables in period 1 used the Wilcoxon signed-rank test because the data on these variables were not normally distributed. The results of the Wilcoxon signed-rank test in Table 7 show that the significance values of abnormal returns and trading volume activity for period 1 are 0.5937 and 0.7897 with 11 companies as samples. It can be concluded that the stock market of IDX oil & gas companies did not react significantly based on abnormal return movements or trading volume activity

movements on the coal export ban policy because of the sig. (2-tailed) 0.5937 & 0.7897 > level of significant (0.05).

The abnormal return and trading volume activity data in period 2 are normally distributed so that the test used is the paired sample t-test. The results of the paired sample t-test in table 7 show that the significance value of abnormal return and trading volume activity for period 1 is 0.0178 and 0.1142 with the sample used as many as 11 companies. It can be concluded that the stock market of IDX oil & gas companies reacted significantly based on the movement of abnormal returns to easing of the coal export ban policy because of the sig. (2-tailed) 0.0178 < level of significant (0.05). But not with trading volume activity which has a sig value. (2-tailed) 0.1142 > level of significant (0.05) so it can be concluded that the stock market of IDX oil & gas companies did not react significantly based on the movement of trading volume activity on easing of the coal export ban policy.

ASX Coal *Companies*

Table 8
ASX Coal Companies Test Result

Test	Paired Variable		Obs	t	Sig 2 tailed
Paired Sample T-test	AARBeforePeriod1	AARAfterPeriod1	15	-0.0287	0.9775
Wilcoxon Signed-rank Test	ATVABeforePeriod 1	ATVAAfterPeriod 1	15	-	0.0157
Paired Sample T-test	AARBeforePeriod2	AARAfterPeriod2	15	0.4055	0.6912
Wilcoxon Signed-rank Test	ATVABeforePeriod 2	ATVAAfterPeriod 2	15	-	0.0054

Source : Output Stata 15

The abnormal return data in period 1 is normally distributed so that the test used is the paired sample t-test. The results of the paired sample t-test in table 8 show that the significance value of abnormal return for period 1 is 0.9775 with 15 companies used as samples. It can be concluded that the stock market of ASX coal companies did not react significantly based on the movement of abnormal returns on the coal export ban policy because the sig. (2-tailed) 0.9775 > level of significant (0.05). Testing on trading volume activity for period 1 uses the Wilcoxon signed-rank test because the trading volume activity data for period 1 is not normally distributed. The results of the Wilcoxon signed-rank test showed the value of sig. (2-tailed) 0.0157 < level of significant (0.05) with a sample of 15 companies, so it can be concluded that the stock market of ASX coal companies reacted significantly based on the movement of trading volume activity on the coal export ban policy.

The variable period 2 has similarities with the variable period 1 where the abnormal return data for ASX coal companies is normally distributed while the trading volume activity data is not normally distributed so that the testing in period 2 will be the same as period 1, the abnormal returns will use the paired sample t-test and trading volume activity will use the Wilcoxon signed-rank test. The results of these tests have similarities with the results of period 1 such as the results of the paired sample t-test showing that the stock market of ASX coal companies does not react significantly based on abnormal return movements on easing of the coal export ban policy because of the sig value. (2-tailed) 0.6912 > level of significant (0.05). Likewise, the results of the Wilcoxon signed-rank test show that the stock market of ASX coal companies reacted significantly based on trading volume activity movements towards easing of the coal export ban policy because of the sig value. (2-tailed) 0.0054 < level of significant (0.05).

NYSE & NASDAQ Coal Companies

Table 9
NYSE & NASDAQ Coal Companies Test Result

Test	Paired Variable		Obs	t	Sig 2 tailed
Paired Sample T-test	AARBeforePeriod1	AARAfterPeriod1	15	0.8325	0.4266
Paired Sample T-test	ATVABeforePeriod1	ATVAAfterPeriod1	15	-2.2798	0.0486
Paired Sample T-test	AARBeforePeriod2	AARAfterPeriod2	15	6.2197	0.0002
Paired Sample T-test	ATVABeforePeriod2	ATVAAfterPeriod2	15	-1.2489	0.2432

Source : Output Stata 15

All abnormal return data and trading volume activity data in periods 1 and 2 for NYSE & NASDAQ Coal Companies are normally distributed so that the test used is the paired sample t-test. The results of the paired sample t-test in table 9 show that the significance value of abnormal returns and trading volume activity for period 1 is 0.4266 and 0.0486 with 15 companies as samples. It can be concluded that the stock market of NYSE & NASDAQ coal companies did not react significantly based on abnormal return movements on the coal export ban policy because the sig. (2-tailed) 0.4266 > level of significant (0.05). However, based on trading volume activity, the stock market of NYSE & NASDAQ coal companies reacted significantly because the sig. (2-tailed) 0.0486 < level of significant (0.05).

In period 2, the results of the paired sample t-test in tabl 9 show that the significance value of abnormal returns and trading volume activity is 0.0002 and 0.2432 with 15 companies used as samples. These results explain that the stock market of NYSE & NASDAQ coal companies reacted significantly based on the movement of abnormal returns on easing of the coal export ban policy because the sig value. (2-tailed) 0.0002 < level of significant (0.05). However, based on trading volume activity, the stock market of NYSE & NASDAQ coal companies did not react significantly because the sig. (2-tailed) 0.2342 > level of significant (0.05).

Conclusions

Based on the results of parametric and nonparametric tests using the paired sample t-test and the Wilcoxon signed-rank test, it can be concluded that there is no difference in market reaction in IDX coal companies based on abnormal return and trading volume activity before and after the coal export ban policy. This could be caused by other events that can make the market react at the same time as the days of coal export ban policy so that investors respond more to other events. There is also no difference in market reaction in IDX coal companies based on abnormal return and trading volume activity before and after easing of the coal export ban policy. This could be caused by other events that could make the market react at the same time as the days of easing of the coal export ban policy so that investors respond more to other events.

In additional test on the coal export ban policy period, based on the result of the paired sample t-test (parametric test) and Wilcoxon signed-rank test (nonparametric test) can be concluded that there are differences in market reaction in ASX coal companies and NYSE & NASDAQ coal companies based on trading volume activity before and after the coal export ban policy. This difference can be interpreted that the US coal stock market and Australian coal stock market react based on the movement of trading volume activity on the coal export ban policy.

In additional test on easing of the coal export ban policy period, based on the result of the paired sample t-test (parametric test) and the Wilcoxon signed-rank test (nonparametric test), it can be interpreted that there are differences in market reaction in IDX oil & gas companies and NYSE & NASDAQ coal companies based on abnormal return before and after easing of the coal export ban policy. Likewise, there are differences in market reaction in ASX coal companies based on trading volume activity before and after easing of the coal export ban policy. Those difference can be interpreted that the Indonesian oil & gas stock market and the US coal stock market react based on the movement of trading volume activity on easing of the coal export ban policy. But the Australian coal stock market react based on the movement of abnormal return on easing of the coal export ban policy.

Future researchers are expected to be able to expand research on other interrelated government policies so that further researchers can conclude that government policies can

really influence market reactions or not. Future researchers are also expected to be able to expand the event dates without any confounding events. Longer event dates without confounding events are more valid in explaining market reactions.

BIBLIOGRAFI

Adnan, A. (2019). Does Market React to Tax Reduction News? An Empirical Study on Corporate Tax Reduction of Bangladesh in 2017-18. *Business Management Education*, Vol. 17(No.2), p. 286-308.

Ante, L. (2020). Bitcoin transactions, information asymmetry and trading volume . *Quantitative Finance and Economics*, Vol. 4(No.3), p. 365-381.

Agustina, L. , Gunawan, Y., Chandra, W. (2018). The Impact of Tax Amnesty Announcement towards Share Performance and Market Reaction in Indonesia. *Accounting and Finance Research*, Vol. 7(No.2), p. 39-47.

Asriyatuzzahra, Fatimah, N., M., Maftukhah, I. (2021). Analysis of Government Stimulus Policy Facing the Covid-19 Pandemic on Abnormal Share Returns (Study on LQ-45 Shares). *Advances in Economics, Business and Management Research*, Vol. 204, p. 30-33.

BP Statistical Review (2021). Statistical Review of World Energy.

Bekkers, V., Fenger, M., Scholten, P. (2017), *Public Policy in Action: Perspectives on the Policy Process*, Cheltenham: Edward Elgar Publishing Limited.

Beaver, W., H. (1981). Understanding and Conducting Event Studies. *Journal of Business Finance & Accounting*, Vol. 56(No.1), p. 23-27.

Chen, D., S., Y. & Liew, V., K., S. (2019). Stock Return: Evidence from The Ace Market in Malaysia. *Asian Journal of Finance & Accounting*, Vol. 11(No.2), p. 169-185.

Fama, E., F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance*, Vol. 25(No.2), p. 383-417.

Fauziah, L. & Venusita, L. (2021). The Reaction of Capital Markets in Indonesia, Singapore, Malaysia, and Thailand towards The Announcement of Lockdown Policy during The Beginning of The Covid-19. *Journal of Accounting, Entrepreneurship, and Financial Technology*, Vol. 2(No.2), p. 109-132.

Handayani, E., Rahmawati, A., Haryanto, E., Wahyuni, S. (2020). Abnormal return of Indonesian banking shares in the time of COVID 19: An event study on the announcement of government regulation, POJK 11 of 2020. *International Journal of Research Business and Social Science*, Vol. 9(No.7), p. 108-114.

Hartono, J. (2018), *Studi Peristiwa: Menguji Reaksi Pasar Modal Akibat Suatu Peristiwa*, Yogyakarta: BPFE.

Jegarut, C., T., S., Rahayu, C., W., E., Yulita, I., K. (2021). The Capital Market Response To The Announcmen of The 2019-2024 Indonesia Onward Cabinet System (Empirical Study on Companies Listed on Kompas Index 100). *Jurnal Keuangan Bisnis*, Vol. 19(No.2), p. 147-159.

Machmuddah, Z., Utomo, S., D., Suhartono, E., Ali, S., Ghulam, W., A. (2020). Stock Market Reaction to COVID-19: Evidence in Customer Goods Sector with the Implication for Open Innovation. *Journal of Open Innovation: Technology, Market, Complexity*, Vol. 6(No.99).

Minzani, N., M., Laba, A., R., Rahim, F., R. (2021). The Effect of Stock Trading Volume, Abnormal Return, and Bid-Ask Spread Before and After Stock Split Events on Companies on the Indonesia Stock Exchange. *Hasanuddin Journal of Applied Business and Entrepreneurship (HJABE)*, Vol. 4(No.4).

Mujib, B. & Candraningrat, I., R. (2021). Capital Market Reaction to Covid-19 Pandemic on LQ45 Shares at Indonesia Stock Exchange (IDX). *The American Journal of Humanities and Social Sciences Research (AJHSSR)*, Vol. 5(No.3), p. 74-80.

Muthaharia, S., A. & Yunita, I. (2021). Analysis of Abnormal Return and Trading Volume Activity Difference Before and After the Announcement of New Normal Implementation by President Joko Widodo: Study on LQ 45 in the Indonesia Stock Exchange. *International Journal od Advanced Research in Economics and Finance*, Vol. 3(No.1), p. 14-20.

Purnasari, L., H., Siregar, H., Maulana, T., N., A. (2015). Impacts of Indonesia Raw Minerals Export Ban on Abnormal Return and Trading Volume: An Event Study on Stocks of Metals and Minerals Mining Subsector in IDX. *Asian Journal of Business and Management*, Vol. 3(No.6), p. 460-469.

Rahadi, F. & Rahmi, F. (2018). The Effect of Internet Financial Reporting and Voluntary Disclosure on Trading Volume Activity. *Advances in Social Science, Education and Humanities Research*, Vol. 292, p. 579-583.

Suratna, Widjanarko, H., Utomo, H., S. (2021). Does Trading Volume Activity React To The Announcement of Large-Scale Social Restrictions During The Covid-19 Pandemic?. *RSF Conference Series: Business, Management and Social Sciences*, Vol. 1(No.3), p. 301-307.

Suryanto (2015). Analysis of Abnormal Return Before and After the Announcement of Investment Grade Indonesia. *International Journal of Business and Management Review*, Vol. 3(No.1), p. 11-23.

Wibowo, M., S. & Sukmaningrum, P., S. (2019). Stock Market Reaction to the Tax Amnesty Announcement. *Indonesia Capital Market Review*, Vol. 11, p. 108-118.