

## ABNORMAL ANALYSIS OF RETURN AND TRADING VOLUME ACTIVITY DURING THE COVID-19 PANDEMIC

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### Abstract

This study aims to determine investor reactions from announcements given by the Government of Indonesia regarding the COVID-19 pandemic. In this study, investors' reactions were seen from whether there were abnormal differences in return and trading volume activity before and after the announcement. The announcements used in this study were the announcement of the first COVID-19 patient in Indonesia, the announcement of the PSBB and the announcement of the new normal. The sample used was 45 shares of companies listed in LQ45 on the IDX. The window period used in this study is 15 days, which is 7 days before the announcement, 1 day of announcement and 7 days after the announcement. The data analysis technique used is the paired sample t-test. The test results of this study show that there is investor reaction, judging from the abnormal return around the announcement of the first COVID-19 patient in Indonesia, the announcement of the PSBB and the announcement of the new normal. Hypothesis testing shows that there are abnormal differences in return and trading volume activity before and after the announcement of the new normal. Meanwhile, there were different results in abnormal return testing and trading volume activity before and after the announcement of the first COVID-19 patient and the announcement of the PSBB, which showed no significant difference.

Keywords: Abnormal Return, Trading Volume Activity, COVID-19, First Patient, New Normal

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### 1. Introduction

In early 2020, China became the world's attention because the public was shocked by information that there was a new virus found in Wuhan City, China. The name of this virus is Corona or now often referred to as Coronavirus Disease 2019 or abbreviated as COVID-19 (Zhang, Hu, and Ji 2020). At the beginning of the outbreak, many people assessed the risk of COVID-19 like the common cold and considered COVID-19 as an infectious disease like SARS or MERS that was limited to only a few domestic outbreaks (Goodell and Huynh 2020).

COVID-19 is an epidemic where permanent treatments have not yet been developed and vaccine studies are underway causing its negative impact on humans to continue. Based on this, it generates a situation of uncertainty for the future in both health and economic terms (Goker, Eren, and Karaca 2020). Therefore, people need to think about not only ways to avoid health problems in the future but also financial problems (Liu et al. 2020).

(Goker et al. 2020) argues that during a pandemic such as COVID-19 people act by prioritizing meeting basic needs first, This situation affects cash flow in many sectors of the company, especially for companies belonging to the sector of luxury goods and

activities such as restaurants, hotels, shopping malls, retail outlets, entertainment venues, aviation and sports. To contain the spread of the disease with widespread and severe economic impacts, COVID-19 presents a unique opportunity to research investors' trading behavior in capital markets (Chiah and Zhong 2020).

Stock buying and selling activities in the capital market cannot be separated from the influence of phenomena that are occurring, both in the economic environment and non-economic environment. Every event that affects the capital market in principle contains information (Putra, Worokinasih, and Nurlaily 2020). According to (Liu et al. 2020) the COVID-19 pandemic has caused a decline return For stock indices in some affected countries, not only stocks in Asia showed great influence but also countries outside Asia were affected. The impact of the COVID-19 pandemic was also felt on the Composite Stock Price Index (JCI) in Indonesia, where in the first quarter of 2020 JCI weakened in line with market concerns about the Indonesian economy and resulted in JCI experiencing a sharp decline to a fairly low level (Rifa'i, Junaidi, and Sari 2020).

The reason this study is important to research is because COVID-19 is an unprecedented outbreak, which impacts not only health problems. The economic impact caused by this outbreak is not only felt within the scope of one country, but has an impact internationally. The outbreak has raised investor concerns about future economic uncertainty. In this study, researchers want to know the short-term reaction of investors to 3 important announcements related to COVID-19 given by the Government of Indonesia and can affect the economy.

Based on the description above, researchers want to research about changes abnormal return and Trading Volume Activity before and after the announcement of the first COVID-19 patient in Indonesia, the announcement of the PSBB, and the announcement New Normal.

## **2. Theoretical Background**

### **2.1 Signaling Theory**

According to (Rifa'i et al. 2020) Signal theory is a theory that addresses the rise and fall of market prices and provides asymmetric investors with the same market information as company managers about the company's prospects. When the information is announced, market participants first interpret and analyze the information as a good signal (Good News) or bad signal (Bad News). If the announcement of such information is considered a good signal, then investors will be interested in trading stocks, thus the market will react which is reflected through changes in stock trading volume.

### **2.2 Event Study**

(Hartono 2019:643) explain that the study of events (Event Study) is a study that studies the market's reaction to an event whose information is published as an announcement. Event study used to test the information content of an announcement. Information content testing is intended to see the reaction of an announcement. If the announcement contains information, it is expected that the market will react when the announcement is received by the market. Market reaction is indicated by changes in the price of the security in question (Hartono 2019:644). Event Study can also be used to test the market efficiency of half-strong shapes. The market is said to form half strong if investors react quickly to absorb abnormal return to go to the new equilibrium price.

### 2.3 Abnormal Return

According to (Hartono 2019:667) abnormal return (AR) is one of the commonly used indicators to gauge stock reactions. Abnormal return is the difference between return Actually what happened with return expectations (return expected by investors). The existence of return abnormalities that occur in the capital market become one of the tools to measure whether phenomena, events or policies from the Government affect or not on investor decision making. To know abnormal return, then the first thing to know is to know the value return actually (actual return) with the formula (Susianti and Rahmawati 2020) :

$$R_t = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}}$$

Information:

$R_{i,t}$  : Actual Return on day t

$P_{i,t}$  : Stock price day t

$P_{i,t-1}$  : Stock price before day t

In this study the model used to calculate return Expectations are market-compliant models (market adjusted model). Formula for calculating return expectations (expected return) is with the following formula (Susianti and Rahmawati 2020):

$$ER_{i,t} = \frac{IHSG_{i,t} - IHSG_{i,t-1}}{IHSG_{i,t-1}}$$

Information:

$ER_{i,t}$  = Market Return on day t

JCI = Composite Stock Price Index on day t

$IHSG_{t-1}$  = Composite Stock Price Index before day t-1

After knowing actual return and expected return then it can be calculated Abnormal return. Formula abnormal return as follows (Susianti and Rahmawati 2020):

$$AR_{i,t} = R_{i,t} - ER_{i,t}$$

Information:

$AR_{i,t}$  = Return abnormal (abnormal return) I-th securities in the period of the T-th event.

$R_{i,t}$  = Return Realization that occurs for the I-th security in the period of the T-th event.

$ER_{i,t}$  = Expected return of the i-th security for the period of the t-th event.

### 2.4 Trading Volume Activity

According to (Princess 2020) Trading Volume Activity (TVA) is a comparison between the number of shares traded in a given period with the number of shares outstanding by a company. The development of stock trading volume reflects the strength between supply and demand which is a form of investor behavior (Firmansyah and Agustin 2016). Stock transaction volume is the number of shares traded in a certain period. The large volume of stock transactions shows how much interest investors have in making transactions both buying and selling shares of a company. The formula calculates trading volume activity as follows (Hartawan, Adiputra, and Darmawan 2015):

$$TVA_{i,t} = \frac{\sum \text{saham } i \text{ yang diperdagangkan pada hari ke } - t}{\sum \text{saham } i \text{ yang beredar pada hari ke } - t}$$

## 2.5 COVID-19

According to (Minister of Health 2020) COVID-19 definition (coronavirus disease 2019) is a disease caused by the type coronavirus new i.e. Sars-CoV-2 and the disease appeared in Wuhan, China in December 2019. On March 11, 2020, the World Health Organization (WHO) designated the COVID-19 outbreak as a pandemic (Zhang, et al. 2020). The COVID-19 pandemic is an unprecedented outbreak. At the beginning of the pandemic, treatment and vaccines had not been found, while the spread of the virus was very fast. This caused panic in all circles of society.

According to (Jalih and Rani, 2020) COVID-19 has had three major impacts on the Indonesian economy, namely affecting household consumption and people's purchasing power; cessation of export and import activities; Investment weakened and had an impact on business stoppages. Since the President of Indonesia announced the first positive case of COVID-19 in Indonesia, the Jakarta Composite Index (JCI) has experienced a downward trend which is also influenced by negative sentiment from the pandemic that has hit the world (Ilafi et al. 2020). This study used 3 announcements related to COVID-19, namely:

### 1) Announcement of the First COVID-19 Patient

According to (Nurmasari 2020) The Indonesian government first announced the existence of Indonesian citizens who were confirmed positive cases of COVID-19 on March 2, 2020. The 2 Indonesian citizens contracted the virus from Japanese people to Indonesia, namely a 64-year-old mother and her 31-year-old daughter. The announcement of the first patient of COVID-19 raised concerns about the spread of the highly contagious outbreak. And the unpredictable pandemic causes investors to feel pessimistic about the returns that will be obtained in the future. This is according to research (Ilafi et al. 2020) Since the President announced the first positive case of COVID-19 in Indonesia, JCI has experienced a downward trend which is also influenced by negative sentiment from the pandemic that has hit the world.

### 2) PSBB Announcement

To prevent or at least reduce the transmission rate of the COVID-19 outbreak, the Government of Indonesia issued a policy Large-Scale Social Restrictions (PSBB) in Government Regulation No. 21 of 2020 on March 31, 2020 (Susianti and Rahmawati 2020) According to Government Regulation No. 21 of 2020 in article 4 concerning Large-Scale Social Restrictions (PSBB) includes: school and work holidays; restrictions on religious activities; and restrictions on activities in public places or public facilities. This PSBB policy has a huge influence on the economy. This is according to research (Goker et al. 2020) which states that the short-term impact of COVID-19 on the stock market arises due to falling demand in several sectors caused by increasingly risky and difficult international activity.

### 3) New Normal Announcement

According to (Utami S, Yuniarta, and Sujana 2017) New normal is a change in the culture of life provided by the Government of Indonesia so that people can get used to the new normal living order to deal with the spread of COVID-19. Application New Normal in Indonesia is regulated in the decree of the Minister of Health number HK. 01. 07 / MENKES / 328 / 2020 concerning guidelines for the prevention and control of COVID-19 in office and industrial workplaces in an effort to support sustainability in the pandemic situation that has hit the world, including Indonesia today, on May 20, 2020 (Rosidi and Nurcahyo 2020). According to (Ilafi et al. 2020) states that After the policy New Normal Starting to be implemented and economic activity running with health

protocols, stock prices began to experience an upward trend. This statement is consistent with (Jalih and Rani, 2020) i.e. at the time of application New Normal The economy has gradually improved, the economy in Indonesia is no longer paralyzed as it was when COVID-19 first entered Indonesia.

### 3. Methods

#### 3.1 Types of Research

This type of research is quantitative research, according to (Sugiyono, 2017, p. 45) Quantitative research is Research that emphasizes testing theories through measuring research variables with numbers and conducting data analysis with statistical procedures.

#### 3.2 Population and Sample

The research population used in this study is all companies listed on the Indonesia Stock Exchange (IDX). While the sample in this study is companies listed in the LQ 45 index on the IDX. The reason for using companies listed in the LQ45 index is because the LQ45 index contains 45 stocks that have high liquidity and have gone through several selection processes and are updated every 6 months, namely at the beginning of February and August (Hartono 2019:172) LQ45 shares are also used as an investment reference by investors.

The sampling techniques used in this study are nonprobability sampling and purposive sampling techniques. The criteria used for sampling are companies included in the LQ45 index during the period February 2020 to July 2020. As well as companies that actively trade their shares during observation trading.

#### 3.3 Data Collection Methods

The data used in this study are secondary data obtained and managed in such a way for research purposes. The secondary data source used by the researcher was obtained from the Indonesia Stock Exchange via the internet ([www.idx.co.id](http://www.idx.co.id)) in the form of closing prices and trading volumes of each company.

## 4. Results And Discussion

### 4.1 Description of Statistics

(Ghozali 2016:16) Descriptive statistics aims to provide an overview or description of a data seen from the minimum, maximum, average (mean), standard deviation of each research variable. The results of descriptive analysis using the SPSS 25 program from these research variables are as in table 1 as follows:

**Table 1.** Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
AAR_sblm_PP	7	-0.012388	0.005218	-0.00497843	0.00641211
AAR_ssdh_PP	7	-0.028167	0.01056	-0.00596157	0.014505605
AAR_sblm_PSBB	7	-0.024613	0.024404	-0.00060286	0.017179487
AAR_ssdh_PSBB	7	-0.020857	0.049187	0.00961571	0.02194851
AAR_sblm_NN	7	-0.008987	0.011267	0.00023757	0.007285264
AAR_ssdh_NN	7	-0.005175	0.021841	0.00896571	0.009969217
ATVA_sblm_PP	7	0.001257	0.002214	0.00154471	0.000325474
ATVA_ssdh_PP	7	0.0012	0.002092	0.00174014	0.000314621
ATVA_sblm_PSBB	7	0.001081	0.005288	0.00297314	0.001727639

ATVA_ssdh_PSBB	7	0.002105	0.005116	0.00316286	0.001072128
ATVA_sblm_NN	7	0.002152	0.003232	0.00250486	0.000369157
ATVA_ssdh_NN	7	0.002728	0.007914	0.00538629	0.001908474
Valid N (listwise)	7				

Source: Processed secondary data (2021)

#### 4.2 Data Normality Test

(Ghozali 2016:154) The purpose of data normality testing is to find out whether the samples used in this study are normally distributed or not. The results of this data normality test are used to determine the model in the analysis test, namely: Using Test Paired Sample T-Test Analysis If the data is normally distributed and the test model analyzes Wilcoxon Signed Rank Test if the data is abnormally distributed. Based on the results of the normality test in table 2 there are The magnitude of the significant value of each variable is normally distributed because the value Sig > 0.05. So the data analysis test is entirely using analysis tests paired sample t-test.

**Table 2.** Paired Sample T-Test Results

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
AAR_sblm_PP - AAR_ssdh_PP	0.00098314	0.01493147	0.00564356	-0.01282616	0.01479245	0.174	6	0.867
AAR_sblm_PSBB - AAR_ssdh_PSBB	-0.01021857	0.03065975	0.01158830	-0.03857411	0.01813696	-0.882	6	0.412
AAR_sblm_NN - AAR_ssdh_NN	-0.00872814	0.00882919	0.00333712	-0.01689378	-0.00056251	-2.615	6	0.040
ATVA_sblm_PP - ATVA_ssdh_PP	-0.00019543	0.00027970	0.00010572	-0.00045411	0.00006325	-1.849	6	0.114
ATVA_sblm_PSBB - ATVA_ssdh_PSBB	-0.00018971	0.00159127	0.00060144	-0.00166139	0.00128169	-0,315	6	0,763
ATVA_sblm_NN - ATVA_ssdh_NN	-0.00288143	0.00215471	0.00081441	-0.00487421	-0.00088865	-3.538	6	0.012

Source: Processed secondary data (2021)

Based on test results Paired Sample T-Test in table 5 above on abnormal return Before and After the Announcement New Normal A statistical t value of -2.615 was obtained with a GIS value of 0.040 smaller than 0.05. At Trading Volume Activity Before and After the Announcement New Normal obtained a statistical t value of -3.538 with a value of GIS 0.012 is smaller than 0.05. So from these results there is a significant difference abnormal return and Trading Volume Activity Before and After the Announcement new normal. With abnormal return and Trading Volume Activity before New Normal lower than after the announcement New Normal. So it can be concluded that hypotheses 3 and 6 are accepted.

Meanwhile, abnormal returns and trading volume activity before and after the announcement of the first COVID-19 patient in Indonesia and the announcement of the PSBB did not make a significant difference. Judging from the significance results of more than 0.05. This suggests that hypotheses 1, 2, 4, and 5 are rejected.

#### 4.3 Discussion

##### 1) Abnormal Return Differences Before and After the Announcement of the First Patient of COVID-19

The insignificant result of the abnormal difference in return before and after the announcement of the first patient of COVID-19 due to the information received by

investors is considered not surprising information. Because before the announcement of the first COVID-19 patient in Indonesia, investors already had information that there was a virus that could spread very quickly and could spread at any time in Indonesia.

The spread of the virus is not only felt by one country, but spread to many countries in the world. Investors have also learned that the impact of the spread of this outbreak not only has an impact on health, but also has an impact on mobility and the economy. So investors take action wait and see from the ongoing development of the pandemic. This resulted in the announcement made by the President of Indonesia on March 2, 2020, which is neutral, because many other countries have announced the first COVID-19 patients in advance.

The results of this study are not in line with research conducted by (Liu et al. 2020; Subrata and Werastuti 2020) which states that there is a difference abnormal return before and after the announcement of the first COVID-19 patient. But the results of this study are in line with research (Goodell and Huynh 2020) that there is no difference abnormal return around the date of the announcement of the first COVID-19 patient in the United States and the stock market did not react to the announcement.

Research (He et al. 2020) also states that there is no difference abnormal return Shares of companies included in Shanghai Stock Exchange China around the day of COVID-19. The results of this study are also in line with research conducted in Indonesia which states that there is no difference abnormal return before and after the inauguration of the first COVID-19 patient in Indonesia (Hidayani 2020).

## 2) Abnormal Differences in Return Before and After PSBB Announcement

The calculation results of statistical analysis show that there is no difference abnormal return before and after the PSBB announcement. Based on these results, it can be seen that there is no investor panic from the PSBB announcement given by the Government. Investors consider that the PSBB announcement is not a surprising announcement. Investors see the experience of other countries that have been exposed to the COVID-19 virus, that the Government will make policies to reduce transmission rates by limiting public mobility. Investors have predicted that PSBB will be held in Indonesia.

The results of this study are not in line with research conducted by (Baker et al. 2020; He et al. 2020; Huo and Qiu 2020) who argue that there is a difference abnormal return From the announcement lockdown in China and America. Although the results of this study reject the hypothesis, but the results of this study are in line with research conducted by (Susianti and Rahmawati 2020) which states that there is no abnormal return before and after the announcement of PSBB in Indonesia.

## 3) Abnormal Return Differences Before and After the New Normal Announcement

There are differences abnormal return Before and after the announcement of the new normal. Based on these results it can be seen that the announcement New Normal is a surprising announcement for investors. Investors hope that after the announcement of the new normal, the wheels of the economy can turn again with the opening of several companies, industries and services. In accordance with the research (Bareksa 2020) Yang argues that the most important sentiment driving the stock market is how countries begin to ease restrictions on activity to re-boost the economy which is reflected in the stock market.

Exist abnormal return After the announcement New Normal larger compared to abnormal return Before the announcement New Normal. The results of this study mean

that investors assume that the announcement New Normal is good news (Good News). This good news is responded by investors with price increases, so investors get abnormal return bigger after announcement New Normal. In accordance with the statement (Rifa'i et al. 2020) who argue that New Normal make Mood Capital market participants are improving.

The results of this study are in line with research (Baker et al. 2020; Huo and Qiu 2020; Subrata and Werastuti 2020) who argue that there is a difference abnormal return before and after announcements related to COVID-19.

#### 4) Trading volume difference Before and After Announcement of the first COVID-19 patient

The results of this study prove that there is no difference Trading Volume Activity before and after the announcement of the first COVID-19 patient in Indonesia. The announcement of the first COVID-19 patient in Indonesia was not considered a surprise announcement, so investors did not react to the announcement of the first COVID-19 patient in Indonesia. This announcement is neutral, because many other countries have already announced the first COVID-19 patients. So that there is no investor panic over the announcement of the first COVID-19 patient in Indonesia which can affect stock trading volume in the stock market.

The results of this study are not in line with research conducted by (Hindayani 2020) who argue that there was a difference in stock trading volume before and after the announcement of the first COVID-19 patient. But the results of this study are in line with research (Dewi and Masithoh 2020; Firmansyah and Agustin 2016) which shows the result that there is no difference Trading Volume Activity before and after the announcement.

#### 5) Differences in trading volume activity Before and After PSBB Announcement

The result of this study is that there is no difference in trading activity volume before and after the announcement of PSBB by the Government of Indonesia. The PSBB announcement is not considered a surprise announcement and is rather considered a neutral announcement. So that stock trading runs normally, and investors do not show their reaction to the PSBB announcement which can be seen from the stock trading volume.

The reason that there is no difference Trading Volume Activity before and after the PSBB announcement is because the PSBB announcement given by the Government of Indonesia is no longer considered a surprise announcement. This is because investors have predicted the PSBB policy by the Government of Indonesia. Based on the experience of other countries that have been exposed to the COVID-19 virus, the Government will make policies to limit public movement to reduce the number of outbreak transmission. So that the PSBB announcement does not provide panic and a significant influence on investors' decisions to invest in the stock market. So that Trading Volume Activity before and after the PSBB announcement, there was no significant difference.

The results of this study are not in line with research conducted by (Subrata and Werastuti 2020) argues that there is a difference in averages Trading Volume Activity before and after the announcement about COVID-19. But the results of this study are in line with research (Ismanto 2020) which states that there is no difference Trading Volume Activity before and after the PSBB announcement.



#### 6) Differences in trading volume activity Before and After the New Normal Announcement

Announcement New Normal by the Indonesian Government gives investor reaction to the volume of stock trading in the stock market, so there is a difference Trading Volume Activity Before and After the Announcement New Normal. For investors announcement New Normal is a surprising announcement. After restrictions on people's movements crippled the economy and forced many companies to close their businesses, investors argued that the announcement New Normal is good news. Many investors begin to reinvest their funds by buying shares of companies, because investors no longer feel anxious about return in the future.

The results of this study are in accordance with the research (Dewi and Masithoh 2020; Hindayani 2020; Khoiriah, Amin, and Kartikasari 2020) who argue that there is a difference Trading Volume Activity before and after an announcement.

### 5. Conclusion

The conclusion of this study is that there are abnormal differences in return and trading volume activity before and after the announcement of the new normal. Different results were obtained that there was no abnormal difference in return and trading volume activity before and after the announcement of the first COVID-19 patient and the announcement of the PSBB. Only the announcement of the new normal is a surprise announcement and can affect the reaction of investors. The announcement of the first COVID-19 patient in Indonesia and the announcement of the PSBB are not surprising announcements so they do not give panic to investors.

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