



# Reaction Analysis of Issuers Listed on the Indonesia Stock Exchange on the Impact of Covid (Event Study: The First Case of Covid-19 in Indonesia, Micro-scale PPKM and Emergency PPKM)

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**Abstract.** The purpose of this research was to identify and analyze differences in Abnormal Return & Trading Volume Activity before and after the announcement of the first Covid-19 case in Indonesia, Micro-Scale PPKM, and Emergency PPKM in companies listed on the Indonesia Stock Exchange during the 2020–2021 period. Case study research is the method used (Event Study). An event study is a study of the market sentiment of an event. The population for this research is companies listed on the Indonesia Stock Exchange for 2020–2021, involving as many as 79 companies in the Healthcare, Technology, Transportation & Logistics sectors. Purposive sampling was used to collect samples from as many as 48 companies. The Differential Test, particularly the Paired Sample T-Test and the Wilcoxon Signed Rank Test, is used for analysis. There was no significant difference in abnormal returns before and after the announcement of the first case of Covid-19 in Indonesia, Micro-Scale PPKM, and Emergency PPKM in the Healthcare, Technology, Transportation, and Logistics sectors, according to the results. There is a significant difference in Trading Volume Activity before and after the announcement of the first case of Covid-19 in Indonesia in the Healthcare sector but not in the Technology or Transportation & Logistics sectors. There is a significant difference in Trading Volume Activity before and after Micro-Scale PPKM in the Healthcare and Technology sectors but not in the Transportation & Logistics sector. There is no significant difference in Trading Volume Activity in the Transportation & Logistics sector before and after the announcement of the first case of Covid-19 in Indonesia, Micro-Scale PPKM, and Emergency PPKM.

**Keywords:** Impact of Covid · Reaction Analysis · Stock Exchange

## 1 Introduction

The capital market is crucial to the economy and reflects a country's economic growth. The capital market serves two purposes. First, it allows businesses to boost their long-term funding needs by selling various investment products such as stocks, bonds, and

mutual funds. Thus, the public can place their funds according to each existing instrument's characteristics and risk profile. The capital market also functions as a productive allocation of funds to transfer funds from lenders to borrowers [1].

Investors are becoming more interested in placing their money into the capital market as a profit-maximizing investment vehicle, but they must also consider the amount of risk. The risk comes from swings in stock prices, which signal a capital gain or loss. It is impossible to eliminate investment risk, but investors may decrease risk by analyzing risk factors from any information that can cause the capital market to respond. All information considered relevant and capable of affecting stock prices is classified as information that can impact the capital market's reaction. This information can shape official news and issues [2].

Information is meaningful for investors if the information can move investors to transact in the capital market. With the information, potential investors will know the results or risks they will face in investing. If all market participants receive the disclosed information, market participants might interpret and evaluate the information as good or bad news [3]. According to [4], the reaction of investors in responding to information is influenced by the amount of information contained in it, both information from internal and external companies. Internal events might occur, such as stock splits, financial statement issuance, dividend distribution, and other occurrences.

External events might be economic or non-economic, such as legal, social, cultural, security, political events, government policies, and unexpected events. The market is called efficient when the market can react quickly and accurately to a new equilibrium price that fully reflects the available information. The idea of testing an efficient market is stated in a hypothesis called the Efficient market hypothesis (EMH). According to Fama in Jogiyanto [1], there are three main forms of market efficiency, one of which is the semi-strong form of market efficiency. If all disclosed information influences the securities prices of all companies listed on the stock exchange, the market is considered to be semi-strong. This information may come the form of government or regulatory regulations that apply to all issuers.

Event studies can be performed to examine the information content of a public announcement as well as the efficiency of a semi-strong market. An event study is a research that investigates the market reaction to an event (Event) whose details are made public through an announcement. If the announcement contains information (information content), the market is anticipated to respond when the announcement is received. This market reaction can be measured by using abnormal returns as the value of changes in stock prices. Conversely, events that do not contain information will not provide abnormal returns to investors [1]. In addition to abnormal returns, a market reaction can be seen through the parameters of the movement of trading activity (Trading volume activity). If the information provides a positive value, the market will react to changes in stock trading volume.

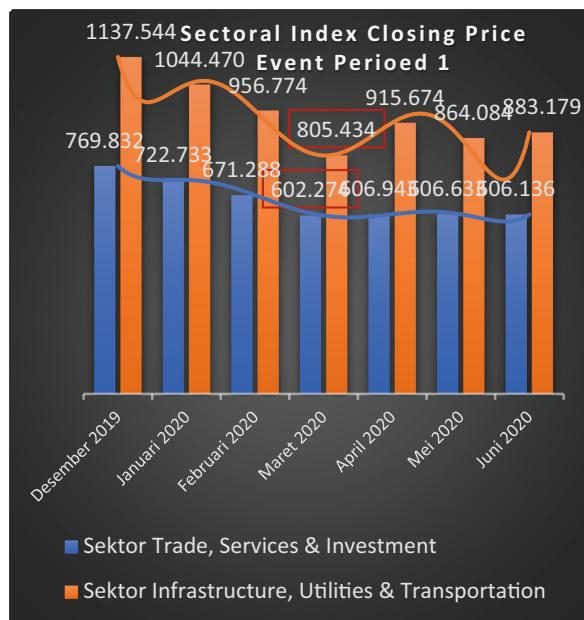
The influence of non-economic external events cannot be separated from capital market activities, although they are not directly tied to the dynamics that occur in the capital market. The biggest event that shook the globe in December 2019 was an unprecedented non-economic event that was unanticipated, arising from the Coronavirus outbreak, which is a huge family of viruses that cause sickness in humans and animals. Since

an unprecedented incident occurred in Wuhan, China, in December 2019, a new kind of coronavirus has been discovered in people, was later named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV2), and caused Coronavirus Disease-2019 (COVID-19) [5]. The first case of coronavirus infection occurred in mid-December 2019 in Wuhan, China, and spread to other nations from January to February 2020, claiming thousands of lives. It was recorded that as of February 28, 2020, the spread of positive cases of the coronavirus had spread to 51 countries, with a total of 83,652 positive cases with 2,858 total deaths [6].

In Indonesia, the first confirmed cases were Two Indonesian Citizens (WNI) who were found to be positive for the Covid-19 virus on March 2, 2020. The impact of the Covid-19 virus pandemic hit global, regional, and domestic capital markets. The Indonesia Stock Exchange (IDX) was among those that had to experience a sharp correction due to the negative sentiment of the announcement of the first COVID-19 case. In trading in the March 2020 period, the IDX Composite Index (JCI) decreased by 30.32% from 5,650 (04/03/20) to 3,937 (24/03/2020). Sectorally, the pressure is also indiscriminate. Sectoral index closing price shown in Fig. 1.

Shares in the Infrastructure, Utilities, and Transportation sector decreased by 15.82% and shares in the Trade, Services & Investment sector also decreased by 10.28% compared to the previous month [7]. Various government attempts have been undertaken to restrict the spread of the Covid-19 chain, including:

1. Enforcement of Restrictions on Micro-scale Community Activities
2. Enforcement of Restrictions on Emergency Community Activities



**Fig. 1.** Closing Prices for Trade, Services & Investment and Infrastructure, Utilities & Transportation Sector Index for December 2019–June 2020.

The Implementation of Restrictions on Micro-scale Community Activities commences on February 9, 2021, in accordance with Minister of Home Affairs Instruction No. 4 of 2021. The implementation of this policy provides a positive sentiment for economic recovery rather than the Lockdown option which has an impact on trade in the February 2021 period. Closing Prices for Healthcare, Technology, Transportation & Logistics Sector Index for January–May 2021 shown in Fig. 2.

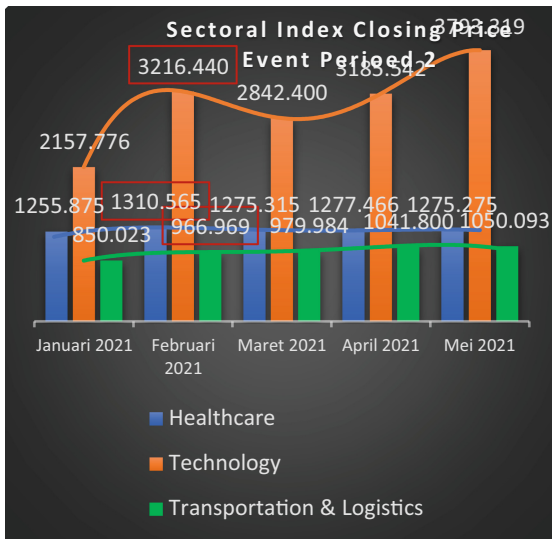
The IDX Composite Stock Price Index (JCI) has increased by more than 4.1% from the level of 6,043 (02/02/2021) to 6,292 (16/02/2021). Sectorally, the increase also occurred. IDX Sector Healthcare shares increased by 4.35%, IDX Sector Technology increased by 49.06% and IDX Sector Transportation & Logistics also increased by 13.76% compared to the previous month [8].

Based on the instructions of the Minister of Home Affairs No. 15 of 2021, the Implementation of Restrictions on Emergency Community Activities begins on July 3, 2021. The implementation of this policy provides a positive sentiment and shows the government’s concern to continue to complete the second wave of the spread of Covid-19 which has an impact on trade in the period July 2021, Stock Price Index the IDX Composite (JCI) increased by 2.6% from the level of 5,979 (14/07/2021) to 6,137 (22/07/2021).

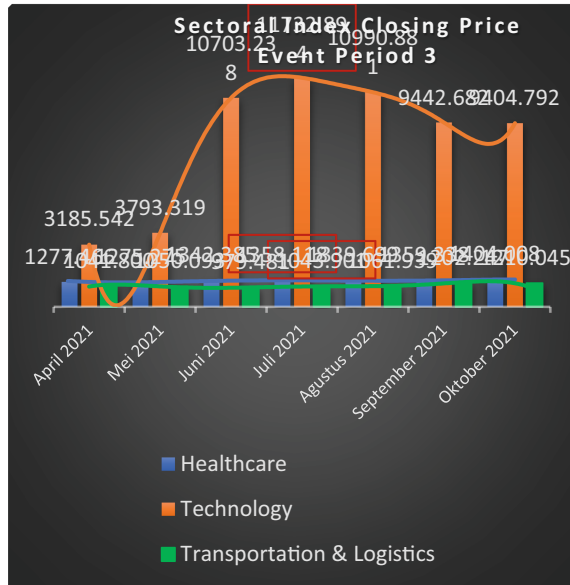
The increase also occurred in the closing Prices for Healthcare, Technology, Transportation & Logistics Sector Index for April–October 2021 shown in Fig. 3.

Sectorally, the increase also occurred. IDX Sector Healthcare shares increased by 1.17%, IDX Sector Technology increased by 9.62%, and IDX Sector Transportation & Logistics also increased by 6.58% compared to the previous month [9].

[10] the difference in abnormal returns (AR) and CAR was calculated by analyzing the market reaction in Indonesia to the Covid-19 incident using the event approach. AR before and after the announcement of the first Covid-19 in Indonesia showed a substantial



**Fig. 2.** Closing Prices for Healthcare, Technology, Transportation & Logistics Sector Index for January–May 2021.



**Fig. 3.** The increase also occurred in the closing Prices for Healthcare, Technology, Transporta- tion & Logistics Sector Index for April–October 2021.

difference. Furthermore, there is a substantial negative difference in CAR in the tourism hotel and restaurant sub-sectors, but not in the pharmaceutical, telecommunications, or food and beverage sub-sectors. [11] evaluated the influence of the first Covid-19 case announcement and the new normal policy on changes in stock prices as measured by abnormal returns and changes in stock trading activity as measured by Trading Volume Activity (TVA). There were no significant differences in abnormal returns or Trading Volume Activity (TVA) before and after the announcement of the first instance of Covid-19, based on the results. However, abnormal returns and Trading Volume Activity (TVA) fluctuate significantly before and after the implementation of the new normal policy. Where there is an increase in abnormal returns and Trading Volume Activity (TVA) after the announcement of the new normal policy [12]. The Thai Stock Exchange's reaction was analyzed using the event approach to determine Abnormal Returns and Abnormal Volatility. The analysis revealed that the pandemic had harmed most stocks in SET, as seen by abnormal negative returns during the COVID-19 window compared to their typical state before the epidemic. Stocks in the banking, finance, securities, energy and utilities, food and beverage, transportation, and logistics sectors have had considerable negative impacts in size and statistical significance [13]. The event method was used to examine the impact of the COVID-19 declaration on eight Australian industries. The findings show how investor confidence has changed since the formal announcement of the outbreak, yet there is a significance difference among industries. Three industries (food, medicine, and health) showed outstanding returns at a large pace on the day of the announcement. Following that, more and more industry indexes shown sensitivity to the announcement, particularly the performance of the pharmaceutical, health, and telecommunications indexes, which outperformed the transportation and energy indexes.

Healthcare, Technology, and Transportation & Logistics sector companies listed on the IDX were selected as the population in this study because they are closely related to the Pandemic. Unexpectedly, it has made people aware of the importance of medicines, medical devices, and health workers. In addition, since entering the pandemic, technology has been maximally utilized in the context of HR efficiency or digital business development in addition to supporting various activities and jobs and attracting investor interest along with technological developments that continue to occur. Likewise, during the pandemic and restrictions on community mobility implemented by the government, transportation, and logistics services have become the foundation of people's hopes to distribute needs that used to be able to be done alone.

Based on the explanation above, the authors discovered interesting phenomena related to the announcement of the first case of Covid-19 in Indonesia and government policies to contain the spread of Covid-19, and it can be concluded that there are several differences in the above-mentioned research results, referred to as the research gap. Further research is needed using different methods, samples, and observation periods so that they can be used as references or comparisons for further researchers and investors. Based on the description above, the research hypothesis is generated as follows:

H1A & H1B: There is a significant difference in Abnormal Stock Returns and Trading Volume Activity in the Healthcare, Technology, Transportation & Logistics sector companies listed on the Indonesia Stock Exchange before and after the announcement of the first Covid-19 case in Indonesia.

H2A & H2B: There is a significant difference in Abnormal Stock Returns and Trading Volume Activity in Healthcare, Technology, and Transportation & Logistics sector companies listed on the Indonesia Stock Exchange before and after the Announcement of the Imposition of Restrictions on Micro-scale Community Activities.

H3A & H3B: There is a significant difference in Abnormal Stock Returns and Trading Volume Activity in Healthcare, Technology, and Transportation & Logistics sector companies listed on the Indonesia Stock Exchange before and after the Announcement of the Imposition of Restrictions on Emergency Community Activities.

## 1.1 Literature Review

### **Information on the Capital Market and Market Reaction**

Information is an important element in making decisions when making investments. Information plays an important role in investing, especially in the capital market. The fact that the market combines individual preferences makes the market a potential indicator of the public's demand for information. The capital market is an interesting place to observe market reactions to financial information.

Market reaction is a response that comes from information that results in a change that occurs in the market, especially the capital market. The information received is not only from internal but also from influential external companies [14]. Event study research

investigates the market's reaction to an event. The market will respond to information-containing occurrences. An event might be compared to a surprise (surprise) or anything unexpected (unexpected).

### **Efficient Market Theory**

According to the Efficient Market Hypothesis hypothesis, the stock price is a reflection of all available information, including fundamentals and insider information. [15] states that investors cannot consistently outperform market returns and that stock prices are reasonable. What is meant by rational is that stock prices reflect facts like risk and value rather than psychological factors like investor sentiment?

The market's efficiency determines the speed with which a stock price reacts to an occurrence. According to [16], one of the significant milestones in developing corporate finance theory was Fama's invention of the efficient market theory or Efficient Market Theory (EMT) in 1970. Whereas a market is said to be efficient if no one, including individual investors and investors, participates. Using established trading tactics, institutions will be able to generate abnormal returns over time. This indicates that market prices are a reflection of the available information (stock prices reflect all available information).

### **Signaling Theory**

According to [17], signaling theory is a theory that explains that signals arising from information both external to the company (labor demonstrations, inflation, natural disasters, etc.) affect the price movement of the related company. Signaling theory explains that information published as an announcement will provide a signal for investors in making investment decisions.

Information is vital for investors and business people since it gives notes or descriptions of the past, present, and future for a company's existence. Investors in the capital market want complete, relevant, accurate, and timely information as an analytical tool to make investment decisions [18]. The information made public will serve as a signal for investors making investment decisions. If the announcement has a value that is not yet known to investors, the information is assessed to see whether the information has a positive or negative signal.

### **Event Study**

An event study is a research that investigates the market reaction to an event whose details are made public through an announcement. The influence of information releases on security prices is investigated in this study. The goal of event study research is to determine how rapidly information entering the market may be reflected in stock prices.

An event study may be used to investigate both the information content of a public announcement and the efficiency of a semi-strong market. In the event research, the market reaction is shown by a change in the price of one or more securities. The idea of abnormal returns is often used to evaluate this reaction. An event or announcement containing information will cause the market to react abnormally. An announcement that does not contain information, on the other hand, will not deliver an abnormal return to the market [19].

### **Stock Return**

[20] states that the basic price of a stock is closely related to the market price of a stock.

The base price of a stock is used in calculating the stock price index, while the stock price is the price formed in the stock buying and selling market. An investor always anticipates a return or profit when investing in equities.

Stock return is the amount of profit earned by investors on their investment [21].

Systematically the total return of an investment can be written as follows:

$$\text{Return Total} = \text{Yield} + \text{Capital gain (loss)} \quad (1)$$

Returns can be realized returns that have already occurred or predicted returns that have not yet occurred but are projected to occur in the future. Realized return is a return that has occurred and is calculated using historical data. Realized return is essential because it is used as a measure of the company's performance as a foundation for assessing projected returns and future risks.

### Abnormal Return

According to [20], abnormal return is the difference between the actual rate of return (actual return) and the amount of predicted profit (expected return). This abnormal or excess return is the difference between the actual and usual returns. The normal return is the expected return by investors after taking into account the amount of risk.

The market reaction to an event often involves changes in stock prices as indicated by the existence of abnormal returns. As stated in [20], if abnormal returns are used, an announcement containing information will offer an abnormal return to the market.

To calculate abnormal returns, the following formula is used:

$$A_{R_{i,t}} = R_{i,t} - E(R_{i,t}) \quad (2)$$

Information:

$A_{R_{i,t}}$  = abnormal return I on day t

$R_{i,t}$  = actual return I on day t

$E(R_{i,t})$  = expected return I on day t

### Trading Volume Activity

Trading volume activity (TVA) is a tool for observing the capital market's reaction to information by tracking the movement of trading volume activity in the market. Indicators of stock trading volume activities are used to calculate stock trading volume.

To calculate trading volume activity, the following formula is used:

$$TVA_{it} = \frac{\sum \text{traded shares}}{\sum \text{outstanding shares}} \quad (3)$$

where:

TVA<sub>it</sub> = Stock trading volume activity

Shares traded = Daily share transaction volume

Total shares outstanding = Number of shares outstanding in 1 year.



## 2 Method

This study uses the event study approach (Event Study), which focuses on analyzing market reaction to a specific event or event whose material is presented in the form of an announcement. The sources of data used in this study are secondary data sourced from the Indonesia Stock Exchange through the website [www.IDX.co.id](http://www.IDX.co.id). Other data are obtained from publications or mass media outputs of publishing companies; such as Industry Classification of Listed Companies (As of January 19, 2021) and Monthly Statistics issued by the Indonesia Stock Exchange. The population in this study are all companies in the Healthcare, Technology Transportation & Logistics sectors listed on the Indonesia Stock Exchange in the period 2020–2021 with a total of 79 companies. The method of determining the sample in this research is purposive sampling. According to Hermawan and Yusran [22], the sample is part of the number and characteristics possessed by the population. The sampling technique used in this research is purposive sampling by determining certain criteria. The criteria used to select the sample shown in Table 1.

**Table 1.** Research Sample

Total Population used in the Research		Number of Companies
All companies in the Healthcare, Technology and Transportation & Logistics sectors listed on the IDX for the Period 2020–2021		79
Sampling Criteria		
No	Information	Number of Companies
1	Share that received an announcement of an unusual increase in share price (Unusual Market Activity) by the IDX in the three research time windows	6
2	Stocks that received announcements of a temporary suspension of stock trading (Suspension) by the IDX in three research time windows	4
3	Companies that carry out Corporate Action (Stock Split, Reverse Stock Split, Rights, No Rights, ESOP/MSOP, Bonus Shares, IPO, Partial Delisting, Warrants, Stock Dividends, Mergers, Company Listings, Stock Conversions, Stock Buybacks, Private Placements) in three study time windows	17
4	Stocks that fall into the category of Sleeping Stocks or Inactive Stocks+ (if the trading frequency for three months is less than 75 times) in the three research time windows	4
Number of samples used in study		48

Based on these criteria, the companies that were sampled and met these criteria were 48 companies. (PPKM Mikro) on February 9, 2021, as Event 2, and Announcement of the Implementation of Restrictions on Emergency Community Activities (PPKM Emergency) on July 3, 2021, as Event 3. Dependent variables in this study are Abnormal Return (Y1) and Trading Volume Activity (Y2).

After the data is collected, then an analysis is carried out where the data is processed to obtain more detailed results in answering the problems in this study. This study uses a quantitative approach with the tools used in this study are descriptive statistics and analysis of different tests. Panel data used as a data analysis method for this study was processed and calculated using SPSS 26 software. This study aims to discover and analyze differences in Abnormal Return and Trading Volume Activity before and after the announcement of the first Covid-19 case in Indonesia, as well as Micro-Scale PPKM and Emergency PPKM.

### **3 Result and Discussion**

#### **3.1 Normality Test**

Normality test using Kolmogorov-Smirnov Test for Abnormal Return and Trading Volume Activity before and after event 1, event 2 and event 3.

The Abnormal Return and Trading Volume Activity before and after event 1, event 2, and event 3 are not normally distributed with a significance probability before and after the event is 0.000 and 0.000, respectively. This significance probability is smaller than the 5% significance level (0.05). This indicates that hypothesis testing on abnormal returns can use the Wilcoxon test.

#### **3.2 Hypothesis Test and Result**

After testing the normality of the data, statistical testing was carried out to test the hypothesis based on the stock sector using the Wilcoxon Signed Rank Test.

##### **Sector Healthcare**

Wilcoxon signed rank test healthcare sector stock shown in Table 2.

##### **Sector Technology**

Wilcoxon signed rank test technology sector stock shown in Table 3.

##### **Sector Transportation and Logistics**

Wilcoxon signed rank test transportation and logistics sector stock shown in Table 4.

#### **3.3 Research Result**

After the Descriptive Statistics Test researcher, then perform the Normality Test which aims to see the normality data that has been obtained. Kolmogorov-Smirnov is used to

**Table 2.** Wilcoxon Signed Rank Test Healthcare Sector Stock

	AR: After (Event 1) - AR: Before (Event 1)	AR: After (Event 2) - AR: Before (Event 2)	AR: After (Event 3) - AR: Before (Event 3)	TVA: After (Event 1) - TVA: Before (Event 1)	TVA: After (Event 2) - TVA: Before (Event 2)	TVA: After (Event 3) - TVA: Before (Event 3)
Z	-.713b	-.187b	-.230c	-2.864b	-3.724c	-1.717c
Asymp. Sig. (2-tailed)	.476	.852	.818	.004	.000	.086

**Table 3.** Wilcoxon Signed Rank Test Technology Sector Stock

	AR: After (Event 1) - AR: Before (Event 1)	AR: After (Event 2) - AR: Before (Event 2)	AR: After (Event 3) - AR: Before (Event 3)	TVA: After (Event 1) - TVA: Before (Event 1)	TVA: After (Event 2) - TVA: Before (Event 2)	TVA: After (Event 3) - TVA: Before (Event 3)
Z	-.537 <sup>b</sup>	-1.008 <sup>c</sup>	-.579 <sup>b</sup>	-.668 <sup>c</sup>	-2.436 <sup>c</sup>	-1.639 <sup>b</sup>
Asymp. Sig. (2-tailed)	.591	.313	.563	.504	.015	.0101

**Table 4.** Wilcoxon Signed Rank Test Transportation and Logistics Sector Stock

	AR: After (Event 1) - AR: Before (Event 1)	AR: After (Event 2) - AR: Before (Event 2)	AR: After (Event 3) - AR: Before (Event 3)	TVA: After (Event 1) - TVA: Before (Event 1)	TVA: Sesudah (Event 2) - TVA: Before (Event 2)	TVA: Sesudah (Event 3) - TVA: Before (Event 3)
Z	-.350b	-.093c	-1.768b	-.876c	-1.357c	-.206b
Asymp. Sig. (2-tailed)	.727	.926	.077	.381	.175	.837

test for normality. Furthermore, to test the hypothesis using the Wilcoxon Signed Rank Test because all data are not normally distributed.

### Abnormal Return

Abnormal Return Difference shown in Table 5.

**Table 5.** Abnormal Return

Event	Sector	Asymp Value. Sig. (2-tailed)	Conclusion
Event 1	Healthcare	0.476	There is no significant difference
	Technology	0.591	
	Transportation & Logistics	0.727	
Event 2	Healthcare	0.852	There is no significant difference
	Technology	0.313	
	Transportation & Logistics	0.926	
Event 3	Healthcare	0.818	There is no significant difference
	Technology	0.563	
	Transportation & Logistics	0.077	

From the results of testing the Abnormal Return hypothesis above, it is known that the Asymp value. Sig. (2-tailed) at the 5% confidence level. In event 1 (The First Covid Case in Indonesia is Announced), the Asymp value was obtained. Sig. healthcare is 0.476, Technology is 0.591, and Transportation & Logistics is 0.727, which means the three values are greater than (0.05), so the test results show there is no significant difference in Abnormal Return before and after the event in the Healthcare, Technology, and Transportation & Logistics sectors.

Furthermore, in event 2 (Micro-Scale PPKM Announcement), the Asymp value was obtained. Sig. healthcare is 0.852, Technology is 0.313, and Transportation & Logistics is 0.926, which means the three values are greater than (0.05), so the test results show there is no significant difference in Abnormal Return before and after the event in the Healthcare, Technology, and Transportation & Logistics sectors.

Furthermore, in event 3 (Emergency PPKM Announcement), the Asymp value was obtained. Sig. healthcare is 0.818, Technology is 0.563, and Transportation & Logistics is 0.077, which means the three values are greater than (0.05), so the test results show there is no significant difference in Abnormal Return before and after the event in the Healthcare, Technology, and Transportation & Logistics sectors.

The results of this study are under the Half-Strong Efficient Market Theory, which states that a capital market is said to be informationally efficient if the prices of its securities reflect all relevant information. Informational efficiency is external efficiency indicating that the market is in balance so that stock trading decisions based on information available in the market cannot provide a profit level above the equilibrium level. In other words, security prices will quickly adjust to reflect new publicly available information. So an investor who just takes action after new information is released to the public cannot expect an abnormal return on his action because the stock price already reflects the effect of the new information.

If the publication provides abnormal returns to investors, it means that the publication has information content, and vice versa if the publication or announcement does not cause abnormal returns, it means that the publication does not contain information content [23].

As can be seen, the Announcement of the First Covid 19 Case in Indonesia, Micro-Scale PPKM, and Emergency PPKM did not contain information, resulting in no reaction and no significant influence on market players on activities in the capital market, particularly in the Healthcare, Technology, and Transportations sub-sector.

An event can be likened to a surprise or something that is not expected (unexpected), investors think that the announcement of the First Covid 19 Case in Indonesia, Micro-Scale PPKM, and Emergency PPKM is bad information (bad news) that cannot provide prospects which are good in terms of Return around the occurrence of events.

This happened because the announcement of the first Covid 19 case delivered by the President of Indonesia on March 2, 2020, was neutral, whereas, in the spread of the Covid-19 Virus, other countries in the world including ASEAN countries had already announced their first cases and were already feeling the impact on the COVID-19 pandemic. Various sectors of life, especially the economic sector. Thus, before the announcement of the first COVID-19 case occurred in Indonesia, information about the impact of the pandemic on various sectors had created uncertainty and instability, including in the capital market.

This situation is undoubtedly bad news for investors, therefore investors will find it difficult to secure or move their investment to other countries because they have already been hit by the Covid-19 virus outbreak. In addition, the implementation of Micro-Scale PPKM and Emergency PPKM will indirectly have an impact on negative economic growth and describe economic activity both from the demand side, whether it is consumption, investment, exports, and even government activities, which have experienced a very sharp decline. Although the company has positive financial performance, external factors such as the coronavirus outbreak can influence how investors think about their investment decisions, [24] said that external factors directly affect investment opportunities before and during the crisis, meaning that the company considers the interest rate level. Interest, changes in exchange rates, and the rate of inflation when investing. As a result, investors have little option but to wait and watch after the announcement, because investors do not want to hurry into decisions in order to ensure that this event does not effect abnormal returns.

Previous research [25] supports the findings of this study, stating that there was no significant change in abnormal return results before and after the announcement of the first Covid-19 patient case in Indonesia. The same thing is supported [26], which states that there is no difference in the average abnormal return before and after the publication of the Emergency PPKM policy announcement.

### **Trading Volume Activity**

Trading volume activity difference shown in Table 6.

From the results of testing the Trading Volume Activity hypothesis above, it is known that the Asymp value. Sig. (2-tailed) at the 5% confidence level. In event 1 (The First Covid Case in Indonesia is Announced) the Asymp value was obtained. Sig. healthcare is 0.004, Technology is 0.504 and Transportation & Logistics is 0.381, which means in the Healthcare sector the Asymp value. Sig. smaller than (0.05) and the Asymp value in the Technology and Transportation & Logistics sector. Sig. greater than (0.05), so the

**Table 6.** Trading volume activity

Event	Sector	Asymp Value. Sig. (2-tailed)	Conclusion
Event 1	Healthcare	0.004	There is a significant difference
	Technology	0.504	There is no significant difference
	Transportation & Logistics	0.381	There is no significant difference
Event 2	Healthcare	0.000	There is a significant difference
	Technology	0.015	There is a significant difference
	Transportation & Logistics	0.175	There is no significant difference
Event 3	Healthcare	0.086	There is no significant difference
	Technology	0.101	
	Transportation & Logistics	0.837	

test results state that there is a significant difference in Trading Volume Activity in the Healthcare sector but there is no significant difference in Trading Volume Activity in the Technology and Transportation & Logistics sectors before and after the event occur.

Furthermore, in event 2 (Micro-Scale PPKM Announcement) the Asymp value was obtained. Sig. healthcare is 0.000, Technology is 0.015 and Transportation & Logistics is 0.175, which means in the Healthcare sector and Technology sector the Asymp value. Sig. smaller than (0.05) and on the Asymp and Transportation & Logistics values. Sig. greater than (0.05), so the test results state that there is a significant difference in Trading Volume Activity in the Healthcare sector and the Technology sector but there is no significant difference in Trading Volume Activity in and Transportation & Logistics between before and after the event occurs.

Furthermore, in event 3 (Emergency PPKM Announcement) the Asymp value was obtained. Sig. healthcare is 0.086, Technology is 0.101 and Transportation & Logistics is 0.837, which means that the three values are greater than (0.05), As a conclusion of the test results, there is no statistically significant difference in Trading Volume Activity in the Healthcare, Technology, and Transportation & Logistics sectors before and after the event.

The results of this study are under signaling theory which states that signals arising from information both external to the company and internal to the company will provide signals for investors in making investment decisions.

There is a difference in Trading Volume Activity in the Healthcare sector before and after the announcement of the first case of Corona Virus (COVID-19) in Indonesia and the announcement of Micro-Scale PPKM in the Healthcare and Technology sectors,

indicating that this information is bad news for investors due to investor panic. After the uncontrolled increase in the number of positive Covid victims, the government had to implement a policy of community restrictions which was allegedly going to cause a decline in economic growth. In addition, investors consider that selling shares is a step to secure the assets used for investment in shares and then transferred them to gold investments which are considered safer and more stable. Furthermore, the difference in the frequency of stock trading is not proportional to the difference in abnormal returns. After the constant panic, OJK immediately issued a buyback policy without prior AGM, to overcome the decline in the Composite Stock Index and reduce the risk of a down auto-reject. As a result, even though the trading frequency is quite high after the event, it does not make investors get abnormal returns. This means that the increase in the frequency of trading transactions is not always followed by an increase in stock returns.

This is supported by previous research, [25] which states that the results of trading frequency show a significant difference before and after the event in terms of trading transactions. Furthermore, [27] concluded that there was a significant difference in stock prices and total shares traded before and after the announcement of the first Covid-19 case. This indicates that this information is bad news for investors, due to the sentiment that causes investors to panic after the increasing number of positive Corona victims so that investors do panic selling, which causes the difference in stock trading frequency to be disproportionate to the difference in abnormal returns. After the constant panic, OJK immediately issued a buyback policy without a GMS beforehand, to overcome the decline in the JCI and reduce the risk of a downward auto-reject. As a result, even though the trading frequency is quite high after the event, it does not make investors get abnormal returns. This means that the increase in the frequency of trading transactions is not always followed by an increase in stock returns.

## 4 Conclusion

Based on the findings of the research on the capital market's reaction to the announcement of the first Covid case in Indonesia, Micro-Scale PPKM, and Emergency PPKM, it is possible to conclude that:

1. The announcement of the first Covid case in Indonesia has no effect on the Abnormal Return of Healthcare, Technology and Transportation & Logistics Companies in the sector that are listed on the Indonesia Stock Exchange.
2. The announcement of the first Covid case in Indonesia affected the Trading Volume Activity of Healthcare sector companies, but had no effect on Technology and Transportation & Logistics Companies in the sector that are listed on the Indonesia Stock Exchange.
3. The announcement of the Micro-Scale PPKM has no effect on the Abnormal Return of the Healthcare, Technology and Transportation & Logistics Companies in the sector that are listed on the Indonesia Stock Exchange.
4. The announcement of the Micro-Scale PPKM has an effect on the Trading Volume Activity of the Healthcare, Technology sector companies, but has no effect on the Transportation & Logistics Companies in the sector that are listed on the Indonesia Stock Exchange.

5. The announcement of the Emergency PPKM has no effect on the Abnormal Return of the Healthcare, Technology and Transportation & Logistics Companies in the sector that are listed on the Indonesia Stock Exchange.
6. The announcement of the Emergency PPKM does not affect the Trading Volume Activity of the Healthcare, Technology and Transportation & Logistics Companies in the sector that are listed on the Indonesia Stock Exchange.

After the results of the research have been concluded, then suggestions are obtained which are expected to provide benefits and managerial implications for various groups, namely as follows:

#### 1. For Traders or Investors

This research can be used by investors as a reference not to rush in making investment decisions by not being easily influenced by negative issues, but first selecting and observing the information obtained from an event in the form of a published announcement, therefore if there is any similar events in the future capital market investors must correctly select and analyze appropriate (relevant) information as a consideration in order to draw conclusions in order to avoid losses and gain profits from the invested capital.

In addition, there is a necessity for traders to act faster in dealing with economic and socio-political events that are classified as unanticipated events that occur abroad and domestically. In an event that contains negative information and is relevant to the market, investors must immediately secure their investment by selling (cut loss) so as to avoid bigger losses. Likewise, in economic and socio-political events that have positive information content and are believed to be relevant to the market, traders must buy more quickly so that they get bigger profits.

#### 2. For Companies or Issuers

This research can be used for companies or issuers, it is recommended not only to pay attention to factors from inside or outside the company but also external or external factors of the company that may affect prices, returns and stock trading volumes such as the Covid-19 pandemic that hit globally which at finally spread and entered Indonesia on March 2, 2020 and forced the government to issue a policy to curb its spread through the implementation of Micro-Scale PPKM and Emergency PPKM. By paying attention to these external factors, if the company is affected by an event, the company's management can prepare alternative policies as an effort to reduce the risks that will arise that can harm the company and its stakeholders.

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