# STUDY OF THE COVID-19 PANDEMIC ON RETURNS AND TRADING VOLUME ACTIVITIES OF STOCKS IN INDEX LQ45 INDONESIA STOCK EXCHANGE

# KAJIAN PANDEMI COVID-19 TERHADAP IMBAL HASIL DAN AKTIVITAS VOLUME PERDAGANGAN SAHAM DI INDEK LQ45 BURSA EFEK INDONESIA

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***Abstract***

*The purpose of the study is to identify and analyze abnormal returns and trading volume activity at the announcement of the Covid-19 pandemic by President Joko Widodo on March 13, 2020. In this study, the authors try to exposed the impact of the Covid-19 pandemic on the return and volume of trading activities which listed on the LQ45 index of the Indonesia Stock Exchange. The test results reveal that the announcement of the Covid-19 pandemic has a significant impact on abnormal returns and trading volume activity throughout the window period. These findings are in line with research conducted by He et al (2020), Xiong et al (2020) and Ashraf (2020) which revealed that the Covid-19 pandemic largely had a negative impact on stock prices listed on the stock exchange in their each studies. respectively. Thus, this event study of the Covid-19 pandemic confirms research in various capital markets that the information content has a major impact on decreasing returns and volume of trading activity in various capital markets in the world.*

***Keywords:*** *Abnormal return; trading volume activity; efficient market hypothesis; semi-strong form; the covid-19 pandemic*

**Abstrak**

Tujuan penelitian adalah untuk mengidentifikasi dan menganalisis abnormal return dan aktivitas volume perdagangan pada pengumuman pandemi Covid-19 oleh Presiden Joko Widodo pada tanggal 13 Maret 2020. Dalam penelitian ini, penulis mencoba memaparkan dampak dari pandemi Covid-19. 19 pandemi terhadap return dan volume aktivitas perdagangan yang tercatat di indeks LQ45 Bursa Efek Indonesia. Hasil pengujian mengungkapkan bahwa pengumuman pandemi Covid-19 berdampak signifikan terhadap abnormal return dan aktivitas volume perdagangan selama periode jendela. Temuan ini sejalan dengan penelitian yang dilakukan oleh He et al (2020), Xiong et al (2020) dan Ashraf (2020) yang mengungkapkan bahwa pandemi Covid-19 sebagian besar berdampak negatif terhadap harga saham yang terdaftar di bursa saham di bursa mereka. masing-masing studi. masing-masing. Dengan demikian, event study pandemi Covid-19 ini mengkonfirmasi penelitian di berbagai pasar modal bahwa kandungan informasi tersebut berdampak besar pada penurunan return dan volume aktivitas perdagangan di berbagai pasar modal di dunia.

Kata Kunci: Abnormal return; aktivitas volume perdagangan; hipotesis pasar efisien; bentuk semi-kuat; pandemi covid-19

## INTRODUCTION

The corona virus (covid-19) pandemic has had a significant impact on trading on the stock exchange. This is indicated by the decline in the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange (IDX). IDX President Director, Inarno Djajadi, said that the latest data over the weekend, April 17, 2020, showed that trade indicators had decreased compared

to 2019. "Some of them were JCI 26.43% to 4,635, followed by a decrease in market capitalization by 26.35% to 6,300 trillion, There was also a 1.49% decrease in daily transactions to 462 thousand times," said Inarno in a video conference, Friday (24/4). Inarno added that there was also a significant decline in trading on the stock exchange in March 2020, when the government announced two positive cases of COVID-19 in Indonesia. As it is known that the financial market was negatively affected both during the covid-19 pandemic. This situation continued until the JCI was at its lowest level on March 24, down 37.49% compared to the end of the previous year. When viewed from the chart of global trade, almost all global indices declined. The highest decline occurred in Austria as much as 35.05%. "Meanwhile, the highest decrease in capitalization was US$3 trillion. The index fell 26.43% as of April 17, 2020, and was followed by a decline in stock market capitalization of US$180 billion," concluded Inarno. (Nurhidayat, 2020).

Various empirical studies have been carried out to measure the information content of an event on the value of shares, and the volume of transactions in the capital market. Various events that are used as objects of study can be in the form of economic events and non-economic events. Economic events include announcements about dividend payments (Maitra and Dey, 2012), stock and reverse splits (Utami., Maski., and Idrus (2009). Mergers and acquisitions, rights issue events, winning project tenders (Agrawal., Kishore., and Roa, 2006). The rating of debt securities (Yowana, and Nuzula, 2019), etc. Various non-economic events have also been widely studied, namely how the influence of information contained in these non-economic events affects the market stock and/or bond markets Examples of non-economic events are political events such as presidential or regional head elections (Purba and Handayani, 2017), election of council members (Meidawati and Harimawan, 2004), announcements of ministerial replacements, government decision events (Wibowo , 2017) Events related to security issues of a country, such as bombings or terrorism (Rahmawati, and Pandansari, 2016) and others.

In this study the author will try to reveal how the impact of the Covid-19 pandemic on stock returns and the volume of stock trading transactions on the Indonesia Stock Exchange. As an initial illustration of the indications of the impact of the Covid-19 pandemic on the stock market in Indonesia, it can be seen in Table 1.

**Table 1. Growth of the Indonesia Stock Exchange LQ45 Index for the period June 2019 - June 2020**

| Date | Open | High | Low | Close* | Adj Close** | Volume |
|------|------|------|-----|--------|-------------|--------|

| Jun 01, 2020 | - | - | - | - | - | - |
|---|---|---|---|---|---|---|
| May 01, 2020 | 713.64 | 725.83 | 648.65 | 725.83 | 725.83 | 38,619,129,600 |
| Apr 01, 2020 | 691.13 | 736.73 | 654.86 | 713.64 | 713.64 | 37,879,563,400 |
| Mar 01, 2020 | 880.22 | 935.48 | 566.05 | 691.13 | 691.13 | 40,252,042,500 |
| Feb 01, 2020 | 956.39 | 979.45 | 846.02 | 879.53 | 879.53 | 20,382,900,600 |
| Jan 01, 2020 | 1,017.16 | 1,036.62 | 961.98 | 961.98 | 961.98 | 20,615,892,500 |
| Dec 01, 2019 | 960.71 | 1,025.85 | 959.93 | 1,014.47 | 1,014.47 | 19,364,346,200 |
| Nov 01, 2019 | 984.16 | 1,001.87 | 942.48 | 956.82 | 956.82 | 22,416,335,200 |
| Oct 01, 2019 | 967.06 | 1,012.65 | 928.34 | 984.84 | 984.84 | 26,605,630,500 |
| Sep 01, 2019 | 996.31 | 1,009.35 | 948.00 | 968.15 | 968.15 | 23,092,846,600 |
| Aug 01, 2019 | 1,020.95 | 1,022.89 | 944.55 | 995.76 | 995.76 | 28,633,484,000 |
| Jul 01, 2019 | 1,019.71 | 1,035.59 | 1,003.47 | 1,022.43 | 1,022.43 | 42,064,286,000 |
| Jun 01, 2019 | 1,000.35 | 1,016.99 | 980.29 | 1,013.96 | 1,013.96 | 17,975,860,300 |

Source: Yahoo.finance.com, 2020.

From the data in Table 1, it is clear that the trend of the movement of the LQ45 index, as a benchmark for the development of the stock price index in Indonesia, contains 45 public company shares with the highest liquidity level of all public company shares listed on the IDX. Judging by the movement of the LQ45 index, it shows that the highest index started from June and July 2019 in the close price column, namely 1.013 and 1.022. Then the index corrected around the 900s and again reached above 1,000, namely 1,014.47 in December 2019.

On March 14, 2020, the President of Indonesia, Joko Widodo declared Indonesia in a national disaster of Corona. Although the virus was officially declared to have entered around March, the capital market reaction from the development of the LQ45 index has experienced a sharp downward correction from the range of 1,014 in December 2019 to 691 in March 2020. This shows that investors, especially foreign investors, have divest ownership of shares from the floor of the Indonesia Stock Exchange since January. This is evidenced by the stock sell-off, which peaked in March 2020, with 40,252,042,500 shares changing ownership, which resulted in a sharp decline in the LQ45 index.

Based on the facts above, it is interesting to conduct this study whether the decrease in the LQ45 index is related to the outbreak of the Covid-19 pandemic. For this reason, this study was conducted to examine "how the effects of the Covid-19 pandemic event on the return and trading volume activity of stocks listed on the LQ45 index of the Indonesia Stock Exchange".

**The efficient capital market hypothesis**

An efficient capital market is "a market in which the price of securities reflects a relevant information". Husnan (2015:232). Furthermore, Tandelilin (2010:219) reveals that "the concept of an efficient market is more emphasized on the information aspect", meaning that an efficient

market is a market where the prices of all traded securities reflect all available information. The information available may include all information from the past as well as current information, as well as information that is a rational opinion circulating in the market that can affect price changes.

There are three forms of market efficiency based on the three forms of information as follows: a) Weak form of market efficiency, the market is said to be in the weak form of efficiency if security prices fully reflect past information. Past information is information that has occurred; b) Market efficiency in the semi-strong form, the market is said to be semi-strong efficient if the prices of securities fully reflect all publicly available information, including information contained in the Issuer's financial statements; c) Strong form market efficiency, the market is said to be efficient in strong form, if the prices of securities fully reflect all available information, including private information. (Fama, 1970).

To test the efficient capital market in the weak form, the correlation coefficient of changes in stock prices is used for a certain time lag. Meanwhile, for the semi-strong test, an event study is used and for the market in the strong form, the test is carried out by analyzing the performance of various portfolios managed by groups that may have special information (Husnan (2015).

**Stock Liquidity**

One of the steps the company takes to sell its shares to the general public is to list its shares on the stock exchange so that these shares can be traded on the secondary market. According to Ang (2007) "Every listing on the stock exchange has certain requirements called listing policy. One of the requirements for the listing policy is that the minimum number of shares listed on the Jakarta Stock Exchange is one million shares".

The number of shares listed on the stock exchange is one of the factors that affect the trading liquidity of these shares on the stock exchange. If the number of shares listed is small, then there are also few shareholders, so that daily transactions are few or even non-existent. Stocks that have not been traded for a long period of time or have had too few transactions are called sleeping stocks. There are several factors that affect the liquidity of a stock, including: number of listed shares, stock prices, issuer's fundamental factors, information disclosure and market sentiment.

Stock liquidation is an indicator and reaction to an announcement as measured by Trading Volume Activity (TVA). Suryawijaya and Setiawan (1998) explain that: "Trading

Volume Activity (TVA). It is an instrument that can be used to see the reaction of the capital market to information through the parameters of the movement of the volume of stock trading activities in the capital market.

Houlthauesen and Verrecchia (1990) argue that: "Announcements that do not bring new information will not change investors' confidence, so they will not trade. On the other hand, with constant differences of interpretation, an unexpected new information will bring about a change in beliefs which will further motivate them to carry out trading activities.

**Abnormal Return**

Abnormal return is the return that investors get that is not in line with expectations. Abnormal return is the difference between the expected return and the return obtained. The return difference will be positive if the return obtained is greater than the expected return or calculated return. While the return will be negative if the return obtained is smaller than the expected return or the calculated return. Abnormal returns can occur due to certain events, such as national holidays, the beginning of the month, the beginning of holding, an uncertain political atmosphere, extraordinary events, stock splits, initial public offerings, and others.

Event studies analyze abnormal returns from securities that may occur around the announcement of an event. Abnormal return or excess return is the excess of the actual return to normal returns. "Abnormal return is the difference between the actual return that occurs and the expected return" (Jogiyanto, 2016: 624).

**Trading Volume Activity (TVA)**

Trading Volume Activity (TVA), is used to measure whether individual investors know the information issued by the company and use it in buying or selling shares, so that they will get above-normal profits (abnormal returns). The shares referred to are ordinary shares traded on the Indonesian capital market, especially the IDX.

According to Suryawijaya and Setiawan (1998) "TVA is an instrument that can be used to see the reaction of the capital market to information through the parameters of the movement of trading volume activity in the capital market". Judging from its function, it can be said that TVA is a variation of event study. The difference between the two lies in the parameters used to measure the market reaction to an event. This TVA approach can also be used to test the efficient market hypothesis in the weak form efficiency. This happens because in a market that is not yet efficient or efficient in its weak form, price changes do not immediately reflect the available information because in weak form efficiency it uses past data, so it cannot be used to

predict current prices, so investors cannot use past information to obtain abnormal returns. So the capital market reaction can only be observed through the movement of trading volume that occurs in the capital market being studied.

Preferably, with different interpretations of the incoming information, there is a possibility that unexpected new information will bring about a change in confidence that can motivate investors to trade. Houlthausen and Verrechia (1990) "opinion that an announcement that does not bring new information will not change investors' confidence, so they do not trade". Furthermore, "trading volume is a increasing function of absolute price changes, where prices reflect changes in the level of information". Differences in the weight of public information, can lead to changes in investor confidence, resulting in trade.

**Previous Research**

Various non-economic impact events have been tested on abnormal returns and average transaction volume activities carried out by previous studies. The results of these studies are inconsistent. As the study conducted by Purba and Handayani (2017) using the Paired Sample t-test, and the Wilcoxon Signed Rank Test revealed that there was no significant difference between Average Abnormal Return (AAR) and Average Trading Volume Activity (ATVA) before and after the political events of the second round of the 2017 DKI Jakarta Pilkada. Then Wibowo (2017) using the Independent Sample t-test shows that there is a significant positive abnormal return around the date of the event, which means that investors respond to the announcement of the Jokowi–JK Phase I Economic Policy Package announcement as good news. The results of the Wilcoxon Signed Rank Test prove that there is a significant positive difference in the average abnormal return between before and during the event, and there is a significant negative difference in the average abnormal return between the time and after the event.

Rahmawati and Pandansari (2016) used the paired sample-t test. Shows that there is no significant difference in average abnormal return (AAR) before and after the Plaza Sarinah bombing. Suwanna (2012) states that stock prices move up significantly after the announcement of dividend payments. Abnormal Return (AR) and cumulative abnormal return (CAR) using the market model are statistically significant. The results of his research support the dividend signaling theory, namely that the announcement of dividend payments has a significant impact on stock prices. Masyithoh (2018) using Paired Sample T-Test with an observation period of seven days before and seven days after the stock split. It was found that the stock trading volume

before and after the stock split was not significantly different and there was no significant difference in the acquisition of abnormal returns before and after the stock split. Furthermore, Anderson (2009) uses the friction model to examine the market reaction to the simultaneous announcement of earnings and dividends in a thin trading environment. The friction model can be used to replace the market model, and he also states that dividend signals can be separated from earnings signals.

**METHOD**

This research is an event study, to test the information content of an announcement as a form of testing market efficiency in a semi-strong form.

**Population and Sample**

The population in this study, namely all shares of public companies listed on the Indonesia Stock Exchange (IDX) in the study period. The research period used is 121 trading days which consists of the estimation period and the event period. The estimation period used in this study is 110 days, namely t-115 to t-11 before the event period. After determining the estimation period, the next step is to determine the event period. In this study, the event period used was 21 days, consisting of 10 days before the event, the date of the event and 10 days after the event date. This ten-day time frame was taken because it was considered that the period was expected to reflect the market reaction.

The sample used in this study is a purposive sampling method, namely the sampling is not random and the sample is selected based on certain considerations or criteria that have been determined as follows:

1. Companies with active shares during the observation period, starting from January 1, 2019 to May 30, 2020.
2. There is data in the form of closing price and stock trading volume.
3. The company does not make other announcements other than the announcement of the Covid-19 pandemic by the Government on ten days before, on and ten days after the announcement of the Covid-19 pandemic.

**Data collection technique**

In obtaining data related to this research, the researcher uses documentation techniques, namely data collection techniques by collecting documents on the Indonesia Stock Exchange and other data that are considered to have a close relationship with the problem being studied.

Secondary data taken in this research are the closing price of each company, market index, and daily stock trading volume.

**Operational of Variables**

The following will explain the operational definition of the variables that will be used in this study.

**Abnormal Returns.**

Abnormal return is the difference between the expected return and the return obtained. To calculate the abnormal return of stock $i$ on day $t$, the following formula is used:

$$ARit = Rit - E(Rit) \qquad (1)$$

where:

ARit    = abnormal return of stock $i$ on day $t$

Rit      = actual return for stock $i$ on day $t$

E (Rit)  = expected return for stock $i$ on day $t$

The actual stock return (Ri,t) is obtained from the daily share price of security $i$ at time $t$ (Pi,t) minus the daily share price of security $i$ at time $t-1$ (Pi,t-1), divided by the daily share price of securities i at time t-1 (Pi,t-1) or with the formula:

$$Rit = \frac{Pit - Pit, t-1}{Pit, t-1} = \ldots\ldots\% \qquad (2)$$

where:

Ri,t = stock return $i$ for time t (day, month, and so on)

Pi,t = price, i.e. the price for time $t$

Pi,t-1 = price, i.e. the price of the previous time

Furthermore, calculating the Expected return of shares is the return expected by investors on their investment. This model can be formed using the OLS regression technique:

$$E(Ri,t) = \alpha_1 + \beta_i RMt + eit \qquad (3)$$

where:

E(Ri,t)  = Return of realized securities i in the j estimation period

$\alpha_1$      = Intercept for the i-th security

$\beta_i$    = Slope coefficient which is the beta of the i-th security

RMt   = Market index return in the j estimation period

Eit    = i-th security residual error in the j-th estimation period

**Trading Volume Activity**

        Trading volume activity (TVA) is an instrument that can be used to see the reaction of the capital market to information through the parameters of the movement of trading volume activities in the capital market (Suryawijaya and Setiawan, 1998). The results of the TVA calculation reflect the comparison between the number of shares traded and the number of shares outstanding. So, TVA is measured by the following formulation:

$$\text{TVA} = \frac{\Sigma \text{ Company stock } i \text{ which traded on day t}}{\Sigma \text{ Company stock } i \text{ which outstanding on day } t} \qquad (4)$$

**Analysis Techniques**

        The analysis was carried out using event study analysis techniques to process and discuss the data obtained. The methodology for conducting the event study test is as follows:

a. Collect a sample of companies that have an event to be studied.

b. Determine the exact date of announcement and determine it as day 0.

c. Determine the research period or event window.

d. For each sample company, the return and activity of trading volume are seen in each period (days).

e. Calculating abnormal returns from returns that have been obtained for each company.

f. Calculating the expected return with using the market model.

g. Calculating trading volume activity for each company.

h. Calculating the average abnormal return and trading volume activity for each period (days) for the entire sample.

**Hypothesis test**

        In this study, two (2) hypothesis tests were carried out. Test steps

The hypothesis is carried out as follows:

**Hypothesis Testing 1:**

The first hypothesis can be stated as follows:

H1: There is suspected abnormal stock returns occurred on the LQ45 index on

the Indonesia Stock Exchange (IDX) before and after the official

announcement of the Covid 19 pandemic in Indonesia.

In this study, to prove the first hypothesis by looking at the *t*-statistic value of stock return. Stages of testing are carried out:

- Calculating the actual return on the LQ45 index stock in the observation period

- Calculating daily market returns

- Regress individual stock returns with daily market returns to obtain alpha and
 beta.

- Calculating the expected stock return during the event period

- Calculating abnormal stock returns during the event period

- Performing abnormal return testing in aggregate by testing the average abnormal
 return by cross section for each day of the window period

- Calculating the standard error of estimation by calculating the standard
 deviation of stock returns based on return data during the estimation period,
 namely t-115 to t-11.

**Hypothesis Testing 2:**

The second hypothesis in this study can be stated as follows:

H2: There is suspected abnormal trading volume activity (TVA) occurred on the
 LQ45 index on the Indonesia Stck Exchange (IDX) before and after the
 official announcement of the Covid 19 pandemic in Indonesia.

In this study, to prove the second hypothesis by looking at the *t*-statistic value of trading volume activity.

**DISCUSSION**

In this section, we discuss the results of the event study test, by taking the event of an official announcement by the president about Indonesia having contracted the corona virus outbreak, which was announced directly by President Joko Widodo on March 13, 2020. This event was used as a momentum to test the efficiency of the capital market in semi-strong form. Event studies are conducted to detect the market response to a published event. Market response depends on the information content inherent in an event that is thought to have an impact on the company's cash flow and/or the rate of return on investment by investors in the capital market. Testing the study of the announcement of the COVID-19 pandemic in this study was carried out in the following stages.

Data analysis process was carried out in two stages of testing, namely testing the efficient market hypothesis on public information announced by the President of the Republic of Indonesia, Joko Widodo on March 13, 2020 about Indonesia having been infected with the COVID-19 pandemic outbreak. Furthermore, different tests were carried out on abnormal stock returns and abnormal trading volume activities of stocks listed on the LQ45 index before the event and after the announcement event. Finally, a discussion of the results of hypothesis testing was carried out.

**Abnormal Stock Return Test Results**

Stages of testing the event study as described in the previous section, then in this session a test of the data that has been collected is tested, using a sample of companies listed in the LQ45 index. The hypothesis testing stage is divided into two parts, namely the first part of testing the company's stock return response during the announcement of the COVID-19 pandemic. Furthermore, in the second stage, a response test of the company's stock trading volume activity was carried out during the announcement of the COVID-19 pandemic.

The test of whether the average abnormal return is different from 0, before and after the Covid-19 announcement is presented in Table 2. The results of the calculation of the hypothesis testing Ho, that there is a difference in the average abnormal return that has been standardized can be seen in the last column of the collective t-statistic value. By using the student t statistic distribution table value at 20-2=18 with degrees of freedom 5% level is 1.734.

The t-statistic value results from the announcement of the covid-19 pandemic, show that 10 days before and 10 days after announcement about the covid-19 pandemic there is a significant difference in abnormal returns on stocks listed in the LQ45 index. This reveals that the efficient market hypothesis testing rejects the hypothesis (Ho), meaning that the capital market has not been efficient in its semi-strong form at the announcement of the COVID-19 pandemic.

There are 6 days before the event and 7 days after the event, investors experience abnormal negative returns. From 6 days before the announcement event, the negative significant with the *t*-statistic value in a row is on day -10 of -2.9272, day -9 of -5.5970, day -5 of -7.8857, day -4 was -20.0528, day -2 was -4.2730, and day -1 was -15.8792. Meanwhile, those who obtained significant positive abnormal returns were on day -7 of 6.3570 and day -3 of 4.7887. Furthermore, after the announcement of covid 19 vandemic by President of Indonesia, stock prices are experienced significant negative abnormal returns with t statistic value in a

row, the +1 day was -13.3885, the +2 day was -12.6445, the +3 day was -11.6859, the +4 day was -13.0776, day +6 by -14.0433, day +7 of -3.5950, day +10 by -10.6070. Then those who obtained a significant positive t-statistic return were not normal, namely day +5 by 4.3819, day +8 by 29.3147 and day +9 by 19.1103.

**Table 2. Standardized average abnormal returns (RTNS) Statistical t-test results of Stock Return pre and post of the announcement event of the Covid-19 Pandemic**

| Date | Day | t - test result |
|---|---|---|
| 30/03/2020 | 10 | -10.6070*** |
| 27/03/2020 | 9 | 19.1103*** |
| 26/03/2020 | 8 | 29.3174*** |
| 24/03/2020 | 7 | -3.5950*** |
| 23/03/2020 | 6 | -14.0433*** |
| 20/03/2020 | 5 | 4.3819*** |
| 19/03/2020 | 4 | -13.0776*** |
| 18/03/2020 | 3 | -11.6859*** |
| 17/03/2020 | 2 | -12.6445*** |
| 16/03/2020 | 1 | -13.3885*** |
| 13/03/2020 | 0 | 0.4357 |
| 12/03/2020 | -1 | -15.8792*** |
| 11/03/2020 | -2 | -4.2730*** |
| 10/03/2020 | -3 | 4.7887*** |
| 09/03/2020 | -4 | -20.0528*** |
| 06/03/2020 | -5 | -7.8853*** |
| 05/03/2020 | -6 | 0.7358 |
| 04/03/2020 | -7 | 6.3570*** |
| 03/03/2020 | -8 | 9.4752*** |
| 02/03/2020 | -9 | -5.5970*** |
| 28/02/2020 | -10 | -2.9272** |

Noted: *** is significant at 1%; ** is significant at 5% level; * is significant at 10% level
Source: Processed SPSS output, 2022

**Abnormal Trading Volume Activity Test Results**

The results of the calculation of the Ho hypothesis testing, whether there is an abnormal trading volume activity that has been standardized on average can be seen in the last column of the t-statistic value. By using the student t statistic distribution table value at 20-2=18 with degrees of freedom 5% level is 1.734.

The t-statistic value results from the announcement of the covid-19 pandemic, show that 10 days before and 10 days after the president's announcement about the covid-19 pandemic there was a significant difference in abnormal trading volume activity in stocks listed in the LQ45 index. This reveals that the efficient market hypothesis testing rejects the hypothesis

(Ho), meaning that the capital market has not been efficient in a semi-strong form at the announcement of the COVID-19 pandemic.

There are 3 days before the event, 1 day during the event and 7 days after the event, the stock trading volume activity experienced a significant change in transactions. From 3 days before the announcement, there was significant positive trading volume activity on day -10 of 1.7342 and on day -4 of 2.0783, which experienced a significant negative change only on day -9 of -1.7767. Furthermore, on the day of the announcement of the event (day 0), trading volume activity was significantly positive at 1.9467. After the announcement, during the window period in the study, there were 7 days that experienced

**Table 3. Calculation results of the average abnormal trading volume activity Standardized (TVATNSit) and t-statistic test results of trading volume activity stock event announcement of the Covid-19 pandemic**

| Date | Day | t - value result |
|---|---|---|
| 30/03/2020 | 10 | -2.6291*** |
| 27/03/2020 | 9 | -1.4035* |
| 26/03/2020 | 8 | 9.4003*** |
| 24/03/2020 | 7 | 8.8341*** |
| 23/03/2020 | 6 | -3.2037*** |
| 20/03/2020 | 5 | 51.7844*** |
| 19/03/2020 | 4 | -2.1687** |
| 18/03/2020 | 3 | 0.4044 |
| 17/03/2020 | 2 | 1.2369 |
| 16/03/2020 | 1 | -2.0402** |
| 13/03/2020 | 0 | 1.9467** |
| 12/03/2020 | -1 | -0.5058 |
| 11/03/2020 | -2 | -0.7840 |
| 10/03/2020 | -3 | -0.4004 |
| 09/03/2020 | -4 | 2.0387** |
| 06/03/2020 | -5 | -0.4991 |
| 05/03/2020 | -6 | -1.0172 |
| 04/03/2020 | -7 | -0.3517 |
| 03/03/2020 | -8 | 0.1562 |
| 02/03/2020 | -9 | -1.7767** |
| 28/02/2020 | -10 | 1.7342** |

Noted: *** is significant at 1%; ** is significant at 5% level; * is significant at 10% level
Source: Processed SPSS output, 2022

significant trading volume activity, namely there were 4 days of negative trading volume activity, namely on day +1 of -2.0402, on day +4 of - 2.1687 , on the +6 day it is -3.2307, and on the +10 day it is - 2.6291. Meanwhile, those who experienced a significant positive impact on day +5 were 51.7944, on day +7 it was 8.8341, and on day +8 it was 9.4003.

This research was conducted to test the efficient market hypothesis in a semi-strong form in response to information that is publicly announced and is suspected to have important content and fundamentally has the potential to cause changes in asset valuation (Tandililing,

2020). The public event tested in this study was the official announcement by the president about the entry to Indonesia for the COVID-19 pandemic which was announced on March 13, 2020.

From the results of data analysis, it is revealed that testing the efficient capital market hypothesis with the announcement of the COVID-19 pandemic has resulted in abnormal returns during the event period, namely ten days before and ten days after the announcement of the COVID-19 pandemic and similarly there has been no trading volume activity. normal over the same period. From 10 days before the announcement of the covid-19 pandemic, the market reaction to the issue of the imminent entry of the COVID-19 pandemic in Indonesia, because since the outbreak first occurred in Wuhan around December 2020, it has spread massively throughout the world, and Indonesia. including the latter compared to other Asean countries. So that during the waiting period for the outbreak of the epidemic, various issues, statements, comments and so on, both contain positive and negative information that have an impact on price movements and stock trading volume activities on the stock exchange floor. From ten days before and after the announcement event, there were 6 days and 7 days there was a significant negative abnormal return on stocks in the LQ45 index. Furthermore, there was a significant positive abnormal return only for 3 days before and 3 days after the announcement of the COVID-19 pandemic. Trading volume activity also experienced significant negative abnormal trading for only one day, however, significant negative trading volume activity occurred for four days after the announcement event.

The results of the above review reveal that during the window period, stock price movements and trading volume activities in companies listed on the LQ45 index have experienced a significant decline or fall in stock prices, resulting in investors experiencing substantial capital losses in stocks that are listed in the LQ45 index. listed in the index. The fluctuation of price changes or the LQ45 index is much greater than the fluctuation of changes in trading volume activity. Since two months before the announcement of the development of the LQ45 index, there has been a decline, and reached its peak, namely the lowest decline in March as the month for the announcement of the COVID-19 pandemic, which was -21,42%. This percentage decline is the lowest for a year starting from June 2019 to Mai 2020. Furthermore, fluctuations in changes in trading volume activity are relatively low, even in the month of the announcement of the COVID-19 pandemic there was an extraordinary increase in trading volume activity of 97.48 percent, this is a the largest increase during the window period.

The results of this study reject the efficient market hypothesis in a semi-strong form, which reveals that with the entry of new information on the announcement of the COVID-19 pandemic, it is not absorbed quickly in the stock prices listed on the LQ45 index, this shows that the impact of the announcement took a relatively long time to reach the price. new balance. Likewise, the reaction to stock trading transaction volume activity in the LQ45 index has a significant impact on changes in abnormal trading volume activity, most of which have a significant negative impact on trading volume activity.

These findings are in line with recent research conducted by He et al (2020), Liargovas and Repousi (2010), Xiong et al (2020) and Ashraf (2020) revealing that the COVID-19 pandemic has largely had a negative impact on prices. shares listed on the stock exchange in their respective studies. Thus, the study of the COVID-19 pandemic information event confirms research in various capital markets that the information content has a massive impact on decreasing returns and trading volume activity in various capital markets in the world.

## CONCLUSION AND RECOMMENDATION

Based on the results of data analysis and previous discussions, it can be concluded that this research was conducted to test the efficient market hypothesis in a semi-strong form, using public information in the form of announcements of the COVID-19 pandemic. This test was carried out to find out how the stock price response and trading volume activity of the shares listed on the LQ45 index during the window period were ten days before and ten days after the announcement of the covid-19 pandemic. The result of testing hypothesis 1 is to reject the null hypothesis, which means that the announcement of the covid-19 pandemic has a significant impact on abnormal returns throughout the window period. The results of the t-statistical test during the window period revealed that before the event there were 6 days of significant negative abnormal returns and 3 days of significant positive abnormal returns on the stock prices of companies included in the LQ45 index. Then, there are 3 days before the event and 3 days after the event there is a significant positive abnormal return announcement of the COVID-19 pandemic.

Testing results for hypothesis 2, rejecting the null hypothesis, from 10 days throughout the window period before the event there were only 3 significant days, namely that the abnormally positive trading volume activity was positive for only 1 day and significant negative for 2 days. Furthermore, from the 10-day window period after the announcement of the COVID-19 pandemic, significant abnormal trading volume activity was 7 days, which was significant

negative for 4 days and significant positive for 3 days. The results of testing hypotheses 3 and 4, do not reject the null hypothesis, revealing that there is no significant difference in the mean value of abnormal returns before the event with abnormal returns after the announcement of the COVID-19 pandemic. Furthermore, there was also no significant difference in the mean value of trading volume activity before and after the announcement of the COVID-19 pandemic for stocks included in the LQ45 index.

Based on the results of the analysis and discussion in the previous chapter, here are some suggestions related to the results of the analysis and discussion, namely considering the results of testing the efficient market hypothesis in a semi-strong form using public information, in the form of the announcement of the COVID-19 pandemic, which has an impact on changes in prices and values. transactions of shares included in the LQ45 index, it is recommended to the capital market authorities to continuously strive for public information to be published quickly and widely, so that when the information is entered in the market it can be quickly absorbed by the price of the shares in the index. LQ45. Considering the results of hypothesis testing rejecting the null hypothesis, revealing that the announcement of the covid-19 pandemic has a significant impact on abnormal returns and abnormal trading volume activity, it is recommended to investors and potential investors to always pay attention to the possibility of public information that has the potential to influence price movements and trading volume in the capital market, so they can make quick and appropriate decisions as the information enters the market.

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