

## Comparative Analysis of Stock Prices, Stock Returns, Abnormal Returns and Trading Volume Before and After the Announcement of Covid-19

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### ABSTRACT

This study analyzes significant differences in stock prices, stock returns, abnormal returns, and stock trading volume of telecommunications companies before and after the announcement of COVID-19 in Indonesia. The analysis was conducted using Paired Sample T-Test for normally distributed data and Wilcoxon Signed Rank Test for non-normal data, with the help of Microsoft Excel 2010 and SPSS-24 in data processing. The results showed that the COVID-19 announcement had a significant effect on the four variables. Stock prices decreased due to selling pressure triggered by economic uncertainty, so investors became more selective. Although stock prices decreased, trading volume increased due to panic selling. Investors try to minimize risk by releasing stocks and shifting their investments to safer instruments. This finding reinforces the Efficient Market Theory, which states that information related to the COVID-19 pandemic is quickly reflected in stock prices and trading volumes. From a policy perspective, these results emphasize the importance of risk mitigation strategies for investors as well as the government's role in stabilizing the market to reduce the impact of volatility due to global events. The uniqueness of this study lies in analyzing the impact of COVID-19 on the telecommunications sector in Indonesia, which has rarely been studied.

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### INTRODUCTION

The Covid-19 pandemic has had a major impact in various countries, including Indonesia, since its emergence in late 2019. The virus was first announced in Indonesia on March 2, 2020, which marked the beginning of a surge in positive cases. Transmission of the virus occurs through both local transmission and imported cases, making it increasingly difficult to control. The impact of this pandemic is not only limited to public health but also extends to various sectors of the economy, including the capital market. As one of the important economic indicators, Indonesia's capital market is under severe pressure due to a decline in investment and stock trading activities.

The capital market in Indonesia has shown a significant decline since the first case of Covid-19 was announced. The Jakarta Composite Index (JCI) continued to decline sharply, even reaching

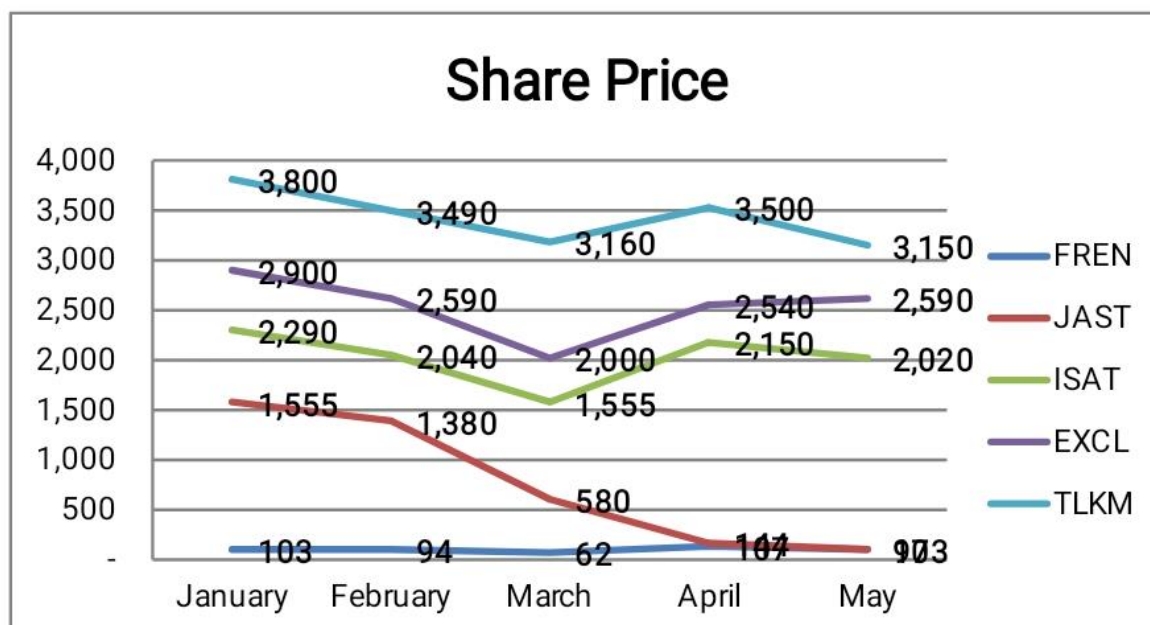
its lowest point at the end of March 2020 (Purnaningrum & Ariyanti, 2020) . This decline illustrates investors' negative sentiment towards the market due to high economic uncertainty. As an investment venue, the capital market is highly vulnerable to non-economic events such as the pandemic (Welley et al., 2020) . Under these conditions, many investors tend to withdraw their funds to reduce the risk of further losses.

The Covid-19 pandemic has not only created economic pressure but also affected the mindset and behavior of investors. The uncertainty caused by the pandemic makes investors more cautious in making investment decisions. This condition is in line with research showing that major events such as a pandemic can reduce investor confidence. The capital market, which is usually a place to diversify wealth, has turned into a high-risk sector. As a result, many market participants choose to secure their assets in more stable investments such as gold or time deposits.

As an extraordinary event, the pandemic has forced economic actors to adapt to new conditions. The Indonesian government has responded to the situation by launching various policies to stabilize the economy, including providing tax incentives and fiscal stimulus. On the other hand, the Indonesia Stock Exchange also issued strategic measures such as easing regulations to support market liquidity. These measures aim to maintain investor confidence and minimize the negative impact on the capital market. Nonetheless, economic recovery remains a major challenge that requires time and cross-sector coordination.

Quoted from CNN Indonesia, at the close of trading on Monday, March 2, 2020, the Composite Stock Price Index (JCI) fell to 5,361, weakening 91.46 points or 1.68% compared to the previous week's close. The decline was even sharper on Tuesday, March 24, 2020, when the JCI touched its lowest level at 3,937. The average daily transaction value decreased by 23.84%, to Rp 6.94 trillion, while the average daily transaction volume fell by 51.87% to only 7 billion shares. Based on data from the Indonesia Stock Exchange (IDX), after Covid-19 was officially announced as a pandemic, the JCI closed down 1.2% or 66.72 points at 5,154.10. Prior to the official announcement, the JCI had risen by 1.6% or 84.02 points to 5,220.83. However, on March 12, 2020, the JCI fell sharply by 5.01% or 258.36 points to 4,895.75. This significant decline prompted the Indonesia Stock Exchange to temporarily suspend trading (Trading Halt) for 30 minutes at 15:33 WIB through the Jakarta Automated Trading System (JATS) system. The trading halt on that date was the first to be carried out, in response to instructions from the Financial Services Authority (OJK) to maintain market sustainability and reduce investor panic.

Based on the above conditions, researchers feel interested in examining more deeply whether the Covid-19 pandemic has really had a significant impact on all economic sectors in Indonesia. One sector that attracts attention is the telecommunications sector, which plays a vital role in supporting community activities during the pandemic, especially through work from home (WFH), online learning, and digital economic transformation. The telecommunications sub-sector in the Jakarta Industrial Classification (JASICA) category is considered strategic due to the high dependency of people on internet, digital communication, and data services during social distancing. This condition creates opportunities for telecommunication companies to survive and even grow amidst uncertainty, with its stocks showing defensive characteristics and gaining positive sentiment from investors. With high liquidity, the telecommunications sector is an interesting object to analyze the impact of the pandemic on stock prices, stock returns, abnormal returns, and trading volume before and after the pandemic announcement.



**Figure 1. Stock Prices of Telecommunication Companies After and Before the Announcement of Covid-19**

Source: Processed Data, 2024

In Figure 1. it can be seen that the stock prices of telecommunications companies fluctuated after the announcement of Covid-19, which was influenced by unbalanced information in the capital market. Telecommunications issuers tried to make corrections and improvements by increasing trading activities. The increase in transactions of telecommunications companies was triggered by the government's announcement regarding the large-scale social restriction (PSBB) policy. This policy made it difficult for people to interact face-to-face, so offices and schools were forced to close. As a result, workers and teaching and learning activities were shifted to online systems.

The implementation of an online system that has become a major necessity for society has led to a significant increase in the demand for internet services. This condition forces companies in the telecommunications sector to meet the surge in demand, albeit amidst tough challenges. The telecommunications sector is also one of the sectors that significantly affects the Composite Stock Price Index (JCI). According to Samuel Sekuritas' observation as quoted from Kompas.com, major telecommunications companies such as PT Telkom Indonesia (TLKM), PT XL Axiata (EXCL), and PT Indosat (ISAT) experienced a sharp decline in share prices. The decline has reached 35.5% for TLKM and EXCL, and 31.6% for ISAT since the beginning of the year.

PT Telkom Indonesia, as the largest company in the telecommunications sector and has a significant weight in the JCI, has a major influence on the movement of the index. The decline in the company's stock performance caused the JCI to decline by 22.7%. In addition, the increasing number of Covid-19 cases in Indonesia has increased investors' concerns about the impact of the pandemic. According to (Siswanto, 2020), stock price volatility and the total volume of shares traded are important factors in determining the sustainability of the company's business. Previous research by (Nurmasari, 2020) showed that the Covid-19 pandemic caused stock prices to decline, while the volume of transactions actually increased significantly.

Related research was also conducted by (Bakhtiar et al., 2020), which discusses the impact of Covid-19 on the comparison of stock prices and the volume of stock sales transactions in telecommunications companies. The study showed a significant difference in the volume of stock sales transactions before and after the announcement of Covid-19. Telecommunications companies experienced an increase in stock prices and volume of stock sales transactions, because the activity of buying and selling shares in telecommunications companies listed on the IDX increased, so that it was able to drive a significant increase in transaction volume and stock prices due to the Covid-19 case in Indonesia. (N. P. T. P. Sari et al., 2017) states that in examining the effect of a sentiment on

the capital market can use event studies. Event study is a study that studies the market reaction to an event whose information is published as an announcement (Damayanti et al., 2020) .

Changes in the stock prices of telecommunications companies showed a decline after the announcement of the first case of Covid-19 in Indonesia. This decline occurred due to the high supply compared to the demand for shares in the telecommunications sector. High selling pressure caused the stock price to fall, while investors prefer investments that are considered safe amid economic uncertainty. Concerns about the significant impact of the pandemic on the economy have caused investors to be more selective in choosing investment assets. This is in line with the findings of (Sukma & Susandini, 2022) , which explains that the Covid-19 pandemic affects capital market dynamics.

Despite the decline in share prices, the trading volume of telecommunication companies' shares has increased during the pandemic. This increase was not always accompanied by a rise in share prices, but was instead driven by the phenomenon of panic selling. Investors who feared losses due to the pandemic sold their stocks, including well-performing stocks, and shifted their portfolios to safer investment instruments. (Sukma & Susandini, 2022) notes that this activity reflects the market's response to economic uncertainty. This phenomenon shows how investor psychology plays a role in market fluctuations during the pandemic.

Research results (Bakhtiar et al., 2020) show that telecommunications companies on the IDX experienced an increase in stock prices during the pandemic. This increase is in line with the surge in stock transaction volume, reflecting investor confidence in the prospects of the telecommunications sector. Investors believe that telecommunications companies are able to maintain positive performance despite difficult conditions. This expectation is based on the increased demand for internet and communication services during the pandemic, which is a major need for the community. As such, investors expect companies to distribute profits in the form of dividends during the pandemic.

Research by (Mahanani et al., 2021) found significant differences in stock prices before and after the Covid-19 pandemic in Indonesia. Based on the Wilcoxon Signed Rank Test, the average share price of the telecommunications sub-sector has decreased significantly. This decrease shows the negative impact of the pandemic on the share prices of telecommunications companies listed on the IDX. However, another study by (Daniel & Subekti, 2021) shows that the abnormal return of telecommunication sub-sector companies is not significantly different before and after the pandemic. This indicates the stability of the performance of telecommunications companies in dealing with the impact of the pandemic.

The Covid-19 pandemic also caused significant differences in abnormal stock returns before and after the PSBB announcement on March 31, 2020. (Rori et al., 2021) explains that the theory of semi-strong form market efficiency can explain how information such as PSBB announcements affect investor psychology and create market reactions. Research by (Pradana & Priyadi, 2022) also found that abnormal stock returns tend to increase significantly after the announcement of social distancing activities. This shows that the market reacts to relevant information, while confirming that the Indonesian capital market has achieved semi-strong form efficiency. In addition, the increase in trading volume also reflects high market activity during the pandemic.

Other studies have found that stock returns during the pandemic are higher than before the pandemic (Liyanto & Mendari, 2022) . (L. Sari & Bone, 2021) also found significant abnormal return differences before and after the announcement of the first Covid-19 case in Indonesia. (Riyosef & Agustin, 2022) noted that the event of the effective implementation of PSAK 72 had a significant impact on stock trading volume. This shows that the market is actively responding to the information circulating by increasing stock buying and selling activities. These findings confirm that the Covid-19 pandemic has a multidimensional impact on the capital market, especially in the telecommunications sub-sector.

From the above background, the researcher is interested in examining "Comparative Analysis of Stock Prices, Stock Returns, Abnormal Returns and Trading Volume Before and After the Announcement of Covid-19" This research will use closing price data, trading volume, stock returns and abnormal returns, namely 30 days before and 30 days after the announcement of Covid-19 in Indonesia.

## THEORETICAL BASIS AND HYPOTHESIS DEVELOPMENT

### a. Theoretical Basis

#### 1. Event Study

Eugene Fama (1969) introduced event study as an analytical method to evaluate the impact of an event on stock price movements in the capital market. This method is used to determine whether publicly announced information affects stock prices and trading volume. Under efficient market conditions, stock prices will immediately adjust to the information received.

#### 2. Signaling Theory

Michael Spence (1973) developed Signaling Theory, which explains that information from a company or external factors can be a clue for investors in making investment decisions. If the information received is positive, investors tend to buy shares, while if it is considered negative, they will sell them.

#### 3. Efficient Market Hypothesis (EMH)

Eugene Fama (1970) formulated the Efficient Market Hypothesis (EMH), which states that stock prices always reflect all available information. This hypothesis is divided into three levels of efficiency: (1) Weak Form, where stock prices only reflect historical information; (2) Semi-Strong Form, which includes all available public information; and (3) Strong Form, which reflects all information, including internal ones.

#### 4. Stock Price Theory

According to Brigham & Houston (2010), stock prices reflect the market value of a company and are influenced by the interaction between the demand and supply of shares on the stock exchange. Some of the factors that influence stock prices include company performance, macroeconomic conditions such as inflation and interest rates, and investor sentiment towards the market.

#### 5. Stock Return Theory

Jogiyanto (2017) explains that stock returns are the profits or losses that investors get from their investments. Stock returns consist of two types, namely realized returns, which are calculated based on historical data, and expected returns, which are estimates of future profits.

#### 6. Abnormal Return Theory

Craig MacKinlay (1997) defines abnormal return as the difference between actual return and expected return based on a particular model. If after an event there is a significant difference in abnormal returns, it indicates a market reaction to the information received.

#### 7. Stock Trading Volume Theory

Jonathan Karpoff (1987) argues that stock trading volume reflects the level of transaction activity in the market. High trading volume indicates investors' reaction to information, either in the form of panic selling when uncertainty increases or market optimism when economic prospects improve.

### b. Hypothesis Development

The capital market is one of the main indicators in a country's economy that is very sensitive to various global events, including the COVID-19 pandemic. Based on the Efficient Market Hypothesis (EMH) proposed by Fama (1970), stock prices in the capital market reflect all available information. When there is significant new information, such as the announcement of the first case of COVID-19 in Indonesia on March 2, 2020, the market will respond. If investors perceive the pandemic as a threat to the economy, then selling activity may increase, which has the potential to depress stock prices. In line with research conducted by Mahanani et al. (2021), found a significant difference in stock prices before and after the COVID-19 pandemic in Indonesia. Therefore, the first hypothesis in this study is:

H1: There is a significant difference in the stock prices of telecommunications companies listed on the Indonesia Stock Exchange before and after the announcement of COVID-19.

Stock return is one of the main indicators used by investors to assess stock performance. According to Jogiyanto (2017), stock returns can change as a form of response to information entering the market. In the context of the COVID-19 pandemic, investors may overreact or be more

cautious in making investment decisions, which can cause stock return volatility. Research conducted by Liyanto & Mendari (2022) showed significant differences in stock returns before and during the COVID-19 pandemic in various sectors, including the telecommunications sector. Therefore, the second hypothesis proposed is:

H2: There is a significant difference in stock returns of telecommunications companies listed on the Indonesia Stock Exchange before and after the announcement of COVID-19.

In addition to stock returns, abnormal returns are also an important measure in assessing market efficiency. MacKinlay (1997) defines abnormal return as the difference between the actual return and the expected return based on a particular model. If the market reacts to an event, then a significant abnormal return may appear. Previous research, such as that conducted by Sari & Bone (2021), found differences in abnormal returns before and after the announcement of the first case of COVID-19 in Indonesia, especially in the telecommunications sector. Therefore, the third hypothesis in this study is:

H3: There is a significant difference in the abnormal stock returns of telecommunications companies listed on the Indonesia Stock Exchange before and after the announcement of COVID-19.

Stock trading volume is an important indicator in analyzing capital market activity. Karpoff (1987) states that trading volume reflects the level of investor reaction to information entering the market. In conditions of high uncertainty such as the COVID-19 pandemic, trading volume can increase due to panic selling or new portfolio strategies implemented by investors. Research conducted by Suidarma & Puspayani (2021) found a significant difference in stock trading volume before and after the announcement of the first case of COVID-19 in Indonesia. Therefore, the fourth hypothesis proposed is:

H4: There is a significant difference in the trading volume of shares of telecommunications companies listed on the Indonesia Stock Exchange before and after the announcement of COVID-19.

## RESEARCH METHOD

This study applies a quantitative approach with the event study method to evaluate the impact of COVID-19 announcements on the capital market, especially in the telecommunications sector in Indonesia (Damayanti et al., 2020). The event study method was chosen because it is able to measure the market response to an event (announcement) by analyzing changes in stock prices, stock returns, abnormal returns, and stock trading volume around the announcement date (Sari et al., 2017).

The sample consisted of four telecommunication companies selected using purposive sampling technique based on the following criteria:

1. Companies listed in the telecommunications sector on the IDX
2. Company data is fully available for analysis and can be accessed via [www.idx.co.id](http://www.idx.co.id) and [www.finance.yahoo.com](http://www.finance.yahoo.com)
3. Companies whose shares are actively traded during 2020
4. The company has conducted an IPO since at least 2016
5. Companies that have complete historical data.

**Table 1. List of Companies that are Research Samples**

| No. | Issuer Code | Company Name                    |
|-----|-------------|---------------------------------|
| 1.  | EXCL        | XL Axiata Tbk.                  |
| 2.  | FREN        | Smartfren Telecom Tbk.          |
| 3.  | ISAT        | Indosat Tbk.                    |
| 4.  | TLKM        | Telkom Indonesia (Persero) Tbk. |

Source: Processed Data, 2024

Data collection is done through the documentation method by downloading historical data on daily stock prices and stock trading volume from the official website of the Indonesia Stock Exchange ([www.idx.co.id](http://www.idx.co.id)) and other financial sources such as Yahoo Finance. The data covers a time span of 30 days before to 30 days after the announcement of the first case of COVID-19 in Indonesia on March 2, 2020. The data that has been obtained is then analyzed using SPSS 24 and Microsoft Excel 2010 statistical software.

## RESULT AND DISCUSSION

The following will present the results of the analysis related to stock prices, stock returns, abnormal returns, and trading volume in telecommunications companies before and after the announcement of COVID-19 in Indonesia. The data used during the research period can be seen in Figure below.

**Table 2. Descriptive Statistical Analysis**

| Variables       | Period | N  | Minimum  | Maximum   | Mean     | Std. Deviation |
|-----------------|--------|----|----------|-----------|----------|----------------|
| Share Price     | Before | 30 | 2022,00  | 2486,75   | 2237,63  | 120,8657       |
|                 | After  | 30 | 1320,00  | 2180,75   | 1759,48  | 240,3287       |
| Stock Return    | Before | 30 | -,0465   | ,0707     | -,0075   | ,0240          |
|                 | After  | 30 | -,0905   | ,1706     | ,0197    | ,0621          |
| Abnormal Return | Before | 30 | -,0314   | ,0584     | ,0009    | ,0183          |
|                 | After  | 30 | -,1268   | ,3738     | ,0349    | ,0778          |
| Trading Volume  | Before | 30 | 16557175 | 96909725  | 40338857 | 19164996       |
|                 | After  | 30 | 8284450  | 180616750 | 70830389 | 45539389       |

Source: Processed Data, 2025

Based on Table 2. before Covid-19, stock prices had a range of values between 2,022 and 2,486.75, with an average of 2,237.63 and a standard deviation of 120.8657. After Covid-19, stock prices decreased, with a minimum value of 1,320 and a maximum of 2,180.75, while the average fell to 1,759.48 and the standard deviation increased to 240.3287. Stock returns before the pandemic ranged from -0.0465 to 0.0707, with an average of -0.0075 and a standard deviation of 0.0240, while after the pandemic, stock returns showed an increase with a range of -0.0905 to 0.1706, the average rose to 0.0197, and the standard deviation increased to 0.0621.

In abnormal returns before Covid-19, the minimum value was -0.0314 and the maximum was 0.0584, with an average of 0.0009 and a standard deviation of 0.0183. After the pandemic, the abnormal return increased with a minimum value of -0.1268 and a maximum of 0.3738, the average rose to 0.0349, and the standard deviation increased to 0.0778. Meanwhile, stock trading volume before Covid-19 ranged from 16,557,175 to 96,909,725, with an average of 40,338,857 and a standard deviation of 19,164,996. After the pandemic, the trading volume increased significantly, with a minimum value of 8,284,450 and a maximum of 180,616,750, the average rose to 70,830,389, and the standard deviation jumped to 45,539,389.

**Table 3. Data Normality Test**

| Variables       | Period | P value | Decision   | Hypothesis Test      |
|-----------------|--------|---------|------------|----------------------|
| Share Price     | Before | 0,200   | Normal     | Paired Sample T Test |
|                 | After  | 0,094   | Normal     |                      |
| Stock Return    | Before | 0,200   | Normal     | Paired Sample T Test |
|                 | After  | 0,200   | Normal     |                      |
| Abnormal Return | Before | 0,200   | Normal     | Wilcoxon             |
|                 | After  | 0,002   | Not Normal |                      |
| Trading Volume  | Before | 0,001   | Not Normal | Wilcoxon             |
|                 | After  | 0,000   | Not Normal |                      |

Source: Processed Data, 2025

Based on Table 3, the normality test shows that the stock price and stock return variables have a p-value above 0.05 (0.200; 0.094; 0.200; and 0.200), which means that the data is normally distributed. Therefore, the hypothesis test for these two variables uses the Paired Sample T-Test. In contrast, the abnormal return variables in the after data group and trading volume have p values below 0.05 (0.002; 0.001; and 0.000), indicating that the data is not normally distributed. Consequently, the hypothesis test for the abnormal return and trading volume variables uses the Wilcoxon test.

**Table 4. Hypothesis Test**

| Methods                          | Variables       | Period | Mean         | t      | P value | Decision                |
|----------------------------------|-----------------|--------|--------------|--------|---------|-------------------------|
| <i>Paired Sample T-Test</i>      | Share Price     | Before | 2237.625     | 10.892 | 0.000   | Significantly Different |
|                                  |                 | After  | 1759.483     |        |         |                         |
|                                  | Stock Return    | Before | -0.007       | -2.586 | 0.015   | Significantly Different |
|                                  |                 | After  | 0.02         |        |         |                         |
| <i>Wilcoxon Signed Rank Test</i> | Abnormal Return | Before | 0.001        | -2.931 | 0.003   | Significantly Different |
|                                  |                 | After  | 0.035        |        |         |                         |
|                                  | Sales Volume    | Before | 40338856.667 | -3.425 | 0.001   | Significantly Different |
|                                  |                 | After  | 70830389.167 |        |         |                         |

Source: Processed Data, 2025

Based on Table 4., the average share price before the Covid-19 announcement was recorded at 2,237.625, while after the announcement it decreased to 1,759.483, indicating a decrease in the share price after the announcement. The t-count value obtained is 10.892 with a p-value of 0.000 < 0.05, indicating a significant difference in stock prices before and after the Covid-19 announcement. For stock returns, the average before the Covid-19 announcement was -0.007, while after the announcement it increased to 0.020, indicating an increase in stock returns. The t-count value of -2.586 with a p-value of 0.015 < 0.05 indicates that there is a significant difference in stock returns before and after the Covid-19 announcement.

Meanwhile, abnormal return had an average of 0.001 before the announcement and increased to 0.035 afterwards, indicating an increase in abnormal return. The z-count value of -2.931 with a p-value of 0.003 < 0.05 indicates a significant difference in abnormal return before and after the Covid-19 announcement. On stock trading volume, the average before the Covid-19 announcement was 40,338,856.667, while after the announcement it increased to 70,830,389.167, reflecting an increase in stock trading volume. The z-count value of -3.425 with a p-value of 0.001 < 0.05 indicates that there is a significant difference in stock trading volume before and after the announcement of Covid-19.

## CONCLUSION

This study aims to analyze the significant differences in stock prices, abnormal returns, and stock trading volume of telecommunication companies before and after the announcement of COVID-19 in Indonesia on March 2, 2020. The results showed a significant increase in stock trading volume after the announcement. This increase reflects the market reaction in the form of panic selling due to the economic uncertainty engulfing investors. However, this study found no significant difference in stock prices or abnormal returns, indicating that the telecommunications sector has unique characteristics in dealing with the impact of the pandemic.

This finding differs from the study conducted by (Nurmasari, 2020), which recorded a decrease in stock prices and an increase in trading volume after the announcement of the pandemic. In addition, a study conducted by (Bakhtiar et al., 2020) actually reported an increase in stock prices and stock transaction volume in the telecommunications sector. This difference in results may be due to specific factors within the telecommunications sector, such as increased demand for internet and communication services during the pandemic. The surge in demand for telecommunication services helped to cushion the pressure on the share prices of companies in this sector, making it more stable compared to other sectors that were more heavily affected.

Stock returns in this study experienced a sharp decline after the COVID-19 announcement, reflecting investors' negative reaction to economic uncertainty. However, after some time, stock returns in the telecommunications sector began to stabilize along with the increasing demand for communication and internet services due to social restriction policies. This is in line with research (Mahanani et al., 2021), which shows a significant difference in stock prices before and after the pandemic.

In addition, abnormal returns also experienced significant differences as identified by (Sari & Bone, 2021). They found that abnormal returns before and after the pandemic announcement showed statistically measurable differences. These results indicate that the market reacted to the pandemic announcement and the telecommunications sector was one of the sectors that received investor attention. Thus, this study provides more insight into how the telecommunications sector in Indonesia responds to market dynamics during the COVID-19 pandemic.

This study has several limitations. First, the observation period is relatively short, namely 30 days before and after the announcement of COVID-19, so it may not fully illustrate the impact of the pandemic in the long term. Second, this study only focuses on telecommunications companies listed on the IDX, so the findings may not be representative of the entire telecommunications industry. Third, this study has not taken into account other factors that could potentially affect stock prices, abnormal returns, and stock trading volume, such as macroeconomic conditions and market sentiment.

Therefore, future research is recommended to extend the observation period, expand the sample coverage, and consider additional control variables. In addition, future research can also compare the impact of COVID-19 on the telecommunications sector with other sectors in the Indonesian capital market to obtain a more comprehensive understanding.

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