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The Correlation Between The Covid-19 Pandemic And Disparities In Stock Prices, Transaction Volume, And Abnormal Returns Within The Transportation Sector

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Abstract: The COVID-19 pandemic poses a threat to many economic growth in a country. This has a significant impact on the driving sectors of the economy. One of them is that the transportation sector has an important role in people's lives which is driven by an increase in people's needs for mobility and transportation of goods throughout. Data collection with the method of documentation and data sources from secondary data. The event study method was used in this study to determine the response of stocks from the capital market to certain events that contain or do not contain information and cause the market to react positively or negatively. It can be used to test the information content of an announcement and can also be used to test semi-form market efficiency. strong. This study proves that there are significant differences in stock prices and stock transaction volumes, but there are no significant differences in abnormal returns after the COVID-19 pandemic in Indonesia. The share price shows an increase after the COVID-19 pandemic. This research also proves that there are significant differences in trading volume before and after the COVID-19 pandemic in the transportation sector listed on the Indonesia Stock Exchange because it has a significance probability value. The volume of stock transactions has increased after the COVID-19 pandemic. Based on testing for abnormal returns on 31 days before and after the Covid-19 pandemic, it stated that there were no significant differences in the transportation sector listed on the Indonesia Stock Exchange (IDX).

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INTRODUCTION

The COVID-19 pandemic was an event of the worldwide spread of the Coronavirus Disease 2019 for all countries. Apart from posing a threat to human health and immunity, the COVID-19 pandemic also poses a threat to many economic developments in a country. This is evidenced by the global economic growth which experienced a recession of -4.2% in 2020 and currently many mutual fund investors want to get high returns by using various sophisticated techniques and methods(Azis et al., 2021)

One of them is having a significant impact on the economic driving sectors, the sectors that are heavily affected by COVI-19 include: (1). Tourism Sector (2) Manufacturing Sector (3) Transportation Sector (4) MSME Sector (5) Mining Sector. The weakening of several very influential sectors, the Central Statistics Agency (BPS), Indonesia experienced a contraction in economic growth in 2020 of -2.07 percent. This pandemic has disrupted business in many industries, so that the global economy experienced a contraction with negative growth of 4.3%, and Indonesia's GDP contracted by 2.1%.

Based on data from the Indonesian Chamber of Commerce and Industry, the Transportation Sector reported a decline in all modes of transportation, there was a decrease of 75 percent to 100 percent, especially in passenger transportation, both in intercity modes of transportation and non-PSO urban transportation. Meanwhile, in the tourism transportation sector, there was a decline of up to 100 percent (Qomariah et al., 2016). Even though during the COVID-19 pandemic, more than 100 countries had implemented full or partial lockdowns which resulted in a decrease in the number of air and inter-city travel by 70 – 90% in March 2020 compared to the same month in 2019 (Dunford et al., 2020) (Dunford et al., 2020) which of course has a big impact on stocks in the transportation sector. In addition, research results (He et al., 2020) (Pinglin et al., 2020) state that the transportation sector in the capital market is one of the sectors that has experienced a

very bad impact due to the COVID-19 pandemic (Hafidzi et al., 2023). Each event will certainly affect the IDX market closing (maket on close), also due to a significant increase in trading activity. Therefore, this study uses transaction volume and abnormal returns to be used as variables.

Because these events include mergers and acquisitions, dividend announcements, announcements of productive companies, lawsuits, increases in interest rates and others . Every investor expects a return in the future, but every investment has a risk. The higher the return investors get, the higher the risk will be (Fahmi, 2018, 167). The purpose of calculating abnormal returns is to determine the impact of an event with abnormal stock returns in certain situations and periods (Qomariah et al., 2021).

METHOD

This research belongs to the type of quantitative research. Data collection is done by using the documentation method and data sources from secondary data. The data is obtained and quoted on the internet from the Indonesian Stock Exchange website. The event study method was used in this study to determine the response of stocks from the Capital Market to certain events that contain or do not contain information and cause the market to react positively or negatively (Hafidzi & Qomariah, 2022).

The population of this study are all transportation sector companies listed on the Indonesia Stock Exchange (IDX) with a total of 23 listed companies (updated January 1, 2020). The reason for choosing a transportation company as a sample is due to the characteristics of transportation companies having very large investments. The following is a list of company names that were used as the population in the study, which can be seen in table 1 below:

Table 1 List of Transportation and Logistics Sector Company Names Registered on the Indonesia Stock Exchange (IDX)

No	Code	Company name
1	ASSA	Adi Sarana Armada Tbk.
2	BIRD	Blue Bird Tbk.
3	BPTR	Batavia Prosperindo Trans Tbk.
4	CMPP	AirAsia Indonesia Tbk.
5	GIAA	Garuda Indonesia (Persero) Tbk
6	HELI	Jaya Trishindo Tbk.
7	LRNA	Eka Sari Lorena Transport Tbk.
8	SAFE	Steady Safe Tbk
9	TAXI	Express Transindo Utama Tbk.
10	WEHA	WEHA Transportasi Indonesia Tbk.
11	AKSI	Mineral Sumberdaya Mandiri Tbk
12	BLTA	Berlian Laju Tanker Tbk
13	DEAL	Dewata Freightinternational Tb
14	JAYA	Armada Berjaya Trans Tbk.
15	KJEN	Krida Jaringan Nusantara Tbk.
16	MIRA	Mitra International Resources
17	NELY	Pelayaran Nelly Dwi Putri Tbk.
18	SAPX	Satria Antaran Prima Tbk.
19	SDMU	Sidomulyo Selaras Tbk.
20	SMDR	Samudera Indonesia Tbk.
21	TMAS	Temas Tbk.
22	TNCA	Trimuda Nuansa Citra Tbk.
23	TRUK	Guna Timur Raya Tbk.

Source: https://www.idx.co.id/id/data-pasar/data-saham/register-saham

The sampling technique in this study used a non-probability technique, namely purposive sampling. The sample criteria used are:

a. Companies that are only in the transportation sector listed on the Indonesian Stock Exchange (IDX)
b. Daily closing price, for 31 days prior to the announcement of the first case of COVID-19 in Indonesia (28 February 2020 to 17 January 2020)
c. Daily closing price, for 31 days after the announcement of the first case of COVID-19 in Indonesia (2 January 2022 to 13 February 2022)

Based on the criteria above, the sample in this study amounted to 10 companies. Which is a list of company names as follows:

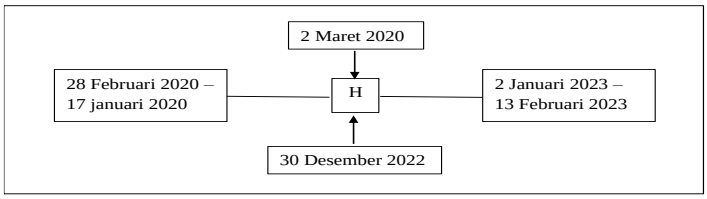
Table 2 Sample Company Data

No	Code	Company name
1	ASSA	Adi Sarana Armada Tbk.
2	BIRD	Blue Bird Tbk.
3	BPTR	Batavia Prosperindo Trans Tbk.
4	CMPP	AirAsia Indonesia Tbk.
5	GIAA	Garuda Indonesia (Persero) Tbk
6	HELI	Jaya Trishindo Tbk.
7	LRNA	Eka Sari Lorena Transport Tbk.
8	SAFE	Steady Safe Tbk
9	TAXI	Express Transindo Utama Tbk.
10	WEHA	WEHA Transportasi Indonesia Tbk.

Source: https://www.idx.co.id/id/data-pasar/data-saham/register-saham

The research period for the COVID-19 pandemic event from 2 March 2020 to 30 December 2022 as can be described and can also be described as follows:

Figure 1
Observation Period



The date when the announcement of COVID-19 was announced was used as t = 0. The observation period (event window) in this study for abnormal returns was 31 days before the announcement of COVID-19 and 31 days after the announcement of COVID-19.

The analysis used in this study is descriptive statistical analysis which provides an overview or description of a data seen from the mean, standard deviation, and variance. The first test in this study using the data normality test was carried out as a condition for conducting data analysis, to find out what test would be carried out afterwards. The purpose of the normality test is to detect the distribution of data in one variable. To detect the normality of the data, one sample Kolmogorov-Smirnov test can be used. The one sample Kolmogorov - Smirnov statistical test was chosen because it is more sensitive in detecting data normality compared to testing using graphs. After that, testing the hypothesis used in this study is the different test. If the data is normally distributed, the Paired Sample T Test will be carried out, if the data is not normally distributed, the Wilcoxon Signed Rank Test will be carried out.

RESULTS AND DISCUSSION

Descriptive statistics

The results of descriptive statistics on the share price of the transportation sector can be seen in table 2.1 below:

Table 3
Stock Price Descriptive Statistics

	N	Minimum	Maximum	Mean	Std.deviation
Stock price before covid-19	310	50.00	2610.00	437,62	672,77
Stock price after covid-19	310	50.00	35230.00	640,38	876,77
ValidN(listwise)	310				

Data source: processed data

From table 3 above it can be seen that before the announcement of Covid-19 the share price had a minimum value of 50, a maximum value of 2,610, an average (mean) of 437.62 and a standard deviation of 672.77. Meanwhile, after the announcement of Covid-19, the share price had an average share price of 640.38 and a standard deviation of 876.77. The average after the announcement of covid-19 shows a 32% increase from the average before the announcement of covid-19. So that it can be seen that the average stock price after the announcement of Covid-19 in Indonesia showed a higher number than before the announcement of the first case of Covid-19.

The results of descriptive statistics on the transaction volume of the transportation sector shares can be seen in table 2.2 below:

Table 4
Descriptive Statistics of Stock Transaction Volume

	N	Minimum	Maximum	Mean	Std.deviation
Stock transaction volume before covid-19	310	0	59.034.200.00	3.221.539,32	452.439,27
Stock transaction volume after covid-19	310	0	97.488.700.00	4.367.049,15	547.875,01
Valid N(listwise)	310				

Data source: processed data

From table 4 above it can be seen that before the announcement of Covid-19 the volume of stock transactions had a minimum value of 0, a maximum value of 59,034,200, an average (mean) of 3,221,539.32 and a standard deviation of 452,439.27.Meanwhile, after the announcement of Covid-19, the volume of stock transactions had an average share price of 4,367,049.15 and a standard deviation of 547,875.01.The average after the announcement of covid-19 shows a 28% increase from the average before the announcement of

covid-19. So that it can be seen that the average stock price after the announcement of Covid-19 in Indonesia showed a higher number than before the announcement of the first case of Covid-19.

Normality test

The results of the management of the normality test data used are the One Sample Kolmogrov-Smirnov Test, in which it can be seen that if the significance value is > 0.05 then the studied data is not normally distributed, meanwhile if the significance value is <0.05 then the studied data is not normally distributed.The normality test on stock prices, stock transaction volume, and abnormal returns can be seen in the table below:

Table 5 Stock Price Data Normality Test

One Sample Kolmogorov-Smirnov Test

		stock before	stock after
N		310	310
NormalParameters[a,b]	Mean	439.03	639.63
	Std.Deviation	680.175	892.768
MostExtremeDifferences	Absolute	.330	.339
	Positive	.330	.339
	Negative	-.284	-.254
TestStatistic		.330	.339
Asymp.Sig.(2-tailed)		.000[c]	.000[c]

Data source: processed data

Based on the normality test in table 5, it shows that stock prices have a significance value of 0.00, which means less than 0.05. This can be interpreted that the data is not normally distributed.

Table 6 Stock Transaction Volume Data Normality Test

One Sample Kolmogrov-Smirnov Test

		volumebefore	volumeafter
N		310	310
NormalParameters[a,b]	Mean	3211132.90	4367049.1525
	Std.Deviation	7717907.832	9410062.34393
MostExtremeDifferences	Absolute	.339	.321
	Positive	.332	.244
	Negative	-.339	-.321
TestStatistic		.339	.324
Asymp.Sig.(2-tailed)		.000[c]	.000[c]

Data source: processed data

Based on the normality test in table 6, it shows that the volume of stock transactions has a significant value of 0.00, which means it is less than 0.05. This can be interpreted that the data is not normally distributed.

Table 7 Abnormal Return Data Normality Test

One Sample Kolmogorov-Smirnov Test

		Abnormal Re-turnBefore	*AbnormalReturn Afrter*
N		310	310
NormalParameters[a,b]	Mean	.0039039	NormalPa-rameters[a,b]
	Std.Deviation	.03310510	.19132237
MostExtremeDifferences	Absolute	.268	Most ExtremeDif-ferences
	Positive	.208	.259
	Negative	-.268	-.385
Test Statistic		.268	.099
Asymp.Sig. (2-tailed)		.000[c]	.200[c,d]

Data source: processed data

Based on the normality test in table 4.6, it shows that the abnormal return has a significance value of 0.200, which means it is greater than 0.05. This can be interpreted that the data is normally distributed.

Hypothesis Testing

The Wilcoxon signed test can be used to test the significance of the comparison of two samples that are interconnected or correlated but not normally distributed(Sugiyono, 2018) (Sugiyono, 2018).As a reference in making a decision to accept or reject Ho on the Wilcoxon signed test is if the value (Asymp sig <0.05) then the hypothesis can be rejected. if the value (Asymp sig > 0.05) then the hypothesis can be accepted. Then the results of the Wilcoxon signed rank test test for stock prices, stock transaction volume, and abnormal return data can be seen in the table below.

Table 8 Wilcoxon Signed Rank Test Stock Price Test

Test Statistics

	stock price after - stock price before
Z	-5.672[b]
Asymp.Sig.(2-tailed)	.000

Data source: processed data

Based on table 8 above, it can be seen that the significance value of stock prices before and after Covid-19 in Indonesia is 0.01 <0.05. This shows that there are significant differences in stock prices before and after Covid-19 in Indonesia.

Table 9

Wilcoxon Signed Rank Test Share Transaction Volume Test

Test Statistics

	transaction volume after - transaction volume before
Z	-3.244[b]
Asymp.Sig.(2-tailed)	.001

Data source: processed data

Based on table 10 above, it can be seen that the significance value of stock prices before and after Covid-19 in Indonesia is 0.01 <0.05. This shows that there are significant differences in stock prices before and after Covid-19 in Indonesia.

Table 10
Paired Sample T-Test Abnormal Return parametric test
Paired Samples Correlations

		N	Correlation	Sig.
Pair1	ABS_BEFORE&ABS_AFTER	310	-.325	.075

Data source: processed data

Based on table 10 above, it can be seen that the significance value for stock prices before and after Covid-19 in Indonesia was 0.75 <0.05. This shows that there is no significant difference in stock prices before and after Covid-19 in Indonesia.

CONCLUSION

The Difference in Stock Prices Before and After COVID-19

The results of testing the hypothesis test using the Wilcoxon Signed Rank Test stock prices before and after Covid-19 produce an Asymp sig value of 0.000 <0.05 which means that the significance result is smaller than 0.05 then H1 is accepted which means that Covid-19 has implications or has an impact on changes in stock prices that addressed from the results of this study.

This decline can be seen from the low average value and standard deviation of stock prices after the announcement of Covid-19 in Indonesia. The share price decreased after the announcement of Covid-19, namely by 11%. This decline occurred due to the government implementing several policies such as Large-Scale Social Restrictions (PSBB), lock down and other policies.Significant changes in stock prices can cause an inefficient market.

Discussion of the results of hypothesis testing using SPSS found evidence that there were differences in stock prices in the period before and after Covid-19. The results of this study support the research of (Joanne V. Mangindaan & Manossoh, 2020)Joanne V. Mangindaan&Manossoh (2020) which states that there is a significant difference between stock prices before and after the Covid-19 event. Likewise research conducted by (Rafsyanjani & Wuryani, 2021)Rafsyanjani&Wuryani (2021) which stated that the announcement of the Covid-19 had a very significant effect on reducing the price of shares traded with transportation companies.

Differences in Stock Transaction Volume Before and After COVID-19

The results of testing the hypothesis test using the Wilcoxon Signed Rank Test the volume of stock transactions before and after Covid-19 produces an Asymp sig value of 0.000 <0.05 which means the significance result is smaller than 0.05 then H2 is accepted which means COVID-19 has implications or impacts on changes in transaction volume shares addressed from the results of this study.

With the decline in stock prices, of course, due to increased trading volume. This is the same as research conducted by (Sri Yuliwarti , Nining Widiyanti, M.G Suwarni, 2020) Sri Yuliwarti, NiningWidiyanti, M.G Suwarni (2020) which states that there is a significant difference in average trading volume, both short term and long term, for LQ45 stocks listed on the IDX between before and after the announcement of COVID-19 . but was rejected by research conducted by (Yohana Aperlina, 2022) Yohana Aperlina (2022), (Suryadi & Feranita, 2022)Suryadi&Feranita (2022), (Jao

& Jimmiawan, 2018)Jao&Jimmiawan (2018), (Rianti, 2021)Rianti (2021), which stated that there was no significant effect on stock transaction volume in the period before and after COVID -19.

Differences in Abnormal Returns Before and After COVID-19

The results of testing the hypothesis test using the Wilcoxon Signed Rank Test for abnormal returns before and after Covid-19 produce an Asymp sig value of 0.837 <0.05, which means that the significance result is greater than 0.05, so H3 is rejected, which means that COVID-19 has no impact on changes in abnormal returns.

This study shows that there were no significant abnormal returns before and after the first announcement of COVID-19 in Indonesia. This reflects that investors did not carry out activities above normal and carried out stock buying and selling activities as usual at the time of the issuance of the presidential decree regarding the designation of COVID-19 as a national disaster.

Discussion of the results of hypothesis testing using SPSS found no evidence that there were differences in abnormal returns in the period before and after COVID-19. The results of this study support the research of (Wijayantini, 2015), (Jao & Jimmiawan, 2018)(Agfah & Azhari, 2021)(Hermuningsih et al., 2021) which state that there is no difference between before and after abnormal returns.

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