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COMPARATIVE ANALYSIS OF AVERAGE ABNORMAL RETURN, AVERAGE TRADING VOLUME ACTIVITY AND AVERAGE BID-ASK SPREAD BEFORE AND AFTER COVID-19 ANNOUNCEMENT IN INDONESIA (EVENT STUDY ON IDXHIDIV20 INDEX)

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ABSTRACT

The purpose of this research is to analyze differences in the average abnormal return, the average trading volume activity, and the average bid-ask spread on Idxhidiv20 stocks before and after announced on Covid-19 in Indonesia from 17 February 2020 to 16 March 2020. This research uses the event study method. In this method, we observe the average abnormal returns, average trading volume activity, and the average bid-ask spread within 10 days before, after the event date. This research uses secondary data, the data is collected from Indonesia Stock Exchange and Finance.yahoo.com. The data of this research consist of: day's closing price, Index of Idxhidiv20 stocks, daily trading volume, and the number of shares of the stocks. The samples of this research consist of Idxhidiv20 stocks that were listed in the Indonesia Stock Exchange. The results showed that: (1) Based on statistical tests on the average abnormal stock returns during the event, the finding is that there is an average abnormal return but not significant before and after the announcement of Covid-19 in Indonesia. This finding indicated that investors are anticipating the Covid-19 outbreak. Most of the Abnormal returns are negative: it means that the informations from the event is bad news. (2) From the paired sample test of the average trading volume activity before and after the event, it shows that statistically there is a significant difference before and after the event. The mean value of the average trading volume activity shows that there is an increase of the average trading volume after the event than before the event comparing with the average trading volume before the event. (3) From the paired sample test of the average bid-ask spreads 10 days before and 10 days after the announcement of Covid-19 in Indonesia,

showing different statistics for 10 days before and 10 days after Covid-19 was announced in Indonesia. The average value of BAS produced indicates an increase in the average price liquidity in the reporting period, whereas the average price liquidity before.

INTRODUCTION

The Covid-19 Pandemic that occurred in early 2020 was a global event including a major economic event. Until now, the world has been shocked by the Corona virus which began to plague since the beginning of 2020. Launching data compiled by John Hopkins University (25/2/2020), the number of positive patients infected with the Corona virus has reached 79,571, with the number of deaths recorded from around the world as many as 2,630 people. In several countries such as South Korea, Italy, Iran and Japan, they are experiencing a high increase in cases. And in Indonesia there were cases of Corona virus infection occurring in early March 2020.

After the announcement of a case of being infected with the Corona virus among two Indonesian citizens (WNI) in Depok on March 2 to March 16, the Composite Stock Price Index (IHSG) decreased by -12.5%, where on March 2 2020 the JCI closed at 5,361 points and on March 16, JCI closed with 4,691 points. This can be seen in the table as follows:

Table1. Changes in the Composite Stock Price Index from 2 to 16 March 2020

Date	IHSG	Change	
		Point	%
2020-03-02	5361		
2020-03-03	5519	158	2,95
2020-03-04	5650	131	2,37
2020-03-05	5638	-12	-0,21
2020-03-06	5498	-140	-2,48
2020-03-09	5137	-361	-6,57
2020-03-10	5221	84	1,64
2020-03-11	5154	-67	-1,28
2020-03-12	4896	-258	-5,01
2020-03-13	4907	11	0,22
2020-03-16	4691	-216	-4,40

Based on the announcement of the Corona virus in Indonesia which took place on March 2, 2020, there was something that caught our attention, namely the decline in the value of the idxhidiv20 index, where Idxhidiv20 is an index of the price of 20 shares of listed companies that routinely distribute cash dividends and have dividend yields to its shareholders for the past 3 years. The Idxhidiv20 index is selected based on dividend yields, liquidity criteria, and market capitalization. Therefore, this study seeks to conduct an event study regarding the comparison of abnormal returns, trading volume activity and bid-ask spread using stocks listed on the Idxhidiv20 Index as samples. In Figure 1, it can be seen that the decline occurred in the Idxhidiv20 index as follows:

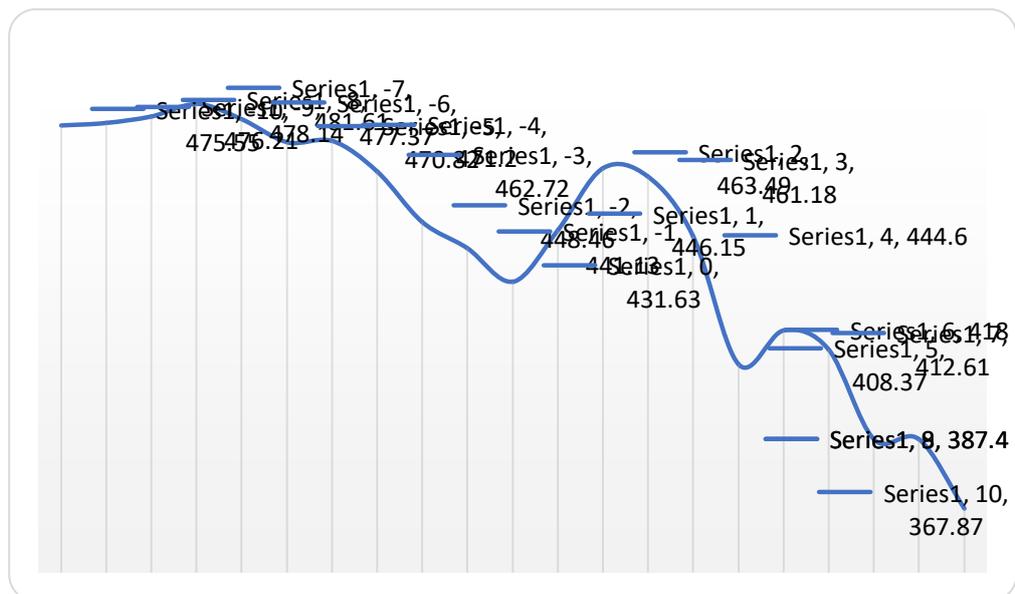


Figure1. Changes in the Idxhidiv20 Index

From Figure 1, it can be seen that a graph of the difference in price movements 10 days before and 10 days after the announcement of Covid-19 in Indonesia on the idxhidiv20 Index, which illustrates that stock prices fluctuate. This can be seen from the differences in the graphs of the 1st, 2nd, 5th, and 8th days which tend to be unstable (very steep ups and downs), where price movements after the announcement of Covid-19 are more extreme than price movements prior to the announcement of Covid-19 in Indonesia. In contrast to the graph before Covid-19 announcement, which has decreased slowly.

A lot of information published in the capital market affects the existence of abnormal returns, including the global crisis. Research on global crisis events was conducted by Satria et al. (2017) who tested the market reaction to China Black Monday on the IDX as measured by abnormal returns, the results showed that the market reacted positively to the global crisis "China Black Monday". Meanwhile, Munawarah (2009) conducted research on the 2008 global crisis and returns on the IDX stock market using an abnormal return approach, the results indicate that the global crisis has no significant effect on abnormal returns.

The following describes the abnormal return conditions that occurred on the idxhidiv20 Index on 17 February 2020 - 16 March 2020 as follows:

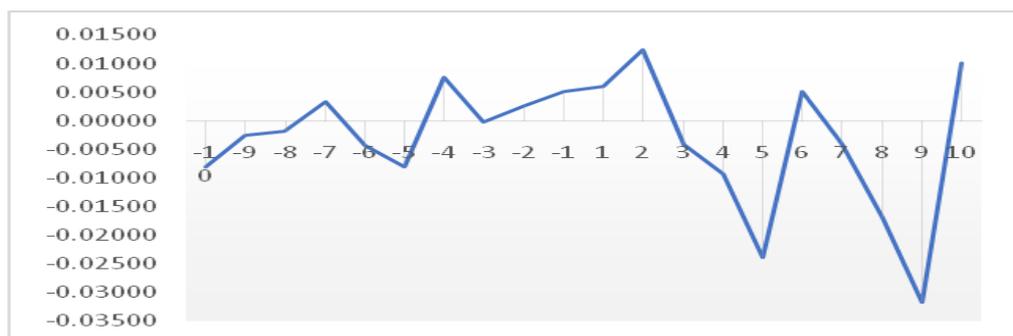


Figure 2. Comparison Chart of Abnormal Return 10 Days Before and After Covid-19 the Announcement in Indonesia

From Figure 2, it can be seen a graph of the difference in abnormal returns 10 days before and days after the announcement of Covid-19 in Indonesia on the idxhidiv20 Index which illustrates that stock prices fluctuate. This can be seen from the differences in the graphs of days 2, 3, 4, 6, 7, 8, 9, where the abnormal return after the event is greater than the abnormal return before the event. In contrast to the graphs on days -10, -9, -8, -7, -3, -2, to -1, the decline tends to be normal / not extreme where the abnormal return condition before the event is smaller than the abnormal return after the incident.

In addition, there are also many events that affect the capital market, especially economic events, but the indicator used is Trading Volume Activity. Like the event study research conducted by Munawarah (2009) which examines the market reaction to the global crisis using the Trading Volume Activity (TVA) indicator, the results show that there is no difference before and after the event.

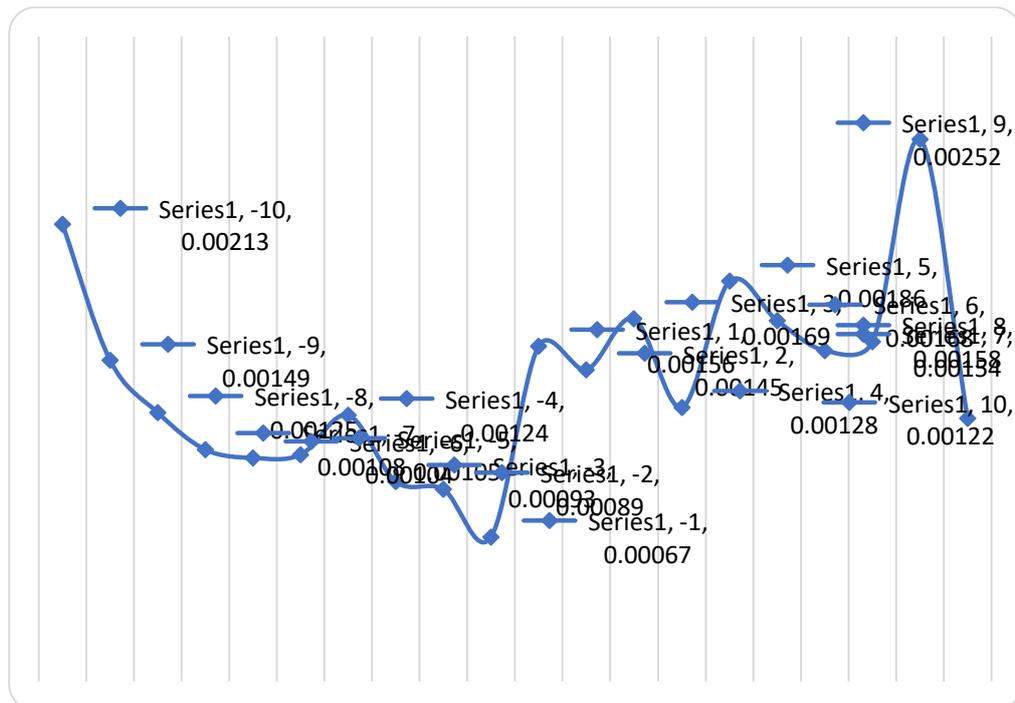


Figure 3. Comparison Chart of Trading Volume Activity 10 Days Before and After Covid-19 the Announcement in Indonesia

From Figure 3, it can be seen the graph of the difference in the average trading volume activity 10 days before and after the announcement of Covid-19 in Indonesia on the idxhidiv20 Index, which illustrates the difference in TVA. This can be seen from the difference in the graphs of days 2, 4, 6, 7, 10 which fluctuated where the trading volume after the event was greater than the trading volume before the event with the lowest score on day -10 of 0.0012. and the highest score on day 9 is 0.0025. In contrast to the graph of day -10 to day -1, it decreased slowly where the average trading volume before the event

was smaller than the trading volume after the event with the lowest score on day -10 of 0.0006 and the highest score at day -1 of 0.002. Another indicator used in event studies in the capital market is the Bid-Ask Spread. Like the research conducted by Irianti (2015) which examined the market reaction to stock split using the Bid-Ask Spread indicator, the results show that there are differences before and after the event. The following describes the conditions for the bid-ask spread that occurred on the idxhdiv20 Index on 17 February 2020 - 16 March 2020 as follows:

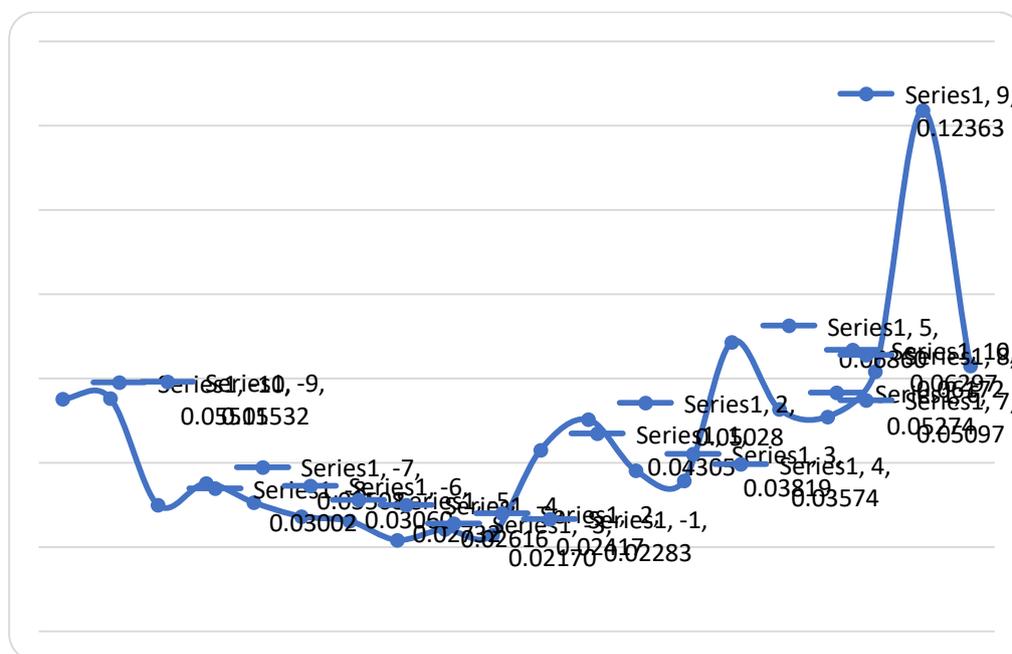


Figure 4. Comparison Chart of Bid-Ask Spread 10 Days Before and After Covid-19 the Announcement in Indonesia

From Figure4, it can be seen that the graph of the difference in the average bid-ask spread 10 days before and 10 days after the announcement of Covid-19 in Indonesia on the idxhdiv20 Index depicts BAS experiencing differences, resulting in decreased liquidity. This can be seen from the difference in the graph from day 1 to day 10 that fluctuates tends to increase, where the condition of the bid-ask spread after the event is greater than the bid ask spread before the event with the lowest score on day 4 of 0.0357 and the highest score on day. 9th is 0.1236. In contrast to the graph of day -10 to day-1, it decreased slowly where the condition of the bid-ask spread before the event was smaller than the bid ask spread after the event with the lowest score on day -8 of 0.02170 and the highest score on the day -2 equal to 0.1553.

This study uses a 20-day event window, which is 10 days before the event and 10 days after the Covid-19 pandemic event in Indonesia. The event study approach usually uses a short estimation period, in order to control for other information around the date of the event that can damage the research results (Ranjeeni& Sharma, 2015). In their research, Ranjeeni and Sharma used a 5-day event window with the Lehman Brother Bankruptcy event. Another researcher who used a short estimation period, namely Sanjay Kumar with the

title "Impact of Terrorism on International Stock Market" using a period of 6 and 10 days before and after the event, Beauliau with the title "Political Uncertainty and Stocks Market Return evidence from the Quebec Referendum" using period of 10 days before and after the event, MianSajidNazir et al. with the title "Impact of Political Event on Stocks Market Return" using 2, 5, 15 days before and after the event, Andre and Andhi with the title "Capital Market Reaction of Trade Wars" using the 7 day period before and after the event.

Based on the conditions described above, to test the strength of the information load from the Covid-19 pandemic in Indonesia on activities on the stock exchange or in other words to observe the capital market reaction. Thus, this study will examine the reaction of the capital market on the Idxhidiv20 Index for the Covid-19 pandemic.

LITERATURE REVIEW

Market reaction

An event study is a study that studies the market's reaction to an event whose information is published as an announcement. Testing the information content is intended to see the reaction of an event, including the Covid-19 event as a non-economic event. The announcement of Covid-19 in Indonesia does not directly interfere with the stock market, but it is one of the information that is absorbed by capital market players and to gain benefits in the future. This affects investors, which in turn, the market reacts to the information to strike a new balance. Market reaction is indicated by a change in the price of the security in question. This reaction can be measured using an abnormal return. In addition, in examining market reactions, researchers also use trading volume activity as an important indicator in measuring market reactions (Mahgianti, 2001).

Abnormal return

According to (Florensia and Susanti, 2020), return is said to be the feedback that is going to be obtained by every investor's investment on the capital in a company. Meanwhile, based on the research by Putra et al. (2019), return is one of the very important factors that intervene in investors' decisions making. Market return is also utilized by every investor as an analytical tool in deciding to invest in the capital market or not (Nugraha & Susanti, 2019). Abnormal return and excess return are the advantages of return that actually occur against normal returns. Abnormal return is the difference between the actual return that occurs with the expected return, formulated as follows (Jogiyanto, 2017):

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

Notes:

$AR_{i,t}$ = abnormal return stocki in period t

$R_{i,t}$ = actual return that occurred for the I stock in period t
 $E(R_{i,t})$ = expected rate of return in period t

Trading volume activity

Trading volume is a measure of the volume of certain shares traded, indicating the ease of trading these shares. The magnitude of the trading volume variable is known by observing stock trading activities which can be seen through the Trading Volume Activity (TVA) indicator. According to Widayanto and Sunarjanto (2005), "Trading Volume Activity (TVA) is an indicator that can be used to see the capital market's reaction to information through the movement parameters of the volume of stock trading activities in the capital market". The calculation of TVA is done by comparing the number of shares of the company that are traded in a certain period with the total number of shares outstanding of the company during the same period (Jogiyanto, 2017). Calculated using the formula:

$$TVA = \frac{\text{trading volume of shares in period } t}{\text{number of shares outstanding in period } t}$$

Bid ask spread

Liquidity can be measured by the density of the bid-ask spread, which is the difference between the lowest price that traders are willing to sell and the highest price that buyers are willing to buy. This bid-ask spread measurement can be used as a proxy in statistical analysis. Measurement of liquidity can also be done by focusing on short term volatility. According to Arifin (2007) conceptually, the bid-ask spread on the securities market is an economic compensation given to market makers to encourage them to remain willing to provide liquidity services. Market makers are expected to always be ready to sell securities when someone wants to buy and ready to buy securities when someone wants to sell securities. The difference between the selling price and the buying price offered by a market maker to potential investors is called the quoted spread, while the difference between what the market maker actually receives and what is actually paid by the market maker for a security is called the effective spread. In general, the effective spread is lower than the quoted spread. The bid-ask spread can also be interpreted as the difference between the highest purchase price desired by the buyer of a stock and the lowest selling price offered by the seller of the stock. The size of the bid-ask spread influences buyers (investors) in making decisions in buying and selling shares. The smaller the bid-ask spread, the more liquid the stock will be and vice versa. The formula used to calculate the bid-ask spread (BAS) is:

$$BAS = \frac{\text{ask price} - \text{bid ask}}{\text{ask price}}$$

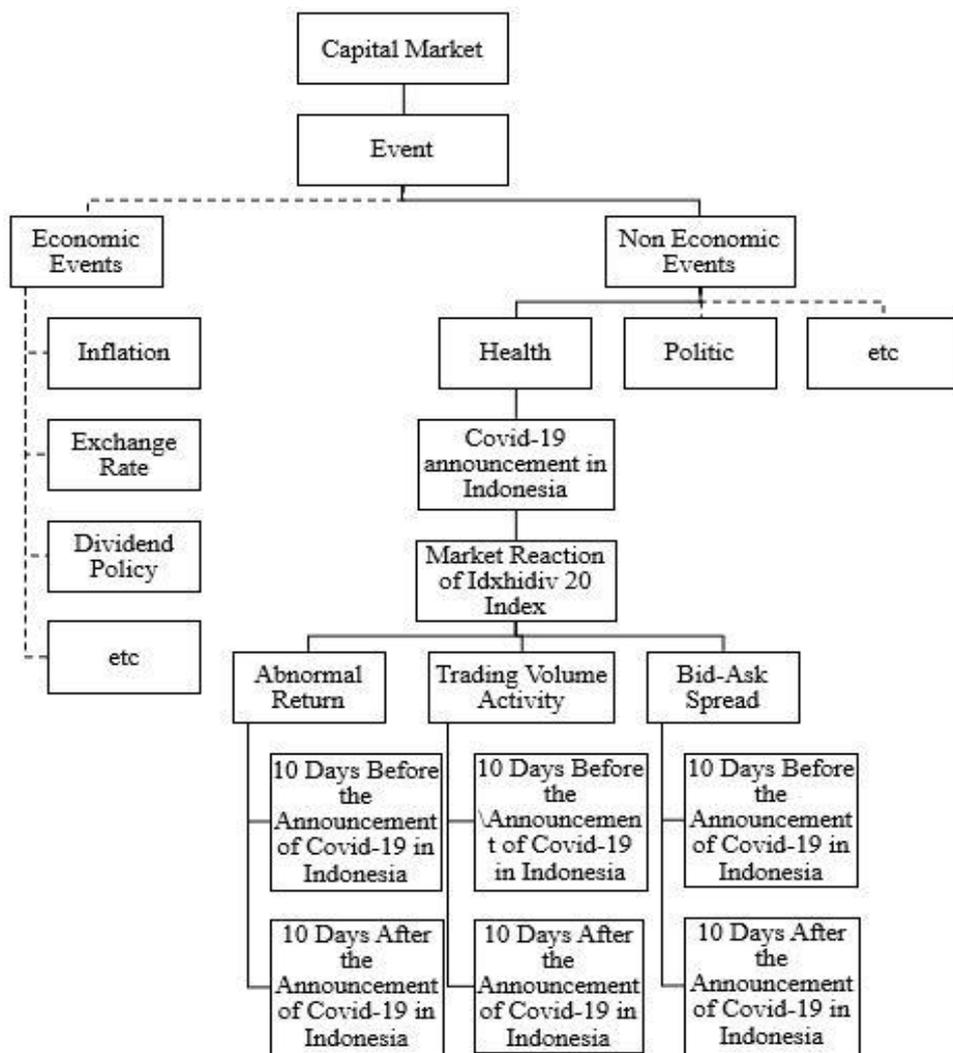


Figure 5 Conceptual Framework

H₁: There is a significant difference between the 10 days abnormal return before and 10 days after the announcement of Covid-19 in Indonesia.

H₂: There is a significant difference between the 10-day trading volume activity before and 10 days after the announcement of Covid-19 in Indonesia.

H₃: There is a significant difference between the 10-day bid-ask spread before and 10 days after the announcement of Covid-19 in Indonesia.

METHODS

This type of research is descriptive research and comparative research. The type of data needed and used to support the analysis and hypothesis testing in this study is secondary data provided by companies on the Indonesia Stock Exchange (BEI), credible news websites (including finance.detik.com, cnbc.co.id and www.jpnn.com), the Indonesia Stock Exchange website (www.idx.co.id), Indonesian Capital Market Directory (ICMD), and finance.yahoo.com. The data is then processed into necessary data for analysis and hypothesis testing. The population that will be the observations in this study is the stock movement data listed in the Idxhidiv20 Index. In this study, the sample being observed is data on the movement of stocks listed on the Idxhidiv20 Index for 10 days before and 10 days after the announcement of

Covid-19 in Indonesia, namely on March 2, 2020. The sample was taken by using purposive sampling technique.

Table 2. List of Shares included in the IDX High Dividend20 Index (IDXHIGHDIV20) for the period February 2020 to January 2021

No.	Kode	Nama Saham	Sub Sektor
1.	ADRO	Adaro Energy Tbk.	Coal Mining
2.	ASII	Astra International Tbk.	Automotive and Components
3.	BBCA	Bank Central Asia Tbk.	Bank
4.	BBNI	Bank Negara Indonesia (Persero) Tbk.	Bank
5.	BBRI	Bank Rakyat Indonesia (Persero) Tbk.	Bank
6.	BMRI	Bank Mandiri (Persero) Tbk.	Bank
7.	CPIN	Charoen Pokphand Indonesia Tbk	Animal Feed
8.	GGRM	Gudang Garam Tbk.	Tobacco Manufacturers
9.	HMSP	H.M. Sampoerna Tbk.	Tobacco Manufacturers
10.	INDF	Indofood Sukses Makmur Tbk.	Food and Beverages
11.	INTP	Indocement Tunggai Prakarsa Tbk.	Cement
12.	ITMG	Indo Tambangraya Megah Tbk.	Coal Mining
13.	KLBF	Kalbe Farma Tbk.	Pharmaceuticals
14.	LPPF	Matahari Department Store Tbk.	Retail Trade
15.	PGAS	Perusahaan Gas Negara Tbk.	Energy
16.	PTBA	Bukit Asam Tbk.	Coal Mining
17.	TLKM	Telekomunikasi Indonesia (Persero) Tbk.	Telecommunications
18.	TOWR	Sarana Menara Nusantara Tbk.	Non-Building Construction
19.	UNTR	United Tractors Tbk.	Wholesale (Durable & NonDurable Goods)
20.	UNVR	Unilever Indonesia Tbk.	Cosmetics and Household

This research uses event study analysis techniques to process and discuss data obtained from the Covid-19 announcement in Indonesia. The research period (event window) in this study which is used to analyze the differences in abnormal returns, trading volume activity and bid-ask spread before and after the announcement of Covid-19 in Indonesia is 21 days. The research period (event window) for 21 days consists of 10 days before the event (pre-event), namely t-10 on February 14, 2020 to t-1 on February 28, 2020, the day of the event t-0 (event-date) which occurred on March 2, 2020 and 10 days after the event (post-event), namely from t + 1 on March 3, 2020 to t + 10 on March 16, 2020.

RESULTS AND DISCUSSION

The following are the test results using the paired sample t-test in the SPSS 20 program as follows:

Table 3 Results of Different Test (Paired Sample T-test) Average Abnormal Return 10 Days Before and 10 Days After Covid-19 Announcement in Indonesia

Paired Samples Test								
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Sebelum - sesudah	,004985	,016897	,00528035	-,006959	,01692998	,944	9	,370

Sumber: data diolah tahun 2019

Based on Table 3, it shows the results of the paired different sample test the average abnormal return 10 days before and 10 days after the announcement of Covid-19 in Indonesia. The table shows the t count of 0.944 with a significance value of 0.370 which is greater than the significance level of 0.05. Thus, it can be concluded that H0 is accepted or there is no significant difference between abnormal returns 10 days before and 10 days after the announcement of Covid-19 in Indonesia, so the first hypothesis is rejected. Investors did not react to the event of the Covid-19 announcement in Indonesia, it was possible for investors to wait and see carefully the ongoing events. Judging from the test results, this directly affects investors' policies in investing and the activities of capital market players in conducting transactions in the capital market.

Table 4 Results of Different Test (Paired Sample T-test) Average Trading Volume Activity 10 Days Before and 10 Days after Covid-19 Announcement in Indonesia

Paired Samples Test								
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Sebelum - Sesudah	-,000481	,000575	,000181	-,000872	-,000049	-2,535	9	,032

Sumber: data diolah

Based on Table 4, it shows the results of the paired sample difference test of trading volume activity 10 days before and 10 days after the announcement of Covid-19 in Indonesia. The table shows the t count of -2.535 with a significance value of 0.032 which means it is smaller than the significance level of 0, 05. Thus, it can be concluded that H₂ is accepted or there is a significant difference between trading volume activity 10 days before and 10 days after the announcement of Covid-19 in Indonesia, so the second hypothesis is accepted. Reaction of investors at the Covid-19 announcement in Indonesia. it is possible for investors to wait and see carefully on ongoing events. Judging from the test results, as a non-economic factor that is actually quite important, it directly affects investors' policies in investing and the activities of capital market players in conducting transactions in the capital market.

Table 5 Results of Different Test (Paired Sample T-test) Average Bid-Ask Spread 10 Days Before and 10 Days After Covid-19 Announcement in Indonesia

	Sesudah - Sebelum
Z	-2,191 ^b
Asymp. Sig. (2-tailed)	,028

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Sumber: data diolah

Based on Table 5, it shows the results of the difference test on the average bid-ask spread 10 days before and 10 days after the announcement of Covid-19 in Indonesia using the Wilcoxon signed ranks test. The table shows that the Z value obtained is -2.191 with a P value (Prob> (Z)) and Asymp. Sig (2 Tailed) of 0.028 which means it is smaller than the 0.050 significance level. Thus, it can be concluded that H₃ is accepted or there is a significant difference between the average bid-ask spread 10 days before and 10 days after the announcement of Covid-19 in Indonesia, so that the third hypothesis is accepted. Judging from the test results, the capital market was affected by the Covid-19 incident in Indonesia, this directly affected the liquidity activity of the bid-ask spread carried out by capital market players in conducting transactions on the capital market.

DISCUSSION

This research using an event study on the Covid-19 outbreak in Indonesia shows that this event contains information content that causes market players to react to the event. The Covid-19 incident in Indonesia is a non-economic event that can hamper the global economy, so there are concerns from investors. Information that has been anticipated is instantaneous and its effect will be felt immediately at the time of the incident or after it (Ang, 1997). The occurrence of Covid-19 in Indonesia provides a signal about the existence of bad information about stock exchange activity or the decline in stock price

movements, which will pose a risk to investors and for their investment (bad news). This can be seen from the changes in the average abnormal return, the average trading volume and the average bid-ask spread before and after the Covid-19 announcement in Indonesia.

The negative market reaction before and after the Covid-19 incident in Indonesia was caused by a quite large drop in the JCI which was the result of panic by foreign and local investors over this outbreak which is suspected of causing a global recession / crisis, so that investors anticipate securing their assets in the capital market. Meanwhile, 3 days after the announcement of Covid-19 in Indonesia, there was a positive reaction to the government's policy for companies to conduct buybacks without a GMS, and the existence of minimum restrictions to reduce investor panic and try to conducive the market. However, the following day the market reaction was negative, which meant they were still anticipating the decline in share prices that would occur due to the Covid-19 pandemic. A significant difference in abnormal returns did not occur in the announcement of Covid-19 in Indonesia, this was due to the prolonged pandemic of the Covid-19 outbreak so that stock price movements continued to decline. Meanwhile, TVA and BAS experienced significant differences before and after the incident, this was due to investors' confidence that the existence of Covid-19 in Indonesia had hampered the economy in Indonesia, resulting in a decrease in income from almost all companies on the Indonesia Stock Exchange.

CONCLUSION

This research finding is that there is an average abnormal return but not significant before and after the announcement of Covid-19 in Indonesia. Most of the abnormal returns are negative; it means that the informations from the event is bad news. From the paired sample test of the average trading volume activity before and after the event, it shows that statistically there is a significant difference before and after the event. The mean value of the average trading volume activity shows that there is an increase of the average trading volume after the event than before the event comparing with the average trading volume before the event. From the paired sample test of the average bid-ask spreads 10 days before and 10 days after the announcement of Covid-19 in Indonesia, showing different statistics for 10 days before and 10 days after Covid-19 was announced in Indonesia. The average value of BAS produced indicates an increase in the average price liquidity in the reporting period, whereas the average price liquidity before.

After observing and analyzing the results of the research, the authors see that there are several things that can be used as input to interested parties, including; Investors should seek sufficient information in carrying out stock trading activities so that the return which is the investor's goal can be realized. Investors are also expected not to rush into selling and to be more rational in making decisions. For the stock exchange authority, it is necessary to supervise the activities of the exchange, especially those related to economic and non-economic events that may affect the implementation of an orderly, fair and efficient securities trading. The government is expected to form policies that can protect investors in particular and the capital market in

general. For further researchers, it can determine the expected return besides the market adjusted model, namely the market model and the mean adjusted model. In addition, further research on the event study can make comparisons of market reactions on the Indonesia Stock Exchange with other country exchanges. Another thing that can be done by further researchers is research on other non-economic events, in order to increase knowledge and understanding of non-economic factors that are actually quite important for the company.

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