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LQ 45 CAPITAL MARKET REACTION SPEED DURING COVID-19 PANDEMIC

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ABSTRACT : The study explored the speed of market reaction on the LQ-45 index on the Indonesia Stock Exchange before and after the Covid-19 pandemic eventthe estimation period is generally the period before the event period carried out using the estimation period for 60 days before the event day. The reason for taking the research period (event period) t-3 and t4 or in this study t-5 and T+5 is to avoid any confounding effect due to the announcement of stock splits, mergers, and rights issues.The results of the study using the event study approach in the Covid-19 pandemic event show that this event has information content, the reaction is shown by changes in the price of securities, this is shown by an abnormal increase in stock returns during the pandemic. This can be seen from T-5 to T-0 which moves in a volatile manner. But at the time of t + 2 experienced a drastic increase to t+5.Based on the results of the analysis and testing that has been done previously, there are several things that can be concluded that there are significant differences in lq45 stock prices and stock returns before and after the National announcement of the Covid-19 outbreak. The existence of Covid-19 cases in Indonesia caused the stock price to decline, it was certainly offset by a decrease in the value of stock returns.

KEYWORDS: *Reaction speed, LQ-45, Covid-19, Event Study, Abnormal return*

I.   INTRODUCTION

The event, which occurred on March 2, 2020, for the first time the government announced two cases of Covid-19 positive patients in Indonesia. Riano (2020) mentioned that the SARS-CoV-2 type of coronavirus as thecause of Covid-19 had entered Indonesia since early January in an online discussion entitled "population mobilityand Covid-19: Social, Economic and political implications" on Monday, April 5, 2020. The increase in positive cases of Covid-19 brings securities to the stock exchange (iNews.id, 2020). The capital market is still depressed amid Indonesia's struggle against the covid-19 virus pandemic. The Joint Stock Price Index, the main benchmark index on the Indonesia Stock Exchange (IDX) is so depressed, as is the performance of mutual funds. Based on IDX data, until April 8, 2020 the JCI has dropped 26.44% with a foreign net sell record of Rp 15.01 trillion in the regular market, while in the non-regular market (cash and negotiation) there is a foreign net buy action of Rp 2.94 trillion.

The Covid-19 event, causing bond yields to surge, the Joint Stock Price Index (JCI) also moved very volatile and had reached its lowest level at 3. 937 on March 24 or contracted 37 percent from the position at the end of last year (Praditya, 2020). The effects of the Covid-19 pandemic also resulted in panic for investors and global businesses causing large capital outflows, global dollar tightness, and the pressure of weakening World exchange rates (Octa, 2020).

Some sentiment influenced the movement of LQ45. When the first two cases of Covid-19 wereencountered on March 2, for example, the share price fell by 1.68 percent. The share price fell deeper to 4.9 percent on March 23 in line with market concerns about the spread of the virus (Lidwina, 2020). Here are the JCIdata for 2020 in Figure 1.1 :

Figure 1.1 : Development of LQ45 Capital Market Return in Indonesia

Source : Data processed (2022)

in this case, there are several decreases in returns that are quite attention-grabbing, namely at the end of March 2020, which showed a very sluggish decrease in returns. In March 2020 the LQ45 stock index fell by 8.26% due to negative sentiment towards the increase in victims due to Covid-19 (Haryanto,2020). This resulted in a negative impact on the LQ45 stock index.

Fatimala's research, (2021) on before and after the announcement of covid-19 patients having stock returns of banking companies listed on the IDX, can be seen from the Abnormal differences in Return and significant Trading volume Activity. Ramadan research, (2021) on before and after the announcement of the Covid-19 Virus by President Joko Widodo there was an Abnormal difference in Return, but in Trading Volume Activity there was no significant difference to the announcement.

Based on the differences in the findings of previous studies, it is interesting to analyze further how the speed of capital market reaction in responding to capital market anomalies, especially Covid-19 cases. Various studies of events in the capital market have not yet examined the speed of capital market reaction to capital market anomalies during the Covid-19 pandemic by using stock return and abnormal stock return variables.

II.　　LITERATURE REVIEW

Although the efficient market hypothesis introduced by Fama (1970) has become an acceptable concept in the field of finance, many studies have found the existence of events that contradict the efficient market. An incident that contradicts the efficient market hypothesis is called a market anomaly. According to Jones (1996), market anomalies are events that are opposite or contrary to the concept of efficient capital market theory and the causes of such events cannot be explained easily. Anomaly is a technique or strategy that appears to contradict the concept of market efficiency (Jones, 1996). This anomalous event makes the market move with a structured at some time. So that it is no longer random and predictable patterns of return movements by investors that can be used as a reference in determining abnormal returns. Levi (1996) grouping anomalies that occur in the capital market into four accounting anomaly, *accounting anomaly, seasonal anomaly, event anomaly, company anomaly.*

Measuring market reactions using return as the value of price changes is commonly used by researchers. For investors, observation of an event is important because the content of information in it can affect investment decisions. Examples of information content in question such as the existence of corporate actions in the form of stock splits, initial public offering (IPO) events, and information related to the publication of the company's financial statements. The changes of the information are then used in a scientific approach that is in accordance with the rules of financial management and capital markets. However, from any scientific approach still need to anticipate many factors that can influence out of control. Therefore, investors do not always get positive returns and often suffer losses (abnormal returns). Investors prefer to buy a certain price then sell at a better price, then investors get a normal profit (Suwaryo, 2008).

This division of the efficient market into three forms gave rise to various studies that looked at the pattern of investor behavior in the capital market. From various studies that exist then emerged a concept that deviates from the concept of efficient market. This deviation from the concept of efficient market is often referred to as an efficient market anomaly, this is because the factors that cause it are difficult to explain exactly. Jones (1996) in Hartono (2013) suggests that market anomalies as techniques or strategies that are opposed to the concept of an efficient market. Jones (1996) defines market anomalies as a form of strategy or technique because the results caused by these market anomalies allow investors to get the opportunity to obtain abnormal profits by relying on various events (events) that occur in the capital market. According to Alteza (2007) market anomaly is an exception of rule or model, the meaning is an anomaly is a deviation from the model or concept of efficient market.

This reaction is usually measured using the concept of abnormal return. Bowman in Muhammad SyaifulMuzhab (2017) defines an event study as a study that involves analyzing the behavior of securities prices around the time of the event. This is almost in line with what was expressed by Strong (1992) in the Journal MuhammadSyaiful Muzhab (2017).

III. DATA AND METHODOLOGY

3.1 Sample Data

The type of data in this study is secondary data. Secondary Data was obtained from Yahoo Finance with vulnerable time 2019 to 2020 during the vulnerable time of the Covid-19 pandemic published by the Statistical Publication Unit Research and Development Division Indonesia Stock Exchange (IDX) Indonesia Stock Exchange. The Data includes published financial statement data recorded on IDX LQ 45 in vulnerable time 2019 to 2020.

The data sources used in this study consist of:

A.   The publication date data on the LQ 45 index for 2019 to 2020 was obtained from the Yahoo Finance LQ 45 Index.
B.   Daily trading Volume during the observation period, i.e. for 11 days (i.e. t-5, t0 to T+5). This Data is used to calculate abnormal returns obtained from Yahoo Finance lq 45 Index.

3.2 Methodology

Data analysis techniques in this study conducted through several ways, among others :

3.2.1 Uji T Paired test

Paired t-test or paired t-test is used as a comparative or difference test when the data scale of the two variables is quantitative (interval or ratio). This test is also called the pairing t-test. Paired t-test is a parametric difference test on two paired data. In accordance with this understanding, it can be explained in more detail that this test is intended for difference tests or comparative tests. This means comparing whether there is a difference in the mean or average of two paired groups. Paired means that the data source comes from the same subject.
Paired t-test (paired t-test) is one of the hypothesis testing methods where the data used is not free (paired). The characteristics most often encountered in paired cases are one individual (object of research) subjected to 2 different treatments. Although using the same individual, researchers still obtained 2 kinds of sample data, namely the first treatment data and data from the second treatment.

Figure 4.1

Measurement of event Study related to the determination of time span
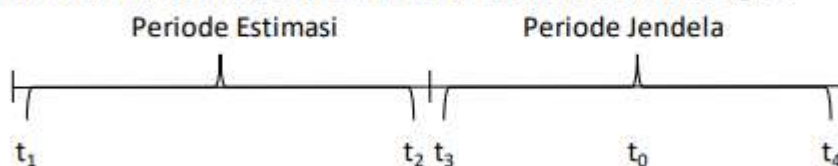
Periode estimasi (*estimation period*) generally, the period before the event period is carried out using an estimated period for 60 days before the event day. The period of the event is taken short because so that there is a rapid market reaction so that investors get a quick transformation as well. T in Figure 4.1 can be explained that T1 to T2 is the estimation period in this study using 60 days estimation period, T0 to T3 is the window period. Reasons for taking the research period (*event periode*) t - 3 and t4 or in this study t-5 and T+5 is to avoid any confounding effect due to the announcement of stock splits, mergers, and rights issues.

3.2.2 Determining Testing Criteria

If as a reference is H0 (zero) (Agung, 2005) :
1.   H0 is accepted if thitung < t-table, or p-value in sig column. (2-tailed) > significance level (DisneySea).
2.   H0 is issued If t-count > t-table, or the p-value in the sig column. (2-tailed) < significance level (DisneySea).

If instead Ha used as acceptance (Agung, 2005) :

1. T-table, or p-value in the sig column. (2-tailed) < significance level (DisneySea).
2. Ha is issued If t-count < t-table, or the p-value in the sig column (2-tailed) > significance level (Trojans).

IV. EMPIRICAL RESULT

A. 4.1 Statistical Analysis

Normality Test

Normality test aims to test whether the data is distributed normally or not. Normality test of data in this study was conducted using Kolmogorov Smirnov one sample test for each variable. If the results of the test of one sample kolomogorv smirnov has a significance value of 0.05, it can be said that the variable is normally distributed.

Figure 5.1 : Testing the normality of Stock Return data

One-Sample Kolmogorov-Smirnov Test		BeforeRit	AfterRit
N		5	5
Normal Parameters[a,b]	Mean	-16761859	-9791966.4
	Std. Deviation	11694629.5	50573321.9
Most Extreme Differences	Absolute	.234	.208
	Positive	.234	.173
	Negative	-.184	-.208
Kolmogorov-Smirnov Z		.523	.466
Asymp. Sig. (2-tailed)		.947	.982

a. Test distribution is Normal.
b. Calculated from data.

Source : Data processed (2022)

In the calculation of this stock return, what is needed is daily stock price data during the observation period, which is 5 days before the event and 5 days after the event. In the normality test output above (table 5.1) it appears that the number of observations BeforeRit (Return before Covid-19) 5 and AfterRit (Return before Covid-19) 5 with an average value (mean) BeforeRit (Return before Covid-19) of -16761859 and AfterRit (Return before Covid-19) of -9791966.4 and standard deviation 11694629.5 for BeforeRit and 505573321.9 for. The absolute value of BeforeRit is 0.234 and AfterRit is 0.208 with Kolmogorov Smirnov's z value for BeforeRit is 0.523 and AfterRit is 0.466. This z value gives a p-value of 0.947 for BeforeRit and 0.982 for p - value AfterRit which means that the P-value of BeforeRit and AfterRit is greater than 0.05 so that h0 is accepted. If H0 is received, then stock return data before Covid-19 and stock return data after Covid-19 have a normal distribution.

Figure 5.2: Abnormal data return normality testing

One-Sample Kolmogorov-Smirnov Test		BeforeARit	AfterARit
N		5	5
Normal Parameters[a,b]	Mean	3766281.80	-1699538.8
	Std. Deviation	2974681.90	7915875.02
Most Extreme Differences	Absolute	.234	.229
	Positive	.184	.229
	Negative	-.234	-.199
Kolmogorov-Smirnov Z		.523	.512
Asymp. Sig. (2-tailed)		.947	.956
a. Test distribution is Normal.			
b. Calculated from data.			

Source: Data processed (2022)

In the normality test output above it appears that the number of observations BeforeARit (Abnormal Return before Covid-19) 5 and AfterARit (Abnormal Return before Covid-19) 5 with an average value (mean) BeforeARit (Abnormal Return before Covid-19) of 3766281.80 and AfterARit (Abnormal Return before Covid-19) of -1699538.8 and standard deviation of 2974681.90 for BeforeARit and 7915875.02 standard deviation of afterarite. The absolute value of BeforeARit is 0.234 and AfterARit is 0.229 with Kolmogorov Smirnov's z value for BeforeARit is 0.523 and AfterARit is 0.512. This Z value gives a p-value of 0.947 for BeforeARit and 0.956 for p - value AfterARit which means that the P-value of BeforeARit and AfterARit is greater than 0.05 so that h0 is accepted. If H0 is received, then Abnormal stock Return data before Covid-19 and Abnormal stock Return data after Covid-19 have a normal distribution.

4.1.2 Uji Paired T- Test

The Paired T-Test is used to determine whether two related samples have different averages. T-test difference test is done by comparing the difference between two average values with the standard error of the average difference of two samples. So the purpose of the T-test difference test is to compare the average of two groups that are not related to one another (Ghozali, 2011). In this study the data used in the form of stock prices before and after the event then the samples are interconnected, so that the T-test difference test used is Paired Samples T-Test. Using the significance level of 5% of the test criteria, the hypothesis is accepted if the significance value of 0.05 means that there is a difference in stock return and abnormal return between the comparison before and after the announcement of Covid-19. Then the hypothesis is rejected if the significance value of 0.05 means that there is no difference in stock returns and abnormal returns between the comparison before and after the announcement of Covid-19

Figure 5.3 : *Paired T-Test of Stock Return*

Paired Samples Statistics		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BeforeRit	-16761859	5	11694629.5	5229997.31
	AfterRit	-9791966.4	5	50573321.9	22617077.1

Source: Data processed (2022)

In the output in Table 5.3, the results are shown summary statistical descriptions of both samples or data before Rip or Return before Covid-19 (t-5) and AfterRit or Return after Covid-19 (T+5). The Mean or mean value before Rit (t-5) is -16761859 while the mean or mean value of Afterbirth (t+5) is -9791966.4.

Figure 5.4 : *Paired Samples Correlations Stock Return*

Paired Samples Correlations		N	Correlation	Sig.
Pair 1	BeforeRit & AfterRit	5	.420	.481

Source: Data processed (2022)

In the output table 5.4 is the result of correlation or relationship between the two data or variables namely BeforeRit (t-5) and AfterRit (t+5) with a significance value of 0.481 which means that this value is greater than the significance level of 0.05 then it can be said there is no relationship between BeforeRit (t-5) and AfterRit (t+5).

Figure 5.5 : *Paired Samples Test Stock Return*

Paired Samples Test								
		Paired Differences						
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	BeforeRit – AfterRit	–6969892.6	46878219.5	20964577.1	–65176890	51237104.9	–.332	4	.756

Source: Data processed (2022)

Based on Table 5.5 shows that in the test results with paired sample test, it is known that the value of Sig. (2-tailed) of 0.756 > 0.000 it can be concluded that there is no significant difference between BeforeRit or stock Return before Covid-19 (t-5) and AfterRit or Return after Covid-19 (T+5).

Tabel 5.6 : Paired T-Test Abnormal Return

Paired Samples Statistics		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BeforeARit	3766281.80	5	2974681.90	1330318.19
	AfterARit	–1699538.8	5	7915875.02	3540086.93

Source: Data processed (2022)

In the output of Table 5.6, descriptive statistical summary results are shown from both samples or dataBeforeARit or Abnormal Return before Covid-19 (t-5) and AfterARit or Abnormal Return after Covid-19 (T+5).The mean or mean value of BeforeARit (t-5) is 3766281.80 while the mean or mean value of Afterarit (t+5) is - 1699538.8.

Tabel 5.7 : *Paired Samples Correlations Abnormal Return*

Paired Samples Correlations		N	Correlation	Sig.
Pair 1	BeforeARit & AfterARit	5	.779	.120

Source: Data processed (2022)

In this output is the result of correlation or relationship between the two data or variables, namely BeforeRit (t-5) and AfterRit (t+5) with a significance value of 0.120 which means that this value is greater than the significance level of 0.05 then it can be said there is no relationship between BeforeARit (t-5) and AfterARit (t+5).

Tabel 5.8 : *Paired Samples Test Abnormal Return*

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	BeforeARit - AfterARit	5465820.60	5899218.41	2638210.68	-1859026.5	12790667.7	2.072	4	.107

Source: Data processed (2022)

Based on Table 5.8 shows that the test results with paired sample test known that the value of GIS. (2-tailed) of 0.107 > 0.000 it can be concluded that there is no real difference between BeforeRit or Return before Covid-19 (t-5) and AfterRit or Return after Covid-19 (T+5).

V. CONCLUSION

The study evaluates the reaction speed on the capital market index in Indonesia, LQ45 on March 2, 2020, for the first time the government announced two cases of Covid-19 positive patients in Indonesia. The results of the stock return Research during the Covid-19 period appear to have increased from t-5 to t-4 then decreased from t-3 to t-2 and rose on t-1. At t0 stock returns rose dramatically to T + 1 and fell sharply to T+5. This indicates that the return in the LQ 45 index tends to fluctuate and increase before the Covid-19 event until its peak at t+1. This can be because investors react positively before there is a publication of financial statements and then react negatively after the financial statements can mean that the market does not react or in other words that the publication of financial statements does not have information.

The findings from the study provide important implication information is a major need for investors, because information is an input in making investment decisions. The speed of the market in absorbing new information into changes in the price of securities is one of the indicators of market efficiency. Based on the results of the analysis and testing that has been done previously, there are several things that can be concluded that there are significant differences in lq45 stock prices and stock returns before and after the National announcement of the Covid-19 outbreak. The existence of Covid-19 cases in Indonesia caused the stock price to decline, it was certainly offset by a decrease in the value of stock returns. There was an abnormal return of LQ45 before and after the announcement of the first Covid-19 case in Indonesia because the Covid-19 pandemic affected almost all industrial sectors and made investors feel pessimistic, reducing investor confidence in future profits. Investors do not want to take risks, then there is a significant decline in stocks and affects the stock market over the covid-19 announcement event in Indonesia.

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