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COVID-19 OUTBREAK AND CAPITAL MARKET REACTION: AN EVIDENCE FROM THE JAKARTA ISLAMIC INDEX 70

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ABSTRACT – The COVID-19 outbreak has become a global problem affecting human life entirely. This paper provides evidence of the market reaction to Jokowi's announcement regarding the first patient of COVID-19 in Indonesia on March 2, 2020. This research is an event study that looks at whether or not there is a difference in average abnormal returns of go public companies registered on The Jakarta Islamic Index (JII) 70 both before and after the announcement. The observations were made 9 days before the announcement and 9 days after the announcement. Based on descriptive data, the average stock returns of JII 70 fluctuated which increased in the first day after the announcement but decreased sharply after the fifth day of the announcement. The test showed that the average abnormal returns is negative both before and after the announcement. The paired sample t-test provided evidence that there is a difference in the average abnormal return during the testing period between before and after the announcement. Market reacted negatively to the announcement indicated by negative average abnormal return and support semi-strong market hypothesis.
Keywords: Market Reaction, Event Study, Market Efficiency, COVID-19

ABSTRAK – Wabah Covid-19 dan Reaksi Pasar Modal: Bukti dari Jakarta Islamic Index 70. *Wabah COVID-19 telah menjadi masalah global yang mempengaruhi kehidupan manusia sepenuhnya. Paper ini memberikan bukti reaksi pasar terhadap pengumuman Presiden Jokowi mengenai pasien perta COVID-19 di Indonesia pada 2 Maret 2020. Penelitian ini merupakan studi peristiwa yang melihat apakah terdapat perbedaan rata-rata abnormal return perusahaan go public yang terdaftar di Jakarta Islamic Index (JII) 70 baik sebelum maupun sesudah pengumuman. Pengamatan dilakukan 9 hari sebelum pengumuman dan 9 hari sesudah pengumuman. Berdasarkan data deskriptif, rata-rata return saham JII 70 mengalami fluktuasi yang meningkat pada hari pertama setelah pengumuman namun menurun tajam pada hari kelima setelah pengumuman. Hasil pengujian menunjukkan bahwa rata-rata abnormal return bernilai negatif baik sebelum maupun sesudah pengumuman. Uji-t sampel berpasangan memberikan bukti bahwa terdapat perbedaan rata-rata abnormal return selama periode pengujian antara sebelum dan sesudah pengumuman. Pasar bereaksi negatif terhadap pengumuman yang ditunjukkan oleh rata-rata abnormal return negatif dan mendukung hipotesis pasar semi-kuat*
Kata Kunci: *Reaksi Pasar, Studi Peristiwa, Efisiensi Pasar, COVID-19*

INTRODUCTION

The Corona virus is a new type of virus known as Coronavirus Disease 19 (COVID-19) that began to attract the attention of the world after on January 20, 2020. Health authorities in Wuhan City, Hubei Province, China, announced that three people died in Wuhan presumed due to this virus. This virus spreads to become a global pandemic that changes various aspects in human life compared with previous condition. This outbreak has caused great concern about public health around the world.

Simultaneously with the outbreak, concerns about the economic consequences was starting to emerge because households are required to stay at home to slow down the spread of the virus. Economic activity is hampered and impacted by supply chain, househehold demand, and financial stability of the economy largerly unknown. As a result, policymakers, business and market player are trying to revise growth expectation in the short term and long term.

Since World Health Organization (WHO) officially announced COVID-19 as a pandemic, capital markets around the world has started turbulent. The Shanghai Stock Exchange Composite Index, Dow Jones Index, S&P 500 Index and Nasdaq Composite Index moved down. The rapid spread of the outbreak caused more victims every day and increased market pessimism regarding future economic conditions.

Stock returns is influenced by economic and non-economic events. Merger and acquisition announcement affect the acquiring company's wealth with a positive average abnormal return around the announcement day (Sachdeva *et al*., 2015). The dividend announcement both in cash and shares have an impact on the increase of stock prices and a positive average abnormal return, especially after the announcement (Rosario & Chavali, 2016). Sukuk issuance announcement has a negative impact on stock returns the day before the announcement decisions (Mohamed *et al*., 2017). Reshoring announcement decisions produced positive abnormal returns (Brandon-Jones *et al*., 2017). The announcement of quarterly earnings has an effect on the formation of abnormal returns in the Saudi Arabia capital market which indicates the absence of a semi-strong efficiency market hypothesis (Syed & Bajwa, 2018). Dividend declaration produced abnormal return due to the allegations of market abuse in the form of insider trading (Tanveer & Jamil, 2019). The cumulative abnormal return rate decreases before the company included in the participation index

and continues in the following days (Koca *et al*., 2019). Divestment has positive impact on shareholders wealth and resulted average abnormal return on the day of announcement (Teschner & Paul, 2020).

Khajar (2012) tested the efficiency of the Islamic capital market before and after the 2008 monetary crisis. The result showed that the Indonesian Islamic capital market was efficient eventhough weak and being decrease in efficiency during the monetary crisis but the efficiency increased rapidly after crisis. Beik & Fatmawati (2014) emphasized that the national macroeconomic is relatively stable and shows positive growth so that Islamic stocks were able to recover better after a downturn due to the global financial crisis. The ability of sharia industry to encounter various economics and non economics problems is an added value for the market to consider its existence. Choi *et al*. (2019) investigated the impact of travel ban on the stock price of high-tech companies. The study found that abnormal return decrease on the first day after the announcement. These losses were greater for companies with higher R&D expenditure, but smaller for global firms located in the outside of United States. Jamil *et al*. (2020) examined the effect of sharia compliance announcement on stock returns in Malaysia. The study was conducted to assess whether the information was valuable and has an impact on stock returns in the period of 2007-2015. The study provided evidence that the inclusion of shares in the sharia compliance list has increased share price and positive rates of return. Meanwhile, stocks that were excluded from the sharia compliance list had negative abnormal return.

Several previous studies also found varying market reaction on the global outbreaks. Severe Acute Respiratory Syndrome (SARS) epidemic had a negative impact on the tourism, wholesale, and retail industry but positively impact on biotechnology sectors (Chen *et al*., 2009). The bird flu did not reflect the delays in travel of elderly tourist in Asia (Lee & Chen, 2011). The SARS outbreak weakened the long-term relationship between China and four Asian stock markets (Chena *et al*., 2018). Countries in Asia have shown negative abnormal return due to COVID-19 (Liu *et al*., 2020). The adverse effect of the corona virus was lesser in countries that are free to declare a pandemic, while ivestors in countries that were less free to announce it actually cause an overreaction (Erdem, 2020).

The President of the Republic of Indonesia, Joko Widodo, announced the first patient of COVID-19 in March 2, 2020. This information had surprised many

parties because so far Indonesia was considered safe from the virus. Public was starting to predict the development of the capital market. The pandemic was considered to have a serious impact on national economic stability and investment in the future. Industrial sector was considered to be the most vulnerable to being affected because the outbreak has systemic impact.

Figure 1: Average Return Before and After Announcement (-9 days and +9 days)

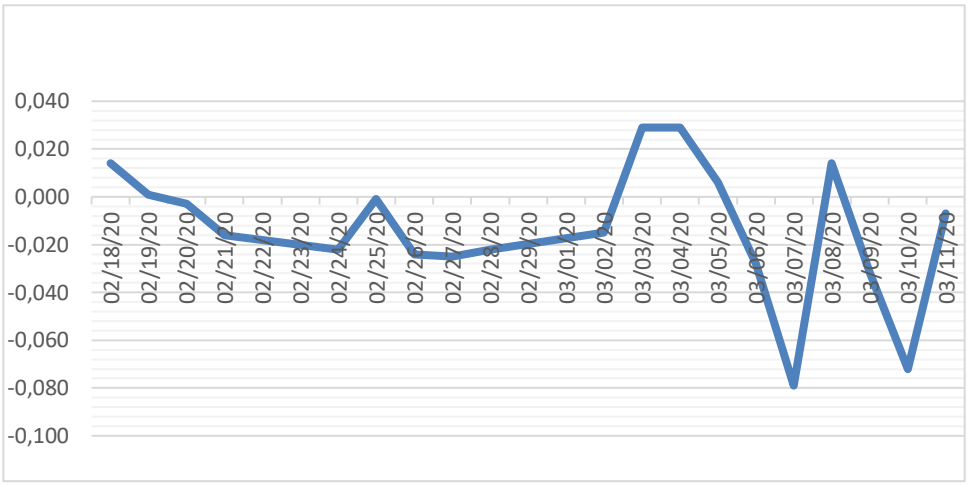

Figure 1 shows the data with a period of 9 days before and 9 days after the announcement shows that the average stock return of JII 70 was fluctuated. The market responded optimistically that Indonesia would be able to handle the pandemic as indicated by the increase in average return of JII 70 on the first day or event the third day after the announcement. In general, the market was still producing adequate returns although it fell sharply some time after the announcement. Islamic stocks were considered withstand to economic crisis because they work in the real sector.

The effect of COVID-19 pandemic on Islamic stocks returns in Indonesia requires in-depth testing. Research on the impact of an event aims to contribute on future economics policies. This paper will test statistically whether or not there is a difference in the average abnormal returns of listed companies in JII 70 before and after the announcement of the first COVID-19 patient in Indonesia. This study purposes to prove market efficiency in responding to this information.

LITERATURE REVIEW

Islamic Stocks

The main source of Islamic investment is in QS. Al-Baqarah: 275 which states that "Allah has made buying and selling legal and forbidden usury". Likewise, in QS. An Nisa': 29 which contains the prohibition of eating each other's property by false way except by commerce that applies consensually between the parties. Based on Al-Qur'an, hadith, and the opinion of fiqh experts that something is prohibited or forbidden because of the substance, it is *haram* because of apart from the object and because the contract is not valid. This prohibition is caused the thing becomes the object of activity (Kamri, Ramlan. & Ibrahim, 2014). These objects include pigs, liquor (*khamr*), animal carcasses, and blood. *Haram* apart from object with the intention that the object is actually permitted but it is forbidden because of the presence of willingness (*tadlis*), uncertainty (*gharar*), usury (*riba*), or because of the occurrence of hoarding (*ikhtikar*) (Ibrahim & Kamri, 2013; 2017). Objects are categorized as *halal* if the contract or agreement that as basis of transaction is not prohibited in Islam such as linkages (*ta'alluq*) and occurs where the perpetrator, object, and period are at the same time (Ibrahim, 2015).

The Islamic capital market is a capital market whose entire mechanism of activity, ultimately concerning issuers and types of securities traded in accordance with sharia principles (Wardiyah, 2017). In the concept of the Islamic capital market, traded shares must be from companies that enganged in sectors that meet the criteria of sharia by avoiding speculative practices. Speculation is prohibited not because of the uncertainty, but more on the purposes or intention and way of using the uncertainty. The act of leaving senses of responsibility and the rule law in order to obtaining profit solely from the uncertainty is prohibited in Islam. Gharar and maysir are related to negative result (*mudharat*) or hazard.

Shares that included in Islamic stock index must fulfill several requirements based on the type of business, activity, and other provisions (Soemitra, 2015). The type of business, product, and services, contract, and method of managing the company must not conflict with sharia principles. The issuer's type of activities that are listed in the sharia index are shares that do not contradict with sharia principles, including: (1) non-gambling and games that are classified as gambling or illicit trading; (2) non-conventional financial institution including

conventional banking and insurance; (3) not a business that produces, distributes, and trades food and beverages classified as *haram*; and (4) not a business that produces, distributes, and/or provides goods or services which is harmful and destroys moral. In addition, it is also prohibited to make fake offer (*najsy*), insider trading, providing misleading information, interest-based securities, and *ikhtikar*. Issuers must meet and have a Sharia Compliance Officer. If it does not meet the requirements as well, the issuers will be excluded from the list.

The advantages of investing in Islamic stocks in addition to obtaining dividen and capital gain are accommodated with Islamic principles, safe, and avoidance of *riba* so not conflicting with religious teachings. Investment in Islamic stocks in Indonesia is guaranteed to be *halal* by the Indonesia Ulama Council as known as Majelis Ulama Indonesia (MUI) as part of the clarity of the absence of *riba, gharar* and *maysir* content. Islamic stocks are considered to have minimum risk because it is classified as a large capitalized stock (blue chip).

The Islamic stock index is used to as a measure of the performance of Islamic stock and can be used by investors to select stocks to buy. The Indonesian Sharia Stocks Index (ISSI) which contains of all Islamic stocks listed on the Indonesia Stock Exchange (IDX), the Jakarta Islamic Index (JII) which contains of 30 Islamic stocks, and the Jakarta Islamic Index 70 (JII70) which contains of 70 Islamic stocks. Establishment of sharia principles in Indonesia through the Fatwa of the National Sharia Council known as DSN-MUI. The JII 70 was selected by IDX based on liquidity criteria among constituens listed in ISSI for the last 6 months, then 150 shares were selected based on the order of the highest average market capitalization for the last 1 year. After the step, 70 shares were selected from 150 shares based on the highest average daily transaction value in the regular market. Islamic stocks will be reviewed twice a year in accordance with the schedule from the Sharia Securities List and the Financial Services Authority. The JII 70 is the latest index of Islamic stocks launched by the IDX.

Abnormal Return

Return is an outcome of investment in capital market obtained by shareholders. The return component includes cash flow generated periodically (yield) and income due to an increase (capital gain) or a decrease (capital loss) (Tandelilin, 2001). Yield is indicated by the size of dividend received by shareholders.

Return is also called as a reward for the desire of investors to spend money despite knowing the risk to be faced.

Calculating abnormal return requires several stages. First, determine actual return that is a real profit and counted based on historical data. Actual return is important because it is used as a measure of company performance and useful for determining expected return and risk in the future. Actual return occurs at current time (t) which is the gap between current price and previous price. The formula to calculate actual return is in equation 1 below:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \quad \text{...} \quad (1)$$

Where, R_{it}= actual return of securities i at time t; P_{it}= price of securities i at time t; P_{it-1}= price of securities i at one time before.

Second, calculate expected return as return expected by investors in the future. Unlike actual return which has already occurred but expected return has not yet. Meanwhile, expected return can be measured by market returns (Jogiyanto, 2009).

$$E(R_{it}) = Rm_t \quad \text{...} \quad (2)$$

Where; $E(R_{it})$= expected return of the securities i at time t; Rm_t= market return at time t

As for Islamic capital market return is calculated by return of JII 70 with the following formulation:

$$R_{mt} = \frac{JII70_t - JII70_{t-1}}{JII70_{t-1}} \quad \text{..} \quad (3)$$

Where; Rm_t= market return at time t; $JII70_t$= Jakarta Islamic Index 70 at time t; $JII70_{t-1}$= Jakarta Islamic Index 70 at the day before time t

Third, calculate abnormal return. Abnormal return is the excess of stock return before and after announcement that may received by shareholders. Abnormal return is the difference between expected return and actual return (Jogiyanto, 2010). Abnormal return can occur before the information published or there has been information leakage after it was published (Tandelilin, 2010). When expected return can be calculated based on market return, thus abnormal return

is the difference between actual return and expected return such the following equation:

$$AR_{it} = R_{it} - E(R_{it}) \text{ ………………………………………….. (4)}$$

AR_{it}= Abnormal return of securities i at time t; R_{it}= actual return of securities i at time t; $E(R_{it})$= expected return of securities i at time t

For E(Rit)= Rm_t as in equation 2

$$E(R_{it}) = Rm_t$$

Therefore,

$$AR_{it} = R_{it} - Rm_t \text{ …………………………………………….. (5)}$$

Where AR_{it}= abnormal return of securities i at time t; R_{it}= actual return of securities i at day t; Rm_t= return market at time t

Abnormal return generally accours around the announcement of an event. The sum of daily abnormal return from the first day to the following days for each stock type are used to calculate the Cummulatiev Abnormal Return (CAR). Therefore, CAR during the period before an event will be compared with CAR after event. Average abnormal return is CAR divided by all securities affected by the annoucement

According to Sutarni and Dermawan (2004), identifying efficient abnormal returns requires some assumptions. First, the assumption of Efficient Market Hypothesis (EMH). Efficient market condition indicates that all information is relevant to stock prices. If the efficient market assumption does not apply because the market is known to be inefficient, an adjustment is made to the normal return measurement model then developed model close to actual market conditions. Second, unanticipated event and announced in media or press. Market does not have information about an event before announced through the press, not other sources and no possibility of information leakage before officially announced. Third, compounding effect. This assumption relates to the mixing of an event with others. The measurement of a market reaction should be based on a single event. The existence of this mixed effect causes the measurement of market reaction to be inaccurate, considering that there is more than one event affects it. Isolating other events that affect a particular event is

intricate. Therefore, it is necessary to determine the assumption of the mixed effect that has been isolated by researcher to facilitate their study.

Event Study

Event study is a study about market reaction to an event whose information published as an announcement. If the announcement contains information, market is expected to react on it. Event study examines whether the announcement has a value for the market or not and used to test content of information and semi-strong efficiency of market. Testing information content merely assess market reaction but does not test how quickly the market reacts. Market is efficient in a semi strong form if investors react fast to absorb abnormal returns to the new equilibrium price.

Fama (1970) classified the efficient market into three forms, they are weak form efficient market, semi strong efficient market, and strong efficient market. A weak form occurs when stocks price reflects past information. A semi strong efficient happens if stock price reflects all published information such in financial statements. In a semi strong efficient market, abnormal returns occur around the date of announcement as a sign of investor's reaction. A strong market efficient indicated if the stock price represents all available information, including published and highly confidential information. If the market is efficient in a strong form, no investor gains abnormal return.

Fama (1970) also classified information into three types including past price changes, information available to the public, and information availability both to public and private. Analysis of financial reports does not provide benefits to efficient market because the information is already owned by public, subsequently, investors react rapidly. Price at the buy or sell level of stock reflects this information due to market reaction. Contrary, semi-strong proponents of efficient markets argue that investors expect to create profit by closely observation to available information on the market.

The announcement of an event is considered be information for investor and potential investors. Previous studies have shown a variety of findings in response to information. Based on the event study theory and research results, the following hypothesis is formulated:

H_0: There is no difference in the average abnormal return before and after the announcement of the first COVID-19 patient in Indonesia

H_a: There is a difference in the average abnormal return before and after the announcement of the first COVID-19 patient in Indonesia

RESEARCH METHOD

This research is included in the event study which is used to determine market response to disseminated information. Using daily stock returns data of companies listed on JII 70 as an Islamic stock index launched by Indonesia Stock Exchange (IDX) on May 17, 2018. The JII 70 constituency consists of 70 most liquid stocks categorized as Islamic stocks. The observation period is 9 days before the event and 9 days after the event. The announcement of the first COVID-19 patient was delivered by President of the Republic Indonesia, Mr. Joko Widodo accompanied by Minister of Health of the Republic of Indonesia, Mr. Terawan Agus Putranto on March 2, 2020. The test was conducted through a paired t-sample test using the Statistical Package for the Social Sciences (SPSS) software. Hypothesis testing with paired sample-t test is tested after for normality and collinearity tests.

RESULTS AND DISCUSSIONS

Statistical Descriptive

This study was conducted to test whether or not there is a difference in the average abnormal return of stock listed in JII70 before and after the announcement of the first COVID-19 patient in Indonesia.

Table 1. Statistical Descriptive

	N	Min	Max	Mean	Stdev
AAR_Before Announcement (-9 days)	70	-0.04054	0.00242	-0.01689	0.00918
AAR_After Announcement (+9 days)	70	-0.03205	0.02601	-0.00547	0.01500

Observation were conducted before the announcement during the 9 trading days starting February 18, 2020 and 9 trading days after the announcement began March 3, 2020 based on the Average Abnormal Return (AAR). Table 1 shows that the lowest AAR before the announcement is -0.04054, the highest AAR is 0.00242, the average AAR is -0.01689, and the standard deviation is 0.00918. Meanwhile, the lowest AAR after the announcement is -0.03205, the highest

AAR is 0.02601, the average AAR is -0.00547, and the standard deviation is 0.01500.

Normality Test

The normality test is carried out to see whether the data is normally distributed or not. This test used to assess data distribution from a normal population. The normality test is processed by using the Shapiro-Wilk test with the condition that if the p-value>0.05 and H_0 is accepted accordingly, which means the data is normally distributed. Conversely, if the probability value or p-value<0.05 then H_0 is rejected and is accepted H_a, which means the data is not normally distributed.

Table 2. Shapiro-Wilk Normality Test

	Statistic	Df	Sig
AAR_Before Announcement (-9 days)	0.991	70	0.914
AAR_After Announcement (+9 days)	0.972	70	0.125

Based on the result of normality test in table 2, it shows that all data are normally distributed both before the announcement with a significance value of 0.914 and after the announcement with a significance value of 0.125. Thus, the requirement for conducting the paired sample t-test is acceptable.

Correlation Test

The result of correlation test for the market reaction to the announcement of the first COVID-19 patient in Indonesia is as follows:

Table 3. Correlation Test

		N	Correlation	Sig.
Pair 1	AAR_Before Announcement (-9 days) & AAR_After Announcement (+9 days)	70	-0.025	0.835

Output in the table 3 above shows the result of correlation test or relationship between two variables before and after the announcement. Based on the output, correlation coefficient value is at level of -0.025 with a significance value of

0.835. The significance value is 0.835>0.05 then it can be said that there is no relationship between the variables before and after the announcement.

Hypothesis Test

Market reaction testing toward an event is carried out to find the difference of average abnormal return before dan after an event.

Table 4. Paired Sample t-Test Result of AAR Before and After Announcement

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. deviation	Std Error Mean	95% Confidence Interval of The Difference Lower	Upper			
Pair 1_ AAR_Before announcement (-9 days) AAR_After announcement (+9 days)	-0.01143	-0.01778	0.00123	-0.01567	-0.00719	-5.378	69	0.000

Based on the results of the paired sample t-test in table 4, t-value is -5.378 with a significance of 0.000. This significance value is less than 0.05 so that H_0 is rejected and H_a is accepted. It shows that there is a difference in average abnormal return before and after the first COVID-19 patient in Indonesia.

Analysis

The pattern of stock price movement follows random walks or does not have a standard. Many factors affect it to find out market efficient or inefficient. Definite information affects market efficiency. The EMH theory is a reference for market performers in planning investment policies to capture profit opportunities. The extracted information must be perceptible to convince market conditions entirely.

The stock price index is a barometer of capital market health that represents stock market performance. If the index rise, capital market is going up and indicates a good economic condition. Investor often use stock price index as a benchmark to continue, postpone, or stop to invest. Market index escalation exhibits that the market is bullish and generally dominated by buying action.

Conversely, when market is in slow movement or bearish then it is dominated by selling action and declining stock prices.

Based on the results of this study, the average abnormal return is negative both before and after the announcement. Paired sample t-test was carried out, it showed a difference in the average abnormal return. Capital market reacts more quickly to information considered interfere stocks performance. The epidemic spreads rapidly around the world and has impact on large capital markets. Investors generally have negative sentiment and are pessimistic about market uncertainty in the future. Investors take steps to buy, sell, or holds shares and rearrange their portfolio to gain return in profitable sectors.

The result is similar to previous researches conducted in testing the impact of COVID-19. Al-Awadhia *et al*. (2020) investigated the influence of COVID 19 on Chinese stock market with panel data analysis. This study found that the daily growth in total confirmed cases and total cases caused by the virus had a negative impact on company stock returns on Chinese capital market. Other capital markets were also predicted shocked due to the virus because it has preyed many victims in various countries including Indonesia. Zhang *et al*. (2020) assessed that rapid spread of COVID-19 had had a dramatic impact on financial markets. Investors suffer significantly, individual stock market reaction being severity, and the market became unstable and unpredictable. Ashraf (2020) examined the impact of government action in dealing with COVID-19 pandemic on stock market returns. It was found that the announcement of social distancing policy had a direct negative effect on stock returns. Meanwhile, the govermnet announcement of the quarantine policy and financial support package had a positive impact.

These results also confirm that if information is considered good, it will be responded positively by the market which can be seen from the abnormal return around the announcement. However, if it is considered as bad news, it will be responded negatively by the market which can be seen from the negative abnormal return around the announcement. Market sentiment is basically an indicator for the direction of capital market movements. Negative sentiments can weaken the market, on the other hand, positive sentiments will strengthen stock price movements. Investor sentiment relates to investors' confidence in the issuer's future either with adequate informations or predictions. Investor behavior is largerly determined by their preference for risk whether they tend to be risk averse, risk moderate, or risk taker. Investors who are scrupulous to

seize opportunities and dare to act even in a pandemic will have a chance to make a profit.

Information as good or bad news has economic value for capital markets. The announcement of the first COVID-19 patient was considered to contain bad news so that investors began to count possibility of future investment. This condition is different from when information with a good value that creates market optimism which increase the demand for well-performed stock. According to the signaling theory, information that has bad value (bad news) causes negative reactions from investors and indicated by negative abnormal returns. Mostly investors wait until normal condition for further investment. Investor action causes the capital of go public companies decrease and has impact on the decline of stock price.

CONCLUSION

Event study is used to measure market reaction toward an information published in media. This study examines market reaction to the announcement of the first COVID-19 patient in Indonesia. The purposes of this study is to capture whether capital market is efficient in responding the information.

The statistical test using paired sample t-test shows that the average abnormal return differs around day of the announcement. Market reacted negatively to the announcement because information was considered negative for it raised concerns about the spread of the outbreak globally. The COVID-19 is not solely a health problem but also has an impact on economic, social, and cultural sectors. Investors consider various informations about the impact of this outbreak on their share ownership and also raises question about how long it will take to recover economic sector. No proper vaccine and handling method to overcome the virus in the short run. Therefore, shareholders and policy makers must be concerned about the impact of the catastrophic epidemic. COVID-19 pandemic is considered as an unprecendented rare event and the world is taking emergency actions to break the chain of transmission such as social distancing, self-isolation, financial support package for small business, and other relevant programs. Further research can be carried out to explore the impact of COVID-19 pandemic on capital market stability in other indices and select industries which are able to withstand with epidemic crisis.

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