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## MARKET REACTION TO THE COVID-19 VACCINE ARRIVES IN INDONESIA

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**ABSTRACT:** This study aims to examine whether there has been a market reaction to the COVID-19 vaccine event arriving in Indonesia. The market correction in this study is seen from the abnormal return obtained from the difference between the expected return and the realized return. The model in determining the expected return in this study uses a market-adjusted model. This research was conducted on all shares of companies listed on the LQ45 Index using purposive sampling technique. Determination of the date of the event on Monday, December 7, 2020. The window of events in this study was carried out for 5 days, namely 2 days before the event date, on the event date, and 2 days after the event. The results of the analysis in this study indicate that there is no abnormal return around the event window. The conclusion of this study is that there is no market reaction to the COVID-19 vaccine arriving in Indonesia. This indicates that the COVID-19 vaccine event arriving in Indonesia does not contain information.

**Keywords:** *information content, abnormal return, COVID-19 vaccine*

### I. INTRODUCTION

The reaction of investors in making investment decisions is strongly influenced by a variety of available information, be it economic events or non-economic events such as politics, socio-culture, security, government stability, and various other information. One of the events that has hit Indonesia and even the world is a pandemic called COVID-19. The COVID-19 pandemic is a worldwide event of the spread of coronavirus disease 2019. This disease is caused by a new type of coronavirus, named SARS-CoV-2. This outbreak was first detected in Wuhan City, Hubei Province, China in December 2019 and was declared a pandemic by the World Health Organization (WHO) on March 11, 2020. Since the first cases of COVID-19 sufferers were found in Indonesia, the capital market in Indonesia was so affected that the regulators at the Indonesia Stock Exchange tried hard to issue various policies to contain this impact, but they were still unable to withstand the collapse of the Composite Stock Price Index. For example, in trading on March 9, 2020, the JCI was closed down by 6.5% to the level of 5,136. This situation made the regulators at the IDX take action to stop trading or trading halt by following up on the Order of the Head of the Capital Market Supervision Department 2A of the Financial Services Authority number S-274 / PM.21 / 2020 and the Decree of the Directors of PT Bursa Efek Indonesia Number: Kep-00024 / BEI / 03-2020. Based on that decision, if there is a very sharp decline over the same trading day, then trading halt 30 minutes if there is a 5% decrease and resumed if it has decreased by 10% until trading suspend action occurs if there is a further decline to more than 15%. , this provision is effective from March 11, 2020.

Information is a fundamental need for investors in the capital market. One of them is information about the arrival of 1.2 million doses of the Sinovac COVID-19 vaccine on Sunday, December 6, 2020, the arrival of the vaccine is the initial stage of sending a total of 3 million doses of vaccine which will later be given to health workers as a priority. The Minister of Health of the Republic of Indonesia determined that 6 types of COVID-19 vaccines were used for vaccination in the Decree of the Minister of Health Number HK.01.07 / Menkes / 9860/2020 and was signed on 3 December 2020. The six types of vaccines include vaccines produced by PT Bio Farma (Persero), AstraZeneca, China National Pharmaceutical Group Corporation (Sinopharm), Moderna, Pfizer Inc. and BioNTech, and Sinovac Biotech Ltd. The Sinovac vaccine that arrives in Indonesia can be used as good news and can increase investors' confidence to invest because the presence of the vaccine will be the first step to alleviate the problem of the COVID-19 pandemic which has caused various business sectors to be unable to carry out their business optimally and can also help the government resolve economic crisis and health crisis due to the COVID-19 pandemic

The announcement of the arrival of the COVID-19 vaccine is an event. The theory that explains information or events that can react to stock prices is efficient market hypothesis. Fama (1970) argues that there

are three forms in the level of market efficiency based on the quality of information, namely weak form efficient market, semi strong form efficient market, and strong form efficient market. A market reacts to information to reach a new equilibrium price which is important (Hartono, 2016).

Several previous studies have shown that an event can be reacted by the market. Larimanu&Suaryana (2015) show that there is a positive market reaction to the announcement of dividends with profitability as a moderator. Dewi&Wirama (2018) show a positive reaction to the announcement of the tax amnesty policy. Dewi et al., (2017) show that there is a market reaction to the announcement of the economic policy package X regarding the negative investment list (DNI). Aryasa&Suaryana (2017) in their research there is a market reaction before and after the announcement of the rights issue. Boys & Girls (2018) show there is a market reaction to Donald Trump's victory to become president of the United States. Subawa&Mimba (2020) found a market reaction to the announcement of the results of the election for the 2019 Indonesian President's Volume II Work Cabinet.

## II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The concept of market efficiency discusses how the market responds to incoming information, and how this information can then influence the movement of the security price towards the new equilibrium price. According to the efficient market hypothesis (EMH), the asset price (in this case the stock price) reflects the rapid arrival of new information on events. Testing the information content is intended to see the market reaction to an announcement (Hartono, 2016). If the market reacts to information that is announced or published, it means that the information has economic value. Indicators to measure market reaction can be seen from the abnormal return obtained by investors, so that if there is an abnormal return around the event, it indicates that the market reacts quickly to this information. It also indicates that the market is an efficient market in a semi-strong form.

The COVID-19 vaccine arriving in Indonesia is an event whose market reactions are examined in this study. The COVID-19 vaccine event arriving in Indonesia can be said to be good news because the arrival of the vaccine can be the first step to alleviate the problem of the COVID-19 pandemic which has caused various business sectors to be unable to carry out their business optimally so that it can increase investors' confidence to invest in the capital market and can showed a positive market reaction to these events.

Some of the events in the following research have had a positive reaction to the market. Larimanu&Suaryana (2015) show that there is a positive market reaction to the announcement of dividends with profitability as a moderator. Dewi et al., (2018) show that there is a positive reaction to the announcement of the tax amnesty policy. Dewi et al (2017) show that there is a market reaction to the announcement of the economic policy package X regarding the negative investment list (DNI). With these results, the research hypothesis is:  
Ha: There is a positive market reaction to the COVID-19 vaccine arriving in Indonesia.

## III. METHODS

The location of the research in this study was carried out on the Indonesia Stock Exchange with data obtained through [www.idx.co.id](http://www.idx.co.id), [finance.yahoo.com](http://finance.yahoo.com), and other related internet sources. The population of this study is all stocks listed in the LQ45 index on the Indonesia Stock Exchange. In this study, there were 45 companies as a population. The choice of the LQ45 index is considered to be an index of interest to investors and has high sensitivity because the LQ45 index has high liquidity, large market capitalization, and is supported by good company fundamentals ([idx.co.id](http://idx.co.id)). The sampling method in this study is purposive sampling technique, namely by determining specific characteristics to suit the research objectives. The special feature referred to is that the sampling does not take issuers listed in the LQ45 index that carry out corporate actions (dividends, rights issues, stock splits) with the intention of not mixing information from other events.

The one sample t-test is to show whether there is a significant abnormal return around the window period. The significance in question is that the abnormal return is statistically not equal to zero, which is positive for good news and negative for bad news (Hartono, 2016). The test is carried out with a 95% confidence level with a significance level of 5% ( $\alpha = 0.05$ ).  $p \text{ value} > 0.05$ , then  $H_a$  is rejected, which means there is no abnormal return. If  $p \text{ value} \leq 0.05$  then  $H_a$  is accepted, which means there is an abnormal return.

## IV. RESULTS AND DISCUSSION

### *Descriptive statistics*

Descriptive statistics are presented to provide an overview of the data seen from the number of samples, the average value, the maximum, minimum value, and also the standard deviation. In this study, the results of descriptive statistics are presented around the event window.

**Table 1. Descriptive Statistical Analysis Results**

	N	Minimum	Maximum	Mean	Std. Deviation
CAR	39	-0,112	0,118	-0,01041	0,051826

Secondary Data, 2021

CAR descriptive statistics for 39 companies during the 5-day event window are presented in table 1. The minimum CAR value is -0.112 occurs at PT Bank BTPN Syariah Tbk with the code BTPS. The maximum CAR value is 0.118 which occurs at PT Bukit Asam Tbk. The average CAR value is -0.01041 with a standard deviation of 0.051826.

#### Normality test

The normality test in this study used the Kolmogorov-Smirnov. The results of the normality test using the Kolmogorov-Smirnov are shown in table 2 below.

**Table 2. Normality Test Results**

Tests of Normality							
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.	Sig.
CAR	0,130	39	0,095	0,944	39	0,052	

Secondary Data, 2021

Based on the Kolmogorov-Smirnov normality test, a significance value of  $0.095 > 0.05$  means that the data is normally distributed.

#### One Sample t-test

The one sample t-test is a parametric test that compares one independent variable. In this study, one sample t-test was used to show whether there was a significant abnormal return around the window period. The significance referred to is that the abnormal return is statistically not equal to zero which is positive for good news and negative for bad news (Hartono, 2016).

**Table 3. The results of the One Sample t-test**

One-Sample Test						
Test Value = 0						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CAR	-1,254	38	0,217	-0,010410	-0,02721	0,00639

Secondary Data, 2021

Based on the results of the one sample t-test, it can be seen that the significance is  $0.217 > 0.05$ , which means that there is no market reaction around the event window, so the hypothesis that there is a market reaction to the COVID-19 vaccine arriving in Indonesia is rejected.

The market reaction to the COVID-19 vaccine arrives in Indonesia.

On the date of the event, December 7, 2020, the Composite Stock Price Index increased by 2.07%, which indicates that there was a change in price when the COVID-19 vaccine arrived in Indonesia. However, based on the results of the one sample t-test, it is known that Cumulative Abnormal Return has a significance value of 0.217, this value is greater than 0.05, so it can be concluded that there is no market reaction to the COVID-19 vaccine arriving in Indonesia. This is because the market thinks that the phenomenon of the COVID-19 vaccine arriving in Indonesia is not sufficient to indicate economic recovery and the eradication of the COVID-19 pandemic. In addition, there are not enough people who believe that they will be ready to receive a vaccine once the vaccine is distributed. This can be seen from a survey conducted by SaifulMujani Research & Consulting (SMRC), only 56% of respondents believed and were ready to receive vaccines with 1202 respondents who were randomly selected.

This is in line with several previous studies. Pitriani&Wirama (2020) examined the reaction of the Property and Real Estate Sector market to the initial sale of the Meikarta Mega Project, the research is expected to excite the property and real estate sector but the market does not react to the event. Sanjiwani&Jati (2017) with research on market reactions to the period I tax amnesty policy on the LQ45 index have the result that this phenomenon does not react to the market as seen from abnormal returns, even though tax amnesty is expected to improve macroeconomic conditions in Indonesia and react to the market.

## V. CONCLUSION

The results of this study theoretically explain that if an event contains information, the market will react to the event with an abnormal return around the event window. Conversely, events that do not contain information are not reacted to by the market in the absence of significant abnormal returns around the event window. This research also provides additional information on how the market reacts to the COVID-19 vaccine event arriving in Indonesia. For academics, this research can be a reference source for further research. Practically it can provide information as consideration for investors to examine more deeply about an event that occurs both economic and non-economic events, this study practically contributes that macroeconomic factors can influence market conditions so that investors can be more critical in assessing an event. whether the event contains information or not.

This research can also be taken into consideration that other external factors can also influence an event so that investors are expected to be more critical in responding to an event in order to be able to sort out events that contain information and those that do not. For further researchers, it is hoped that research will be carried out in other sectors such as the pharmaceutical sub-sector, because the possibility that the COVID-19 vaccine event arriving in Indonesia is more sensitive in other sectors so that comparable results can be obtained. Future researchers are also expected to add indicators of trading volume activity or trading volume activity in further research.

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