



Analysis of Abnormal Stock Return in the Banking Sector on the Indonesia Stock Exchange During the Announcement of the Case of Covid 19 and Vaccination in Indonesia

Arie Mardiansyah^(✉) and Dina Patrisia

Universitas Negeri Padang, Padang, Indonesia
ariemardiansyah0412@gmail.com

Abstract. This study aims to analyze Covid-19 announcements and vaccinations in banking sector companies listed on the Indonesia Stock Exchange (IDX). The population in this study are all banking sector companies listed on the Indonesia Stock Exchange in 2021. The data source uses secondary data. The sampling technique used was purposive sampling. The number of samples in this study were 42 companies. The event windows in this study are (-3,3), (-5,5), (-10,10), (-15,15), (-20,20), (-25,25), and (-30,30). The method of data analysis is the Mann Whitney test. The results of the study are that There are differences in abnormal stock returns in the period of 15 days, 20 days, 25 days, while for 3 days, 5 days, and 10 days there is no difference.

Keywords: Abnormal Return · Covid-19 · Vaccination

1 Introduction

Currently all over the world there is an economic downturn as a result of the deadly virus attack that has paralyzed all economies. All countries in the world must struggle to survive in order to avoid the attack of the covid 19 virus which has resulted in 2,409,011 deaths, with a total infection of 109,068,745 people (Covid 19 Task Force report dated 17 February 2021). Data on January 27, 2021, Indonesia ranks 19th in the world and number 1 in Asean. The number of cases in Indonesia was 1,012,350 cases or an increase of 13,094 cases, 820,356 cases recovered or an increase of 10,868 cases, and 28,468 deaths, or an increase of 336 cases (Covid 19 Task Force report dated 27 January 2021).

Current conditions almost all over the world are experiencing significant economic changes towards a decline as a result of the policy of protecting against the pandemic, namely by imposing a lockdown or known as large-scale social restrictions (PSBB). These restrictive policies have resulted in the cessation of production activities which greatly impacted the global economic downturn. The addition of Covid 19 cases in Indonesia has triggered concerns about the economy in Indonesia so that investors will take a cautious attitude in making investments.

Investors' concerns about the economic downturn as a result of the lockdown implemented by the government led to a decline in stock demand. This is due to investor anxiety about the economic downturn and uncertainty in the creation of policies that are able to protect the economy. According to Husnan (2018: 221) there is no guarantee that the cash flows received or issued by the company will actually be realized in the hope of forming projects that can provide positive value. In reality there is always an element of uncertainty or risk that accompanies an investment. Even in financial theory, the greater the risk borne, the greater the level of profit received. However, the formulation of this risk is not easy because of the many obstacles that must be met, such as the uncertainty of cash flows, both cash flows to the company and cash flows to investors. Investment can be affected by the existence of a condition that forces companies to carry out a number of activities that can reduce economic value, such as social restrictions imposed by the government to contain the spread of COVID-19 which have lowered the company's cash flow graph.

The decline in the company's cash flow chart was felt in the banking sector due to the large number of additions to bad loans as a result of the inability of debtors to pay off their debts during the pandemic. The increasing number of Covid-19 cases in Indonesia has forced the government to carry out large-scale social restrictions in certain areas which greatly impact on economic changes. The hampered economy due to these restrictions has led to a fairly high inflation rate and an increase in non-performing loans. This happens because many companies are unable to produce due to limited resources and policies that must limit the company's operational activities. As of October 2020, the value of non-performing loans at commercial banks reached 8.07%, higher than December 2019 which only reached 6.81%, or an increase of 1.26%. Therefore, bank management must be very careful in making policies because it will greatly affect the decline in the banking economy in general. If the government ignores or allows the growth of non-performing loans, it will trigger fears of a return to the 1998 economic crisis that plunged all banks into a recession.

Bank is an institution whose product is to provide services in managing public finances. Either in the form of savings or in the form of financing. So that banks have a very high risk in terms of social restrictions imposed by the government. The stimulus policies implemented by the government have not been able to create normal conditions in the banking sector, due to high investor concerns about the highest risks such as company bankruptcy. Therefore, it is very important to maintain banking stability, especially its share price, so that it can continue to operate in maintaining economic traffic. The stock price of the banking industry is always maintained by the government because it greatly impacts its operational activities. If a bank has a low stock price, it will be difficult to get funds to carry out operational activities which will reduce the value of the company.

According to Wikipedia, published on January 27, 2021, it explains that there is a downward trend in stock prices worldwide as a result of the implementation of a lockdown to contain the development of covid 19. Anticipatory steps taken by the government through Bank Indonesia are by lowering interest rates by 25 basis points to 4.75% in February 2020. The announcement of a pandemic in Indonesia on March 12, 2020 caused the Composite Stock Price Index to decrease by 4.2% to 4,937 which has

never happened in the last 4 years. On March 13, 2020 trading in shares was suspended for the first time since 2008 as a result of covid 19. Trading on the Indonesia Stock Exchange was suspended 5 times since March 11, 2020, namely on March 12, 2020 at 15:33 WIB, 2020 at 9:15 Jakarta Automated Trading System (JATS) time, March 17, 2020 at 15:02 JATS, March 19, 2020 JATS at 9:37 JATS, March 23, 2020 at 14:52 JATS. The suspension of trading transactions on the Indonesia Stock Exchange has caused a systematic and long-term economic downturn, so the government needs to take appropriate steps in analyzing the economic downturn, so that it doesn't get worse in the future.

The decline in the Composite Stock Price Index due to the policy of implementing a lockdown to contain the development of COVID-19 is a response to information that allows for additional risk in the view of investors. The added risk in question is a decrease in the economic level and company performance as a result of the implementation of the policy so that it will reduce the value of the company which can trigger a decline in stock prices. According to informationally efficient market theory, the market will react if there is information available where the information contains risks that allow investors to take protective measures. After the announcement, stock returns tend to move up, but on the 3rd to 5th day after the announcement, stock returns move towards a very sharp decline. The indication is that there is an abnormal return on the 5th and 10th day after the announcement of the COVID-19 case in Indonesia.

There is a decrease in stock returns for a long time and an abnormal increase after the covid 19 in Indonesia, the researchers will conduct research on the announcement. This will greatly affect the abnormal return of shares in the banking sector listed on the Indonesia Stock Exchange. This is done to obtain the risk value that may occur when investing in stock trading on the Indonesia Stock Exchange in the banking sector. According to Djaja (2019:262), market efficiency theory explains that simply the market correctly includes all relevant public information about the company in the value of the shares traded. But in reality the capital market is not efficient because investors or capital market participants do not have access to the same information. However, under certain conditions, the value of shares may change to be more expensive (over value) or become cheaper (under value) due to an event that informs of economic changes. This is known as abnormal return.

Stock prices will tend to react to certain conditions that can disrupt cash flow in the company's operations. According to Bash (2020) abnormal stock returns reacted negatively when the Covid 19 virus spread to 30 countries in sequence affected by the virus. In this case, there is a very significant difference before the existence of covid 19 and after or during the spread of covid 19 which uses the market method with a different event window. This means that the stock will move negatively if there is an event that requires a change or fluctuation at a certain equilibrium level.

Changes in the equilibrium level of stock prices at certain points will cause symmetrical economic changes due to the unpredictable tendency of decreasing or increasing stocks. According to Panyagometh (2020) the reaction to stock volatility has an asymmetric impact during a pandemic, although it depends on each business sector. However, regardless of the exogenous nature of an event, there is an uneven impact on the return

of abnormal return volatility. This research is a form of event study about the spread of covid 19 in Indonesia on banking stocks.

The government made a policy by importing vaccines to weaken the spread of covid 19 in Indonesia so that this policy gave hope to investors and companies to be able to rise from the economic downturn. The vaccine imported by Indonesia was Sinovac from China on December 6, 2020 (Merdeka.com published December 6, 2020). According to Wikipedia, the Sinovac vaccine is a vaccine used to weaken the spread of COVID-19 made by Sinovac Biotek Ltd in China. The event that the vaccine arrives in Indonesia can convince investors that the economy will recover soon because the spread of the virus can be stopped.

The trend of a drastic decline in stock returns or abnormal returns can be seen 5 days before the arrival of the covid-19 vaccine to Indonesia, namely on November 30, 2020. This explains that investors' concerns are still high about the decline in Indonesia's economic conditions during the pandemic. After the covid-19 vaccine arrived in Indonesia, stock returns fluctuated for 8 days, although there was a decline on the 9th day, namely on December 18, 2020.

The uniqueness of this research can be seen in the use of the event period in the period when the announcement of the COVID-19 case in Indonesia focused on the banking sector. This study will also examine the stock market reaction when the announcement of the arrival of the Sinovac vaccine to Indonesia as an effort to reduce the spread of the COVID-19 pandemic is carried out because of the hope that the use of the vaccine can reduce the spread of pandemic cases, so that the economy can be improved again. The purchase of the vaccine will provide hope for investors and entrepreneurs to return to their normal activities. So the uniqueness of this research is not only discussing the stock market reaction when the announcement of the pandemic case, but also adding the announcement of the arrival of the pandemic prevention vaccine to Indonesia.

Research conducted by Takyi (2020), Zhang (2020), and Singh (2020) explains that there are significant changes in the relationship between COVID-19 and abnormal stock returns. Bash (2020) explained that there were differences before and after the development of covid 19 in various countries in the world. Kamran's (2020) research in America explained that most corporate investors did not respond to the impact of covid 19, or there was no reaction to stock returns before and during the development of covid 19 in America. Heyden's research (2020) explains that the impact of covid 19 on stock prices only occurs from -1 before the announcement until 10 days after the announcement in cases of death only. The results of the study are still different, so further research must be carried out on the stock market reaction regarding the announcement of the COVID-19 case in Indonesia.

Based on the phenomenon where the trend of fluctuations occurs before and after the announcement of the COVID-19 case and the arrival of the vaccine in Indonesia, it is interesting to conduct research with this theme. Based on the background, the author will research with the title "Analysis of Abnormal Stock Returns in the Banking Sector on the Indonesia Stock Exchange: Event Study During the Announcement of Covid 19 Cases and Vaccinations in Indonesia".

2 Theoretical Review

2.1 Market Efficiency Theory

According to Hartono (2017: 605) informationally efficient market theory, the market will react if there is information available where the information contains risks that allow investors to take protective measures. The form of market efficiency can be viewed in terms of the availability of information alone or can be seen not only from the availability of such information but also from the sophistication of investor behavior in making decisions based on analysis of available information.

According to Singh (2020) based on market efficiency theory, investors must make rational decisions related to the existence of an event such as the COVID-19 which remains to entrust intervention from the government through authorized institutions so as to encourage the market to enter a period of uncertainty. The government and companies must maintain investor confidence so that fluctuations in stock trading changes that cause noise can be intervened or stop panic in the sale of stock trading which causes further pressure on the joint stock index.

2.2 Capital Market

Each country has its own capital market that functions as a driver of the economy. According to Husnan (2020:04) the capital market is a market that provides facilities for transferring funds from parties who have excess funds to those who need funds. The existence of an investment of excess funds obtains a reward in the delivery of these funds. The availability of funds from outside parties allows parties who need funds to invest without having to wait for the availability of funds from the company's operational results. The availability of these funds is expected to be able to increase production output which will ultimately increase the company's prosperity.

2.3 Stock

According to Hartono (2017: 189) stock are ownership rights to a company that issues them. Each company has different characteristics of shares according to the level of the agreement and the purpose for which it is issued. The company's main purpose in issuing shares is to obtain funding sources from investors without having to pay interest. Investors buy shares with the aim of investing their funds in order to get profits in the form of capital gains or dividends.

2.4 Abnormal Returns

According to Husnan (2020:241) the abnormal return value is positive, it means that the level of profit obtained is higher than expected, whereas if the value of abnormal return is negative, the level of profit obtained is lower than expected. Measurement of abnormal returns based on the Bash journal (2020), namely:

$$ABR = R_i - E(R_i)$$

$$E(R_i) = a + \beta R_m$$

Description

ABR = Abnormal return

R_i = Stock profit rate for period i

R_m = Profit rate of market index period i

a = alpha level

b = Regression coefficient

2.5 Conceptual Framework

Market efficiency theory explains that simply the market correctly includes all relevant public information about the company in the value of the shares traded. However, under certain conditions, the value of shares may change to be more expensive (over value) or become cheaper (under value) due to an event that informs of economic changes.

Informationally efficient market theory, the market will react if there is information available where the information contains risks that allow investors to take protective measures. The form of market efficiency can be viewed in terms of the availability of information alone or can be seen not only from the availability of such information but also from the sophistication of investor behavior in making decisions based on analysis of available information. At the time of the Covid-19 case, investors and market participants were worried about an economic downturn due to efforts to contain the spread of the pandemic. Efforts are made by implementing large-scale social restrictions which have stopped most of the company's operations. This resulted in the reaction of stock prices in the direction of decline. The event study in this study was at the time of the announcement of the COVID-19 case in Indonesia and the arrival of the Sinovak vaccine to Indonesia.

2.6 Hypothesis

Based on the problem formulation, theoretical study and conceptual framework described above, this research can be formulated as follows:

1. There is a difference in abnormal returns 3 days before and after the announcement of the COVID-19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.
2. There is a difference in abnormal returns 5 days before and after the announcement of the COVID-19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.
3. There is a difference in abnormal returns 10 days before and after the announcement of the Covid-19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.
4. There is a difference in abnormal returns 15 days before and after the announcement of the COVID-19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.
5. There is a difference in abnormal returns 20 days before and after the announcement of the COVID-19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.

6. There is a difference in abnormal returns 25 days before and after the announcement of the COVID-19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.
7. There is a difference in abnormal returns 3 days before and after the announcement of the covid 19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.
8. There is a difference in abnormal returns 5 days before and after the announcement of the covid 19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.
9. There is a difference in abnormal returns 10 days before and after the announcement of the covid 19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.
10. There is a difference in abnormal returns 15 days before and after the announcement of the COVID-19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.
11. There is a difference in abnormal returns 20 days before and after the announcement of the covid 19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.
12. There is a difference in abnormal returns 25 days before and after the announcement of the covid 19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.

3 Research Methods

3.1 Population

According to Sekaran (2017a, b:53) population refers to the whole group, people, events, and interesting things that researchers want to investigate where researchers want to make opinions based on sample statistics. The population in this study are all banking companies listed on the Indonesia Stock Exchange for the 2021 period as many as 47 companies so that the total population.

3.2 Sample

According to Sekaran (2017a, b: 54) the sample is part of the population consisting of a number of members selected from the population. In this study, the sampling method was based on purposive sampling technique which was included in non-probability sampling. According to Sekaran (2017a, b: 68) purposive sampling is a sampling design based on certain considerations that is used if a certain number or category of people has limited information sought. The criteria for sampling in this study are:

1. Banking sector companies listed on the Indonesia Stock Exchange before 2020

The number of samples that meet the sampling criteria are 42 companies in the banking sector on the Indonesia Stock Exchange. The amount of data used is as much as the research period, which is 30 days before and after the announcement (Fig. 1).

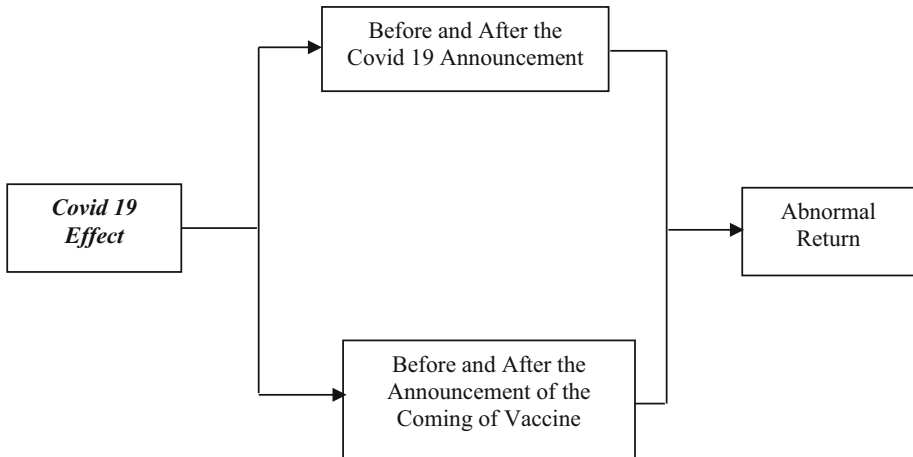


Fig. 1. Model

3.3 Data Analysis Technique

Estimated windows were observed for 250 days in 2020. Based on the results of Bash's research (2020), differences in market reactions can be seen in the 5 days before and after, as well as 10 days before and after the announcement. So this study will use more time, namely 30 days, 25 days, 20 days, 15 days, 10 days, 5 days, and 3 days before and after the announcement date. Event period in 2020 for 60 days which is calculated from 30 days, 25 days, 20 days, 15 days, 10 days, 5 days, and 3 days before the announcement of covid 19 in Indonesia, 30 days, 25 days, 20 days, 15 days, 10 days, 5 days, and 3 days after the announcement of covid 19 in Indonesia, 30 days, 25 days, 20 days, 15 days, 10 days, 5 days, and 3 days before the announcement of the arrival of the covid 19 vaccine in Indonesia, and 30 days, 25 days, 20 days, 15 days, 10 days, 5 days, and 3 days after the announcement of the arrival of the COVID-19 vaccine in Indonesia. The event window in this study uses a pre-event window, namely $(-30,0)$ before the announcement of the COVID-19 case and the arrival of the vaccine. The post event window is $(0,30)$ after the announcement of the COVID-19 case and the arrival of the vaccine. Statistical testing will be selected based on whether or not the data normality test is met, namely choosing to use parametric statistics (paired sample t test) or non-parametric (Mann Whitney) statistics.

4 Research Results and Discussion

4.1 Data Analysis

Based on the normality test, it can be explained that there is no data that is normally distributed because the asymp sig value is $0.000 < 0.05$ so that the Paired Sample T-Test parametric test cannot be carried out. So in this study using the Mann Whitney test as a hypothesis test.

4.2 Hypothesis Testing

The Mann Whitney test as a substitute to see the difference between two independent samples which was carried out using the significant value criterion < 0.05 , then there was a difference or the alternative hypothesis was accepted. The event period in the study started from 30 days, 25 days, 20 days, 15 days, 10 days, 5 days, and 3 days. The results of hypothesis testing in this study are.

Tests in the 3 day period before and after the Covid-19 announcement had an asymp sig value of $0.461 > 0.05$, so the alternative hypothesis was rejected. This means that it can be concluded that there is no difference in abnormal returns in the 3 day period before and after the announcement of Covid-19 in Indonesia. The Wilcoxon value is the same as the sum of rank 3 days before the announcement of Covid-19 so that abnormal stock returns are better 3 days before the announcement of Covid-19 in Indonesia.

Tests in the 5 day period before and after the Covid-19 announcement had an asymp sig value of $0.080 > 0.05$, so the alternative hypothesis was rejected. This means that it can be concluded that there is no difference in abnormal returns in the 5-day period before and after the announcement of Covid-19 in Indonesia.

Testing in the 10-day period before and after the Covid-19 announcement had an asymp sig value of $0.817 > 0.05$, so the alternative hypothesis was rejected. This means that it can be concluded that there is no difference in abnormal returns in the 10-day period before and after the announcement of Covid-19 in Indonesia.

Testing in the 15-day period before and after the Covid-19 announcement had an asymp sig value of $0.673 > 0.05$, so the alternative hypothesis was rejected. This means that it can be concluded that there is no difference in abnormal returns in the 15-day period before and after the announcement of Covid-19 in Indonesia.

Tests in the 20 day period before and after the Covid-19 announcement had an asymp sig value of $0.140 > 0.05$, so the alternative hypothesis was rejected. This means that it can be concluded that there is no difference in abnormal returns in the 20-day period before and after the announcement of Covid-19 in Indonesia.

Tests in the 25 day period before and after the Covid-19 announcement had an asymp sig value of $0.256 > 0.05$, so the alternative hypothesis was rejected. This means that it can be concluded that there is no difference in abnormal returns in the 25-day period before and after the announcement of Covid-19 in Indonesia.

Tests in the 30 day period before and after the Covid-19 announcement had an asymp sig value of $0.302 > 0.05$, so the alternative hypothesis was rejected. This means that it can be concluded that there is no difference in abnormal returns in the 30-day period before and after the announcement of Covid-19 in Indonesia (Table 1).

Tests in the 3 day period before and after the announcement of the vaccine had an asymp sig value of $0.293 > 0.05$, so the alternative hypothesis was rejected. This means that it can be concluded that there is no difference in abnormal returns in the 3 day period before and after the announcement of the vaccine in Indonesia. The Wilcoxon value is the same as the sum of rank at 3 days after the announcement of the vaccine so that the abnormal return of the stock is better at 3 days after the announcement of the vaccine in Indonesia.

Tests in the 5 day period before and after the announcement of the vaccine had an asymp sig value of $0.092 > 0.05$, so the alternative hypothesis was rejected. This means

Table 1. Hypothesis Test

<i>Period</i>	<i>Asymp. Sig</i>	<i>Wilcoxon W</i>	<i>Sum of Rank</i>	<i>Hasil</i>
3 days before the announcement of Covid-19 3 days after the announcement of Covid-19	0,461	15513	15513 16365	Rejected
5 days before the announcement of Covid-19 5 days after the announcement of Covid-19	0,080	42029	42029 46381	Rejected
10 days before the announcement of Covid-19 10 days after the announcement of Covid-19	0,817	175796	175796 177424	Rejected
15 days before the announcement of Covid-19 15 days after the announcement of Covid-19	0,673	394489	399941 394489	Rejected
20 days before the announcement of Covid-19 20 days after the announcement of Covid-19	0,140	691352	720688 691352	Rejected
25 days before the announcement of Covid-19 25 days after the announcement of Covid-19	0,256	1087245	1118805 1087245	Rejected
30 days before the announcement of Covid-19 30 days after the announcement of Covid-19	0,302	1569415	1607045 1569415	Rejected
3 days before vaccine announcement 3 days after vaccine announcement	0,293	15331	16547 15331	Rejected
5 days before vaccine announcement 5 days after vaccine announcement	0,092	42111	46299 42111	Rejected
10 days before vaccine announcement 10 days after vaccine announcement	0,152	171578	181642 171578	Rejected
15 days before vaccine announcement 15 days after vaccine announcement	0,030	383192	411238 383192	Accepted
20 days before vaccine announcement 20 days after vaccine announcement	0,042	685756	726284 685756	Accepted
25 days before vaccine announcement 25 days after vaccine announcement	0,034	1073596	1132454 1073586	Accepted
30 days before vaccine announcement 30 days after vaccine announcement	0,003	1534537	1641923 1534537	Accepted

that it can be concluded that there is no difference in abnormal returns in the 5-day period before and after the announcement of the vaccine in Indonesia. The Wilcoxon value is the same as the sum of rank at 5 days after the announcement of the vaccine so that the abnormal return of the stock is better at 5 days after the announcement of the vaccine in Indonesia.

Tests in the 10 day period before and after the announcement of the vaccine had an asymp sig value of $0.152 > 0.05$, so the alternative hypothesis was rejected. This means that it can be concluded that there is no difference in abnormal returns in the 10-day period before and after the announcement of the vaccine in Indonesia. The Wilcoxon value is the same as the sum of rank 10 days after the announcement of the vaccine, so that abnormal stock returns are better at 10 days after the announcement of the vaccine in Indonesia.

The test in the 15 day period before and after the announcement of the vaccine had an asymp sig value of $0.030 < 0.05$, so the alternative hypothesis was accepted. This means that it can be concluded that there are differences in abnormal returns in the 15-day period before and after the announcement of the vaccine in Indonesia. The Wilcoxon

value is the same as the sum of rank 15 days after the announcement of the vaccine, so that abnormal stock returns are better 15 days after the announcement of the vaccine in Indonesia.

The test in the period of 20 days before and after the announcement of the vaccine had an asymp sig value of $0.042 < 0.05$, so the alternative hypothesis was accepted. This means that it can be concluded that there are differences in abnormal returns in the 20-day period before and after the announcement of the vaccine in Indonesia. The Wilcoxon value is the same as the sum of rank at 20 days after the announcement of the vaccine so that the abnormal return of the stock is better at 20 days after the announcement of the vaccine in Indonesia.

Tests in the 25 day period before and after the announcement of the vaccine had an asymp sig value of $0.034 < 0.05$, so the alternative hypothesis was accepted. This means that it can be concluded that there are differences in abnormal returns in the 25-day period before and after the announcement of the vaccine in Indonesia. The Wilcoxon value is the same as the sum of rank at 25 days after the announcement of the vaccine so that the abnormal return of the stock is better at 25 days after the announcement of the vaccine in Indonesia.

Tests in the 30 day period before and after the announcement of the vaccine had an asymp sig value of $0.003 < 0.05$, so the alternative hypothesis was accepted. This means that it can be concluded that there are differences in abnormal returns in the 30 day period before and after the announcement of the vaccine in Indonesia.

5 Discussion

5.1 Differences in Abnormal Stock Returns Before and After the Covid-19 Announcement in Indonesia

The hypothesis in this study is that there are differences in abnormal stock returns with the announcement of Covid-19 cases in Indonesia in the period of 30 days, 25 days, 20 days, 15 days, 10 days, 5 days, and 3 days before and after the announcement. The results of the study concluded that there was no difference in abnormal returns in the period before and after the announcement of Covid-19 with the proposed event window. The results of this study do not support the research hypothesis. This happened because the spread of Covid-19 in Indonesia did not happen suddenly, but first in the Wuhan province of China.

The government has tried to contain Covid-19 from entering Indonesia. Investors also believe that the government has a good strategy in tackling the spread of Covid-19 because it has experience with the economic crisis that occurred in 1997. Based on this experience, investors believe that the government will be able to balance economic conditions with health so that the level of investor confidence at the time of announcement of cases Covid-19 is still very high. This is also supported by the government's strategy by providing incentives to banking institutions and policies that regulate special banking conditions during Covid-19. This strategy has succeeded in making investor confidence high so that there is no abnormal return before and after the announcement.

The results of this study support the results of Kamran's (2020) research in America which explains that most corporate investors do not respond to the impact of covid 19,

or there is no reaction to stock returns before and during the development of covid 19 in America. Heyden's research (2020) also explains that the impact of covid 19 on stock prices only occurs from -1 before the announcement until 10 days after the announcement. The results of this study do not support the results of research conducted by Takyi (2020), Zhang (2020), and Singh (2020) explaining that there are significant changes in the relationship between COVID-19 and abnormal stock returns. Bash (2020) explained that there were differences before and after the development of covid 19 in various countries in the world.

The results of the study do not support the market efficiency theory which explains that simply the market correctly includes all relevant public information about the company in the value of the shares traded. But in reality the capital market is not efficient because investors or capital market participants do not have access to the same information. However, under certain conditions, the value of shares may change to be more expensive (over value) or become cheaper (under value) due to an event that informs of economic changes. However, economic changes that can make stock values change rapidly must be economic conditions that can result in a decrease in excessive public consumption activity that triggers the potential for dramatic price increases. The announcement of Covid-19 which was accompanied by a strategy of strengthening the economy did not disrupt people's consumption activities, it just experienced a shift from traditional patterns to modern ones by utilizing information technology. So the industry can still work well.

At first the announcement of the Covid-19 case was a very scary thing. However, the government's ability through the policy of the Minister of Finance and Bank Indonesia to hold interest rates and balance them with market conditions at that time resulted in the maintenance of banking operational activities, although there was a slight increase in bad loans. However, the government through several policies provides incentives to banking institutions to be distributed to people affected by the Covid-19 policy. This adds to investor confidence that Indonesia is able to control its economy. This is proven by the announcement of the Covid-19 case that did not cause differences in abnormal returns that could endanger economic conditions.

5.2 Differences in Abnormal Stock Returns Before and After Vaccine Announcement in Indonesia

The hypothesis in this study is that there are differences in abnormal stock returns with the announcement of vaccines in Indonesia in the period of 30 days, 25 days, 20 days, 15 days, 10 days, 5 days, and 3 days before and after the announcement. The results of the study concluded that there were differences in abnormal returns in the periods of 15 days, 20 days, 25 days, and 30 days before and after the announcement of the vaccine in Indonesia, but there were no differences in abnormal returns in the 3 days, 5 days, and 10 days before and after. Announcement of vaccines in Indonesia. The results of this study support the research hypothesis. This is because the arrival of a vaccine in Indonesia gives hope that there will be a decrease in the spread of Covid-19 in Indonesia.

The government is trying to contain the spread of Covid-19 by bringing in a vaccine from China in the hope of establishing immunity. This gives hope that there will be economic recovery by giving vaccines to the public so that investors feel confident that

economic conditions will return to stability. However, the response to the vaccine cannot be done quickly because it is waiting for regulations to give it to the public. This gives a signal to investors that the process of administering the vaccine will take a long time even though the vaccine has arrived in Indonesia. The reaction of new investors is seen 15 days to 30 days after the announcement which is marked by differences in abnormal returns 15 days before and after the announcement of the vaccine.

The results of this study support the results of research conducted by Takyi (2020), Zhang (2020), and Singh (2020) explaining that there are significant changes in the relationship between COVID-19 and abnormal stock returns. Bash (2020) explained that there were differences before and after the development of covid 19 in various countries in the world. The results of this study do not support the results of Kamran's (2020) research in America which explains that most corporate investors do not respond to the impact of covid 19, or there is no reaction to stock returns before and during the development of covid 19 in America. Heyden's research (2020) also explains that the impact of covid 19 on stock prices only occurs from -1 before the announcement until 10 days after the announcement.

The results of the study support the market efficiency theory which explains that simply the market correctly includes all relevant public information about the company in the value of the shares traded. But in reality the capital market is not efficient because investors or capital market participants do not have access to the same information. However, under certain conditions, the value of shares may change to be more expensive (over value) or become cheaper (under value) due to an event that informs of economic changes. The announcement of the vaccine, which was accompanied by a strategy to strengthen the economy, gave investors hope that the economy would recover after 9 months of experiencing an economic downturn, from March 2020 to December 2020.

6 Conclusion

Based on the results of statistical testing, conclusions can be drawn in this study, namely:

1. There is no difference in abnormal returns 3 days before and after the announcement of the covid 19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.
2. There is no difference in abnormal returns 5 days before and after the announcement of the COVID-19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.
3. There is no difference in abnormal returns 10 days before and after the announcement of the COVID-19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.
4. There is no difference in abnormal returns 15 days before and after the announcement of the COVID-19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.
5. There is no difference in abnormal returns 20 days before and after the announcement of the COVID-19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.

6. There is no difference in abnormal returns 25 days before and after the announcement of the covid 19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.
7. There is no difference in abnormal returns 30 days before and after the announcement of the COVID-19 case in Indonesia in the banking industry on the Indonesia Stock Exchange.
8. There is no difference in abnormal returns 3 days before and after the announcement of the covid 19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.
9. There is no difference in abnormal returns 5 days before and after the announcement of the covid 19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.
10. There is no difference in abnormal returns 10 days before and after the announcement of the covid 19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.
11. There is a difference in abnormal returns 15 days before and after the announcement of the COVID-19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.
12. There is a difference in abnormal returns 20 days before and after the announcement of the covid 19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.
13. There is a difference in abnormal returns 25 days before and after the announcement of the covid 19 vaccine arriving in Indonesia in the banking industry on the Indonesia Stock Exchange.

Suggestions that can be written by researchers related to the results of this study are:

1. Companies should pay more attention to changes in stock prices in the period of 15 to 30 days before and after events related to vaccine announcements or efforts to overcome COVID-19 in Indonesia.
2. Investors should be careful in carrying out share buying and selling transactions for a period of 15 days to 30 days before and after events related to the prevention of covid 19 in Indonesia.
3. Further research should use other methods that can measure the presence of abnormal returns related to Covid-19 cases in Indonesia, such as using an event window with a count of months.

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