

Policy Analysis of Booster Vaccination against State-Owned Pharmaceutical Stocks

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ABSTRACT

Medical devices became one of the most important and most sought after things during the Covid-19 pandemic. This will certainly have an impact on the pharmaceutical stock price, this study discusses the reaction of the share price of state-owned companies in the pharmaceutical sector before and after the implementation of booster vaccination. The announcement of the booster vaccination recana also affected the performance of shares of PT. Indofarma and PT. Kimia Farma as a vaccine development company at the beginning of the pandemic. In this study using comparative descriptive methods, data taken in the form of daily stock data obtained on the Indonesia Stock Exchange website and yahoo finance website. Based on studies that have been conducted on existing data, the results of the analysis obtained data that there was an abnormal return negative both in INAF and KAEF before and after the implementation of booster vaccination but abnormal return positive also occurred a few days after the implementation of booster vaccination, tva experienced an increase in shares even though a few days before and after the booster vaccination of INAF and KAEF shares experienced abnormal negative returns.

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INTRODUCTION

The spread of the Covid-19 virus in Indonesia began to appear in March 2020 until now, starting with two women who tested positive for the Corona virus as a result of interacting with Japanese citizens who at that time entered Indonesian territory for vacation, according to the head of the East Java Health Service Covid -19 that entered Indonesia were found to have several variants, to be precise, there was one local variant, 9 Delta variants, and 8 Omicron variants (Achiel et al., 2020). It is yet to be confirmed whether the local variant found in Surabaya is more dangerous than the other two variants or not for the Delta variant (B.1.617.2), which was first discovered in India in October 2020, has a higher transmission rate of 30% - 100% more easily transmitted than the local variants found. Omicron (B.1.1.529) Technical Brief and Priority Actions for Member States. December 23, 2021 it was stated that the Omicron variant had faster transmission characteristics than the Delta variant (Amin & Yunita, 2022).

The Indonesian government has tried to prevent the spread of the Covid-19 virus by carrying out various methods from carrying out lockdowns, PSBB, to PPKM. The various restrictions on community activities that were implemented had an impact on the economy resulting in a recession in 2020 (Hassanpour & Nikbakht, 2021). As a result of the recession, stock prices fell and also contributed to a decline in the JCI, both as a result of the recession and the market receiving negative signals as a result of the entry of Covid-19 in Indonesia of course it will greatly impact the stock price because investors will prefer to sell their shares compared to buying company shares (Amin & Irawan, 2021)

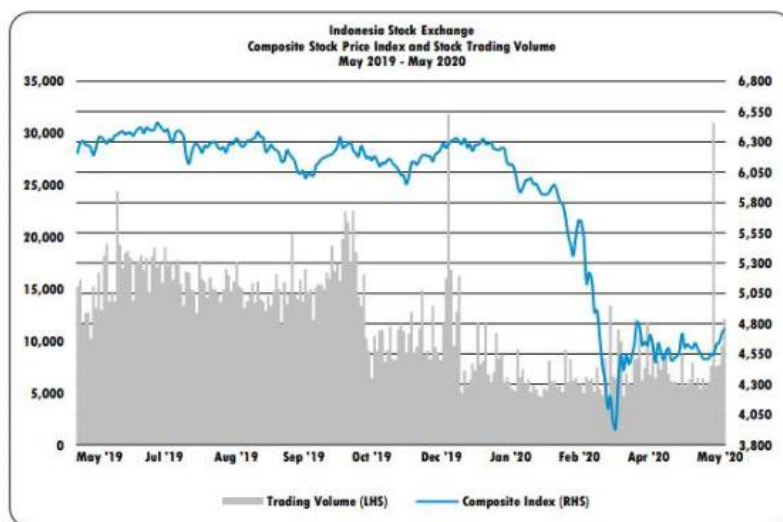


Figure 1. IHSG for the period May 2019 – May 2020

Based on these events, if the announcement has information content then of course the market will react when the announcement is received by the market. This is because an efficient market will react quickly to information related to existing phenomena (Saputro, 2020). Therefore, information regarding booster vaccinations that will be carried out in 2022 will certainly affect the share price of PT.Indofarma and PT.Kimia Farma as state-owned companies in the pharmaceutical sector and national vaccine distributors. This market reaction can be measured using abnormal returns and also stock trading volume activity as seen from the value of stock trading volume or trading volume activity (Amin & Irawan, 2021). By using the variable abnormal return and trading volume activity, we will be able to see how the stock reaction from PT. Indofarma and PT. Kimia Farma resulting from the implementation of booster vaccines.

RESEARCH METHOD

In this study, the approach used is an event study or event study (Suganda, 2018). Event studies analyze abnormal returns from securities that may occur around the announcement of an event (Fadhilah & Yunita, 2021). Thus, testing market efficiency in this study is to test abnormal returns. In addition to PT.Indofarma and PT.Kimia Farma's abnormal return variables, another variable that was examined in this study was trading volume activity. The event period used in this study was 11 days (Amin 2022). The 11-day period includes 5 days before the announcement event, 1 day on the announcement day or event date, and 5 days after the announcement. At the event date or when the event occurs on 12 January 2022, 5 days before the event starts on 5 January 2022 and 5 days after the event ends on 19 January 2022.

Paired Sample t-Test is used if the data used is normally distributed (Junizar, 2013). The paired sample t-test is used to see differences in abnormal returns before and after the implementation of booster vaccinations in Indonesia. The basis for decision making is based on the probability value, i.e. if the probability is > 0.05 , then there is no difference in stock before and after the booster vaccination and if the probability is ≤ 0.05 then there is a stock difference before and after the booster vaccination (Amin, 2022b).

If the data is not normally distributed, the test is carried out using a non-parametric test, namely the Wilcoxon signed ranks test (Amin & Ramdhani, 2017). The basis for making a decision is if the probability is > 0.05 then there is no difference in stocks before and after the implementation of the booster vaccination, and if the probability is ≤ 0.05 then there is a difference in the stocks before and after the implementation of the booster vaccination (Morris, 1987)

RESULTS AND DISCUSSIONS

Deskriptive Statistic

The event period used in this study was 5 days before the booster vaccine and 5 days after the booster vaccine. The event of the initial announcement of the implementation of booster vaccinations in Indonesia. Following are the results of a descriptive analysis of abnormal returns and average trading volume activity before and after the initial announcement of the first booster vaccination in Indonesia

Tabel 1. Deskriptive Statistic *Abnormal Return*

Descriptive Statistics				
	N	Minimum	Maximum	Mean
INAF before	5	-0,03703	0,02831	-0,0027840
INAF after	5	-0,04185	0,01661	-0,0096740

Descriptive Statistics

	N	Minimum	Maximum	Mean
KAEF before	5	-0,05919	0,06300	-0,0018220
KAEF after	5	-0,06431	0,00722	-0,0221040
Valid N (listwise)	5			

Source: processed data (2022)

In table 1 it can be seen that the minimum and maximum values of each PT.Indofarma (INAF) and PT.Kimia Farma (KAEF) shares, at the minimum value of INAF shares in the period prior to the implementation of the booster vaccination, the value was recorded at -0.03703, namely on H- 1 ahead of the booster vaccination and the maximum value is 0.02831 on D-2. The close distance between the maximum and minimum values is because the market receives negative information ahead of the vaccination. Whereas for abnormal returns after vaccination there is still a negative minimum value of -0.04185, namely on D+4 and a maximum value of 0.01661 is on D+3. In KAEF shares in the period prior to the implementation of the booster vaccination, a minimum value of -0.05919 was recorded on H-1, and a maximum value of 0.06300 was on D-2, the close distance between the maximum and minimum AR values was due to negative information. for booster vaccinations. In the period after the booster vaccination there is a minimum value of -0.06431 which is on H+4 and a minimum value of 0.00722 is on D+3, a positive reaction that occurs after the implementation of the booster vaccination because the market only absorbs positive information a few days after completion implementation.

Table 2. Descriptive Statistics of Trading Volume Activity

Descriptive Statistics				
	N	Minimum	Maximum	Mean
INAF before	5	0,00164	0,00280	0,0021940
INAF after	5	0,00053	0,00171	0,0009580
KAEF before	5	0,00087	0,00436	0,0025180
KAEF after	5	0,00065	0,00341	0,0014880
Valid N (listwise)	5			

Source: processed data (2022)

Table 2 shows the descriptive of the TVA variable, at a minimum value there is no negative value because even though AR has a negative value, pharmaceutical stocks are still excellent stocks because during a pandemic the demand for medical devices and medicines was still high, so even though the market reacted negatively to vaccinations booster but stock trading volume is not too affected

Normality test

**Table 3. TVA and AR Normality Test
One-Sample Kolmogorov-Smirnov Test**

	TVA INAF before	TVA INAF after	TVA KAEF before	TVA KAEF after	AR INAF before	AR INAF after	AR KAEF before	AR KAEF after
N	5	5	5	5	5	5	5	5
Normal Parameters ^{a,b}								
Mean	0,00219	0,00096	0,00252	0,00149	-	-	-	-
Std. Deviation	0,00051	0,00049	0,00171	0,00113	0,02631	0,02151	0,04526	0,02832
Most Extreme Differences								
Absolute	0,233	0,204	0,267	0,289	0,150	0,181	0,167	0,164
Positive	0,233	0,204	0,267	0,289	0,149	0,155	0,167	0,150
Negative	-0,182	-0,190	-0,258	-0,229	-0,150	-0,181	-0,124	-0,164
Test Statistic	0,233	0,204	0,267	0,289	0,150	0,181	0,167	0,164
Asymp. Sig. (2-tailed)	0,200 ^{c,d}	0,200 ^{c,d}	0,200 ^{c,d}	0,198 ^c	0,200 ^{c,d}	0,200 ^{c,d}	0,200 ^{c,d}	0,200 ^{c,d}

Source: processed data (2022)

Based on table 3, it can be concluded that the variables of abnormal return and trading volume activity before and after the booster vaccination are normally distributed. This can be seen in its significance, in all data it can be seen that the asymp. Sig. Above 0.05 so that it can be concluded that the data is normally distributed and can be continued by conducting a different test paired sample t-test (Amin & Irawan, 2021).

Difference Test

**Table 4. Paired sample t-test
Paired Samples Test**

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	AR INAF before - AR INAF after	0,00689	0,041900	0,018693	-0,045011	0,058791	0,369	4	0,731
Pair 2	AR KAEF before - AR KAEF after	0,02028	0,062745	0,028060	-0,057626	0,098190	0,723	4	0,510
Pair 3	TVA INAF before - TVA INAF after	0,00124	0,000600	0,000268	0,000491	0,001981	4,606	4	0,010
Pair 4	TVA KAEF before - TVA KAEF after	0,00103	0,001592	0,000712	-0,000946	0,003006	1,447	4	0,221

Source: processed data (2022)

Table 4 can be seen in the abnormal return variable before and after the implementation of the booster vaccination, which has a significance value above 0.05 so that it can be concluded that there is no difference in abnormal returns before and after the implementation of the booster vaccination on PT.Indofarma and PT.Kimia stocks Farma. Whereas the trading volume activity variable has a significance value below 0.05 for PT.Indofarma so that there is a difference in TVA PT.Indofarma before and after implementing the booster vaccination, for TVA PT.Kimia Farma the significance value shows 0.221 or above from 0.05 so that TVA PT. There was no difference between Kimia Farma before and after the implementation of the booster vaccination.

Discussion

Indonesia entered a period of recession at the start of the spread of Covid-19 when it was first discovered that it had entered Indonesia, the impact of Covid-19 very quickly spread to all sectors, including trade, banking, and had the biggest impact on the tourism sector. The government's policy to implement lockdowns, PSBB, and PPKM aims to suppress the spread of Covid-19 to the community, but this has actually impacted the Indonesian economy and caused an economic recession.

Vaccination is carried out with the hope that the community can avoid Covid-19 so that by avoiding people from being exposed to the Covid-19 virus, companies can return to operations and the Indonesian economy will revive, but with the emergence of new variants, namely delta and omicron, booster vaccinations are needed to strengthen the immune system. hold on. Booster vaccination will be carried out on January 12 2022 with priority on the elderly which will then be carried out en masse for all Indonesian people.

PT.Indofarma and PT.Kimia Farma experienced fluctuating movements, but during the implementation of the booster vaccination the shares of BUMN KAEF and INAF appreciated 1.64% and 0.89 respectively. With this increase, investors have started hunting for shares in the health sector. especially pharmaceuticals, if there are more and more negative cases of Covid-19 then stocks in the health sector will become even more excellent. So that the negative abnormal returns in INAF and KAEF cannot be directly indicated that these BUMN shares are not performing well, but it should be noted that even after the implementation of the booster vaccination there were positive abnormal returns that occurred, so that it can be concluded that pharmaceutical stocks will still become prima donna and be a good choice to invest.

With these results, it can be ascertained that with investors choosing to invest in pharmaceutical sector stocks, investors will get greater profits compared to other sectors, this is because pharmaceutical sector shares, especially PT. positive abnormal return, positive abnormal return indicates that the actual return obtained is greater than the expected return, so that by investing in PT.Indofarma and PT.Kimia Farma stocks, investors will be able to get this positive abnormal return.

CONCLUSION

Value of shares of PT. Indofarma (INAF) and PT. Kimia Farma (KAEF) still has the opportunity to get a greater positive abnormal return after implementing booster vaccinations, even though a few days after implementing the booster vaccine it has a negative abnormal return value, this is due to the increasing number of positive omicron cases, however, even though the Covid-19 patients are increasingly increasing, of course, will raise the need for medical devices and medicines as well, as well as the vaccines requested will be even greater, so of course the shares of PT.Indofarma and PT.Kimia will continue to increase and provide positive abnormal returns for investors.

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