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Announcement of COVID-19 cases in Indonesia on the Indonesian Stock Market: Analysis of a Study of Events in Miscellaneous Industry

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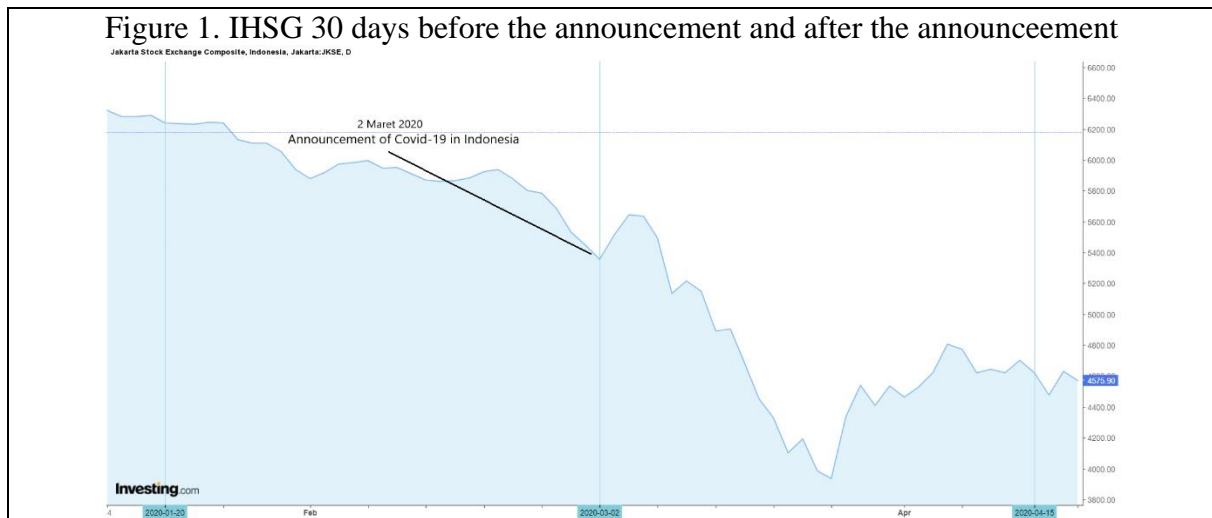
Abstract. The first Covid-19 case was announced on March 2, 2020. This study aims to determine whether there is a difference between the abnormal return before the announcement and after the announcement of the first Covid-19 case in Indonesia (case Study of Events in Miscellaneous Industry). The research data was taken 30 days before and 30 days after the announcement of the first case of Covid-19 in Indonesia. The data were processed using SPSS. From the results of data processing, it shows that there are differences in the index prices of Miscellaneous industry before and after the announcement of the first Covid-19 case in Indonesia. This is indicated by a significant value of $0.00 < 0.05$.

Keywords. Abnormal return, Covid-19, Event Study, Miscellaneous Industry

1. Introduction

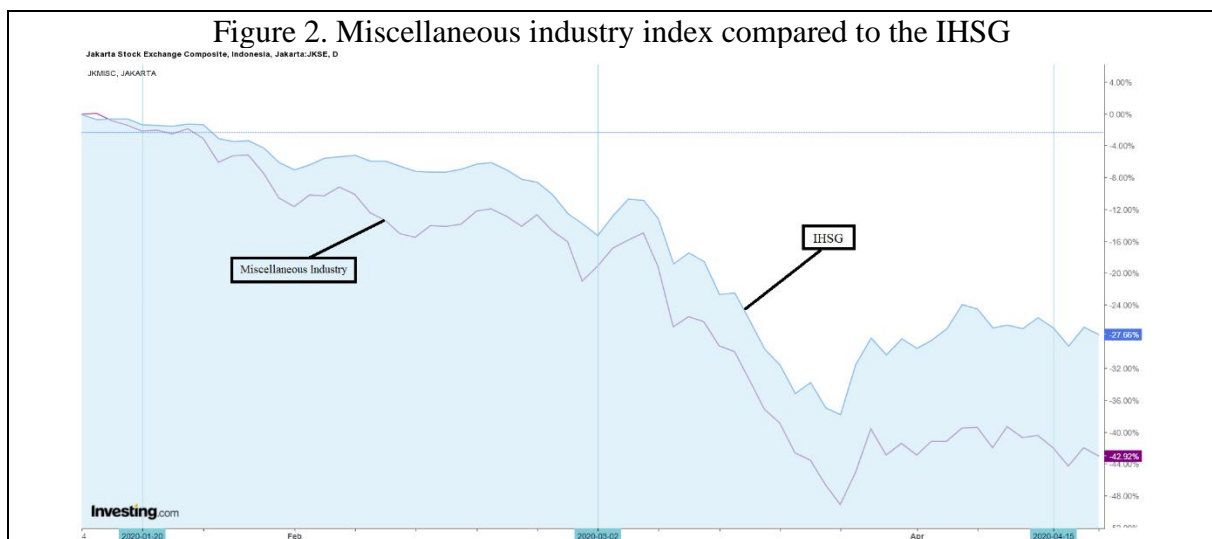
The Indonesian government announced the findings of the first corona virus infection case in Indonesia on Monday 2 March 2020 (Pikiran Rakyat, 2020). The Corona virus (Covid-19) originated in Wuhan, China, where the spread is so fast that it has spread throughout the world. The actions of the Indonesian government to prevent the spread of this virus by conducting social distancing, social distancing, wearing masks, working at home, studying at home, business activities, to large-scale restrictions (PSBB), etc.

The impact of the Covid-19 pandemic has made global conditions unstable, one of which is the economic sector. Investors on the Indonesia Stock Exchange experienced panic when the government announced the Covid-19 case entered Indonesia. On March 2, 2020, the IHSG closed down by -1.67% to the level of 5,361, this decline was due to the announcement of the Covid-19 case in Indonesia (Novika, 2020).



The Indonesian stock market is one of the affected by Covid-19, from Figure 1 it can be seen that the IHSG experienced a price decline before the Indonesian government announced the Covid-19 case in Indonesia and after the government announced the Covid-19 case in Indonesia the IHSG index price has decreased. Market conditions are difficult to predict and only become known after the event has occurred. Therefore, investors who intend to invest in the stock exchange must always monitor the conditions of the capital market (Ang, 1997).

The Indonesian Stock Exchange (IDX) has responded to positive cases of Covid-19 in Indonesia by tightening short selling transactions in the capital market. This is to anticipate the negative impact of Covid-19 on the Indonesian capital market. The COVID-19 virus has quite a negative impact on the capital market (Hamdani, 2020).



Based on Figure 2, charts of Miscellaneous industry index are below the performance of the IHSG index. one of the issuers of PT Industri and Trade Bintraco Dharma Tbk. (CARS) estimates that the impact of the corona virus will have an impact on car sales performance (Sudarwan, 2020).

In the current situation, people choose not to buy new vehicles, many are actually selling. Executive Director of the Indonesian Listed Companies Association, Samsul Hidayat PT Astra

International Tbk (ASII) agrees with this and estimates that this year's vehicle sales will be corrected by 40% (Sidik, 2020).

Apart from sales, there is a reduction in factory activity to factory closure. The PSBB policy caused factory production to decline. One of the factories that has temporarily stopped operating is PT Honda Prospect Motor (HPM).

This journal will conduct research on the impact of the Covid-19 pandemic on Miscellaneous industry sectors listed on the Indonesian stock exchange. Where the researcher will use the abnormal return measurement tool, it will be seen whether there is a difference in the average abnormal return of various industrial sectors on the Indonesian stock exchange before and after the determination of the Covid-19 pandemic in Indonesia.

In this study, there are problem formulations that can be written, including:

Are there any differences in the abnormal returns of Miscellaneous industry sectors before and after the Covid-19 announcement?

2. Literature review

Covid-19 (corona virus disease 2019) is a disease caused by the SARS-Cov-2 (Seve Acute Respiratory Syndrome Coronavirus 2) virus, better known as the Corona Virus. The Covid-19 case first appeared in the Chinese province of Wuhan. The initial suspicion of this disease was like pneumonia, with flu-like symptoms in general. But unlike influenza, the corona virus can develop rapidly, resulting in more severe infections and organ failure. This emergency condition mainly occurs in patients with previous health problems (No & Mona, 2020). (Nippani & Washer, 2004) conducted research on the effects of SARS on the markets of China, Canada, Indonesia, Hong Kong, Singapore, the Philippines, Vietnam and Thailand. SARS had no negative effect on the affected stock markets except Vietnam and China. (Loh, 2006) examined that the effect of SARS on airline stock performance had a negative effect on airline stock returns. (Chun-Da Chen et al., 2009) Analyzing the impact of the SARS outbreak on the Taiwanese stock market shows that the impact of the SARS crisis had a negative impact on retail and wholesale and tourism, but the biotechnology sector showed a positive effect. Research conducted (Rusyida & Pratama, 2020) examined the effect of covid-19 on the share price of the Indonesian Garuda company. It shows that covid-19 shows that the effect of covid-19 has a negative effect on stock prices. In a study conducted by (Nurmasari, 2020) examining the impact of covid-19 on retail companies, it shows that the impact of covid-19 has a significant effect on reducing transaction volumes and stock prices after the announcement of the pandemic. (Khan et al., 2020) found evidence that covid-19 has a negative impact on stock indices. (He et al., 2020) found that the covid-19 pandemic had a negative impact on stock prices on the Shanghai stock exchange, but the Shenzhen stock exchange had a positive impact. (Shiyammurti et al., 2020) found the impact of Covid-19 on slowing economic growth in Indonesia.

Pandemic

According to WHO (World Health Organization) a pandemic is the spread of new diseases throughout the world (WHO, 2020). There is no clear definition of a pandemic, but we are still trying to study the disease by examining their similarities and differences. Diseases that are chosen empirically to reflect the etiological spectrum, mechanisms of spread, and era of emergency, several diseases that have become pandemics, namely acute hemorrhagic conjunctivitis (AHC), AIDS, cholera, dengue, influenza, plague, severe acute respiratory syndrome (SARS), scabies, West Nile disease, and obesity (Morens et al., 2009). Covid-19 was declared a pandemic on 11 March 202 (WHO, 2020).

Event Study

The event study is used to test the efficiency of the semi-strong form market (Jogiyanto, 2020). The event tested in this study is the announcement of the Covid-19 case announced by the Indonesian government on March 2, 2020. The impact of the announcement event will be tested before and after the announcement of stock prices.

Window period

The window period uses the observation period of 30 days before the event and 30 days after the event.

Return

Return is the result obtained from investment. Returns can be in the form of actual returns that have occurred or expected returns that have not occurred therapy which are expected to occur in the future. Stock return is the profit from the difference in selling price higher than the purchase price.

Actual return

Actual return can be calculated from historical data. Return realization is the most important because it is used as a measure of company performance, as well as a determinant of expected return and risk in the future.

Abnormal return

Abnormal return is the excess of actual return on normal return. Normal return is the expected return. normal return is the return expected by investors. Abnormal return is a selection of returns that actually occur with the expected return.

$$AR_t = R_t - E(R_t)$$

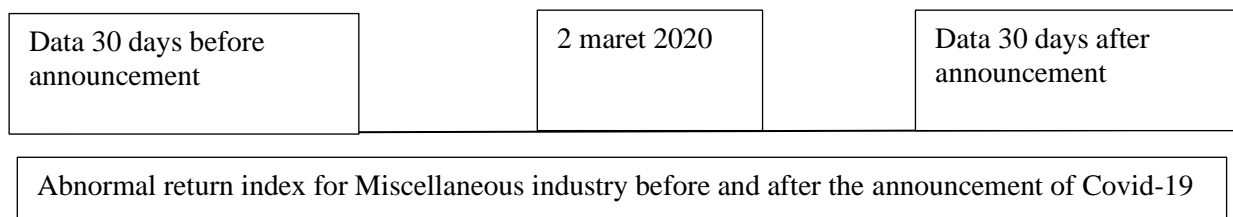
Information

$$AR_t = \text{Abnormal return on day } t.$$

$$R_t = \text{Actual return on day } t.$$

$$E(R_t) = \text{Expected return on day } t.$$

Announcement of the first cases of Covid-19 in Indonesia



Hypothesis

H0: accepted if the abnormal return value is -30 days for the window period = average abnormal returns +30 days for the window period.

Means:

There was no effect of the covid-19 pandemic on the yield on Miscellaneous industry sectors on the Indonesia Stock Exchange after the announcement of the covid-19 pandemic.

Ha: accepted if the abnormal return value is -30 days of the window period \neq average abnormal returns +30 days of the window period.

Means:

There is the influence of the covid-19 pandemic on the yield on Miscellaneous industry sectors on the Indonesia Stock Exchange after the announcement of the covid-19 pandemic.

3. Research methodology

In this study, secondary data is used, the index price data for Miscellaneous industry sectors listed on the Indonesia Stock Exchange, taken from yahoo finance. Data collection was 31 days before and 31 days after the announcement of the first Covid-19 case, namely on March 2, 2020. The index data used are the daily closing price index for Miscellaneous industry sectors and the IHSG daily closing price.

This study uses an event study with a window period calculation using abnormal return as a comparison of the difference in index prices before and after the announcement of the Covid-19 outbreak in Indonesia. The data in this study were processed using SPSS.

In this study, the variables used are:

- X1: Abnormal return data for Miscellaneous industry before the announcement of Covid-19 in Indonesia
Data before the announcement of Covid-19 in Indonesia, data on the closing price of Miscellaneous industry sector indices and IHSG taken before the announcement of Covid-19 were 30.
- X2: Abnormal return index data for various industry sectors after the announcement of Covid-19 in Indonesia.
Data after the announcement of Covid-19 in Indonesia, data on the closing price of Miscellaneous industry sector indices and IHSG taken after the announcement of Covid-19 was 30.
- Covid-19 announcement for the first time in Indonesia.
The first case of Covid-19 in Indonesia began on March 2, 2020, when the government announced the first time an Indonesian had contracted Covid-19.

4. Results and Discussion

Descriptive statistics

Based on data obtained from the sectoral index of Miscellaneous industry in February-March 2020 before and after the announcement of Covid-19 in Indonesia, the variable data used in this study are abnormal returns and average abnormal returns. Descriptive statistics are used to describe the characteristics of the sample used.

Table 1. Descriptive Statistics Of Abnormal Returns For Miscellaneous Industry Sectors

	Statistic	Std. Error
AR_Sblm Mean	-.0002453	.00205899
95% Confidence Interval for Mean		
Lower Bound	-.0044564	
Upper Bound	.0039658	
5% Trimmed Mean	-.0006476	
Median	-.0000300	
Variance	.000	
Std. Deviation	.01127757	
Minimum	-.02228	
Maximum	.03071	
Range	.05299	
Interquartile Range	.01219	
Skewness	.510	.427
Kurtosis	1.074	.833

AR_Sdh	Mean		.0445203	.00349811
	95% Confidence Interval for Mean	Lower Bound	.0373659	
		Upper Bound	.0516748	
	5% Trimmed Mean		.0433957	
	Median		.0434750	
	Variance		.000	
	Std. Deviation		.01915996	
	Minimum		.01058	
	Maximum		.09939	
	Range		.08881	
	Interquartile Range		.02111	
	Skewness		.974	.427
	Kurtosis		1.774	.833

Based on table 1, the descriptive results of the research on abnormal return variables can be explained as follows:

- Abnormal return before the announcement of Covid-19 in Indonesia has a minimum value of 0.01058 with a maximum value of 0.09939. The average value of abnormal returns before the announcement of Covid-19 in Indonesia is -0.0002453 with a standard deviation of 0.01127757. a high standard deviation value from the mean indicates a high variation between the maximum and minimum values.
- Abnormal return after the announcement of Covid-19 in Indonesia has a minimum value of 0.01058 with a maximum value of 0.09939. The average abnormal return value before the announcement of Covid-19 in Indonesia is 0.0445203 with a standard deviation of 0.01915996. a high standard deviation value from the mean indicates a high variation between the maximum and minimum values.

Data analysis of abnormal returns

Normality test

In this data normality test using the Kolmogorov-Smirnov test method. The choice of this method is based on the Kolmogorov-Smirnov test which is a method commonly used to test data normality. The purpose of this test is to find out whether the samples used in this study are normally distributed or not. Samples were normally distributed if the probability value > the level of significance was set ($\alpha = 0.05$). If the test results show that the sample is normally distributed, the different test that will be used in this study is the parametric test, but if the sample is not normally distributed, the different test used in this study is the non-parametric test. The results of the normality test with the Kolmogorov-Smirnov test can be seen in table 2 below:

Table 2. Normality Test For Abnormal Return

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
AR_Sblm	.124	30	.200*	.969	30	.516
AR_Sdh	.131	30	.200*	.938	30	.079

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on table 2, the P-Value for the abnormal return variable before the announcement of Covid-19 in Indonesia is 0.200 followed by the P-Value for the abnormal return variable after the announcement of Covid-19 in Indonesia is 0.200. because the P-Value variable abnormal return is greater than the significant level $\leq 5\%$, then H_0 is rejected; which means the data is normally distributed.

The results of the different test

Hypothesis testing aims to answer the question whether before and after the announcement of Covid-19 in Indonesia there are differences in abnormal returns. This analysis is carried out to test H_1 to H_2 which states that abnormal returns before and after the announcement of Covid-19 in Indonesia are different from abnormal returns after the announcement of Covid-19 in

Table 3. Abnormal Return Test

Paired Samples Test

		Paired Differences		95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Lower	Upper			
Pair 1	AR_Sbl - AR_Sdh	-.04476567	.02063560	-.05247112	-.03706021	-11.882	29	.000

Indonesia using the paired sample test measurement as follows:

Based on table 3, the test results show the difference in the average abnormal return before and after the announcement of Covid-19 in Indonesia. Abnormal return before the announcement of Covid-19 is -11,882 with a P-Value of .000 ($0.00 < 0.05$). Based on this, it shows that there is a difference between abnormal returns before the announcement of Covid-19 in Indonesia and abnormal returns after the announcement of Covid-19 in Indonesia.

5. Results and Discussion

Based on the results of the analysis conducted by researchers, calculated from the value of abnormal returns before and after the announcement of Covid-19 in Indonesia was -11,882 with a P-Value of 0.00 ($0.00 < 0.05$). This shows that there are differences in abnormal returns before the announcement of the Covid-19 case in Indonesia and after the announcement of the Covid-19 case in Indonesia. The Indonesian Capital Market responded to a reaction to the announcement of the first Covid-19 case in Indonesia.

6. Conclusions

Based on the results of data analysis and discussion, it can be concluded that there is a significant difference between abnormal returns before and after the announcement of the Covid-19 case in Indonesia. This is evidenced by the sig value. (2-tailed) of $0.008 < 0.5$ with a mean value before and after $-.04476567$ obtained a value of -11.882 . A negative t value indicates that the average abnormal return after the event is greater than the average abnormal return before the event. These results indicate that the market gave bad signals to investors after the announcement of Covid-19 in Indonesia, so that it tends to cause stock prices for Miscellaneous industry indices to down.

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