

## STOCK PRICE REACTION ANALYSIS TO THE COVID-19 PANDEMIC (EMPIRICAL STUDY OF INDONESIA STOCK EXCHANGE LISTED COMPANIES IN 2020)

### *ANALISIS REAKSI HARGA SAHAM TERHADAP WABAH COVID-19 (STUDI EMPIRIS PERUSAHAAN YANG LISTING DI BURSA EFEK INDONESIA TAHUN 2020)*

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#### *Abstract*

This study aims to determine the reaction of stock prices to the announcement of the first patient of Covid-19 in Indonesia on the Indonesia Stock Exchange (BEI). This research was conducted at all companies listed on the IDX during the study period. All companies studied were divided into nine sectors which were classified according to the industrial classification set by the BEI, namely JASICA (Jakarta Industrial Classification). The event study method is used to test the stock price reaction to these events. Based on the research results, there are significant stock price reactions on the nine Sectoral Indices on the IDX, namely the Agri Sector; Mining; Basic-Ind; Misc-Ind; Consumer; Property; Infrastructure; Finance and Trade, while for the Sectoral Index that suffered the most losses, namely Property from the announcement of the first Covid-19 patient in Indonesia.

**Keywords:** Covid-19, Stock Price, Event Study

#### *Abstrak*

Penelitian ini bertujuan untuk mengetahui reaksi harga saham terhadap peristiwa pengumuman pasien pertama Covid-19 di Indonesia di Bursa Efek Indonesia (BEI). Penelitian ini dilakukan pada seluruh perusahaan yang terdaftar di BEI pada periode penelitian. Seluruh perusahaan yang diteliti dibagi menjadi sembilan sektor yang diklasifikasikan menurut klasifikasi industri yang telah ditetapkan BEI yaitu JASICA (Jakarta Industrial Classification). Metode event study digunakan untuk menguji adanya reaksi harga saham terhadap peristiwa tersebut. Berdasarkan hasil penelitian terdapat reaksi harga saham yang signifikan pada sembilan Indeks Sektor di BEI yaitu Sektor Agri; Mining; Basic-Ind; Misc-Ind; Consumer; Property; Infrastruktur; Finance dan Trade sedangkan untuk Indeks Sektor yang paling mengalami kerugian yaitu Property dari peristiwa pengumuman pasien pertama covid 19 di Indonesia.

**Kata Kunci:** Covid-19, Harga Saham, Event Study

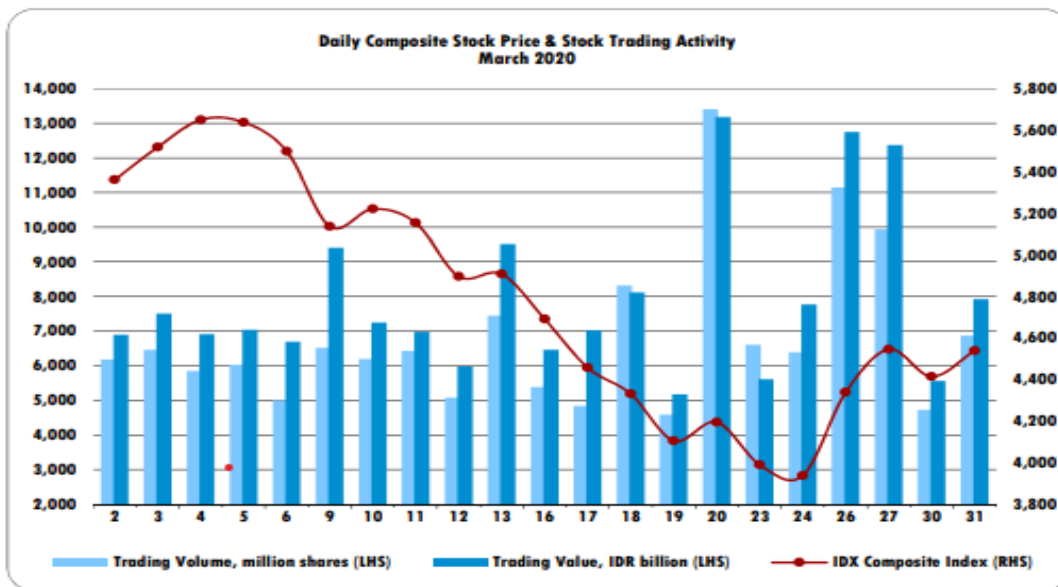
## INTRODUCTION

The Capital market as one of the economic instruments can not be separated from the influence of the environment of economic and non-economic. According to Altin (2015) the influence of the economic environment consists of the influence of macro and micro environment, while the influence of environmental non-economic such as the presence of the Presidential Election, the Legislative election, the Chaotic Politics, the Wars, and other events that also affect the stock price fluctuations. The influence of the environment of non-economic, though not directly related to the dynamics that occur in the capital market, however can not be separated from the activity in the capital market (Diniar & Kiryanto, 2015).

One of the factors of non-economic impacts on the capital market in Indonesia at this time, namely the existence of the outbreak of Virus Covid-19. Corona Virus or Covid-19, the case begins with Pneumonia or inflammation of the lungs mysterious in December 2019. The outbreak is suspected related to animal market in Huanan in Wuhan that sells various types of meat animals, including those

not commonly consumed e.g. Snakes, Bats and various types of mice. Coronavirus is actually no stranger in the world of animal health, but only a few species are able to infect humans to be an inflammatory disease of the lung. The impact of the outbreak of the virus on global economic growth is expected to be greater than the impact of the MERS and SARS, because of the amount of the added value of china's exports has increased more than three-fold since 2003. The spread of the virus's impact on the activity of trade, tourism and retail globally. Extraordinary events the outbreak of corona virus or Covid-19 in Indonesia, has been downgraded its prediction for economic growth in Indonesia in the year 2020 from 4.9 % to 4.8 %. The outbreak of virus Covid-19 impact on the fluctuation trend of the strengthening of the Stock Price Index in Indonesia stock Exchange (BEI).

Since the first cases of patients with Covid-19 found in Indonesia, the Indonesian capital market helter-skelter. The regulator has been working hard by issuing a policy, but still, it is not able to withstand the collapse of The Price of the Stock (CSPI). President Joko Widodo announced the first case of Covid-19 on March 2, 2020 which consists of 2 people. They are mothers and children who are exposed to from the Japanese tourists from Malaysia who is present at the dance. On that day the INDEX closed 91 points (1,67 %) to \$ 5.361. When it was the trend of the INDEX is Bearish. But the news of the entry of Corona Virus into Indonesia directly affecting the capital market.



Picture 1. The Movement of The Stock Trading Activity on March 2020

Source: <https://www.idx.co.id/data-pasar/laporan-statistik/statistik/>

Composite Stock Price index (JCI) earlier in the decreasing trend is also influenced by the negative sentiment from the Corona virus or Covid-19 which is spreading so fast in China. As time goes by, the number of patients with Covid-19 in Indonesia is increasing. Its influence on the capital market is getting bigger. The INDEX continued to decline with the drop is quite severe. As a result, many raised concerns on the companies that are in different sectors or groups as listed in Indonesia stock Exchange (BEI).

Events that affect the capital markets in principle contain any information. When the information is announced and all market participants have received such information, market participants first interpret and analyze information such as the signal (good news) or signal bad (bad news). The next market will react in accordance with the signal received and resulted in changes in stock prices. One of the methods that can be used to determine the reaction of the market this is the Event Study.

Event Study is the study of the market reaction to an event that the information is published as an announcement and to determine whether there is Abnormal Return obtained shareholders a result of a particular event (Jogyanto, 2013). According to (Setyawasih, 2007) event study is the research methodology that uses data-financial market data to measure the impact of an event that is reflected from the changes in prices and volume of transactions.

Price changes can be reflected from the presence of abnormal return. Abnormal return is the difference between the return is actually the return that is expected (Hartono, 2014). Actual return is the ratio between the difference of the price of the stock the current period with the previous period.

## METHOD

This type of research is quantitative research. Quantitative approach research using its analysis on numerical data processed by statistical methods. In this study, the data source used is Stock Price Index data sourced from IDX. Secondary data required in this study is daily stock trading data on the Indonesia Stock Exchange in 2020. The research period is 21 exchange days 10 days before the announcement and 10 days after the announcement of the first patient of Covid-19.

## Research Population

The population in this study is companies that do not conduct corporate action in the period on the Indonesia Stock Exchange and are divided into 9 sectors. In the 9 sectors there are 687 Issuers.

**Table 1.** Research Population

No	Sector	Number Of Companies
1.	PROPERTY	93
2.	TRADE	175
3.	MISC-IND	53
4.	CONSUMER	62
5.	FINANCE	100
6.	INFRASTRUCTUR	51
7.	AGRI	23
8.	MINING	49
9.	BASIC-IND	81
	<b>TOTAL</b>	<b>687</b>

Source: [www.idx.co.id](http://www.idx.co.id)

## Research Sample

Sample selection using purposive sampling method, which means that the population to be used as a study is a population that has certain sample criteria in accordance with the researchers' wishes, stock criteria that will be conducted research to be used as a research sample as follows:

- Data used from 17 February – 16 March 2020 and the announcement of Covid-19 in Indonesia was first released on March 2, 2020
- Have complete data and can be found by researchers during the research period
- Companies listed on the Indonesia Stock Exchange
- Companies that actively traded stocks during the research period became samples in this study

Based on the criteria of the research samples, the sample obtained a total of 9 Sectors listed in Indonesia stock Exchange

**Table 1.** Research Sample

No	Sector	Number Of Companies
1.	PROPERTY	90
2.	TRADE	175
3.	MISC-IND	52
4.	CONSUMER	61
5.	FINANCE	99
6.	INFRASTRUCTUR	49
7.	AGRI	23
8.	MINING	47
9.	BASIC-IND	79
	<b>TOTAL</b>	<b>675</b>

Source: [www.idx.co.id](http://www.idx.co.id)

### **Research Variable**

The independent variable is the Outbreak of Covid-19. While the dependent variable is the variable that has a dependency between one variable with another variable or a variable that is affected by the independent variable that is Stock Price.

### **Research Period**

It consists of 21 day exchange, is among the 10 trading days prior to the event and 10 days after the events of the announcement of the first patient covid-19 in Indonesia. The duration of the number of days in each observation was due to the occurrence of a decline in stock prices is very significant and the tendency of the reaction of the market. Event period used to calculate the abnormal return of the sample at the time the events took place. This period is the period of the event.

## **RESULT AND DISCUSSION**

### ***Abnormal Return***

The sector that has the smallest abnormal return average at the time before the announcement of the first patient covid-19 in Indonesia is the Basic-Ind sector with an average abnormal return of -0.004609061, while at the time after the announcement of the sector that has the smallest abnormal average return obtained by the Basic-Ind sector of -0.007960804. For the sector that has the largest abnormal return before the announcement of the first patient covid-19 in Indonesia, namely in the Property sector of 0.002760382, and the sector that has the largest abnormal average return at the time after the announcement, the Consumer sector is 0.006235545.

From table 3, it can be seen that the average total abnormal return from 9 sectors before the announcement was -0.001502209 and after the announcement of the first patient covid-19 in Indonesia was -0.018175388. This means that there is a decrease in the average abnormal return from before and after the announcement of the first patient of COVID-19 in Indonesia in 9 sectors, namely 0.016673179.

**Table 3.** Sectoral Index Abnormal Return Results

No	Sector	N	Average Abnormal Return Before Announcement	Average Abnormal Return After Announcement
1	Agri	23	-0,003824237	-0,006758486
2	Mining	47	0,002182958	-0,000794307
3	Basic-Ind	79	-0,004609061	-0,007960804
4	Misc-Ind	52	-0,000897681	-0,005533494
5	Consumer	61	-0,001663819	0,006235545
6	Property	90	0,002760383	-0,005370266
7	Infrastructure	49	0,001699886	4,08898E-05
8	Finance	99	0,000396844	0,001025323
9	Trade	175	0,002452517	0,000940211
<b>TOTAL</b>			<b>-0,001502209</b>	<b>-0,018175388</b>

Source: Processed secondary data

#### Agricultural Sector

Based on the table below in the Agri sector can be seen the results of different test calculations using Paired Sample t-test, it is seen that before and after the announcement of the first patient covid-19 in Indonesia the value of t or t-value of 9,574 with a sig value.(2-tailed) 0.000 and mean 162.800.Due to the t-value (9,574) > t-table (2,262) then the decision taken is "there is a difference in the share price before and after the announcement of the first patient covid-19 in Indonesia or H0 rejected and Ha accepted".It can be concluded that there are significant differences before and after the announcement of the first patient covid-19 in Indonesia.

**Table 4.** Paired Sample t-test Agriculture Sector

		Paired Differences				T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower Upper			
Paired Sample 1	Before Announcement - After Announcement	162,800	53,773	17,004	124,333 201,267	9,574	9	,000

Source: Processed secondary data

#### Mining Sector

Using Paired Sample t-test, showed that before and after the announcement of the first patient covid-19 in Indonesia the value of t or t-value of 6,827 with a sig value. (2-tailed) 0.000 and mean by 134,700. Because the value of t-value (6,827) > t-table (2,262) then the decision taken is "there is a difference in the share price before and after the announcement of the first patient covid-19 in Indonesia or Ho rejected and Ha accepted. It can be concluded that there are significant differences before and after the announcement of the first patient of Covid-19 in Indonesia.

**Table 5.** Paired Sample t-test Mining Sector

	Paired Differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Before Announcement - After Announcement	134,700	62,390	19,729	90,069	179,331	6,827	9	,000

Source: Processed secondary data

**Basic-Ind Sector**

Paired Sample t-test, shows that before and after the announcement of the first patient covid-19 in Indonesia the value of t or t-value of 14,184 with a sig value. (2-tailed) 0.000 and mean by 118,600. Because the value of t-value (14,184) > t-table (2,262) then the decision taken is "there is a difference in the share price before and after the announcement of the first patient covid-19 in Indonesia or Ho rejected and Ha accepted". It can be concluded that there are significant differences before and after the announcement of the first patient of COVID-19 in Indonesia.

**Table 5.** Paired Sample t-test Basic-Ind Sector

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Before Announcement - After Announcement	117,800	64,829	20,501	71,424	164,176	5,746	9	,000

Source: Processed secondary data

**Consumer Sector**

Paired Sample t-test, shows that before and after the announcement of the first patient covid-19 in Indonesia the value of t or t-value of 9,326 with a sig value. (2-tailed) 0.000 and mean by 127,200. Because the t-value (9,326) > (2,262) the decision taken is "there is a difference in the share price before and after the announcement of the first patient of covid-19 in Indonesia or Ho is rejected and Ha is accepted. It can be concluded that there are significant differences in the share price before and after the announcement of the first patient of COVID-19 in Indonesia.

**Table 6.** Paired Sample t-test Consumer Sector

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
<b>Pair 1</b>	Before Announcement - After Announcement	127,200	43,132	13,640	96,345	158,055	9,326	9	,000

Source: Processed secondary data

### Property Sector

Paired Sample t-test shows that before and after the announcement of the first patient covid-19 in Indonesia, the value of t or t-value of 7,150 with the value of Sig.(2-tailed) of 0.000 and the mean of 48.100. Therefore, the value of t-value (7,150) > (2,262) then the decision is taken "there are differences in stock prices before and after the announcement of the first patient covid-19 in Indonesia or Ho is rejected and Ha accepted. It can be concluded that there are significant differences in stock prices before and after the announcement of the first patient covid-19 in Indonesia.

**Table 7.** Paired Sample t-test Property Sector

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
<b>Pair 1</b>	Before Announcement - After Announcement	48,100	21,273	6,727	32,882	63,318	7,150	9	,000

Source: Processed secondary data

### Infrastructure Sector

Based on the table below in the Infrastructure sector can be seen the results of different test calculations using Paired Sample T-Test, showing that before and after the announcement of the first patient covid-19 in Indonesia the value of t or t-value of 3,999 with a sig value. (2-tailed) 0.003 and mean at 66,200. Because the t-value (3,999) > (2,262) the decision was "there is a difference in the share price before and after the announcement of the first patient of covid-19 in Indonesia or Ho was rejected and Ha accepted. It can be concluded that there are significant differences in the share price before and after the announcement of the first patient of COVID-19 in Indonesia.

**Table 8.** Paired Sample t-test Infrastructure Sector

		Paired Differences				t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
					Lower Upper			
<b>Pair 1</b>	Before Announcement - After Announcement	66,200	52,355	16,556	28,747 103,653	3,999	9	,003

Source: Processed secondary data

### Finance Sector

Paired Sample t-test shows that before and after the announcement of the first patient covid-19 in Indonesia the value of t or t-value of 8,800 with a sig value. (2-tailed) 0.000 and mean by 134,600. Because the value of t-value (8,800) > (2,262) then the decision taken is "there is a difference in the share price before and after the announcement of the first patient covid-19 in Indonesia or Ho rejected and Ha accepted. It can be concluded that there are significant differences in the share price before and after the announcement of the first patient of COVID-19 in Indonesia.

**Table 9.** Paired Sample t-test Finance Sector

		Paired Differences				t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
					Lower Upper			
<b>Pair 1</b>	Before Announcement - After Announcement	134,600	48,367	15,295	100,000 169,200	8,800	9	,000

Source: Processed secondary data

### Trade Sector

Based on the table below in the Trade sector can be seen the results of different test calculations using Paired Sample t-test, showing that before and after the announcement of the first patient covid-19 in Indonesia the value of t or t-value of 6,954 with a sig value. (2-tailed) 0.000 and mean by 48,700. Because the t-value (6,954) > (2,262) the decision was "there is a difference in the share price before and after the announcement of the first patient of covid-19 in Indonesia or Ho was rejected and Ha was accepted. It can be concluded that there are significant differences in the share price before and after the announcement of the first patient of COVID-19 in Indonesia.



**Table 10.** Paired Sample t-test Trade Sector

		Paired Differences				t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
					Lower Upper			
<b>Pair 1</b>	Before Announcement - After Announcement	48,700	22,146	7,003	32,858 64,542	6,954	9	,000

Source: Processed secondary data

### Research Result Discussion

1. In agriculture, basic-ind, and misc-ind sectors, the results show that there is an abnormal average return that had decreased in the time before the announcement of the first patient covid-19 in Indonesia, while at the time of the announcement of the first patient Covid-19 in Indonesia there is an average abnormal return that decreased as well, this indicates that there is a market reaction in the sector, where previously the average abnormal return obtained was already in position however, with the announcement of the first patient covid-19 in Indonesia further exacerbated the average abnormal return in all three sectors.

2. In the sector of Mining and Property results of the study show a significant average abnormal return in the normal conditions at the time prior to the announcement of the first patient covid-19 in Indonesia, while at the time of the announcement of the average abnormal returns decline. This shows that there is a market reaction on the sector due to the announcement of the first patient covid-19 in Indonesia. In the Sector of Consumer research results show a significant average abnormal return which is already showing a decline in the moments before the announcement of the first patient covid-19 in Indonesia, while at the time of the announcement of the average abnormal return which shows an increase. This shows that there is a market reaction that is positive on the sector of the announcement of the first patient covid-19 in Indonesia. While on the Infrastructure, Finance and Trade research results show that the average abnormal returns that indicate a decline in the time after the announcement of the first patient covid-19 in Indonesia.

3. Paired Sample t-test shows that the ninth of the Sectoral Indices studied are the sectors of Agri, Mining, Basic-Ind., Misc-Ind., Consumer, Property, Infrastructure, Finance and Trade show that there are significant differences in the stock price before the announcement and after the announcement of the first patient covid-19 in Indonesia. However, from the ninth Sectoral Indices are sector are the losers of the events of the announcement of the first patient Covid-19 in Indonesia, namely the Property sector can be seen from the reaction of the average abnormal return, which decreased after the announcement and also have the average or mean price of the stock the smallest compared to the eighth sectoral indices other.

The results of this study are similar to research conducted by (nurmasari, 2020) which states that there is a difference in the price of shares traded before and after the first case of covid-19 is announced. As stated by (Akbar, 2020), the Hospitality and Restaurant Subsector became part of the most affected property sector with occupancy rates decreasing by 20 to 40%. Pandemic covid-19 forces people to limit their activities outside the home, this condition certainly makes the income or funds in the community and investors decrease because most companies are closed. In addition, in line with the statement from the President Director of the Indonesia Stock Exchange (IDX), Inarno Djajadi explained that the sector

that experienced the deepest decline during 2020 was the Property sector in its virtual discussion in Jakarta.

According to (Rambey, 2020), The Indonesian Property Industry is very sensitive to following indonesia's macroeconomic cycle. There is a sharp decrease in the number of contracts, both sales and leases will be expected to occur at the end of the year. In addition, many tenants (both individual and corporate) will experience challenges from economic conditions that result in the contracts in force will have difficulty in fulfilling them.

## CONCLUSION

### Conclusion

Based on the results of the research can be concluded that the:

1. The ninth of the sectoral lists considered are the segments of Agri, Mining, Basic-Ind, Customer, Property, Infrastructure, Finance and trade that there critical contrasts within the stock cost some time recently the declaration and after the declaration of the primary persistent Covid-19 in Indonesia. Property is the sector with the fewest shares in terms of investor reactions.

2. The results of the analysis on the nine Sectoral Indices studied showed the results of the  $Gis(2\text{-tailed})$  which is smaller than 0.05 and the results of the t-value obtained from each of the Sectoral Indices on a test of Paired Samples t-test shows that t-value is greater than t-table t-table by 2,262 means of the analysis that has been done shows the differences in the stock price before the announcement and after the announcement of the first patient covid-19 in Indonesia at the Sectoral Indices has been investigated.

3. The results of the analysis that has been done on a Sectoral Indices show that the Property sector has decreased in the abnormal return that has been calculated and get the average or mean price of the stock the smallest compared with the eighth Sectoral Indices, the other being the mean of population of 48,100. To have the mean price of the stock the most of a small show that the property sector suffered losses from the events of the announcement of the first patient covid-19 in Indonesia.

### Implications

Based on the results of research that has been done, there are plenty of suggestions for consideration and decision to the various parties as follows:

1. For Investors to be more selective in choosing a company as a place to invest, but the selective properties of these must be balanced with properties not too excessive worry in responding to the pandemic so the stock trading will remain in progress and will increase prices of shares traded.

2. For further research is expected to extend the observation period and add other variables that are predicted to be affected over the pandemic covid-19.

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