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DOES COVID-19 AFFECT STOCK MARKET PRICES? (Case Study on the Impact of Designating Covid-19 as a Global Pandemic)

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Abstract

This research is a case study that aims to trace market reactions caused by an event in the form of non-economic circumstances which is Covid-19. The data used in this study is the closing price of each sectoral indexes from Indonesia Stock Exchange.The data taken covers the period of 5 days before and after the determination of covid-19 as a global pandemic.In this study hypothesis testing using paired sample t-test., there is a significant difference in the stock price index on the Indonesian stock exchange before and after the determination of Covid-19 as a global pandemic.

Introduction

The world was shocked by the threat of a new virus known as Coronavirus Disease 2019 or Covid-19. The Covid-19 case was first detected in the Wuhan traditional market, China. The spread of this virus can be transmitted from human to human and has spread widely in China and other parts of the world. Currently there are 215 countries infected with the corona virus. According to WHO, the number of patients infected with covid-19 reached 7,410,510 and the death rate reached 418,294 per June 12th 2020. In Indonesia, concerns about covid-19 began to be felt on March 2, 2020 after the discovery of 2 cases of infection. Recent data shows that the total number of confirmed cases of covid-19 infection was 36,406 cases and 2048 cases of death or 5.6% (Indonesia Ministry of Health, 2020).

On March 11, 2020, the World Health Organization (WHO) Director General, TedrosAdhanomGhebreyesus, officially announced the corona virus (COVID-19) as a global pandemic. WHO calls on all countries to take urgent action to prevent the spread of covid-19. Efforts made by various governments including the Government of Indonesia in preventing the spread of Covid-19 include, among others, by conducting physical distancing, implementation of health protocols, large-scale social restrictions, and the application of the new normal concept.

According to Gostin, et al (2020), at the O'Neill Institute for National and Global Health Law at Georgetown University, the declaration of the corona virus as a global pandemic will have political and economic consequences. WHO's announcement of the corona virus as a global pandemic will affect the global market

as a whole, including Indonesia. This information will provide a strong response as a market reaction to the announcement of the corona virus as a global pandemic.

According to Napitupulu and Syahyunan (2013), in making investment decisions, investors will make various considerations, so investors need an injection of information. In this case, the announcement of the determination of covid-19 as a global pandemic is seen as bad news, which makes investors pull out their investments to minimize greater losses.

An information that is announced to the public can give both positive and negative signals, which results in market reaction (Sari et. Al 2017). Market reaction to information is closely related to events that occur such as political events, natural disasters, regional issues and others. According to Hartono (2016: 410) Testing the information content is intended to see the reaction of the announcement. If the announcement of the event contains economic, political, and disaster information, it is expected that the market will react when the announcement is received by the market. Market reaction is indicated by changes in prices of market securities.This study will discuss the differences in the price of stock indexes on the Indonesia Stock Exchange before and after the determination of covid-19 as a global pendemic.

Literature Review

Stocks are evidence of a person's or business entity's claims against a company. Stock consists of two types, namely preferred shares and ordinary shares. Both have different rights and obligations. By owning shares in a company, investors will have rights to the company's wealth. The advantage of owning shares is the capital gain obtained from the spread between the selling price and the purchase price of the shares and dividends obtained from the company's net profit, Permatasari (2017).

Besides the opportunity to make money, there are also risks that are obtained by investors when investing in stocks, namely the risk of capital loss and liquidation risk. According to Martalena and Melinda (2011: 13-14), capital loss is a condition that may also be obtained by investors, namely the situation when investors suffer losses due to investors selling their shares lower than the purchase price due to falling stock prices in the market.

The rise and fall of stock prices is greatly influenced by information circulating in the environment that can be absorbed as an opportunity to make a profit or vice versa. Previous studies have proven that stock prices are influenced by public announcements or news. StankevičienėdanAkelaitis(2014) examined negative information causing a decline in share prices on the Lithuanian Stock Exchange, especially stocks with low and medium stock prices. Malinowska (2010) found that european bond price adjustments were also affected by public announcements.

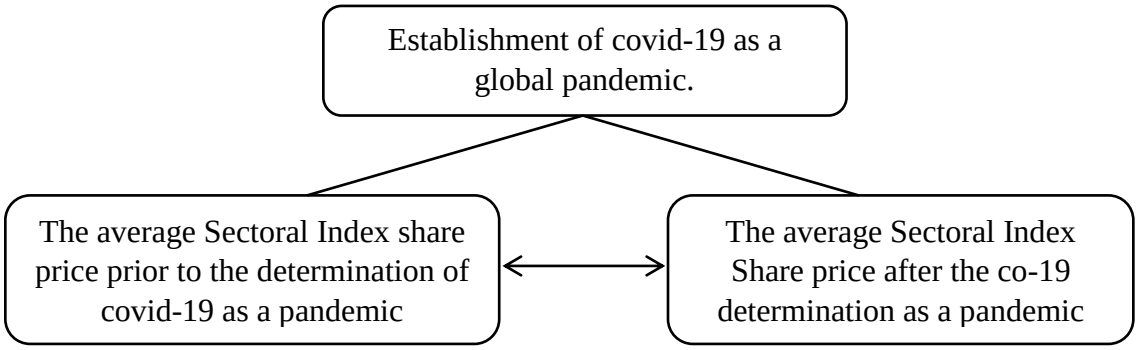

Figure 1. Research Framework

Methodology

This research is a case study that aims to trace market reactions caused by an event in the form of economic or non-economic circumstances that have meaning for investors (Wibowo, 2017).The data used in this study is the closing price of each sectoral indexes from Indonesia Stock Exchange. The use of sectoral indices as a sample is considered to be representative of the overall market population and represent each business sector on the Indonesia Stock Exchange.This study uses secondary data from the Indonesia Stock Exchange, which is in the form of historical daily closing price. The data taken covers the period of 5 days before and after the determination of covid-19 as a global pandemic.

In this study hypothesis testing using paired sample t-test. This test is used to measure whether there are differences in index stock prices on the Indonesia Stock Exchange before the determination of covid-19 as a global pandemic and after the determination.

Result and Discussion

Criteria for normal distribution of data are: If the value of sig <α then the data is not normally distributed, If the value of sig> α then the data are normally distributed and α = 0.05 (5%).

Tabel 1
Normality Test

Indices	kolmogorov-smirnov[a]		
	statistic	df	sig.
consumer_Before	,276	5	,200*
consumer_after	,214	5	,200*
finance_before	,219	5	,200*
finance_after	,199	5	,200*
infrastructure_before	,244	5	,200*
infrastructure_after	,199	5	,200*
manufacture_ before	,242	5	,200*
manufacture_ after	,217	5	,200*
property_ before	,244	5	,200*
property_ after	,220	5	,200*
trade_ before	,233	5	,200*
trade_ after	,236	5	,200*
mining_ before	,280	5	,200*
mining_ after	,205	5	,200*
misc_ind_ before	,222	5	,200*
misc_ind_ after	,213	5	,200*
agri_ before	,337	5	,066
agri_ after	,182	5	,200*
basic_ind_ before	,229	5	,200*
basic_ind_ after	,194	5	,200*

Based on the results of normality testing using the Kolmogorov-Smirnov test above, it can be seen that the data used are normally distributed. Thus, testing of research hypotheses can use the parametric statistical analysis method that is paired sample t-test to measure differences in index stock prices on the Indonesia Stock Exchange before the determination of covid-19 as a global pandemic and after determination.

Tabel 2
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CONSUMER_before	1780,3460	5	67,39141	30,13836
	CONSUMER_after	1598,8540	5	106,83819	47,77949
Pair 2	FINANCE_before	1222,3460	5	55,59761	24,86401

	FINANCE_after	1055,2060	5	59,93248	26,80262
Pair 3	INFRASTRUC_after	978,5360	5	47,93656	21,43788
	INFRASTRUC_before	815,8820	5	56,01490	25,05062
Pair 4	MANUFACTUR_before	1211,6560	5	55,54146	24,83890
	MANUFACTUR_after	1033,9880	5	69,29028	30,98755
Pair 5	PROPERTY_before	417,5180	5	18,07801	8,08473
	PROPERTY_after	352,0620	5	11,98236	5,35867
Pair 6	TRADE_before	662,6200	5	19,84066	8,87301
	TRADE_after	592,1460	5	14,68463	6,56717
Pair 7	MINING_before	1333,1160	5	49,00982	21,91786
	MINING_after	1140,6860	5	46,07236	20,60419
Pair 8	MISC_IND_before	995,7760	5	68,20840	30,50372
	MISC_IND_after	830,4140	5	53,67712	24,00514
Pair 9	AGRI_before	1153,9440	5	54,66425	24,44660
	AGRI_after	940,0260	5	52,77862	23,60332
Pair 10	BASIC_IND_before	762,4240	5	36,96132	16,52960
	BASIC_IND_after	600,4340	5	42,05261	18,80650

Based on table 2 above, shows that the average sectoral index stock price before the determination of covid-19 as a global pandemic is greater than the average sectoral index stock price after the determination of covid-19 as a global pandemic. When viewed from the average value in the table above, there is a decline in sectoral index stock prices after the determination of covid-19 as a global pandemic by WHO.

Tabel 3
Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	CONSUMER_beforeCONSUMER_after	5	,906	,034
Pair 2	FINANCE_before FINANCE_after	5	,928	,023
Pair 3	INFRASTRUC_before INFRASTRUC_after	5	,963	,009
Pair 4	MANUFACTUR_before MANUFACTUR_after	5	,941	,017
Pair 5	PROPERTY_before PROPERTY_after	5	,959	,010
Pair 6	TRADE_before TRADE_after	5	,977	,004
Pair 7	MINING_before MINING_after	5	,928	,023
Pair 8	MISC_IND_before MISC_IND_after	5	,964	,008
Pair 9	AGRI_before AGRI_after	5	,890	,043
Pair 10	BASIC_IND_before BASIC_IND_after	5	,950	,013

Based on the results of the paired samples correlation calculation, the Consumer Goods Index produces a correlation of 0.906 with a significance value below 0.05 which is equal to 0.034. Finance Index produces a correlation of 0.928 with a significance value below 0.05 which is equal to 0.023. Infrastructure, Utility & Trans Index produces a correlation of 0.963 with a significance value below 0.05 which is 0.009.The Manufacture Index produces a correlation of 0.941 with a significance value below 0.05 which is equal to 0.017. Construction, Property & Real Estate Index produces a correlation of 0.959 with a significance value below 0.05 which is equal to 0.010. The Trade & Service Index produces a correlation of 0.977 with a significance value below 0.05 which is 0.004. Mining Index produces a correlation of 0.928 with a significance value below 0.05 which is equal to 0.023. Miscellaneous Index produces a correlation of 0.964 with a significance value below 0.05 which is 0.008. Agriculture Index produces a correlation of 0.890 with a significance value below 0.05 which is equal to 0.043. and the Basic Industry and Chemicals Index produce a correlation of 0.950 with a significance value below 0.05 which is equal to 0.013.This means that there is a close relationship between samples

or statistical significance correlations, namely there is a relationship between the determination of covid-19 as a global pandemic by WHO with sectoral index stock prices on the Indonesia Stock Exchange.

Table 4
Statistik Paired Sample T- Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	CONSUMER_sebelum - CONSUMER_sesudah	181,49200	53,89303	24,10169	114,57497	248,40903	7,530	4	,002
Pair 2	FINANCE_sebelum - FINANCE_sesudah	167,14000	22,28951	9,96817	139,46392	194,81608	16,767	4	,000
Pair 3	INFRASTRUC_sebelum - INFRASTRUC_sesudah	162,65400	16,25055	7,26747	142,47627	182,83173	22,381	4	,000
Pair 4	MANUFACTUR_sebelum - MANUFACTUR_sesudah	177,66800	25,42266	11,36936	146,10160	209,23440	15,627	4	,000
Pair 5	PROPERTY_sebelum - PROPERTY_sesudah	65,45600	7,41577	3,31643	56,24810	74,66390	19,737	4	,000
Pair 6	TRADE_sebelum - TRADE_sesudah	70,47400	6,31583	2,82452	62,63186	78,31614	24,951	4	,000
Pair 7	MINING_sebelum - MINING_sesudah	192,43000	18,27530	8,17296	169,73821	215,12179	23,545	4	,000
Pair 8	MISC_IND_sebelum - MISC_IND_sesudah	165,36200	21,74076	9,72277	138,36728	192,35672	17,008	4	,000
Pair 9	AGRI_sebelum - AGRI_sesudah	213,91800	25,29402	11,31183	182,51132	245,32468	18,911	4	,000
Pair 10	BASIC_IND_sebelum - BASIC_IND_sesudah	161,99000	13,50633	6,04021	145,21968	178,76032	26,819	4	,000

In table 4 above, it can be seen that the significance value of the Consumer Goods Index is 0.002, and the other nine sectoral indices are 0.000. The significance result is less than 0.05. This value indicates that the research hypothesis is accepted, which means that there is a significant difference in the stock price index on the Indonesia Stock Exchange before and after the determination of Covid-19 as a global

pandemic.

Conclusion

The conclusion obtained from this study is that with the paired sample t-test, there is a significant difference in the stock price index on the Indonesian stock exchange before and after the determination of Covid-19 as a global pandemic. This is indicated by a significance value of 0.00 <0.05. Likewise for the share transaction volume of PT. Ramayana Lestari Sentosa, Tbk. There is a significant difference from before the announcement of the first case of Covid-19 in Indonesia and after the announcement. This is indicated by the significance value of the Consumer Goods Index significance value of 0.002, and the other nine sectoral indices of 0.000 which are smaller than 0.05.

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