Analysis of Market Responses to Lockdown Effect of Covid-19 Pandemic in Indonesia and Malaysia

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Abstract

The announcement of lockdowns in Indonesia and Malaysia due to Covid-19 affected the formation of stock price fluctuations because stock prices continued to change, known as volatility. Measurements on the stock market that occur as a result of an event use the market response that is determined by abnormal returns and trading volume activity. The purpose of this study was to analyze abnormal returns and trading volume activity on the lockdown effect in Indonesia and Malaysia. This type of research is quantitative. The samples used were 19 companies listed on the Jakarta Islamic Index which were consistently listed during the lockdown due to Covid-19 and the 10 best constituents on the FTSE Bursa Malaysia Hijrah Syariah. The data analysis technique used is the normality test using the Kolmogorov-Smirnov test and the significance test. The results of the study showed that there was no reaction to abnormal returns when setting the Large-Scale Social Restrictions policy and Imposing Restrictions on Community Activities in Indonesia, but there was a reaction to abnormal returns when setting the Movement Restriction Order policy in Malaysia. As for trading volume activity, there was no reaction to the enactment of the Large-Scale Social Restrictions policy, the Enforcement of Restrictions on Community Activities, and Orders to Restrict Movement in Indonesia and Malaysia

Keywords. Abnormal Return, Trading Volume Activity, Large-Scale Social Restrictions, Restrictions on Community Activities, Movement Restriction Order
JEL codes: A19, H51, I18

1 Introduction

In humans, coronaviruses cause respiratory tract infections that are generally mild, such as the common cold, although some forms of the disease, such as SARS, MERS, and Covid-19, are more deadly (Nur Rohim Yunus and Annisa Rezki, 2020). From 30 December 2019 to 8 April 2020, there were 16,511 people were examined with 13,555 negative results and 2,956 positive confirmed cases of Covid-19, 22 patients recovered and 240 died (Posma Sariguna Johnson Kennedy et al, 2020). On 7 November 2022,

Covid-19 cases increased by 3,828 people. Thus far, 6,525,120 of Covid-19 have been reported cases in Indonesia since President Joko Widodo originally made the announcement on March 2, 2020.

As a result of this disaster that hit the world, the term Lockdown emerged in several countries such as Indonesia and Malaysia. To overcome the impact of Covid-19, President Joko Widodo has decided in a Cabinet Meeting on March 31 2020 to handle the coronavirus case by implementing Large-Scale Social Restrictions/*Pembatasan Sosial Berskala Besar* (PSBB) which are no longer a discourse and allow local governments to limit activities carried out (Rosabella Elga et al, 2022). In addition to the Large-Scale Social Restrictions/*Pembatasan Sosial Berskala Besar* (PSBB) policy, the Indonesian government has also issued an emergency policy with the target of reducing the rate of transmission of Covid-19 contained in the Instruction of the Minister of Home Affairs Number 15 of 2021 concerning the Implementation of Covid-19 Emergency Community Activity Restrictions/*Pemberlakuan Pembatasan Kegiatan Masyarakat* (PPKM) in the Java and Bali regions which are in the business sector whose activities were suspended during the pandemic (Kadek Julia Mahadewi, 2021). Meanwhile, Malaysia began imposing a lockdown from March 18, 2020, to March 31, 2020 and extended it to April 14, 2020. Malaysian Prime Minister Muhyiddin Yassin again extended the Movement Control Order (MCO) policy or restrictions on the movement of citizens until May 12, 2020 (Nurfitri Nugrahaninsgsih et al, 2020).

The outbreak of Covid-19 may impact many financial markets. However, whether the observed financial market effects are direct (arising from concerns about the economic impact of the virus and its accompanying effects on investors' portfolio choices) or indirect (for example, due to contagion from other financial markets) is not yet clearly known and understood (Njamba Kapalu and Odongo Kodongo, 2022). The Central Statistics Agency/*Badan Pusat Statistik* (BPS) announced economic growth data as seen from the Gross Domestic Product (GDP) for the third quarter of 2020. Central Statistics Agency/*Badan Pusat Statistik* (BPS) had previously announced an economic contraction in the second quarter of 2020. Economic growth in the second quarter of 2020 decreased sharply to -5.32% compared to the second quarter of 2019 (year on year) (Teddy Kurnia Dwi Anggoro Kusumo Dewo, 2021).

Just like Indonesia, Malaysia also has Islamic stock indices, one of which is the FTSE Bursa Malaysia Hijrah Shariah Index (FTFBMHS) (Khoirunnisa Abidah et al, 2020). The same thing happened in Malaysia after the Malaysian government officially implemented the Movement Control Order (MCO) from 1 June to 14 June 2021 as a total lockdown for two weeks to reduce the number of Covid-9 sufferers, in Malaysia the state of the

Malaysian Stock Exchange has fallen. Reporting from Blomberg¸ Bursa Malaysia KLCI's FTSE Index experienced a 1.6% correction from the start of trading one week in May 2021. This correction was the deepest since March 31, 2021 (Margaretha Pieter et al, 2022). Transactions on the stock market always fluctuate every second, this is because stock prices continue to change which is known as volatility. To find out the volatility as a whole, a calculation of all existing stocks is used and it is called a stock composite index (Rusmita, 2022).

A Covid-19 event is an event that will be tested for its information content on stock movements in the capital market using the event study method (Nur Anita Chandra Putri and Andika Martin, 2021). The signal theory involves two parties management and outside investors to give signals (Reny Aziatul Pebriani and Rafika Sari, 2021). This theory also states that stakeholders will respond to the size of the company so that it has an impact on the value of the company (Fadilla Cahyaningtyas, 2022). In the concept of an efficient market, investors always take the available information into account when making decisions so that it can be reflected in the transaction price and become part of the market's current pricing (Chelsea Yulane Talumewo et al, 2021).

This reaction can be measured using returns and abnormal returns as price changes. Many potential investors and investors take advantage of certain events to obtain abnormal returns. When a market is inefficient, a return is higher than the typical return (Dewo, 2021). Apart from abnormal returns, another indicator that influences fluctuations in stock price changes in information content are by looking at trading volume activity. Trading volume activity is used to see the reaction of the capital market by looking at the movement of stock trading volume in the capital market (Nur Kemala Desti Alpidayana, 2022).

Christopher Tanasal et al (2021) research proves that the abnormal return and market capitalization variables are significant before and after an event both by the Wilcoxon test and the daily test, but for the trading volume activity variable, it is not significant before and after the event by either the Wilcoxon test or the daily test. Research by Mega Zahira Virtyani et al (2021) showed significant results on abnormal returns and insignificant differences on abnormal TVA, stating that the capital market reacted to Large-Scale Social Restrictions/*Pembatasan Sosial Berskala Besar* (PSBB*)* announcements due to Covid-19.

Based on the background above, measuring the market response that occurred as a result of the lockdown during the Covid-19 pandemic can be measured through several aspects such as abnormal returns and trading volume activity. So the researcher is interested in conducting research with the title "Analysis of Market Responses to Lockdown Effect of Covid-19

Pandemic in Indonesia and Malaysia (Studies on Companies Listed on Jakarta Islamic Index and FTSE Bursa Malaysia Hijrah Syariah Index)".

2 Literature review

Research by Margareth Pieter Joubert B. Maramis, dan Maria V. J. Tielung (2021), the title *"Reaksi Pasar Modal Terhadap Peristiwa Covid-19 (Lockdown) Tahun 2021 di Pasar Modal Malaysia (Bursa Saham Kuala Lumpur)"* with the type of research uses quantitative research. The sampling method used is saturated sampling, with the sample in this study taking the composite stock price index data and trading volume activity. Shows the results of this study show that the Covid 19 (lockdown) event on the Malaysian capital market (Kuala Lumpur stock exchange) had a reaction that caused the market to respond. This is evidenced by the combined stock price index and trading volume activity variables which show significant results before and after the event using a paired sample t-test.

Research by Njamba Kapalu and Odongo Kodongo (2022) the title "Financial Markets Responses to Covid-19: A Comparative Analysis" with an event study of major news and policy announcements related to Covid-19, Regression analysis, and contagion for empirical strategy. Shows Deploying different empirical techniques, we find, unlike some papers in the literature that group countries and run panel regressions, that the effects of Covid-19 on the financial markets differed by country depending on the way the outbreak was managed.

Research by Lailatul Fauziah and Lintang Venusita (2021) the title The reaction of capital markets Indonesia Singapore Malaysia, and Thailand towards the announcement of lockdown policy during the beginning of the covid-19 uses the event study method and is based on secondary data from news portals and websites. The results show that the announcement of the Covid-19 lockdown policy did not significantly influence the reaction of the capital market but was still used as a basis to make investments decision. The announcement of the Covid-19 lockdown, both before and after the announcement did not have a significant effect on abnormal returns and trading volume activity in Indonesia, Singapore, Malaysia, and Thailand capital markets.

2.1 Signaling Theory

Signaling theory emphasizes the importance of information issued by the company on investment decisions from outside the company. In the signaling theory, every action has the potential to carry information (Putri and Martin, 2021). Interpreted as a theory that focuses on the increases or decrease in market prices and how those changes impact investors' decisions (Ilyas Sa'adah, 2022).

2.2 Market Efficiency Theory

Market efficiency theory is a theory that discusses the price or value of securities that fully describes all the information available on that information. The concept of market efficiency is the relationship between the price or value of securities with efficient information, whether the information received can affect the movement or changes in new stock prices (Alriani Rori et al, 2021).

2.3 Event Study

An Event Study is a study that studies market reactions to an event whose information is published as an announcement. An event study can be used to test the information content of an announcement and can also be used to test the efficiency of a semi-strong market (Elga et al, 2022).

2.4 Abnormal Return

Abnormal return is the difference between the actual return and the expected return. The excess of the actual return beyond the typical return is known as anabnormal return (Jogiyanto Hartono, 2018). So, it can be concluded, that abnormal returns happen as a result of certain events or events, such as, national holidays, political climate, extraordinary events, stock splits, initial offerings, suspends, and others (Elga et al, 2022).

2.5 Estimation Period

The estimation period is generally the period before the event period and is days involved before the event date to find out whether there is an information leak (whether the market has heard the information before the information was announced) (Rori et al, 2021).

2.6 Trading Volume Activity

By the characteristics of the movement trading volume activity in the market one can use that instrument to observe how the capital market responds to information. Stock trading volume is an illustration of the condition of securities traded in the capital market. Changes in stock trading volume on the capital market indicate stock trading activity on the stock exchange and reflect investors' investment decisions. If the capital market reacts to information, there will be a change in stock trading activity on the stock exchange (Febria Rahim et al, 2022).

2.7 Lockdown

Lockdown is a popular term during the Covid-19 pandemic. Lockdown is not only a term used in handling public health but includes geographical and non-geographical aspects. The equivalent of the word lockdown in Indonesian is a regional quarantine which means limiting the entry or exit of people in an area, carried out as a form of handling the potential spread of certain diseases or hazards (KBBI, 2016).

2.8 Jakarta Islamic Index

The Jakarta Islamic Index (JII) is an Islamic stock index that was first launched on the Indonesian capital market on July 3, 2000. One of the sharia stock indices on the Indonesia Stock Exchange provided that the shares are by following per unit and do not conflict with sharia principles. Starting from the collaboration between PT Danareksa Investment and PT Jakarta Stock Exchange (now IDX). Aims to increase investor confidence in investing in the capital market based on sharia principles and not contradicting what is prohibited in Islam (Novita Kusuma Maharani, 2017).

2.9 FTSE Bursa Malaysia Hijrah Syariah Index

In the Malaysian capital market, there is an index called the FTSE Bursa Malaysia Hijrah Syariah Index (FTFBMHS), this index is designed to be used as a basis for sharia investment products that meet the screening requirements of international sharia investors (Desy Trishardiyanti Adiningtyas, 2018). The FTSE Bursa Malaysia Hijrah Index (FTFBMHS) is an index to be used as a reference for sharia-based investments in Bursa Malaysia (Oktana Indriatna Jatnika, 2017). Securities included in the index are screened by the Sharia Advisory Council (SAC) Malaysia and a leading global sharia consultancy, Yasaar Ltd, with clear guidelines (Jatu Indri Puspasari, 2019).

2.10 Research Framework
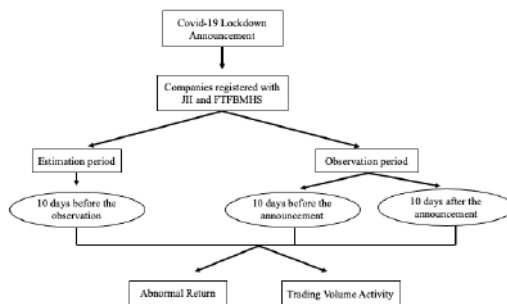
3 Methodology

This research is descriptive with a quantitative approach. This research approach also uses the Event Study method which measures the level of abnormal returns (Nurul Susianti and Naili Rahmawati, 2020). The data source used is a secondary source obtained from the website www.idx.co.id in the form of data on all companies listed on Jakarta Islamic Index (JII) and www.ftse.russel.com for companies listed on FTSE Bursa Malaysia Hijrah Syariah Index (FTFBMHS), and www.yahoo.finance for some other necessary data. Of the 30 stocks indexed by Jakarta Islamic Index (JII), only 19 issuers were used as samples because they were consistent on Jakarta Islamic Index (JII) list for 7 consecutive periods. The sampling technique in this study used a purposive sampling method. The normality test in this study used the Kolmogorov-Smirnov (K-S) test. If the data is normally distributed,

the Paired Sample (t-test) or paired t-test will be used. While the data is not normally distributed, the hypothesis test used is a non-parametrically Wilcoxon Signed Ranks Test (Anastasia Krizia et al, 2020). The significance test used is using a probability value of 5%. If t-count > t-table, then the second hypothesis has a significant abnormal return (Virtyani et al, 2021). TVA calculation is done by comparing the number of company shares traded with the total number of company shares outstanding during the study period (Talumewo et al, 2021). This consists of an estimation period of 30 days and a window period of 21 days, namely 10 days before the announcement date (D-10), 1 day at the time of the announcement (even date, H=0), and 10 days after the announcement date (D+10).

4 Results and Discussion

Table 1

Test Statistics[a]

	AAR After PSBB Policy Determination - AAR Before PSBB Policy Issuance
Z	-.561[b]
Asymp. Sig. (2-tailed)	.575

Source: Data processed (SPSS), 2023

Results in AAR before normal distribution, and vice versa in AAR after abnormally distributed. So the first hypothesis testing uses the Wilcoxon Signed Rank Test method because one of the data is not normally distributed. The test results in table 4.1, show that the event of estabilishing the PSBB policy gets an Asymp value Sig. (2-tailed) of 0.575 which is greater than the acceptable signification value of 5% (0.05). Looking at the test results above, the event of estabilishing the PSBB policy as measured by Average Abnormal Rerturn stated that there was no significant effect.

Table 2
Paired Samples Test

	Paired Differences							
				95% Confidence Interval of the Difference				Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean		Lower	Upper	t	df	

	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1 AAR Before PPKM Policy Extension - AAR After PPKM Policy Extension	.0019700	.0129811	.0041050	-.0073161	.0112561	.480	9	.643

Results in AAR before normal distribution, as well as in AAR after normal distribution. So the first hypothesis testing uses the Paired Samples t-test method because both data are normally distributed. The test results in table 2, show that the PPKM policy determination event obtained the Asymp value Sig. (2-tailed) of 0.643 which is greater than the acceptable signification value of 5% (0.05). Looking at the test results above, the program for extending the PPKM policy as measured by Average Abnormal Return. So the test estabilishment of the PPKM policy on May 10, 2022 has no significant effect, there is a difference in AAR.

<p align="center">Table 3</p>
<p align="center">Paired Samples Test</p>

				Paired Differences				
				95% Confidence Interval of the Difference				Sig. (2-tailed)
		Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
	Mean							
Pair 1 AAR Before PPKM Policy Extension - AAR After PPKM Policy Extension	-.0026400	.0049356	.0015608	-.0061707	.0008907	-1.691	9	.125

Results in AAR before normal distribution, as well as in AAR after normal distribution. So the first hypothesis testing uses the Paired Samples t-test method because both data are normally distributed. The test results in

table 3, show that the PPKM policy determination event obtained the Asymp value. Sig. (2-tailed) of 0.125 i.e. greater than the acceptable signification value i.e. at the rate of 5% (0.05). Looking at the test results above, the program for extending the PPKM policy as measured by Average Abnormal Return. So the result test states that the extension of PPKM policy with AAR after the extension of PPKM policy on October 4, 2022 has no sifnificant effect, there is a difference AAR.

Table 4

One-Sample Kolmogorov-Smirnov Test

		AAR Before MCO Policy Assignment	AAR After MCO Policy Assignment
N		10	10
Normal Parameters[a,b]	Mean	-.808300	.002400
	Std. Deviation	2.8865012	.0063828
Most Extreme Differences	Absolute	.509	.281
	Positive	.289	.281
	Negative	-.509	-.231
Test Statistic		.509	.281
Asymp. Sig. (2-tailed)		.000[c]	.025[c]

Source: Data processed (SPSS), 2023

The normality test with Kolmogorov-Smirnov (K-S) in table 4 above, shows the Asymp results. Sig. (2-tailed) of AAR 10 days before and 10 days after MCO in the 10 best constituents listed on FTFBMHS obtained values of 0.000 and 0.025 respectively of their supposed values (5% or 0.05). The results in AAR before MCO policy determination are abnormally distributed, as well as in AAR after abnormally distributed MCO policy determination. So it is stated to have an effect which means that there is a difference between AAR before the determination of the MCO policy with AAR after determining the MCO policy.

Table 5

Paired Samples Test

	Paired Differences							
				95% Confidence Interval of the Difference				Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	

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		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	ATVA Before the Exit of PSBB Policy - ATVA After the Exit of PSBB Policy	-.0127700	.0804356	.0254360	-.0703101	.0447701	-.502	9	.628

Results in ATVA before normal distribution, as well as in ATVA after normal distribution. So the first hypothesis testing uses the Paired Samples t-test model test method because both data are normally distributed. The test results in table 5, show that the event of setting the PSBB policy obtained the Asymp value. Sig. (2-tailed) of 0.628 greater than the acceptable signification value of 5% (0.05). Looking at the test results above, the program for extending the PSBB policy as measured by Average Trading Volume Activity. So the result of the study stated that there no significant influence.

Table 6
Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	ATVA Before PPKM Policy Extension - ATVA After PPKM Policy Extension	-.0001800	.0006088	.0001925	-.0006155	.0002555	-.935	9	.374

Results in ATVA before normal distribution, as well as in ATVA after normal distribution. So the first hypothesis testing uses the Paired Samples t-test model test method because both data are normally distributed. The test results in table 6, show PPKM policy extension event on October 4, 2022, obtained the Asymp value. Sig. (2-tailed) of 0.374 greater than the acceptable

signification value of 5% (0.05). Looking at the test results above, the PPKM policy extension event on May 10, 2022, as measured by the Average Trading Volume Activity. The result of the study states that there no significant effect.

Table 7
Test Statistics[a]

	ATVA After PPKM Policy Extension - ATVA Before PPKM Policy Extension
Z	-1.687[b]
Asymp. Sig. (2-tailed)	.092

Source: Data processed (SPSS), 2023

The results in ATVA before normal distribution, while in ATVA after distribution are abnormal. So the first hypothesis testing uses the Wilcoxon Signed Rank Test method because one of the data is not normally distributed. The test results in table 7, show PPKM policy extension event on October 4, 2022, obtained the Asymp value. Sig. (2-tailed) of 0.092 greater than the acceptable signification value of 5% (0.05). Looking at the test results above, the PPKM policy extension event on October 4, 2022, as measured by Average Trading Volume Activity. The result states that it had no significant effect.

Table 8
Test Statistics[a]

	ATVA After MCO Policy Exit - ATVA Before MCO Policy Assignment
Z	-.952[b]
Asymp. Sig. (2-tailed)	.341

Source: Data processed (SPSS), 2023

The results in ATVA before distribution are abnormal, while in ATVA after normal distribution. So the first hypothesis testing uses the Wilcoxon Signed Rank Test method because one of the data is not normally distributed. The test results in table 8, show that MCO policy determination event obtained the Asymp value. Sig. (2-tailed) of 0.341 i.e. greater than the acceptable signification value of 5% (0.05). Looking at the test results above, the MCO policy setting event was responded to negatively by market

participants after the MCO policy setting event as measured by the Average Trading Volume Activity, but it was declared to have no effect.

The share price of JII companies that were consistently active before and after the Covid-19 lockdown in the entertainment industry tended to increase. Namely XL Axiata, Media Nusantara Citra, and Telecommunications companies which on average showed an increase in stock prices after the announcement of PSBB and PPKM in Indonesia. Likewise, the food and beverage and pharmaceutical industry companies have experienced an increase in stock prices in several companies such as Indofood CBP Sukses Makmur, Indofood Sukses Makmur, Japfa Comfeed Indonesia, and Kalbe Farma. Some factors cause no difference in stock returns before and after the Covid-19 announcement in Indonesia, including the possibility that information about Covid-19 has been leaked, so the market does not respond aggressively to information about the announcement circulating (Chika Anindya, 2021).

Different from the normality test results on abnormal returns due to PSBB and PPKM in Indonesia, there was a reaction to abnormal returns due to MCO in Malaysia which is in line with this study. This is because investors have lost confidence in the Malaysian government in overcoming the pandemic and are taking profit-taking actions with the existence of the MCO policy which triggers abnormal returns on companies listed on the FTFBMHS.

In the phenomenon of the announcement of Covid-19 as a pandemic by the World Health Organization, it can be seen that the content of information in the Covid-19 lockdown announcement is not strong enough (Putu Elfira Permata and Ayu Ketut Rencana Sari Dewi, 2021). So the market does not show a reaction to this event. This lockdown announcement cannot be said to be a positive (good news) or negative (bad news) signal because there is not enough change in stock trading volume.

Insignificant trading volume activity indicates that this lockdown announcement has weak information content and investors do not feel any strong signals as a result of this announcement. The results of this study are in line with the research of Putu Elfira Permata Sari et al (2021) previously said that there was no significant difference in trading volume activity during PSBB and PPKM in Indonesia. Similarly, the research of Lailatul Fauziah and Lintang Venusita (2021) resulted in no reaction during the MCO lockdown in Malaysia in his research.

The effect on Trading Volume Activity after the announcement occurred was due to investors who tend to apply a wait-and-see strategy. Wait and see is a strategy where investors wait, observe, and analyze stock movements. During this strategy, investors do not make stock transactions

either selling or buying. This is done until investors find the right momentum to sell their shares again.

5 Conclusion

Based on the results of hypothesis testing, it can be concluded that MCO had an abnormal reaction at the time of setting the lockdown policy in Malaysia. However, PSBB and PPKM did not have an abnormal reaction at the time of setting the lockdown policy in Indonesia. As for trading volume activity, PSBB, PPKM, and MCO, there was no market reaction at the time of the lockdown policy in Indonesia and Malaysia. This shows that the establishment of lockdown policies gave the market reaction to several events in the capital market.

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