

Does Announcement on Public Activity Restrictions Affect Stock Prices? Evidence from Indonesia

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Abstract

The new variant of Covid - 19, delta variant, has affected many countries. Indonesia has recorded rapid additional cases day by day since the second half of June 2021. The record shows that there are around 4,000 cases daily at the beginning of June 2021, an increase to more than 20,000 at the end of June. In order to avoid further spreading of the virus, the government announced a restriction for public activity, scheduled for July 3rd to July 20th, 2021, which then extended to August 9th, 2021. This important announcement was expecting market reaction just like the first announcement of Covid-19 entrance to Indonesia in March 2020, when many stock prices dropped rapidly. This paper aims to study the effect of the restriction and the announcement of several pieces of information such as daily additional cases, daily additional deaths, and positivity rate to the stock prices in Indonesia Stock Market during public activity restriction from July 3rd to September 13th, 2021 before the re-extension of the restriction. There are 724 unique firms listed in IDX, with 25 trading days observed. Data of the announcement were taken from kawalcovid19.id daily announcement, and stock prices data were taken from stock summary open access data from IDX website and yahoo finance, resulting in 18,824 firm-day observations. Stata was used to process the regression while controlling for the firm and industry. A robustness test was done to see the effect of the announcement on each industry. This paper finds that daily announcement does affect stock prices during public activity restriction in the announcement of additional deaths and positivity rate announcement. Empirically, higher death and higher positivity rates were reported to drop the stock prices in Indonesia.

Keywords: stock prices, public activity restriction

INTRODUCTION

Early 2020 has become a life-changing situation for the world. The presence of the Covid-19 virus has changed life in many ways. Since then, many researchers have studied the effect of this pandemic situation on stock prices (Wei, Chen, & Chang, 2021), stock return (Al-Awadhi, Alsaifi, Al-Awadhi, & Alhammadi, 2020; Ashraf, 2020), and many aspects in daily life such as domestic credit (Appiah-Otoo, 2020), the effectiveness of lockdown in controlling case (Alfano & Ercolano, 2020) slowing down sustainability (Hosseini, 2020) and massive unemployment (Ozili, Peterson and Arun, 2020).

Specifically, in Indonesia, current research has given many effects from the pandemic situation. Some results show that there is no significant effect on the first announcement of the covid case; there is no abnormal return in the five days after the announcement on firms that are listed in LQ45 (Mujib & Candraningrat, 2021). However, in terms of daily transactions, Haryanto & Mawardi (2021) found that there was a decrease in daily transactions in the first two months of the covid case announcement in Indonesia. Since 2020, many alternatives have been taken as policy by the government to help reduce the spread of the virus and to help the country to restore economic stability. One of the alternatives that have been taken seriously is the public activity restriction (PAR). In Indonesia, there was a long public activity restriction taking place in the year 2020 between June-July. It helps the government reduce the stress of full bed capacity in the hospital; this is proven as what has been studied by Alfano & Ercolano (2020) and positive impact on lockdown in Wuhan (Lau et al., 2021). The year 2021 was expected to bring back what was known as a normal life before covid, but what happened was worse than expected. There is a new variant of Covid-19 that requires a citizen to be more aware. The new delta-variant had attacked many countries before it was finally detected in Indonesia in early June 2021. With the new variant that spread faster than its predecessor, the confirmed case has doubled each day, tripled, even more to the point of being out of control. This has caused chaos and a hectic situation in the hospital, even in the cemetery. This situation needs to be controlled. As of July 3rd, up to July 20th, 2021, the government implement urgent public restrictions in Java Island and Bali Island, specifically in 45 counties on these two islands. This urgent public restriction obliges workers to work from home, and students to study from home, 50% attendance of workers in essential industries, shopping mall closure, dine-in restriction for restaurants.

This paper studies the effect of a recent public restriction due to a new variant of covid, specifically the effect of the daily case announcement on the Indonesia stock market. Figure 1 summarizes the restriction announcement and the extensions of the announcement:

Figure 1: Public Restrictions 2021 in Indonesia

First Announcement	Two weeks public restrictions
Second Announcement	One-week extension of public restriction
Third Announcement	One-week extension of public restriction
Fourth Announcement	One-week extension of public restriction

This paper focuses on the effect of announcements during public restrictions between July 3rd to August 9th, 2021, on the stock prices in Indonesia. In the event of public restrictions, there are

several data announced day by day. This paper discusses three data that are announced: additional daily cases, additional daily deaths, and positivity rate. I implement panel data.

This paper contributes to the current literature on how the covid-19 pandemic situation affects the stock market, especially stock prices in Indonesia during the public restrictions on the data released. The rest of the paper runs as follows. Section 2 explains the data and methods used to process the data. Section 3 describes the empirical results and robustness tests. Section 4 provides conclusions and the economic significance of the results.

METHODOLOGY

This paper used the data of companies listed in the Indonesia Stock Exchange over the period of July 5th to August 5th, 2021. Even though the restrictions started on July 3rd, the data is taken from the first working days when the market opened. I exclude additional listing firms during the sample date, and the companies need to be listed before July 3rd and have a close price starting from July 5th, 2021, resulting in 724 unique firms. Announcement data during public restrictions were obtained from the kawalcovid19 Instagram report from July 5th, 2021, to August 5th, 2021. I measure announcements during public activity restrictions with several proxies. The first proxy is the daily additional cases. The second proxy is the daily additional deaths. The third proxy is the positivity rate. Stock prices data was taken from Indonesia Stock Exchange (IDX website) with 25 days of observation from July 5th, 2021 to August 9th, 2021, resulting in final 18,824 firm-day observations.

Table 1: Variables Definition

Variable	Definition
CloseP	Adjusted closing price $t+1$
DAC	Daily additional case announced at time t
DAD	Daily additional death announced at time t
PR	Positive rate percentage of cases confirmed as positive from all the samples tested at time t

Source: Data processed by the author

This paper used panel data regression following Baltagi (2008) and Hsiao, Hsiao, & Yan (2014) to reduce bias and multicollinearity, control for individual heterogeneity, and point out if any time-varying correlation among independent and dependent variables. I estimate stock prices using the following model:

$$ClosedP_{i,t} = \beta_0 + \beta_1 DAC_{(t-1)} + \varphi t + \omega j + \varepsilon \quad (1)$$

Where ClosedP is the closing price at time t . DAC is daily additional case announced by the Ministry of Health and shown at kawalkovid19 Instagram at time $t-$. For controlling unobserved factors of a firm, I use a fixed-effect model to control the time fixed effect by using date

dummies (φ_t) to capture factors that affect all firms at the same day and use industry classification from IDX following Fama and French (1997) to control industry fixed effect (ω_j) to capture all firms in the same industry. All variables are winsorized at 1% and 99%.

$$ClosedP_{i,t} = \beta_0 + \beta_1 DAD_{(t-1)} + \varphi_t + \omega_j + \varepsilon \quad (2)$$

Where ClosedP is the closing price at time t. DAD is daily additional deaths announced by the Ministry of Health and shown at kawalkovid19 Instagram at time t-. For controlling unobserved factors of a firm, I use a fixed-effect model to control the time fixed effect by using date dummies (φ_t) to capture factors that affect all firms at the same day and use industry classification from IDX following Fama and French (1997) to control industry fixed effect (ω_j) to capture all firms in the same industry. All variables are winsorized at 1% and 99%.

$$ClosedP_{i,t} = \beta_0 + \beta_1 PR_{(t-1)} + \varphi_t + \omega_j + \varepsilon \quad (3)$$

Where ClosedP is the closing price at time t. PR is positive rate announced by the Ministry of Health and shown at kawalkovid19 Instagram at time t-. For controlling unobserved factors of a firm, I use a fixed-effect model to control the time fixed effect by using date dummies (φ_t) to capture factors that affect all firms at the same day and use industry classification from IDX following Fama and French (1997) to control industry fixed effect (ω_j) to capture all firms in the same industry. All variables are winsorized at 1% and 99%.

RESULTS

Table 2 shows summary statistics of 18,824 firm-day observations during public restriction. The highest number of confirmed cases between July 5th and August 9th, during 25 days of observation, is 2,069 deaths, and the lowest number of daily death announcements is 555. The average positive rate is 27.01% during 25 days of observation.

Table 2: Summary Statistics

Variables	N	Mean	Std.Dev	Min	Max
ClosedP	18,824	1,509.87	3,980.68	50.00	59,000.00
DAC	18,824	37,393.77	9,179.63	20,709.00	56,757.00
DAD	18,824	1,286.15	410.35	555.00	2,069.00
PR	18,824	27.01	4.07	20.80	33.40

Source: Data processed by the author with Stata

Table 3 shows the result of panel regression. There are four models in each panel, showing the difference in which fixed effect is used. Model 1 doesn't use any fixed effect. Model 2 used the date effect. Model 3 used the industry effect. Model 4 used both date and industry effect. Panel A shows that daily additional cases during public restriction didn't have an impact on stock prices in Indonesia. Panel B shows that daily additional deaths with the date fixed effect and industry fixed

effect show negative relation; empirically, this shows that more death announcements would drop the stock prices. Panel C model 1 shows that the higher positive rate announced would drop the stock prices.

Table 3: Panel Regression

Panel A.

	Daily Additional Cases			
	(1)	(2)	(3)	(4)
Constanta	37394.0*** (522.55)	27233 (0.0001)	37393.7*** (168.53)	27233.0 (0.0001)
Closed Price	-0.0001 (-0.01)	7.8716 (0.01)	0.0001 (0.00)	-4.4316 (0.00)
Date Effect	No	Yes	No	Yes
Industry Effect	No	No	Yes	Yes
<i>N</i>	18824	18823	11258	11258

t statistics in parentheses * p<0.10, ** p<0.05, *** p<0.01

Panel B.

	Daily Additional Death			
	(1)	(2)	(3)	(4)
Constanta	1286.2*** (402.07)	555.0 (0.0001)	1286.0*** (129.66)	555.0 (0.0001)
Closed Price	-0.0000345 (-0.05)	5.3717 (.)	0.0001 (0.08)	-3.4617 (0.01)
Date Effect	No	Yes	No	Yes
Industry Effect	No	No	Yes	Yes
<i>N</i>	18824	18823	11258	11258

t statistics in parentheses * p<0.10, ** p<0.05, *** p<0.01

Panel C.

	Positive Rate			
	(1)	(2)	(3)	(4)
Constanta	27.02***	31.56	27.02***	31.56

	(851.10)	(.)	(274.51)	(.)
Closed Price	-0.0001	-3.3019	-0.0001	2.2619
	(-0.04)	(0.00)	(-0.11)	(0.00)
Date Effect	No	Yes	No	Yes
Industry Effect	No	No	Yes	Yes
<i>N</i>	18824	18823	11258	11258

t statistics in parentheses * p<0.10, ** p<0.05, *** p<0.01

Source: Data processed by author with Stata

Table 4 presents the effect of the announcement on public restrictions for each industry during 25 days of observation, from July 5th to August 9th, 2021. Table 4 shows that DAC, DAD, and PR does affect each industry in specific announcement. The announcement of daily additional cases lowers stock prices in almost every industry except basic materials, non-cyclical consumers, and healthcare. Announcement of daily additional deaths lower stock prices in the basic materials industry, consumer non-cyclical industry, healthcare industry, infrastructure industry, and technology industry. Announcement of positivity rate lower stock price in the energy industry, industrials industry, cyclical consumer industry, financial industry, properties and real estate industry, technology industry, and transportation and logistics industry.

Table 4: The effect of daily additional cases, daily additional deaths, and positivity rate to stock prices by industries

		(1)	(2)	(3)
	N	DAC	DAD	PR
<i>ClosedP</i>				
Energy	1742	-0.0110	0.0016	-0.0001
		37409.3***	1283.8***	27.04***
Basic Materials	2288	0.0041	-0.0006	0.0001
		37388.7***	1287.0***	27.01***
Industrials	1326	-0.0006	0.0005	-0.0001
		37394.7***	1285.4***	27.02***
Consumer Non-Cyclicals	2288	0.0017	-0.0008	0.0001
		37390.6***	1287.8***	27.01***
Consumer Cyclicals	3224	-0.0143	0.00179	-0.0001
		37404.8***	1284.8***	27.03***

Healthcare	546	0.0237	-0.0012	0.0001
		37302.7***	1291.0***	26.97***
Financial	2730	-0.0051	0.0004	-0.0001
		37403.6***	1285.3***	27.02***
Infrastructure	1456	-0.0081	-0.0012	0.0001
		37402.3***	1287.4***	27.01***
Properties & Real Estate	2054	-0.0018	0.0001	-0.0001
		37395.6***	1286.1***	27.02***
Technology	494	-0.0006	-0.0001	-0.0001
		37397.8***	1286.2***	27.02***
Transportation & Logistic	676	-0.184	0.0091	-0.0001
		37458.6***	1282.9***	27.05***

t statistics in parentheses * p<0.10, ** p<0.05, *** p<0.01

Source: Data processed by the author with Stata

CONCLUSION

Analyzing the stock prices changes in Indonesia Stock Market during the public restriction announcement where the announcement of daily additional cases shows a rapid increase day by day, I find that this announcement of daily confirmed cases didn't have a significant effect on the changes of stock prices. At the same time, the announcement of daily confirmed death does lower the stock prices in Indonesia. This shows that negative news does stimulate a market reaction. Furthermore, the positivity rate, which shows the percentage of new cases from the total specimen tested, shows that the higher the percentage from the previous day, the lower the stock prices for the next day. Further analysis is needed to find out whether Indonesia Stock Market resists any positive news such as daily recovery cases and total specimen tested.

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