Original Article

The Effect of Large-Scale Social Restrictions (PSBB) Announcement in Stock Return in the Indonesian Capital Market

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Abstract: This study examined how market returns were impacted by PSBB (Large-Scale Social Restrictions) announcements. The target sample for the study consisted of companies in the real estate and property sectors that are listed on the Indonesia Stock Exchange. In this study, a purposive sampling technique was used to choose a sample of 34 firms. The analysis of various test data produced the following findings, which were drawn from this study's findings: (1) PSBB announcements had an impact on negative abnormal returns; (2) PSBB announcements had no impact on abnormal returns; (3) PSBB announcements had no impact on trading volume activity; and (4) PSBB announcements had an impact on security return variability. By include this study as one of their considerations when looking to invest in a company, investors may be able to make better investment decisions.

Keywords: Covid-19, Large-Scale Social Restriction (PSBB), Stock Return.

I. INTRODUCTION

A non-economic event is the Covid-19 epidemic. This pandemic cannot be separated from activity in the stock market, despite the fact that it is not directly tied to their dynamics. The Covid-19 pandemic is assumed as information absorbed by market players in making investment decisions. It happened in Indonesia since the early half of 2020 and it has had an impact on social life changes and economic performance reduction.
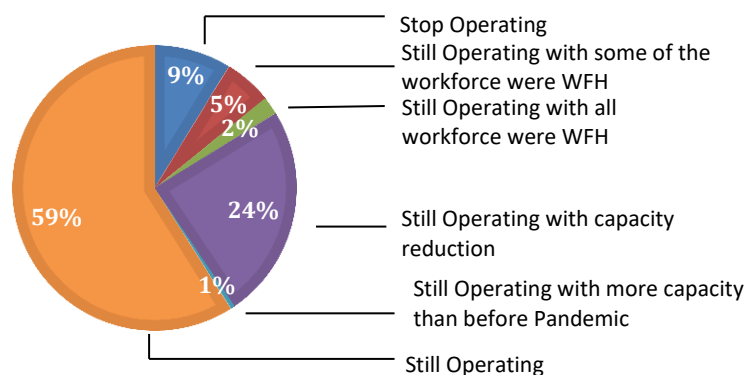

Fig. 1 Company Operations during the Covid-19 Pandemic

Many businesses were attempting to continue operating in the midst of the pandemic. There were 58.95% of companies which were still operating as before the pandemic. The rest were still running their businesses with restrictions, even 8.76% of them were declared bankrupt. One of the industrial sectors that continued to operate as before the pandemic was the real estate industry (BPS, 2020). The performance of companies listed on IDX had also depreciated as a result of the pandemic. This could be seen from the JCI at the end of 2019 which was at the level of 6,299.54 and then underwent a sharp correction to the level of 4,508.79 in the second quarter of 2020 (IDX Statistics, 2020). This fact indicates that the performance of the capital market as measured by stock returns during the Covid-19 pandemic has decreased (Anh, 2020).

The Covid-19 outbreak has a linear effect on business financial performance on the capital market, according to Anh's study (2020). In contrast to Al-Wadhi (2020), the movement of stock returns allowed for the detection of the pandemic's

effects. Al-Wadhi's research (2020) highlighted stock returns as capital market performance without including the company's profitability factor. Khan (2020) suggested further research related to the effects of this pandemic by including the stock market value variable.
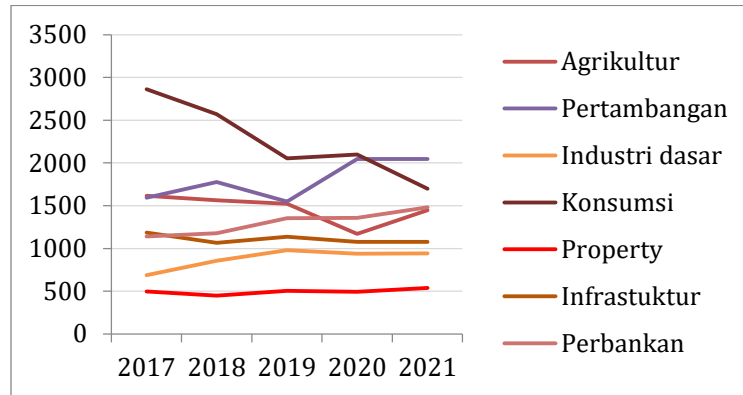

Fig. 2 Stock Movement based on Industrial Sector

Figure 2 illustrated the movement of stock prices that had been corrected in almost all industrial groups. The stock price index had been moving upward since 2017, one year prior to the Covid-19 epidemic. After the government announced the 2020 Large-Scale Social Restriction (PSBB), the movement of the stock price index decreased, with the exception of banking, mining, and real estate. However, after the PSBB was announced, the relatively stable stock movement was property. In other words, during the last observation period, only property group stocks were relatively stable and even showed a positive trend.

Al-Wadhi's study (2020) concluded that the pandemic indirectly suppressed stock prices, therefore purchasing a relatively stable group of stocks could be considered. Unlike earlier research, this one took the Security Return Variability into account. The goal of this study was to ascertain how PSBB (Large-Scale Social Restrictions) announcements affected stock returns for businesses engaged in the real estate and property sectors on the IDX.

II. MATERIALS AND METHODS

A. Population and Samples of the Research

The population of the study consisted of the businesses in the real estate and property industries that were listed on the Indonesia Stock Exchange. Purposive sampling, a method for selecting the sample based on certain criteria, was the sampling methodology used (Sugiyono, 2012).

B. Data Source

The data used in this study came from the Indonesia Stock Exchange website (www.idx.com), Yahoo Finance (www.finance.yahoo.com), and other trustworthy financial websites. It was also included in the company's daily stock data.

C. Data Analysis Technique

The data analysis methods applied in this study were the normality test and hypothesis testing. This normality test was performed to ascertain whether the test data had a normal distribution. Employing data with a normal distribution was appropriate for this inquiry and provided good data. The Kolmogorov-Smirnov test method was used in this study's normality test, which evaluates the appropriateness of two samples drawn from two identical populations. The Kolmogorov-Smirnov test's hypothesis, which had a significance level (α) of 5%, was as follows: (Arifin, 2017), (1) The sample is normally distributed if the Kolmogorov-Smirnov probability is $> \alpha$; (2) otherwise, the sample is not normally distributed if the probability is $< \alpha$.

If the results of this test indicated that the sample was normally distributed, the One Sample t-Test would be the next test in this study (parametric). The Wilcoxon Signed-Rank Test would be the next test, however, if the samples weren't normally distributed (non-parametric). The procedures for figuring out aberrant returns, trading volume activity, and security return variability are as follows:

a) Abnormal Return

    1. Calculating Actual Return

        Researchers used the Ms Excel program as the tool to calculate the Actual Return of sample company shares. The stock price 100 days before the release of the Large-Scale Social Restrictions (PSBB) and the stock price ten

days after the release of the Large-Scale Social Restrictions (PSBB) were calculated using the daily share price as a starting point.

$$Ri_t = \frac{Pit - Pit - 1}{Pit - 1}$$

Information:
Rit = return of stock i on day t
Pit = stock price i on day t
Pit – 1 = price of stock i on day t – 1

2. Calculating Market Return

$$R_{mt} = \frac{IHSG\ t - IHSG\ t-1}{IHSG\ t-1}$$

Information:
Rmt = Market Return
JCI = JCI on day t
IHSGt-1 = JCI on day t – 1

3. Calculating Expected Return
   The Single Index Market Model (SIMM) was employed to determine the expected return:

$$E(Ri_t) = \alpha\ i + \beta\ i\ .\ Rm_t$$

Information:
E(Rit) = Expected Return for stock i on day -t
Rmt = Market Return on day -t

The coefficients α and β were obtained from the time series regression equation between stock returns (Rit) and market returns (Rmt). The coefficients α and β were used to calculate the expected return for each company's stock or E(Rit).

4. Calculating Abnormal Return
   According to the following, abnormal stock return was calculated using the difference between the i-actual stock's return and expected return on the t-day:

$$A\ Ri_t = Ri_t - E(Ri_t)$$

Information:
A Rit = Abnormal Return of stock i on day t
Rit = Actual Return for stock i on day t
E(Rit) = Expected Return for stock i on day t

5. Calculating the daily Cumulative Abnormal Return (CAR) for each stock during the event period

$$CAR_{in} = \sum_{t=+40}^{t=+40} Arit$$

Information:
CARin = CAR of stock i on day t
Arit = AR of stock i on day t

6. Using the formula, determine the average AR (Average Abnormal Return) of stocks on day t.

$$\frac{\sum_{i=1}^{n} Arit}{n}$$

Information:
ARnt = Average Abnormal Return of all stocks on day t
n = the total number of shares of the target company studied

7. Calculating the Cumulative Average Abnormal Return Portfolio

$$\text{CAAR}_{Nt} = \frac{\sum_{t=-10}^{t=+10} AR_{Nt}}{n}$$

Information:
CAARNt = CummAlative Average Abnormal Return Portfolio
ARnt = Average Abnormal Return of stock i on day t

8. Statistical Testing of Abnormal Returns
The goal of analysing anomalous returns statistically is to determine the degree of importance that exists during the event period. Due to the importance of the t-test results, the abnormal return does not equal zero. The t-test can be carried out using the following steps:

$$t = \frac{\bar{X} - \mu}{\frac{s}{\sqrt{n}}}$$

Information:
t : t count value
$\bar{X}$: Average Abnormal Return on the day of observation
μ : Abnormal Return value at the time the PSBB was announced
s : Standard Deviation of the Average Abnormal Return on the day of observation
n : the number of companies observed
The test uses a t-test with a significant level of α = 5% and degrees of freedom (n -k).

b) Trading Volume Activity
The second hypothesis focused on the variation in trading volume activity (TVA) before and after the PSBB event was revealed. A paired t-test was used to examine the subsequent second hypothesis (Sugiyono, 2009):

$$t = \frac{\bar{X} - X_2}{\frac{s}{\sqrt{n}}}$$

Information:
t : t count value
$\bar{X}$: average SRV on the day of observation
X_2 : SRV value at the time the PSBB was announced
s : standard deviation of the average SRV on the day of observation
n : the number of companies observed
The test used a t-test with a significant level of α = 5% and degrees of freedom (n -k).
$H_0 : \bar{X} = \mu$, there is no significant difference between the SRV before and after the PSBB announcement
$H_0 : \bar{X} \neq \mu$, there is a significant difference between the SRV before and after the PSBB announcement
Hypothesis acceptance criteria:
H0 is accepted or H1 is rejected if $-t_{(table)} \leq t_{(count)} \leq t_{table}$
H0 is rejected or H1 is accepted if -t count < -t table or t count > t table

c) Security Return Variability
The third hypothesis focused on the variation in security return variability (SRV) before and after the announcement of the PSBB event. Using a one sample t-test, the following third hypotheses were tested (Sugiyono, 2009):

$$t = \frac{\bar{X} - X_2}{\frac{s}{\sqrt{n}}}$$

Information:

t : tcount value

$\bar{X}$: average SRV on the day of observation

X_2 : SRV value at the time the PSBB was announced

s : standard deviation of the average SRV on the day of observation

n : the number of companies observed

The test used a t-test with a significant level of α = 5% and degrees of freedom (n -k).

$H_0 : \bar{X} = \mu$, there is no significant difference between the SRV before and after the PSBB announcement

$H_0 : \bar{X} \neq \mu$, there is a significant difference between the SRV before and after the PSBB announcement

Hypothesis acceptance criteria:

H0 is accepted or H1 is rejected if $-t_{(table)} \leq t_{(count)} \leq t_{table}$

H0 is rejected or H1 is accepted if -t count < -t table or t count > t table

III. RESULTS AND DISCUSSION

A. Descriptive Statistical Analysis

a) Abnormal Return Movement

Table 1: Results of Abnormal Return Descriptive Statistics Before and After the PSBB Announcement

	N	Minimum	Maximum	Mean	Std. Deviation
Before PSBB	10	-.274	-.165	-.1853	0,2457
After PSBB	10	-.115	.588	.2443	1,0153
Valid N (listwise)	10				

Table 1 shows that before the PSBB announcement, the average anomalous return was negative (-0.1853). This showed that investors were reacting negatively to the government's plan to announce PSBB on April 10, 2020. It could be said that most investors did not make share buying and selling transactions and were in a wait and see attitude waiting for further economic developments. In contrast, after the announcement of the PSBB, it turned out that the average abnormal return was positive (0.2443). This fact indicated that investors' hopes the economy would improve after the implementation of the PSBB.

However, there were differences in investor behaviour before and after the announcement of the PSBB (0.2457), which was smaller than the standard deviation of abnormal returns after the PSBB (1.0153). This showed that investors respond to the PSBB issue very diversely. Some investors doubted the effectiveness of the PSBB in improving the economic cycle, and some, especially after the PSBB, showed the attitude of investors who had hopes for an improvement in the economy after the PSBB.

b) Trading Volume Activity

Table 2: Descriptive Statistical Results of Trading Volume Activity Before and After the PSBB Announcement

	N	Minimum	Maximum	Mean	Std. Deviation
Before PSBB	10	0.632	0.403	.4287	.29914
After PSBB	10	0.308	0.169	.2941	.18032
Valid N (listwise)	10				

Table 2 showed the different facts between stock returns and the volume of shares sold. In the period before the announcement of the PSBB, it was found that the average TVA was 0.4287, which was greater than the average TVA after the announcement of the PSBB, which was only 0.2941. This demonstrated that only a tiny number of property and real estate companies traded shares during the time prior to the PSBB's announcement. However, a significant portion of the shares more than 42.87% were sold.

This fact was reinforced by the TVA standard deviation before the PSBB announcement (0.299) which was greater than the TVA standard deviation after the PSBB announcement which reached 0.180. This showed that market sentiment tended to be positive regarding the PSBB.

c) **Security Return Variability**

Table 3: Results of SRV Descriptive Statistics Before and After PSBB Announcement

	N	Minimum	Maximum	Mean	Std. Deviation
Before PSBB	10	3,268	1,006	1.7478	.35895
After PSBB	10	1,243	1,145	1.3076	.22195
Valid N (listwise)	10				

Based on the aforementioned facts, the average SRV prior to the PSBB announcement was computed to be 1.748 with a standard deviation of 0.359. The smaller standard deviation figure than the average value suggested that practically all investors were waiting to buy and sell shares. However, investors' doubts began to diminish after the announcement of the PSBB was proven by the smaller standard deviation (0.222).

B. *Normality Test*

Table 4: Data Normality Test

Variable	P (Kolmogorov-Smirnov)	Information
Abnormal Return	0,336	Data is normally distributed
Trading Volume Activity	0,284	Data is normally distributed
Security return Variability	0,066	Data is normally distributed

Since the variables of anomalous return, trading volume activity, and security return variability had a normal distribution in accordance with the preceding table, the t-test was utilised to test the hypothesis.

C. *Hypothesis Testing*

a) **There is a negative abnormal return around the PSBB announcement**

Only H-9 was found to be substantially different ($p < 0.05$) in the t one sample test of stock movements prior to the PSBB announcement. Two weeks before to the PSBB announcement, the likelihood value of testing the hypothesis tended to be lower than a few days prior to the PSBB's deployment. The first hypothesis, according to which there was a negative anomalous return around the time the PSBB was issued on April 20, 2020, is therefore acceptable.

b) **There is an Average Abnormal Return before and after the PSBB announcement**

Table 5: Descriptive Statistic Abnormal Return Movement

Window	Average	t-count Value	Significance p
Before	-.1853		
After	.2443	-.531	.599
Difference	-.42963		

According to Table 6, there was no appreciable difference between the significance values of the numerous tests performed before and after the PSBB announcement event, as shown by the value of p (0.599) > 0.05. The average abnormal return movement value prior to the PSBB announcement was negative (-0.1853), which indicated investors' concerns about the capital market environment following the implementation of the PSBB and forced them to sell shares at a discount. On the other hand, the abnormal return following the PSBB announcement was positive (0.2443), demonstrating investors' hopes for the PSBB's stimulation of the capital market. Overall, there was a difference between negative abnormal returns differences (0.4296) indicating the cautious attitude of investors in responding to the PSBB issue, therefore the second hypothesis is proven empirically.

c) **There is Trading Volume Activity before and after the PSBB announcement**

Table 6: Summary of Trading Volume Activity t-test results

Window	Average	T count Value	Significance p
Before	.4287		
After	.2941	1.038	.307
Difference	-.1346		

Table 7 showed TVA after <TVA before. The volume of stock trading after the window was smaller than before, as an indication of investors' distrust that the PSBB would have a positive impact on economic growth. The trading volume activity test findings before and after the PSBB announcement show that there was no appreciable change (p > 0.05). This demonstrated how little changed the ratio of shares exchanged throughout the course of the 20-day monitoring period. It was known from the difference in TVA of (-0.1346), it indicated that investors were panicked before the announcement of the PSBB resulting in panic buying and selling in greater numbers of shares than after the PSBB.

d) There is Security Return Variability before and after PSBB

Table 7: Summary of Security Return Variability t-Test Results

Window	Average	T count Value	Significance p
Before	1.7478		
After	1.3077	1.941	.046
Difference	-.4401		

Based on table 8, the SRV after < SRV before. This showed that the SRV after the window was smaller than before, as an indication that investors were not too willing to take risks after the PSBB. The significance value of the Security return variability test clearly showed a difference between before and after the PSBB announcement event (p <0.046). This meant that investors felt that it was not safe enough to invest in the form of shares as a result of business uncertainty regarding the PSBB implementation.

D. Discussion

a) The effect of negative Abnormal Return around the PSBB announcement

The first hypothesis was accepted based on the findings that irregular returns had a detrimental impact on PSBB announcements for companies involved in real estate and property. This research is in line with Jecuinna's findings (2021) that the first phase of the PSBB in March 2020 had an impact on decreasing share prices, so that the shareholders were doing panic selling.

b) The effect of Abnormal Return around the PSBB announcement

The findings of this study did not conclusively demonstrate that PSBB announcements had a substantial impact on aberrant returns. The findings of this study are consistent with those of Patel et al. (2017), Mahmood (2014), and Ahmad et al. (2015), who found changes in the average abnormal return before and after the PSBB announcement.

c) The effect of the PSBB announcement on Trading Volume Activity

The t-test results indicate that this study was unable to demonstrate a significant relationship between the trade volume activity variable and the non-economic PSBB announcement events. This is corroborated by Jecuinna's research (2021), which indicated that the adoption of extensive social restrictions (PSBB) had resulted in a fall in the JCI. However, as stock trading volume keeps rising, stock prices will generally remain constant.

d) The effect of PSBB announcement on Security Return Variability

The tests' findings demonstrated that the PSBB announcement had an impact on investors' perspectives. This study supports Rori's research (2021), which found that during the Covid-19 pandemic, investors were uneasy (security variability) about investing in equities.

IV. CONCLUSION

The study's findings were based on an analysis of the data and a discussion of how PSBB (Large-Scale Social Restrictions) announcements affected stock performance. The examination of various test data used in this study's findings revealed that: (1) Abnormal returns have a detrimental impact on PSBB announcements. This demonstrates that there was a downward trend in stock prices prior to the PSBB announcement. (2) Announcements from PSBB have no impact on unusual returns. This demonstrates that, in accordance with BPS releases, stock market transactions for real estate and property businesses are proceeding as usual. (3) The PSBB notification had no impact on trade activity or volume. Because the company is still operating in this industry, the widespread restrictions that impede economic activity have no impact on investors' decisions to buy shares of the property and real estate group. (4) PSBB announcements affect the variability of security return. Despite the fact that the PSBB had no effect on stock returns or trading volume in the real estate and property industry, new player investors held off on buying shares.

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