



THE RESPONSE OF BANKING SECTORS TO THE COVID-19 PANDEMIC IN INDONESIA STOCK EXCHANGE

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Abstract: The COVID-19 pandemic that hit Indonesia in early March 2020 had an impact on the capital market, especially on the banking sector. This study aimed to find out the effect of the Daily Growth in Total Confirmed Cases and Daily Growth in Total Death Cases, Recovery Cases, and Social Restrictions on the stock return of the banking sector on the Indonesia Stock Exchange. This study will contribute in two ways. First, we engaged with a particular sector, namely the banking sector which is relatively scarce in the pertaining literature. Second, we involve the role of government intervention, on which, The Large-Scale Social Restrictions (PSBB) as one of the independent variables. The data were collected from companies engaged in the banking sector as many as 46 companies between March 1, 2020, and July 31, 2021. Through Panel Regression with EVIEWS software, the finding revealed that Daily Growth in Total Death Cases and Recovery Cases had a significant effect on stock return. While the Daily Growth in Total Confirmed Cases and PSBB appears to have an insignificant effect on Stock Market Return. This study contributes to investors and investment managers in making decisions in the stock market by paying attention to information related to the Covid-19 cases in Indonesia.

Keywords: Banking Sector; Covid-19; Growth Case; Recoveries Cases; Social restrictions; Stock Market Return

INTRODUCTION

Stock Index is a measure of the average value that describes the movement of stock values as a whole which is categorized based on the criteria, and methodology and is constantly being evaluated. The benefit of having a stock index is that it can find out the sentiment in the market, it can be used as a passive investment product such as Index Mutual Funds and index ETFs to other derivative products, benchmarks in active portfolios, other parties as shareholders (proxies) when taking measurements and creating investment return models, systematic risk, and risk-adjusted-performance to asset classes in asset allocation (Idx.co.id, 2020).

The COVID-19 pandemic has been spreading very quickly, so it has had a negative impact on economies around the world, including Indonesia. At the beginning of 2020, there were several countries in cooperation with Indonesia that experienced negative economic growth, they were Hong Kong -8.9, Singapore -2.2, China -6.8, and the European Union -2.7. In Indonesia, there was a significant decline in economic growth, from 4.97 in the fourth quarter of 2019 to only 2.97 in the first quarter of 2020 (Sakti, 2020). This situation directly affected the capital market. This can be seen through the closing of trading on March 20, 2020, when the Jakarta Composite Index (JCI) decreased by 33.41% (Hadinata, 2020). The decline in the overall level of the economy is one of the impacts of COVID-19 which has had an impact on several sectors, one of which is the banking industry.

The banking sector is the most affected sector by the Covid-19 pandemic. This industry is threatened with three kinds of risks due to COVID-19; the first is the credit risk, which occurs when micro, small, and medium enterprises (MSMEs) are unable to pay off their obligations, the second is the market risk that is due to the decreased exchange rate, and the third is liquidity which is due to the difficulties experienced by the

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debtors in their business or incomes (Elena, 2020). This triggered negative sentiment among investors and affected the movement of the financial sector stock index on the Indonesia Stock Exchange. At the beginning of the emergence of the Covid-19 case in Indonesia, the financial sector index experienced the deepest correction in the last five years, reaching the level of 846.62. This value continued to hold, and began to increase in June 2020, although since then this index has been showing an increasing trend, until now, it is still showing high fluctuations and has not yet reached its momentum of growth.



Figure 1. Stock Index Movement of Financial Sector Indonesia Stock Exchange
 Source: (yahoo finance, 2021)

The Covid-19 pandemic is a condition that reflects uncertainty. In behavioral finance theory, information plays an important role in this condition. Any information received by the public will trigger reactions of investors and become the basis for them to make decisions regarding making transactions in the capital market. Information that becomes the focus of the public during the pandemic is any information related to Covid-19 cases, namely the increase in the number of cases and the number of deaths caused by the virus. Since the beginning of the pandemic, researchers have begun to focus their studies on the relationship between the number of cases or the number of deaths with stock index movements (Al-Awadhi et al., 2020; Ashraf, 2020; Baek et al., 2020). In addition, government policies in handling Covid-19 cases are also believed to trigger investor responses and the movement of the stock market, for example, lockdowns that were implemented in various countries (Anh & Gan., 2020; Narayan et al, 2020).

The Efficient Market Hypothesis firstly introduced by Fama (1970) stated that Stock Price reflects all relevant information about the stock itself. Meanwhile, Behavioural Finance Theory enunciated that, even though indirectly affects the capital market activity, phenomena or information received by investors will be used as the basis of decision making in capital market transactions (He et al, 2020). Numerous research has been done to investigate the effect of Covid-19 on stock price movement. Covid-19 cases are commonly represented by Daily Growth of Cases, Daily growth of Death Cases (Fatality Rate), or recovery cases.

Ashraf (2020) through their study concludes that the Daily Growth of Cases has a negative significant effect on stock price movement. This effect is stronger as compared to the fatality rate in 64 interest countries. Al-Awadhi et al., (2020) examine the influence



of Daily Growth of Cases and Daily growth of Death Cases on Stock price movement in *the Hang Seng Index and Shanghai Exchange Composite Index*. Data were taken from January 10, 2020, to March 16, 2020. Through Panel regression, their study finds that both Daily Growth of Cases and Daily growth of Death Cases have a significant negative effect on Stock Price in Shanghai. This result is in line with a study by (Cao et al., 2020) in China stock exchange. Moreover, their study shows that the negative response caused by Covid-19 only for a temporary period and is predicted to be back into its nature within the next 18 months. Anh & Gan (2020) analyzed the impact of Covid-19 and lockdown implementation in the Vietnam Stock Market. The data used were the daily stock return of 723 companies listed in the Vietnam composite index, 385 firms in HOSE, and 338 HASTC's companies during the period of January 30, 2020, to May 30, 2020. Using Linear Regression, it was revealed that stock return was significantly affected by *The Daily Increase in The Number of Confirmed Cases, Deaths due to COVID-19, Market to Book Ratio, and The Nation-Wide Lockdown* as the dummy variable. Extending this research, Kumar et al. (2020) assess the effect of Covid-19 and government intervention on the stock price. Their study finds that other than a lockdown, stimulus package distribution also gives a positive effect on the stock price. The role of PSBB has been proved by Agustin (2021) who exhibits the significant role of PSBB in the Indonesia sharia stock index.

A Study by Chia et al. (2020) entitled "Daily Cases of COVID-19, *Movement Control Order* and Market Reaction in Malaysia" This study attempts to investigate the relationship between stock market return and variables related to the covid-19 pandemic, whereas *Stock Market Returns* affected by *The Movement Control Order (MCO)* and *Daily New Confirmed and Death Cases of COVID-19*. The data was taken from FTSE KLCI Malaysia in the period of January 2, 2020, to April 30, 2020, and was analyzed using *Ordinary least Square Regression analysis*.

On the other hand, some prior studies try to examine the relationship of Covid-19 cases to stock price movement at the global level. For instance, Liu et al. (2020) researched in China and Asia, Baek et al. (2020) in the United States, Heyden & Heyden (2020) in Germany, and Akhtar et al. (2020) in Bangladesh. Meanwhile, He et al. (2020) researched the relationship of covid-19 to stock prices in sectoral indices in Shanghai and Shenzhen, China. The Sample was taken from 2,895 companies in the period of June 3, 2019, to March 13, 2020, by using Abnormal Return as the dependent variable. The finding ascertains the negative effect of the covid-19 pandemic on stock return in particular sectors such as mining, electricity, transportation, and the environment industry. Surprisingly, covid19 has a significant effect on other sectors such as Technology, manufacturing, Education, and Health.

Stock Market Return is the dependent variable used in this study, which is the profit obtained due to having investors' shares. The effect of the investment is also desired to be following the level of stock return obtained for investors. The way to calculate stock returns is by differentiating the stock price of the current time and the previous period, ignoring the profits shared with shareholders or dividends, or it can also be seen through the stock return formulation below:

$$R_i = P_t - (P_t - 1) / P_t - 1$$

Where

R_i: Stock Return

P_t: Stock Price in Period t

P_{t-1}: Stock Price in Period t-1



Daily Growth in Total Confirmed Cases is the growing number of people who avowed to be infected by Covid-19 and was confirmed through Polymerase Chain Reaction (PCR) test. People who are exposed to the COVID-19 virus can infect anyone with COVID-19 symptoms or infect people without experiencing any symptoms (Who.int, 2020). Some previous studies revealed that Daily Growth in Total Confirmed Cases has a significant negative effect on stock market return ((Al-Awadhi et al., 2020); (Cao et al., 2020); (Kumar et al., 2020); (Ashraf, 2020); (Chia et al., 2020); (Baek et al., 2020); (Akhtar et al., 2020); (Gherghina et al., 2020); (Pareek & Singh, 2020); (Petropoulos & Makridakis, 2020); (Khan et al., 2020); (Shehzad et al., 2020)). Meanwhile, other studies posit that Daily Growth in Total Confirmed Cases has a significant positive influence on Stock Market Return ((Anh & Gan, 2020); (Liu et al., 2020); (Rath et al., 2020); (Salisu & Vo, 2020); (Zhang et al., 2020); (Heyden & Heyden, 2020); (Erdem, 2020); (Baig et al., 2020); (Okorie & Lin, 2020); (He et al., 2020); (Albulescu, 2020); (Singh et al., 2020)).

Daily Growth in Total Cases of Death is a situation where a person who has been declared infected with the COVID-19 virus dies. Cases of death due to COVID-19 occur because the disease can infect the respiratory tract, so it can cause symptoms in the form of ARI ranging from mild to severe. (Who.int, 2020).

Numerous prior literatures stated that Daily Growth in Total Cases of Death has a significant negative effect on Stock Market Return (Al-Awadhi et al., 2020; Cao et al., 2020; Narayan et al., 2020; Ashraf, 2020; Chia et al., 2020; Baek et al., 2020; Heyden & Heyden, 2020; Erdem, 2020; Ali et al., 2020; Gherghina et al., 2020; Petropoulos & Makridakis, 2020; Shehzad et al., 2020). On the other hand, some other studies exhibit a positive significant relationship among those variables (Anh & Gan, 2020; Rath et al., 2020; Salisu & Vo, 2020; Baig et al., 2020; Okorie & Lin, 2020; He et al., 2020; Singh et al., 2020).

Recoveries Cases are people who have been declared to have improved health and are considered no longer transmitting the virus hence advisable to no longer self-isolate at home. Active cases are those who have symptoms that continue and are self-isolating at home because they are still considered to be infectious (News.detik.com, 2020). Recovery is a condition in which a person's psychological and physical condition can improve and ready return to living their daily lives, as they can show themselves as resilient individuals (Giriwijoyo, 2017). Several previous studies find that Recoveries Cases have a significant negative impact on Stock Market Return (Cao et al., 2020; Baek et al., 2020). Otherwise, studies by Rath et al. (2020); Petropoulos & Makridakis (2020) find a significant negative effect of recoveries cases on Stock Market Return.

Large Scale Social Restrictions, which are well known as PSBB is restrictions on several activities carried out by the community in certain locations that are estimated to be infected with the COVID-19 virus. This large-scale social distancing activity aims to prevent the spread of the COVID-19 virus. Restricted activities such as holidays from school and work activities, restrictions on religious activities, restrictions on activities carried out in open public places. This restriction is also carried out by considering educational needs, work productivity, and community worship activities (Kemenkopmk.go.id, 2020). Some prior studies revealed that large-scale social restrictions (PSBB) have a significantly negative effect on Stock Market Return ((Anh & Gan, 2020); (Baig et al., 2020)). While other studies show a positive correlation between the variables (Narayan et al., 2020; Alam et al., 2020).

Market to Book Ratio is the ratio of the value per share of common stock to the book value per share of the equity. The market value per share also shows the company's performance, namely the value of a market at a time that can be influenced by the attitudes of market participants, psychological conditions in the market, economic changes, political growth, and others (Helfert, 2018).



The Market book ratio is a comparison of market equity value to its book value. The calculation of the market value of equity is obtained by multiplying the share price per share with the number of shares currently outstanding. The book value of equity is obtained from the total equity minus the preferred shares as stated in the Statement of Financial Position (Gitman & Zutter, 2015). In this study, Daily Market to Book Ratio is positioned as Control Variable.

Following this explanation, this study aimed to find out the effect of the number of cases and the number of deaths due to Covid-19 on the stock return of the banking sector on the Indonesia Stock Exchange. This study will contribute in several ways, namely: 1) being specific on the sector studied, in this case, the banking sector; 2) this study also included a large-scale social restriction (PSBB) policy as a control variable. This study is expected to be the basis for decision-making for investors and investment managers, especially for the banking sector in making transactions on the stock market.

According to the explanation above, the research model is depicted in the following figure 2.

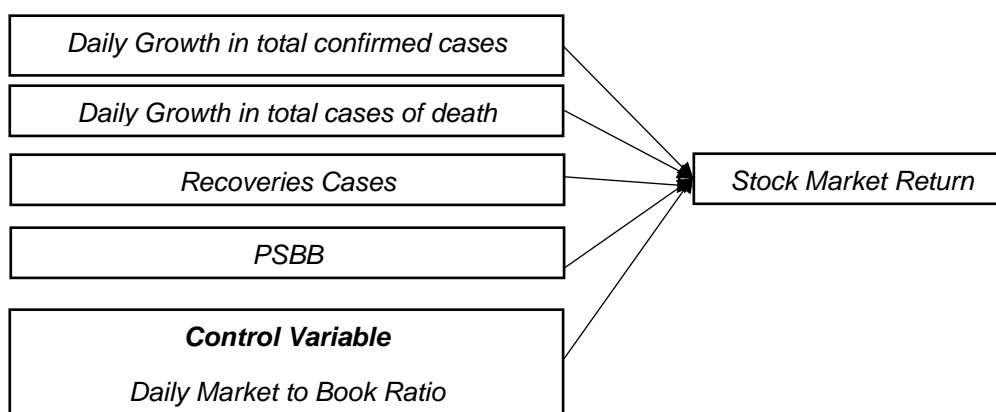


Figure 2. Research Model

Source: Author (2021)

Following are the research hypotheses:

H1: Daily Growth in Total Confirmed Cases has a significant negative influence on Stock Market Return.

H2: Daily Growth in Total Cases of Death has a significant negative influence on Stock Market Return.

H3: PSBB has a significant negative influence on Stock Market Return

METHODS

The object of this research is all companies engaged in the banking sector as many as 46 companies. The data used is daily data by research variables taken from yahoo. finance site. com and www.IDX.co.id. Meanwhile, the Market to Book Ratio variable is taken from the company's financial statements from the website www.idx.co.id. The data period used is March 1, 2020 – to August 31, 2021.

This research involves Daily Growth of Total Confirmed Cases and Daily Growth in Total Death Cases, Recoveries Cases, and Social Restrictions as Independent Variables, while Daily Market to Book Ratio as Control Variables. The data analysis method used is Panel Regression Analysis with Eviews Software. According to Basuki & Prawoto (2016), panel data regression has three approach model techniques, namely



the common effect model (CEM), fixed effect model (FEM), and random effect model (REM). The best model was selected through the Chow Test, Hausman Test, and Breusch Pagan Lagrange Multiplier (LM).

RESULTS AND DISCUSSIONS

Descriptive Statistics

The data used in this study were secondary data collected from the companies in the financial sector listed on the Indonesia Stock Exchange (IDX) from March 2, 2020 – to July 30, 2021, as many as 46 companies. The data for processing were collected in 18 months from the first confirmed Covid-19 case, with 15,686 data samples. The independent variables in this study are daily growth of total confirmed cases, daily growth of total death cases, recovery cases, and market to book ratio. A descriptive statistical table showing the minimum, maximum, average, and standard deviation levels for each variable from the sample used in companies listed on the Indonesia Stock Exchange can be seen in Table 1 below.

Table 1. Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Stock Market Return	15.686	-0,8121	10,2000	0,0038	0,0956
Daily Growth in Total New Cases	15.686	0,0000	10,9465	7,7826	2,0276
Daily Growth in Total Cases of Death	15.686	0,0000	7,6353	4,4828	1,4836
Recoveries Cases	15.686	0,0000	2,1558	1,6370	0,4270
Daily Market to Book Ratio	15.686	0,0000	43,6826	2,4340	4,0768

Source: Author (2021)

Table 1 depicted the descriptive statistics for all variables. It can be seen that the stock market return averaged a relatively low Mean during the covid-19 pandemic. The daily Growth in Total New Cases experienced a Mean value of 7.78 per day, while the daily growth in total Death Cases is 4.48 per day. Judging from their standard deviation, the growth of daily cases has higher variation as compared to growth in death cases. The number of recoveries cases during this period is relatively small since the covid-19 handling is relatively new. Meanwhile, the average Daily Market to Book Ratio shows a positive value, which means that even though the stock prices are volatile during this period, those prices still exceed their book values.

Result of Panel Regression

In this panel regression test, selecting the best model between the common effect model (CEM), fixed effect model (FEM), and random effects model (REM) tests, was then followed by the Chow and Hausman tests conducted, so that the model obtained was the most suitable model. The results of each regression test are described as follows.



Chow Test

The Chow test was intended to determine whether the common effect model (CEM) or the fixed effect model (FEM) would be used. If the significant value is less than the alpha probability of 0.05, then the best panel data regression model will be the fixed effect model (FEM), whereas if the significant number is more than the alpha probability of 0.05, then the best panel data regression model will be the common effect model (CEM). The results of the Chow test regression on the variables in the study are shown in table 2.

Table 2. Result of Chow Test

Effect Test	Statistic	d.f.	Prob.
Cross-section F	2,3664	(44,1420)	0,0000
Cross-section Chi-square	104,1096	44	0,0000

Source: Author (2021)

Table 2 shows the results of the cross-section fixed effect test by looking at the probability value in the cross-section chi-square. The significance value was 0.0000, which was less than 0.05. Therefore, the panel regression technique model used the fixed-effect model (FEM) in predicting the dependent variable.

Table 3. Result of Hausman Test

Test Summary	Chi-sq. Statistic	Chi-sq. d.f.	Prob.
Cross-Section Random	41,4142	5	0,0000

Source: Author (2021)

Table 3 shows the test results that can be seen from the Cross-Section Random probability which has a value of 0.0000, which is less than the alpha of 0.05. Thus, the best model used was the Fixed Effect Model (FEM).

Panel Regression

The F-test aimed to find out the simultaneous effect of all independent variables on the dependent variable. For the regression model, it can be seen through the F value in the sample taken from companies listed on the Indonesia Stock Exchange (IDX). The results of the F-test for the regression model can be seen in table 4.

Table 4. Result of F-Test

Dependent Variable	Sig.	Conclusion
Stock Market Return	0,0000	Significance

Source: Author (2021)

As seen from the test results above, the probability value obtained is 0.0000, where the significant value is less than 0.05. The results showed that the Independent Variables (Daily Growth of Confirmed Cases, Daily Growth of Total Death Cases, Recovery Cases, Large-Scale Social Restrictions, and Market to Book Ratio), had a simultaneous and significant effect on Dependent Variable (Stock Market Return).

The t-test aimed to find out the partial effect of each independent variable. The results of the t-test on the Fixed Effect Model (FEM) can be seen in Table 5 below:



Table 5. Result of t-Test

Variable	Coefficient	t-Statistic	Prob.	Conclusion
C	-.0336	-5,3800	0,0000	
Daily Growth in Total New Cases	-0,0076	-0,8420	0,3998	Insignificant (-)
Daily Growth in Total Cases of Death	-0,0061	-2,9850	0,0028	Significant (+)
Recoveries Cases	0,0377	4,5839	0,0000	Significant (+)
Daily Market to Book Ratio	0,0028	8,4515	0,0000	Significant (+)
PSBB	0,0006	0,3838	0.7011	Insignificant (-)

Source: Author (2021)

The value above is the resulting value of the test. The value is in the probability column, if the probability value is less than 0.05, it can be stated that the dependent variable has a significant effect on the independent variable or it can be said that the hypothesis is accepted.

Daily Growth in Total New Cases and Large-Scale Social Restrictions have a non-significant effect on the Stock Market Return or it can be stated that the hypothesis is not proven. In a journal by Ashraf (2021) and Baig et al. (2020), it is stated that the Daily Growth in Total New Cases and Large-Scale Social Restrictions variables caused decreased stock market returns because the stock market was more proactive in the number of deaths compared to the number of confirmed cases. Meanwhile, the Daily Growth in Total Death Cases, Recovery Cases, and Daily Market to Book Ratio has a significant and positive effect or it can be said that the hypothesis is accepted. Research conducted by Salisu & Vo (2020), Zhang et al. (2020), and Baek et al. (2020) stated that society attaches great importance to the healthy growth rate and recovery rate caused by Covid-19, so that, both increase and decrease in the death and recovery rate have a significant effect on Stock Market Return.

Table 6. The Result of the Goodness of Fit Model

Dependent Variable	R Square	Adjusted R Square
Stock Market Return	0,0132	0,0098

Source: Author (2021)

The purpose of the Goodness of Fit Model Test, also known as the coefficient of determination test (R), is to measure how far the ability of a model in explaining the dependent variable, and also the value of R-Square in the research results is the percentage of model fit. Table 6 posits the value of the Adjusted R Square was 0.009881, which means that the Independent Variables (Daily Growth of Confirmed Cases, Daily Growth of Total Death Cases, Recovery Cases, Large-Scale Social Restrictions, and Market to Book Ratio) could explain the Dependent Variable (Stock Market Return) by 0.9881%, while the rest 99.0119% was explained by other variables that were not included in the research model.



CONCLUSION

The unprecedented Covid-19 pandemic has had a negative impact on the stock market, including in Indonesia. This study derives to provide empirical evidence on the relationship between the Covid-19 pandemic and Stock Market Return of Banking Sectors in the Indonesia Stock Exchange. The results exhibit the negative insignificant influence of Daily growth of confirmed Cases and the positive significant influence of Daily Growth of Death Cases on stock market return. Meanwhile, recoveries cases have a positive significant influence on the stock market return. This contradicts some previous studies which enunciated opposite results. Since the covid-19 pandemic reflects uncertain conditions, banking sectors investors tend to have expedited responses to positive news, in this case, recoveries cases reported by the government. The high number of recoveries cases indicates that the covid-19 virus is not fatal as long as treated in more advanced ways. In addition, PSBB shows an insignificant effect on the stock market, partly due to the transactions in a capital market still can be done along with restriction regulations of PSBB. The results will contribute to investors and fund managers as the basis of decision-making in stock market transactions, particularly in the Banking Sector.

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