



The COVID-19 Outbreak and its Impact on Stock Market Returns: Evidence From Indonesia

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ABSTRACT

This study investigates the impact of Coronavirus disease 2019 (COVID-19) outbreak on stock market returns in Indonesia stock exchange. Number of positive cases, mortality, recovery, and capital market data were collected for 136 days since the first case was announced in Indonesia (2 March 2020). Panel data regression was employed to test the research hypothesis. The results show that COVID-19 has a negative impact on Indonesian stock market returns. The growth of positive case and deaths decreased the market returns. Meanwhile, the increase of recovered cases is a positive signal for the capital market but it has not contributed to the rise of stock prices and market returns.

Wabah COVID-19 dan Dampaknya terhadap Return Pasar Saham: Bukti Empiris dari Bursa Saham Indonesia

ABSTRAK

Penelitian bertujuan untuk menguji dampak wabah Coronavirus disease 2019 (COVID-19) terhadap pengembalian pasar saham di bursa efek Indonesia. Jumlah kasus positif, kematian, pemulihan, dan data pasar modal dikumpulkan selama 136 hari setelah kasus pertama diumumkan di Indonesia (2 Maret 2020). Regresi data panel digunakan untuk menguji hipotesis penelitian. Hasil penelitian menunjukkan bahwa COVID-19 berdampak negatif pada return pasar saham Indonesia. Pertumbuhan kasus positif dan kematian berpengaruh negative terhadap return saham. Sementara itu, peningkatan kasus yang pulih merupakan sinyal positif bagi pasar modal namun belum berkontribusi dalam kenaikan harga saham dan pengembalian pasar.

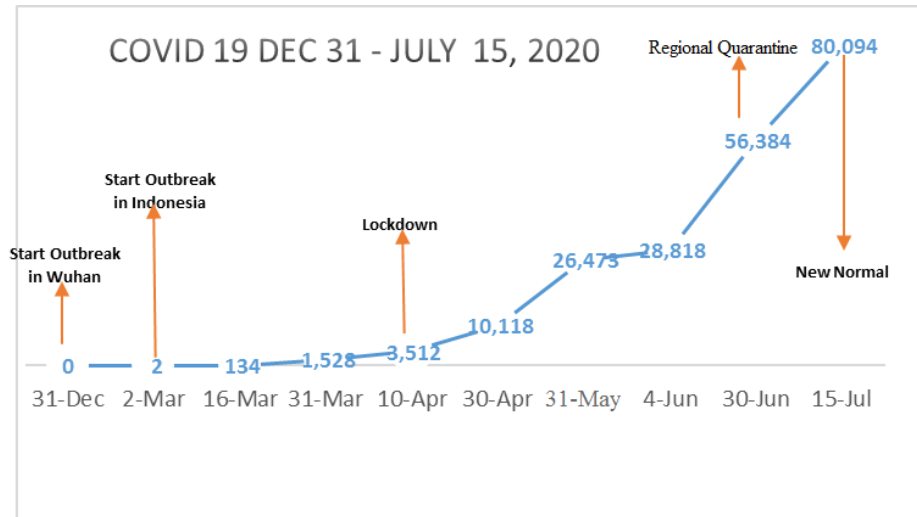
1. Introduction

The Wuhan City Health Commission reported a case/the first case of pneumonia identified as Coronavirus on November 2019 and WHO declared Coronavirus disease (COVID-19) as a global pandemic on March 11, 2020. There were around six million people positive and 365,000 people died due to COVID-19 on May 30, 2020 (Westcott, et al, 2020). The Indonesian government announced the COVID-19 pandemic on March 2, 2020, with 2 people confirmed positive and the

number increased to 134 confirmed cases with 5 people died. For the first time, the Indonesian government implemented a regional quarantine policy (or *Pembatasan sosial berskala besar/ PSBB*) on April 10, 2020 as the case number reached 3,000 positive cases and 300 people died (Ibrahim, 2020). As a result, a lockdown policy is applied, where all activities were switched to be done at home (work from home, learning from home, etc) and it lasted until June 30, 2020, where the Indonesian government announced a "new

normal" policy on July 1, 2020. At this time, all community activities including business activities returned to normal, but with strict health protocols. The COVID-19 pandemic has a significant impact

on the economic sector, especially transaction activities on the Indonesia Stock Exchange with a declining trend during the pandemic.



Source: Data processed from the Ministry of Health, 2020

Figure 1. COVID-19 and Government Policy

The Jakarta Composite Index (JCI) during the pandemic up to July 1, 2020, decreased by 22% due to the very high level of volatility, even though it had corrected 37.49% on March 24, 2020, compared to the end of 2020 (Aldin, 2020). The high volatility of the capital market is shown by the high activity of selling shares on the Indonesia Stock Exchange (IDX) due to panic sales made by investors who struggled to secure their capital (Aldin, 2020). Consequently, JCI experienced a continue fall and it affected stock market of the Indonesian listed companies.

A major event that resulted in a regional and global recession significantly affects the stock return of the capital market (Datar, Naik, & Radcliff, 1998). The COVID-19 pandemic has affected investment and the business environment in Indonesia. The Indonesian Financial Services Authority (FSA) reported that JCI fell 21.05% at the beginning of July 2020 compared to the month in the previous year (YTD) (Otoritas Jasa Keuangan, 2020). The agriculture sector decreased 32.09%, the mining sector fell 18.09%, the Basic

Industry sector fell 23.28%, the miscellaneous Industry sector fell 28.51%, the consumer industry sector fell 11.55%, the Property and real estate sector fell 36.26%, the infrastructure sector fell 21.10%, the financial sector fell 20.77%, the trade sector fell 21.33% (Otoritas Jasa Keuangan, 2020).

According to Goodell (2020), COVID-19 is a big challenge for the world which will cause the biggest world economic crisis in the history of world war II. The world capital market has plunged and is reflected in the Dow Jones Industrial Average (DJIA) and the S&P 500, which fell 33% and 29% during the pandemic period between December 31, 2019, and April 2020 (World economic outlook, 2020).

Research on the impact of COVID-19 on stock returns has been carried out by researchers from various countries, the average motivation for conducting the research is to see whether there is a significant impact of COVID-19 on stock prices and stock returns (Al-Awadhia, Alsaifi, Al-Awadhib, & Alhammadi, 2020; Aslam et al., 2020; Just s& Echaust, 2020; Liu, Manzoor, Wang, &

Manzoor, 2020; Mazur, Dang., & Mega, 2020; Okarie & Lin, 2020; Rahman, Amin, & AlMamun, 2021), which conducted research involving several countries including developed and developing countries.

Return on shares is one of the motivations for investors to invest, and return is a reward for the courage of the investor in bearing the investment risk made (Brigham & Houston, 2014). This study examines the impact of the COVID-19 pandemic on stock returns of the Indonesia Stock Exchange by using the Market to Book Value (MBV) variable. This variable is important to use because it is positively correlated with stock prices and reflects the company's growth in generating net income. Furthermore, this study analyses the impact of various Indonesian government policies in tackling the transmission of COVID-19, such as regional quarantine, lockdown, PSBB, and new normal, which are expected to stop the spread of the virus so that the health aspect becomes the main concern and further efforts to save the Indonesian economy from recession.

The government policy is expected to have a big impact on the capital market so that investors maximize their investment returns (returns) in form of dividends or capital gains. This study identifies the spread of COVID-19 reported daily with data on the number of positives confirmed, recovering and dying patients toward the capital market returns. The analysis of returns on the Indonesian capital market started on March 2 at the time of the first announcement until July 15 during the new normal transition era.

This study provides empirical evidence regarding the success of government policies in overcoming the transmission of the COVID-19 pandemic, especially those that have implications for the Indonesian capital market. The next section of this paper is literature review and hypothesis development. Research design is described in section 3. Section 4 exhibits result of the study and its interpretation. Section 5 consists of conclusions and suggestion for further research.

2. Literature review and hypothesis development

Research on stock returns is usually analyzed using agency theory that emphasized agency relationship between management and shareholders. Another theory that commonly used is signal theory that considers COVID-19 pandemic and several capital market variables as positive and negative signals on capital market returns. This study uses the signaling theory because it has been widely used by previous studies on stock return.

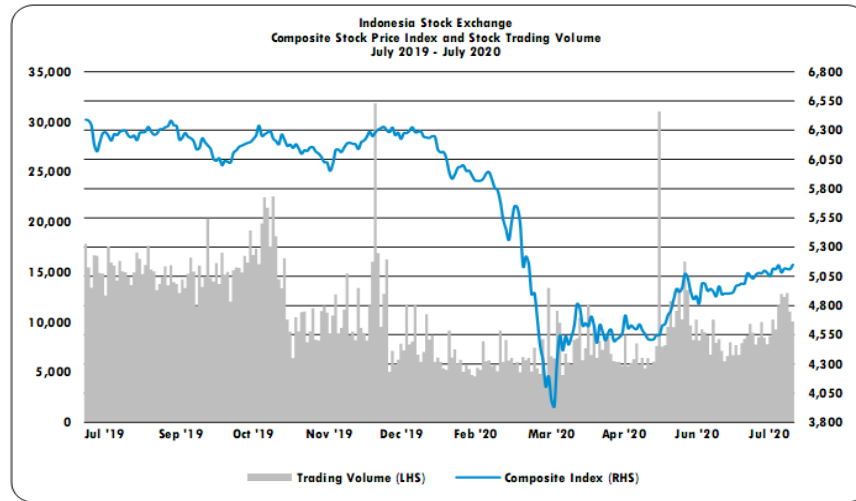
Stock market returns were analyzed using signaling theory. Signaling theory describes companies that have good performance and will provide signals to the market in the form of information, to attract new investors or retain old investors by building trust in stakeholders (Ross, 1977). Jogiyanto (2013), defines signaling theory as a theory that emphasizes the importance of information issued by companies on investment decisions from parties outside the company. Information is an important element for investors and business people because it essentially provides information, notes, or descriptions for the past, present, and future conditions for the survival of a company and how the securities market is. Complete, relevant, accurate, and timely information is needed by investors in the capital market as a way of analysis to make investment decisions. Xu (2020) and Mazur et al., (2020) use signaling theory to justify stock returns because it is considered the most appropriate to describe the capital market during a pandemic.

Stock return

Shares are securities as well as the instruments of ownership or participation of individuals or institutions in a company and are proof of the return of shares or participants in a company. Investors who invest in shares will get benefits in the form of dividends or gain from selling shares or what is often referred to as stock returns. Return is yield and capital gain or loss (Jones, 2000:1124). In general, stock returns are the benefits obtained from

an investment. Stock return is the result of profits (capital gains) or losses (capital loss) obtained from

the investment or stock trading in a certain period (Julianto & Syafrudin, 2019).



Source: idx.co.id, July 2020

Figure 2. Decreasing Composite Stock Price Index

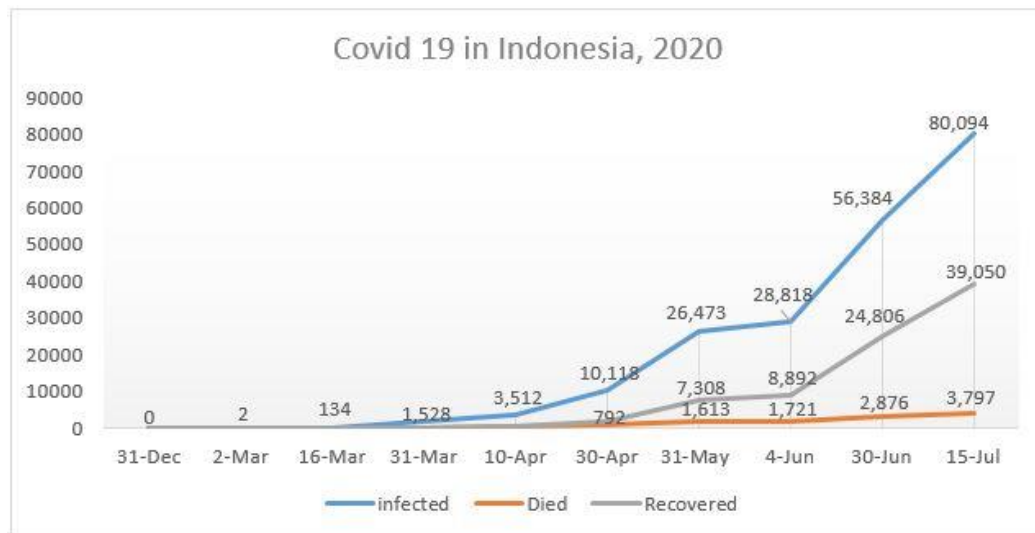
Stock market return is one of the motivations for investors to invest. The higher the return promised by the company or the expected return, the more investors will invest in the company (Tadelilin, 2010). However, the current condition of companies in Indonesia with various business units experiences a significant contraction due to the COVID-19 pandemic. Data from JCI in July 2020 revealed that the JCI had dropped 18.25% compared to the previous year (PT Bursa Efek Indonesia, 2020). The composite index represents the condition of the capital market in general. Figure 1 shows that in early February 2020, the index was declining significantly until March 2020. The index experienced a crash in March 2020 with a deep trough. In April 2020 afterwards, it has gradually increased, in line with government policies to prevent transmission and treat those who have been infected so that it becomes a positive signal.

COVID-19

Coronaviruses are a large family of viruses that cause disease in humans and animals. In humans, it usually causes respiratory infections, from the

common cold to serious illnesses such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). A new type of Coronavirus was discovered in humans since the outbreak emerged in Wuhan China, in December 2019, named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV2) and caused Coronavirus Disease-2019 (COVID-19) (Ministry of Health, 2020).

COVID-19 was first announced in Indonesia on March 2, 2020, when 2 people were being exposed. The rate of the pandemic is increasingly unstoppable, and the number of transmissions is getting higher, so that on April 10, 2020, the government carried out a regional quarantine policy (the lockdown) until June 30 and on July 1 2020 a new normal was started as an effort to overcome economic problems. The data above shows that the transmission process of COVID-19 was very high with a fairly high mortality rate even being the top in Southeast Asia. It is, of course, will have a direct effect on economic activity, especially the stock market in Indonesia.



Source: Data processed from the Ministry of Health, 2020

Figure 3. The COVID-19 Outbreak in Indonesia

COVID-19 has a significant impact on stock returns, indicated by an increase in stock market volatility as a result of high stock sale transactions due to panic sales over uncertainty due to the pandemic (Aldin, 2020). The direct impact is a decrease in the aggregate share price of all shares listed on the IDX which is reflected in Figure 2.

Relationship between COVID-19 and capital market stock returns

Based on the signaling theory, COVID-19 causes companies listed on the Indonesia Stock Exchange to experience a very low price drop, thus gives a bad signal where investors will receive a small or even negative return. The COVID-19 pandemic that has been occurring over a long period will result in a global financial crash, as is currently happening in several large countries where share prices continue to decline (Aslam et al., 2020). A study conducted by Al-Awadhia et al., (2020) on the Chinese capital market revealed that the daily growth of the COVID-19 case has led to decrease of capital market returns. Ashraf (2020) conducted a study on 43 countries confirmed a decline in stock returns as a consequence of the rise of the COVID-19 cases. The dramatic increase of cases number across the globe had a negative impact on the capital market. It was indicated by

high volatility in developing countries and countries progress so that simultaneously the rate of return obtained by investors gradually decreases (Just & Echaust, 2020; Rahman et al., 2021; Zaremba, Kizys, Aharon, & Damir, 2020). Thus, the proposed hypothesis is:

H₁: COVID-19 has a negative effect on stock market returns

3. Research method

This study uses a positive paradigm with a quantitative approach to test the hypothesis. The unit of analysis in this research is the growth of the COVID-19 cases that occurred in Indonesia and data on capital market capitalization, price to earnings ratio, price to book value ratio. The research was conducted on March 2, 2020, when the first COVID-19 case was announced in Indonesia, until July 15, 2020, which is 15 days after the implementation of the new normal by the Indonesian government. COVID-19 data is obtained from the ministry of health's website, and capital market data is obtained from the idx.co.id website in the form of monthly stock market statistical reports. This study uses COVID-19 data (confirmed positive, died, and recovered) and capital market data related to stock returns during the observation period. This study used a saturated

sample method with 136 days of observation to compare the daily growth of Covid with the average daily stock return.

Multiple regression was used for data analysis to predict the variation of the dependent variable by regressing more than one independent variable on the dependent variable simultaneously. Multiple regression was chosen because it can reduce

estimation bias and multicollinearity, control for individual heterogeneity, and identify time-varying relationships between dependent and independent variables (Al-Awadhia et al., 2020). Examining data on the performance of the capital market in the pandemic era using panel data is considered more robust than the others.

The research models built in this study are:

$$RP1 = \alpha_0 + \alpha_1 \text{ Confirm} + \alpha_2 MC + \varepsilon_{it} \dots\dots\dots(1)$$

$$RP2 = \alpha_0 + \alpha_1 \text{ DEATH} + \alpha_2 MC + \varepsilon_{it} \dots\dots\dots(2)$$

$$RP3 = \alpha_0 + \alpha_1 \text{ Recover} + \alpha_2 MC + \varepsilon_{it} \dots\dots\dots(3)$$

$$RPt = \alpha_0 + \alpha_1 \text{ Confirm} + \alpha_2 \text{ DEATH} + \alpha_3 \text{ Recover} + \alpha_4 \text{ PER} + \alpha_5 \text{ MTB} + \alpha_6 \text{ PBV} + \varepsilon_{it} \dots\dots(4)$$

Where R_{Pi} , t is the stock market return on day t , regressed to the lagged value of the predictor of stock market return, which are (1) "Confirmed" daily growth of positive confirmed cases of COVID-19, (2) "Death" daily growth of COVID death cases 19, (3) "Recovery" daily confirmed positive growth and recovery. Furthermore, the stock market return is regressed using Price to Earning Ratio (PER), Market to Book Ratio (MTB), and Price to Book Value Ratio (PBV), and ε_{it} as the error tolerance.

4. Results and discussion

This study has two variables, the daily growth rate of COVID-19 and market return, and uses the control variables PER, MTB, and PBV. Descriptive statistical analysis is used to obtain a description or data characteristics, which include the lowest (minimum) value, the highest (maximum) value, the average, and the standard deviation. Table 1 is the result of the descriptive statistical test of the variables studied, with 136 days of observations from March 2 to July 15, 2020.

Table 1. Descriptive statistics

	Minimum	Maximum	Mean	Std. Deviation
Confirmed	0.100	3.556	2.443	0.781
Deaths	0.100	2.180	1.264	0.520
Recovery	0.100	3.215	1.863	0.974
PER	0.982	1.189	1.106	0.052
MTB	0.011	0.098	0.073	0.014
PBV	1.370	1.930	1.771	0.116

Source: Data processed, 2020

Based on the presentation of data in table 1, the average daily growth value of COVID-19 displaying positive confirmation daily data, daily data on deaths and daily data recovered shows that the average value is greater than the standard deviation. It means that there is a very significant increase in cases in Indonesia during the observation period. The lower standard deviation value indicates that during the observation period

there was a low variation between the minimum and maximum values, which are 0.1 and 3.556. Thus, it can be concluded that the high case growth will significantly affect Indonesia's economic activity, especially stock market returns. The minimum value for confirmed, deaths, recovery indicates that the first case started with 2 people, where 1 patient died and the other patients recovered.

The classical assumption test shows that the data used is normally distributed with a Sig value of 0.063 (> 0.05). The research data does not occur multicollinearity because all variables have a tolerance value above 0.1 (> 0.1) and a VIF value below 10 (< 10), and heteroscedasticity does not

occur due to the test using abs residual all significant values of 0.05 (> 0.5). In addition, the research data does not occur autocorrelation, this study has a value of Durbin Watson (d) 1.802, based on the DW data table shows the value of Du 1.7967 and ($4 - Du = 4 - 1.7967 = 2.2033$).

Table 2. Correlation test results

	Confirmed	Deaths	Recovery	PER	MTB	PBV
Confirmed	1.000					
Deaths	0.880**	1.000				
Recovery	0.888**	0.865**	1.000			
DMC	0.127	0.144	0.170*			
PER	-0.558**	-0.508**	-0.526**	-0.351**		
MTB	0.371**	0.416**	0.383**	0.430**	1.000	
PBV	0.115	0.186*	0.288**	0.475**	0.271**	1.000

Source: Data processed, 2020

Table 2 shows the results of the statistical correlation test which measures the strength level of the relationship between variables in a research model. The highest correlation is 0.888, which is the relationship between recovery and stock returns in the capital market. Thus, it can be concluded that the rate of patients recovering from COVID-19 has a positive relationship with stock returns. The

relationship between groups of individuals on the level of market returns and control variables is moderately correlated with a coefficient of 0.25 to 0.5 (Kennedy, 1992). Therefore, the correlation coefficient indicates the relationship between the independent predictor variables is not at the level that causes multicollinearity problems.

Table 3. Regression test results

	Coeff β	t-value	P-value	Sig ANOVA	R Square
Confirmed	-0.038	-0.367	0.004	0.002	0.164
Death	-0.001	-0.019	0.045		
Recover	0.048	0.371	0.011		
PER	-3.001	-3.242	0.001		
MTB	2.031	1.733	0.045		
PBV	-0.060	-0.115	0.038		

Source: Data processed, 2020

Table 3 shows the results of the regression test for partial and simultaneous testing. A partial test or individual relationship shows that a positive daily growth of COVID-19 has a beta coefficient of -0.038 and has a p-value of 0.004, which means that confirmed daily growth has a negative effect on stock returns. The daily growth of the COVID-19 patient mortality rate on stock returns has a beta coefficient of -0.001 and has a p-value of 0.0450, so that daily growth has a negative effect on stock

market returns. The daily growth of recovered patients has a positive effect on stock market returns as evidenced by the beta coefficient value of 0.048 and a p-value of 0.0116.

Test of control variables, Price to Earnings Ratio (PER), Market to Book Ratio (MTB) Price to Book Value (PBV) on stock returns as a whole affects stock market returns in the capital market. PER has a beta coefficient of -3.001 and a p-value of 0.0016, indicating that PER has a negative effect

on market returns. MTB has a positive effect on stock returns, as evidenced by the beta coefficient value of 2.031 and the p-value of 0.0458 and for the PBV variable, it has a negative effect on stock returns on the capital market. Simultaneous testing using ANOVA of all significant variables on capital market returns is indicated by a p-value of 0.002 (<0.005) and overall, the dependent variable and control variable have the power of influence of 16.4%.

This study was conducted to empirically prove the relationship between COVID-19 and the stock return of the capital market in Indonesia. The observing data is daily COVID-19 growth data which consists of the increase in confirmed positive patients, patients who died, and patients who recovered as well as daily capital market capitalization data. Based on the research results, COVID-19 had a significant impact on the return of capital market shares. The daily growth of confirmed cases of COVID-19 has a negative effect on the return of the capital market, this shows that the higher the positive cases of COVID-19, the higher increase in market response that occurs due to panic investors to sell their shares. Akhtaruzzaman, Boubaker, & Sensoy (2020) found that the COVID-19 pandemic that occurred in China and the G7 countries had implications for financial and non-financial aspects, especially the stock exchanges in various countries.

The study Al-Awadhia et al., (2020) which researched the Chinese Stock Market revealed that the daily growth of positive confirmed cases has negative implications for stock returns. Similar to Study Xu (2020) found that the increase in the number of infections increases future uncertainty. The increasing spread of COVID-19 also resulted in extreme stock volatility and triggered negative returns (Ashraf, 2020; Mazur et al., 2020; Rahman et al., 2021). Just & Echaust (2020) found that the success of companies in developed countries in maintaining share price levels and expected returns are influenced by state policies in overcoming the

pandemic. The increase in the number of cases signals that the company will not be a going concern in the long run so that investors will withdraw their funds.

The daily growth of patients who died has a negative effect on the return of the capital market in Indonesia, a high death rate has a dissatisfied effect on the government's performance in dealing with COVID-19 and there is no certainty when the virus will end, so investors prefer to withdraw their capital and save. In the form of cash, this is in line with a study conducted by Okarie & Lin (2020) which found that uncontrolled virus transmission has medium and long-term effects on the rate of return and stock market volatility so that people tend to withdraw their investment. Al-Awadhia et al., (2020) describes the increase in cases of death which increases market volatility, which has a negative impact on market returns. Mazur et al., (2020) and Liu et al., (2020), explain that the high mortality rate due to COVID-19 results in negative sentiment towards stock returns in the future. Rahman et al., (2021) study stated that a prolonged pandemic produces abnormal returns. The increase in the number of deaths is a dangerous signal for investors, that in the long term the company will propose liquidation, resulting in panic selling which results in high volatility.

The growth in the number of recovered patients has a positive effect on capital market returns, this shows that other factors can be used as variables to increase market capitalization while maintaining investor confidence in investing. Harjoto, Rossi, Lee, & Sergi (2020) conducted a study on two phases, which are before April and April - August, found that in the first phase companies in developed and developing countries experienced a very significant decline in stock prices and returns, but in the second phase companies in developed countries survive in line with government regulations and protection policies. The recovery growth is a positive signal for investors that the

company will also recover and perform well in the short term.

Price to Earnings Ratio (PER), Market to Book Ratio (MTB) Price to Book Value (PBV) as control variables have a contribution to stock market returns. PER describes the market psychology in the form of market expectations and perceptions of stock prices. In this uncertain condition, investors are worried about the economic prospects that occur in Indonesia. This is proven by the significant negative PER coefficient, In line with the study conducted by Zaremba et al., (2020) which revealed that the longer the condition of uncertainty will have negative implications for trading on the capital market so that in the long term the capital market will collapse.

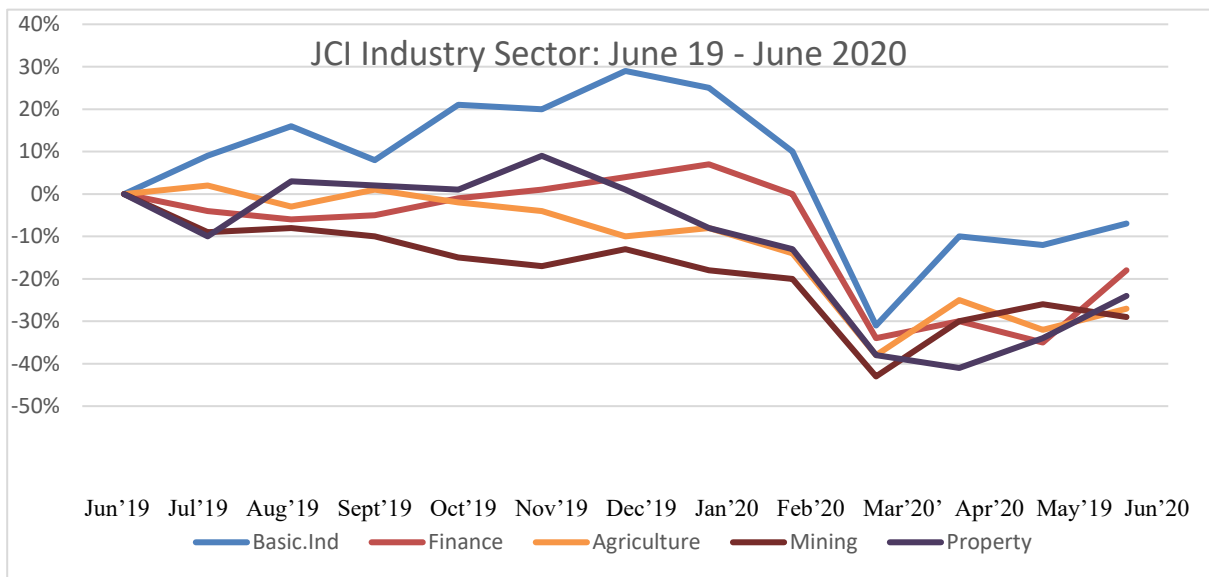
MTB is also used in companies to calculate stock returns in a cross-sectional manner and shows that dividend income and profit are independent variables (Fama & French, 1995). The results show that MTB is significantly positive, this shows that the expectations of profitability, performance, and stock returns in the future will provide great benefits (Jiang & Lee, 2007). MTB has a positive impact on stock returns, supported by a study by (Naraya, Devpura, & Wang, 2020), which revealed that developed countries have prepared various regulations on the capital market so that it is one step in preventing the country from crisis.

The study results show that the PBV is significantly negative, this illustrates that the average share price with a PBV ratio of below 1 (<1) or what is often called undervalued, is reflected in stock trading when compared to YoY

negative with a deep trough. Chang, McAleer, & Wang (2020) in their study of countries in Europe and the US, the Covid pandemic has a significant impact on stock exchange transactions and the phenomenon of high volatility, causing the PBV of each stock to decline and become a bad signal for the company.

Based on the results of the ANOVA test, COVID-19 simultaneously reduces stock market returns. This is in line with the research of (Al-Awadhia et al., 2020; Ashraf, 2020; Liu et al., 2020; Mazur et al., 2020; Rahman et al., 2021; Salisu & Vo, 2020). The COVID-19 pandemic has generated negative sentiment on expectations of future returns so that investors tend to withdraw their funds resulting in high volatility. The results of this study confirm the signaling theory, which reveals that the Covid pandemic has become a negative signal so that investors will withdraw their capital. When the COVID-19 pandemic cannot be stopped in the long term, it will cause a major economic recession, this is because all life activities have stopped, the main aspects affected are health, economy, finance, transportation, and tourism. The economic aspect of capital markets around the world is experiencing high volatility due to the tendency to sell stocks and save money in cash.

The results are supported by data on the decline in the stock index of various business sectors in Indonesia. Based on the data, in July the companies in Indonesia were still performing below standard and showed a fairly deep trough compared to the same month in 2019. However, it begun to improve since April 2020 (Figure 4).

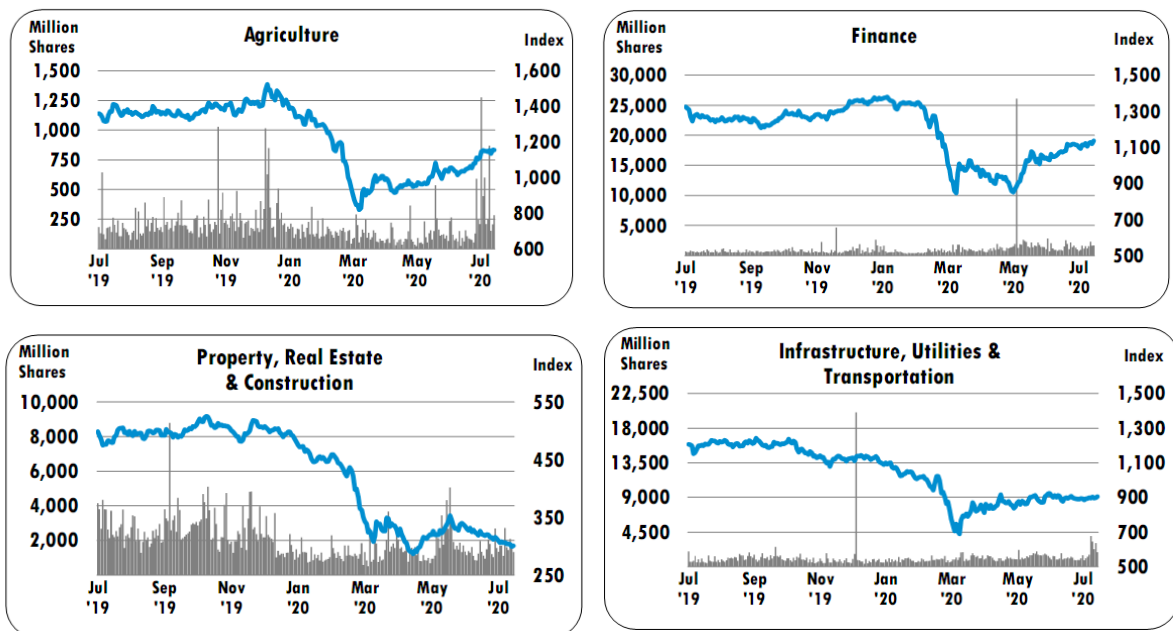


Source: idx.co.id, July 2020

Figure 4. IHSG for industry type

Figure 4, describes the composite index for each industry. It can be seen that All industrial sectors experienced a significant decline. The industry that experienced the deepest decline was the Property industry sector, this was due to the very high volatility for that sector due to panic

selling (-33, 97%), in contrast to the basic industry although it has decreased but not so deep, only - 7.15% compared to last year in June. The share prices of all sectors also experienced a decline as shown in Figure 5.



Source: idx.co.id, July 2020

Figure 5 Stock prices per industry sector

Figure 5 shows that the trend of share prices has started to fall since the first announcement of the COVID-19 pandemic in Wuhan in 2019. Share prices were at their lowest point in March 2020. This is in line with the announcement of COVID-19 in Indonesia from April to June, it shows that stock prices have started to increase, the market response has started to be positive since several policy packages issued by the government have created investor confidence in the Indonesian capital market.

The implication of this research is to provide advice to the government as a regulator in creating investor confidence during a pandemic. The way to reduce market volatility is that in the short term the government must minimize the death of COVID-19 patients and increase the recovery of patients and in the long term must be able to manage pandemic disasters properly and effectively. In addition, the company's JCI during the pandemic declines very deeply, investors do not have to panic selling, creating high volatility, and can invest in the basic industry and the food industry and finance to secure their capital.

5. Conclusions

This study demonstrated that COVID-19 has a negative impact on stock returns. This is due to business uncertainty which is shown by a decrease in company performance, where we can see in the decline in aggregate share prices on the Indonesia Stock Exchange. The increase was confirmed positive and patients who died were a negative signal for stock returns even though the increased recovery rate did not have a significant impact on market returns. This happened because shareholders preferred to withdraw their money and invest in assets that were less likely to be affected by the pandemic. Based on the research results, to increase stock returns, the authorities must stop the growth rate and death rate due to COVID-19.

The limitations of this study are the short observation time of 105 days from March 2 to July 15 and the test results only produce a very low r-

square of 16%. Further research is suggested to extend the observation period, for example 12 months. Also, several variables can be added into the analysis as control variables or moderating variables.

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