

THE IMPACT OF COVID-19, TRADING VOLUME ACTIVITY AND MARKET CAPITALIZATION ON STOCK RETURN OF LQ-45 COMPANIES

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ABSTRACT

The objective of this research is to analyze the impact of daily growth of Covid-19 positive case, Trading Volume Activity (TVA), and market capitalization on LQ-45 companies' stock return in IDX on the year 2020. This research uses multiple regression models on sample size of 41 companies using non-probability sampling method. This research's analysis approach is as follow: statistical descriptive analysis, t-test, F-test and Coefficient of Determination test. Data processing in this research is done by Microsoft Excel and Eviews 12. This study uses Signalling Theory, Black Swan Theory and Efficient Market Hypothesis Theory as grand theories to explain the relationship between variables used in this study and resulted that the daily growth of Covid-19 positive case and TVA partially have a positive effect on stock return, while market capitalization has a negative effect on stock return. This research is designed to be beneficial for investors as a basis for making investment decisions, as well as assisting company management regarding the management of company performance to increase stock prices.

Keywords: Covid19, trading volume, market capitalization, stock return

1. INTRODUCTION

Capital market is a non-bank financial institution that provides platform for trading of securities such as bonds, mutual funds and stocks [1]. Shares are company ownership rights owned by investors in the expectation of obtaining a return which are dividends and capital gains. If investors sell their shares with higher price compared to the price when it was bought, capital gains are obtained. Investors who want to get high return must sell and buy shares at the right time. Based on these objectives, experts have developed various ways and methods to predict stock price fluctuations in the capital market.

Stock price fluctuations can be influenced by several factors and events. The emergence of a phenomenon, which is the transmission of a deadly virus called *Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)* is one of the factors that has a major impact on the capital market. This virus was first discovered in Wuhan, China in December 2019. This virus attacks almost all countries in the world in the span of several months. The first corona case in Indonesia was reported by the President of the Republic of Indonesia, Joko Widodo, on March 2, 2020. According to Administrator [2], at that time the corona virus had spread to more than 60 countries and had infected 88,382 people and killed 2,996 people.

Finally, on March 9, 2020, the World Health Organization (WHO) proclaimed the COVID-19 outbreak as a pandemic. In April 2020, the Indonesian Ministry of Health released Circular Letter No HK.02.02/I/385/2020 on the usage of masks and the supply of handwashing facilities with soap to prevent the spread of Covid-19, as well as a request for a public awareness campaign to overcome this pandemic.

The Indonesian government has also implemented several policies to break the transmission line of the COVID-19 virus. These policies include the closure of schools and universities, restrictions on the operation of offices, restaurants, shopping centres, places of worship and several public transportation facilities, as well as a prohibition on going out of town. This situation resulted in the collapse of the country's economy as a result of the government's policy to temporarily close several businesses and reduce the needs of the community due to restrictions on these activities. This pandemic caused a sharp increase in risk in the financial sector, which was transmitted to other industries. However, each industry is affected to varying degrees and the response of each industry also varies.

According to behavioural financial theory, an emergency situation like this can affect the psychology and behaviour of investors in their decision-making. Shareholders analyze market conditions and can usually predict future stock price fluctuations which are used as a basis for determining investment strategies. Uncertain global economic conditions like this make some shareholders hesitate to sell their shares, but there are also shareholders who want to sell their shares immediately to avoid the risk of greater losses in the future.

There have been many previous research examining the same variables as used in this study but they have varying results. For example, according to Mujib and Candraningrat's [3] research, the COVID-19 epidemic insignificantly impacts stock returns in negative way. Meanwhile, Herwany, Febrian, Anwar & Gunardi [4] investigated the impact of COVID-19 epidemic on abnormal returns in numerous different industrial sectors. The property, real estate, and construction industries suffered the most damage, while infrastructure, utilities, and transportation were unaffected. Other industries, such as consumer goods and mining, had a positive impact.

The COVID-19 epidemic has a detrimental impact on stock returns, according to research by Liu, Manzoor, Wang, Zhang, and Manzoor [5]. This is supported by the research by Apergis & Apergis [6] which states the same results.

In addition, research conducted by Anh & Gan [7] and Khan, *et al* [8] also stated that the COVID-19 epidemic affected stock return negatively. Meanwhile, in the study by Saputra G, Pulungan & Subiyanto [9] discovered that the company's average abnormal return is not affected by the COVID-19 pandemic.

According to Tapa & Hussin's [10] research, trading volume activity has an insignificant positive impact on stock returns. These findings are comparable to those of studies by Indriastuti and Nafiah [11] and Sujana, *et.al* [12]. Meanwhile, Samman and Al Jafari [13] discovered that in the capital market, stock trading volume had a considerable positive influence on stock return. The findings of Effendi and Hermanto's [14] which came to the same conclusion, are similar. This conclusion is supported by Novirman's [15] research which demonstrated a positive impact on stock returns.

However, study by Taslim and Wijayanto [16] indicated that stock trading volume had an insignificant negative effect on stock return. Ardiansyah and Amanah [17] found a significant negative effect between market capitalization and stock return. Research by Marito and Sjarif [18] show that stock return is unaffected by market capitalization. Contrary to the results of research by Abdullah, Parvez, Karim, and Tooheen [19] that found that the stock return is significantly influenced by market capitalization. The same results were also obtained from the research by Kurniawan [20] and Wibowo, and Hendratno [21]. However, Taslim and

Wijayanto [16] found that market capitalization has an insignificant negative effect on stock return.

This research will also answer: (1) Is there any impact of the daily growth of Covid-19 positive case in Indonesia on the stock return of LQ-45 companies listed on the IDX? (2) Is there any impact of trading volume activity on stock return of LQ-45 companies listed on the IDX? (3) Is there any impact of market capitalization on the stock return of LQ-45 companies listed on the IDX?

Our Contribution

Many previous studies have examined the impact of daily Covid-19 positive case growth, trading volume activity, and market capitalization on stock return, but the results have been inconsistent. This research is conducted to re-examine the impact of these factors. Furthermore, this study integrates various factors that have been utilized in other studies so that the effects of these variables can be compared.

Paper Structure

The following section is laid out as follows. The theoretical overview and hypothesis employed in this study are explained in Section 2. The technique and study data are explained in Section 3. Section 4 will present the findings of experiments that will be used to examine the hypotheses. Finally, Section 5 brings the article to a close and provides suggestions for further research.

2. THEORETICAL REVIEW & HYPOTHESIS

Signalling Theory

This theory was introduced by Michael Spence in 1973 to explain how the communication between signallers (companies) and signal receivers (stakeholders). According to this theory, the company, as a party that has important information about its business, must share this information with stakeholders [22]. The information is presented in the form of the company's annual report, which covers the company's financial and non-financial data. The information provided by the company provides a signal for investors that influence investment decisions. Investors will consider buying or selling their ownership shares based on this available information.

Black Swan Theory

This theory was introduced by Nassim Nicholas Taleb in 2007. This theory is used to describe the phenomena that appear suddenly and have a big impact [23]. The examples of these phenomena include the emergence of the internet, personal computers, the World War, the events of September 11, 2001 which sank the dollar in an instant, the American attack on Iraq which soared oil prices, and many others [24]. In this study, the events of the Covid-19 pandemic that afflicted the entire world were in accordance with the concept of the Black Swan theory.

Efficient Market Hypothesis Theory

This theory was first developed by Eugene Fama and introduced to public in 1965. This theory explains that an efficient market is a market that reflects available information. Fama [25] categorizes market efficiency into three forms. The first form is the weak form of market efficiency, which is a market in which the price of shares or securities fully reflect the past information. The second form is the semi-strong form of market efficiency, which is a market in which the price of shares or securities reflect all published information, including information in the financial statements. The third form is the strong form of market efficiency, which is a market in which the price of shares or securities reflect all available information, including highly confidential information.

Daily Growth of COVID-19 Positive Cases

Coronavirus is a virus that attacks human respiratory system and causes flu-like symptoms which are fever, cough, shortness of breath, and can even cause death in severe cases. This virus was first discovered in Wuhan, China at the end of 2019 and was discovered in Indonesia on March 2nd, 2020. The lockdown policies that were imposed by the government to overcome this outbreak, has a tremendous impact on the state of country's economy. Many people also experience panic due to the rapid spread of this deadly disease. Surprising and unexpected events like this certainly affect investors' decision making on their investments, which also affects stock prices in the capital market [5]. Daily growth of Covid-19 positive cases can be calculated as follow:

$$\text{Covid} = \text{Total positive cases}_t - \text{Total positive cases}_{t-1}$$

Trading Volume Activity

Trading volume activity is the total of share trading activities that occur at a certain time. Stocks with high trading volume (active stocks) are stocks that have high speed in their trading activities [26]. The reaction of the capital market to an information can be seen by analyzing trading volume activity. The stocks that have good performance and are favoured by investors will have high stock trading volumes because the company does not have idle funds. All funds are used for capital turnover to do expansion, paying debts to creditors, producing goods or services to be sold to the public that it attracts investors to invest in the hope of getting a high return. The higher demand for shares causes the stock prices increase which will result in an increase in stock return. For this research, trading volume activity can be calculated by:

$$\text{Volume} = \text{Ln} (\text{Trading volume activity})$$

Market Capitalization

The worth of a public company whose shares have been listed on a stock exchange is known as market capitalization. Stocks with a high market capitalization value show a potential for rapid company growth and relatively low risk exposure that attracts investors to invest. Due to the great demand, the stock price is comparatively high, resulting in a significant return on investment. Taslim and Wijayanto [16] and Novirman [15] explain that market capitalization can be calculated by:

$$\text{MarCap} = \text{Ln} (\text{Closing Price} \times \text{Outstanding share})$$

Stock Return

One of investor's motivation to invest and increase their trust to bear the risk of investing is stock return. Ang, R. [27] also argues that return is the amount of profit earned by investors on an investment. Investors invest only if the investment can provide a rate of return in the form of profits. Stock return can be calculated by:

$$\text{Return} = \frac{CP_t - CP_{t-1}}{CP_{t-1}}$$

The following hypothesis were made based on the previous description:

H₁: The daily growth of Covid-19 positive cases has a negative effect on stock return.

H₂: Trading volume activity has a positive effect on stock return.

H₃: Market capitalization has a positive effect on stock return.

3. METHODOLOGY

Research Design

The data used in this study is secondary data over period March 2nd to December 30th 2020 that was obtained through the <https://covid19.go.id/> and <https://www.idx.co.id/> site. The data that has been obtained is processed using Microsoft Excel and EViews 12. The subjects in this research are 48 firms who are part of the Indonesia Stock Exchange's (IDX) LQ-45 index. This study's sample was chosen using a non-probability sampling approach based on the following criteria: (1) Companies that are listed in the LQ-45 index respectively for the period of February – July 2020 and August 2020 – January 2021; (2) Companies that do not perform stock split during the observation period. Based on these criteria, 41 companies were obtained from a total of 48 companies listed on the LQ-45 index for the 2020 period.

Multiple Regression Analysis

This study employs a form of panel data regression analysis with a research model that is similar to that employed by Anh and Gan [7] which is:

$$\text{Return}_{i,t} = \alpha + \beta_1 \text{Covid}_{t-1} + \beta_2 \text{Volume}_{i,t} + \beta_3 \text{MarCap}_{i,t-1} + \varepsilon_{i,t}$$

Whereas: $\text{Return}_{i,t}$ is return of stock i on day t , β_{1-3} is coefficient variable, Covid_{t-1} is daily growth in total number of Covid-19 positive cases on day $t-1$, $\text{Volume}_{i,t}$ is natural logarithm value of the trading volume activity of stock i on day t , $\text{MarCap}_{i,t-1}$ is natural logarithm value of stock market capitalization i on day $t-1$, and $\varepsilon_{i,t}$ is error.

4. RESULTS AND DISCUSSIONS

Descriptive Statistics Test

Descriptive statistical tests are conducted with the goal of providing readers with a summary of the study items in the form of mean (average), median, maximum, minimum, and standard deviation values. The descriptive statistical analysis of this research variable yielded the following results.

Table 1 Descriptive Statistics Test Result

	RETURN_Y	COVID_X1	VOLUME_X2	MARCAP_X3
Mean	0.001568	2360.470	16.99680	31.20794
Median	0.000000	1788.00	17.04701	30.99307
Maximum	0.250000	8369.00	21.58796	34.37413
Minimum	-0.182143	0.0000	12.40492	28.53715
Std. Dev	0.037979	2016.868	1.342735	1.207845

The stock return variable has an average value of 0.001568 and a median value of 0.000000, according to Table 1. The stock return with the highest value is 0.250000, which is the stock return of Ciputra Development Tbk on April 6th, 2020. The stock return with the lowest value is -0.182143, which is the stock return of Wijaya Karya (Persero) Tbk on March 12th, 2020, while the standard deviation is 0.0387979.

The daily growth of Covid-19 positive cases variable has an average value of 2360.470 and a median value of 1788.00. The highest value of daily growth of Covid-19 positive cases variable is 8369 cases which is the growth of positive cases on December 3rd, 2020. The lowest value of the daily growth of Covid-19 positive cases variable is 0 case, which is the growth of positive cases on March 3rd, 4th, 5th, and 12th 2020. Meanwhile, the standard deviation for the daily growth of Covid-19 positive cases variable is 2016.868.

The trading volume activity variable which is the natural logarithm value of the stock variable has an average value of 16.99680 and a median value of 17.04701. The highest value of trading volume variable is 21.58796 which is the trading volume of Sarana Menara Nusantara Tbk on November 30th, 2020. The lowest value of trading volume variable is 12.40492 which is the trading volume of Tjiwi Kimia Paper Factory Tbk on March 19th, 2020. Meanwhile, the standard deviation for stock trading volume is 1.342735.

The market capitalization variable has an average value of 31.20794 and a median value of 30.99307. The highest value of market capitalization is 34.37413, which is the market capitalization of Bank Central Asia Tbk on December 17th, 2020. The lowest value of market capitalization is 28.53715 which is the market capitalization of Charoen Sri Rejeki Isman Tbk on March 23rd, 2020. Meanwhile, the standard deviation of market capitalization is 1.207845.

Classical Assumption Test

Multicollinearity Test

The goal of the multicollinearity test is to see if the independent variables in the regression model are correlated. A good regression model is one that does not have a correlation between the variables [28]. Test to detect the existence of multicollinearity in a research model can be done by observing the correlation between variables. If the correlation is found > 0.85 , it can be concluded that there is multicollinearity in the research model. Otherwise, it can be concluded that there is no multicollinearity problem in the research model.

Multicollinearity test that done in this research resulted that the correlation coefficient between the daily growth of Covid-19 positive cases and trading volume activity is 0.046166, the correlation coefficient between the daily growth of Covid-19 positive cases and market

capitalization is 0.092959, and the correlation coefficient between trading volume activity and market capitalization is 0.066533. Therefore, it can be concluded that the correlation value between all independent variables is lower than 0.85, which means that there is no multicollinearity problem in this regression model.

Heteroscedasticity Test

Heteroscedasticity test is used to see if there is an inequality of variance between the residuals of one observation to another observation. The heteroscedasticity test was carried out by comparing X_2 count with X_2 table. If the value of X_2 count is greater than the value of X_2 table, the equation is a heteroscedasticity equation. When the X_2 count X_2 table, on the other hand, the equation is a homoscedasticity equation.

In this study, the heteroscedasticity test yielded a total squared residual value of 11.56972. The X_2 count is calculated by dividing the sum squared residual amount by two, yielding 5.78486. This study uses α value of 0.05 and the df value of 3, so the X_2 table is 7.8147. It can be concluded that this research model does not have a heteroscedasticity problem based on the X_2 count X_2 table ($5.78486 < 7.8147$).

Regression Model Test

There are three types of regression models for panel data: Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) (REM). To interpret the findings of the investigation, one of the most appropriate models will be selected. The Chow Test, Hausman Test, and Lagrange Multiplier Test are three tests that may be used to determine the type of acceptable model. Based on Table 2, the model chosen in this test is the FEM model.

Table 2 Result of Regression Model Test

Test	Probability	Result
Chow Test	0.0000	Prob < 0.05 = FEM
Hausmann Test	0.0000	Prob < 0.05 = FEM

Panel Data Regression Test

From the three regression model tests, it is concluded that the best suitable model for this research is the Fixed Effect Model (FEM). The FEM output is shown below

Table 3 Fixed Effect Model Output

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	0.843168	0.085213	9.894797	0.0000
COVID	2.31E-06	2.51E-07	9.215731	0.0000
VOLUME	0.014301	0.000576	24.81971	0.0000
MARCAP	-0.034931	0.002728	-12.80599	0.0000

Based on Table 3, the regression equation model in this research can be formulated as:

$$\text{Return}_{i,t} = 0.843168 + 0.00000231 \text{ COVID}_{t-1} + 0.014301 \text{ Volume}_{i,t} - 0.034931 \text{ MarCap}_{i,t-1} + \epsilon_{i,t}$$

Based on this regression equation, a constant value of 0.843168 is obtained, which means that the stock return variable will increase by 0.843168 if the daily growth of Covid-19 positive cases, trading volume activity and market capitalization is constant or zero.

The daily growth of Covid-19 positive cases has a coefficient of 0.00000231. These results indicate that if the daily growth of Covid-19 positive cases increases by 1 unit, the stock return will increase by 0.00000231 units, assuming that other variables, which are trading volume activity and market capitalization, are constant or zero.

The trading volume activity has a coefficient of 0.014301. These results indicate that if the trading volume activity increases by 1 unit, the stock return variable will increase by 0.014301, assuming that other variables, which are the daily growth of Covid-19 positive cases and market capitalization, are constant or zero.

The market capitalization has a coefficient of -0.034931. These results indicate that if the market capitalization variable increases by 1 unit, the stock return will decrease by 0.034931, assuming that the other variables, which are the daily growth of Covid-19 positive cases and the trading volume activity, are constant or zero.

Simultaneous (F) Test

The simultaneous (F) test is done to test whether the independent variables have an impact on the dependent variable simultaneously. In this study, the F-test was carried out to examine the impact of daily growth of Covid-19 positive cases, trading volume activity and market capitalization simultaneously on stock return. If the probability value obtained is smaller than the significance level (0.05), it can be concluded that the independent variable simultaneously affects the dependent variable. Conversely, if the probability value obtained exceeds the significance level (0.05), it can be stated that the independent variable simultaneously does not affect the dependent variable.

The simultaneous (F) test done in this research resulted the probability value of 0.0000 which doesn't exceed 0.05. This result indicates that the independent variables, which are the daily growth of Covid-19 positive case, trading volume activity and market capitalization have a simultaneous effect on stock return.

Coefficient of Determination Test

The coefficient of determination test is used to determine how effectively a model can explain variance in an independent variable. The coefficient of determination might have a value somewhere between zero and one. A high value of R^2 (Coefficient of Determination) suggests that the independent variables in the model can give nearly all of the information required to predict the dependent variable. Coefficient of Determination test done in this research resulted the adjusted r-squared value of 0.084708. This result indicates that changes in stock return can be explained by the daily growth of Covid-19 positive cases, trading volume activity and market capitalization of 8.47% which means the remaining 91.53% is explained by other variables used in other studies.

Partial (t) Test

The partial test, was intended to examine how much one independent variable alone might explain the dependent variable. The impact of daily growth of Covid-19 positive cases, trading volume activity, and market capitalization on the stock return variable was tested using the t-test in this study. If the probability value obtained is smaller than the significance level (0.05), it can be stated that the independent variable has a significant impact on the dependent variable. The independent variable has no significant impact on the dependent variable if the probability value obtained is greater than the significance level (0.05).

The daily growth of Covid-19 positive cases has a regression coefficient of 0.00000231 with a probability of 0.0000, according to Table 3. A positive coefficient value suggests that Covid-19 positive cases significantly affected stock return on a daily basis. While the probability value of 0.0000 is less than the significance level (0.05), this indicates that the daily growth of Covid-19 positive cases has a significant impact on stock return. This suggests that the increase of Covid-19 positive cases on a daily basis has a significant and positive impact on stock returns. Therefore, it can be concluded that H_1 which is the daily growth of Covid-19 positive cases has a negative effect on stock return, is rejected.

The trading volume activity has a coefficient of 0.014301 with a probability of 0.0000. A positive coefficient value shows that trading volume activity has a positive impact on stock return. While the probability value of 0.0000 is less than the significance level (0.05), this indicates that trading volume activity has a significant impact on stock return. This indicates that high trading volume has a significant positive impact on stock returns. As a conclusion, it can be stated that H_2 which is the trading volume activity has a positive effect on stock return, is accepted.

The market capitalization has a coefficient of -0.034931 with a probability of 0.0000. A negative coefficient indicates a negative effect of market capitalization on stock return. Meanwhile, the probability value of 0.0000, which is lower than the significance level (0.05), indicates that market capitalization has a significant effect on stock return. This means that market capitalization has a significant negative effect on stock return. Therefore, it can be concluded that H_3 , which is market capitalization has a positive effect on return share, is rejected.

Discussions

Based on the tests that have been performed, the following results were obtained:

The first finding is that increase in number of Covid-19 positive cases on a daily basis has a significant positive impact on stock returns. This finding is consistent with the findings of Herwany et al [4], who investigated the impact of COVID-19 on stock returns in consumer products and mining industries. However, this finding contradicts the majority of research on the impact of COVID-19 on stock returns, such as research by Mujib and Candraningrat [3], Herwany et al [4], Liu et al [5], Apergis & Apergis [6] and Anh and Gan [7]. This positive influence is due to government policies that limit people's activities during the pandemic resulting in decreased levels of spending or consumption. Reduced public spending causes the availability of more money or savings that can be used to invest. Pandemic Covid-19 cause people to delay spending money on consumptive things such as vacation, so the funds are used to invest. It is also due to the emergence of a digital investment trend

among young people which is marked by the increase in new investors, which are dominated by people aged under 30 years old and between 31-40 years old. The increase of investors' interest during this pandemic can result in increased stock return as well.

The second result is that the trading volume activity has a significant positive effect on stock return. This finding supports Samman and Al-Jafari [13], Effendi and Hermanto [14] and Novirman [15] findings. However, the results of this study contradict the conclusions obtained by Taslim and Wijayanto [16], Tapa and Hussin [10] and Indriastuti and Nafiah [11]. The high volume of stock trading indicates good market conditions because investors believe that the company's good performance can provide maximum return. In accordance with the law of demand and supply, the significant acquisition of shares in the capital market resulted in higher stock prices and a higher stock return.

The third result is that market capitalization has a significant negative effect on stock return. This result is in line with the research by Ardiansyah and Amanah [17], but contradicts with the researches by Kurniawan [20], Abdullah et al [19] and Wibowo, and Hendratno [21]. The negative effect is due to an increase in market capitalization is caused by an increase in stock prices. High stock prices reduce investors' interest in investing that causes stock prices are difficult to increase to higher price. In addition, the increase in stock prices also causes the demand for share purchases to decrease. This can result in a decrease of stock return.

5. CONCLUSION

The following are some of the findings of this study hypothesis testing: The daily growth of COVID-19 positive cases has a significant positive effect on stock return (H_1 is rejected). This is because government regulations restricting people's activities during the epidemic have resulted in individuals having more money or savings, which they invest. Because of the significant interest in investing, there is a lot of demand, which impacts stock prices, resulting in a higher return.

Trading volume activity has a significant positive effect on stock return (H_2 is accepted). This is because the large trading volume activity shows that the stock is in great demand. Investors' motivation is derived from their belief in the performance and prospects of these stocks, which have the potential to give a significant return. High trading volume activity leads to an increase in stock prices, which in turn leads to a higher stock return.

Market capitalization has a significant negative effect on stock return (H_3 is rejected). This is because high market capitalization indicates high stock prices. High stock prices reduce the investment interest so that it causes stock prices to decline. The lower the stock price, the lower the return is.

In order to address the study's limitations, various recommendations for further research have been made. It is recommended for further researchers to expand the research subjects to focus on industrial sectors affected by the Covid-19 pandemic, for example hotel, restaurants, manufacturing, transportation, or food and beverages companies, etc. Further researchers can also increase the research period used, as well as change or add other variables that have higher impact on stock return like Earning per Share (EPS), Debt-to-Equity Ratio (DER), stock trading frequency, etc. As a result, it may be more beneficial since investors may utilize it to help them make investment decisions that optimize their return.

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