

Does the corona virus affect market volatility and exchange rates in Indonesia?

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Abstract. The business world is in ruins caused by the COVID-19 or coronavirus case that started in the Hubai province in China at the end of 2019. The virus has spread to more than 120 countries in the world. Various attempts were made by the leadership of the State to stem the outbreak of the COVID-19 virus, ranging from restrictions on or closing the entrance of foreign nationals to other countries, as well as lockdown policies or stopping business and trade activities carried out even in Indonesia religious activities, school education, campuses closed, cinemas as well as companies and offices, are closed to tackle the coronavirus outbreak. The research method uses event study using secondary data about the incidence of positive COVID-19 cases and exchange rates and their effects on market volatility in the stock market. The results of this study are that the Covid-19 case variable does not affect the exchange rate of the rupiah against the US dollar, so does the Covid-19 case for market volatility in the short term. the stock market, while the exchange rate variable has a significant effect on market volatility in the stock market

Keywords : coronavirus, market volatility, exchange rate, stock market

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1 Introduction

The world can be ravaged by the Covid 19 or coronavirus which started in China's Hubei province at the end of 2019. The virus has spread to more than 120 countries, based on data showing that the virus has infected 1,986,462 people worldwide until midway through April 2020. Such conditions create panic in the world community where this virus spreads rapidly through direct contact or air.

Various attempts have been made by the leadership of the State to stem the outbreak of the Covid 19 virus, ranging from limiting or closing the entrance of foreign citizens to other countries, as well as lockdown policies or stopping business or trade activities carried out even in Indonesia religious activities, school education, campuses are closed, cinemas, as well as companies and offices, were closed to tackle the coronavirus outbreak.

We are very aware that the closure of business and economic activities has had a major impact on the national economy, the composite stock price index fell the deepest up to 4,588 early in April 2020, fell sharply even though in February 2020 it was still in the range, as a result, the market capitalization on the market evaporated around 496 trillion rupiahs, as well as the rupiah exchange rate at the beginning of 2020, was recorded at 13,892, up at the end of March 2020 to 16,341 at the end of March 2020. Of course, the logical consequence that the government has taken is to change the portion of the APBN where every budget of the ministries and state institutions is cut and diverted to handling covid 19, the government allocated 400 trillion rupiahs or the equivalent of a quarter of the state budget for the response to the COVID 19 disaster.

This unstable economic situation created a massive wave of layoffs where companies had to close down and were unable to cover operational costs causing a wave of layoffs, according to news reported by CNN Indonesia until mid-April 2020, there were 1.2 million people and 2.8 million people being laid off.

Concerns about the impact of Covid 19 on the sustainability of the company and the expectation that the pandemic will last a long time, encouraging capital outflows caused by panic selling on the stock market. Based on the release of data like Indonesia in 2020, it was recorded that foreigners left Indonesia amounting to 125.2 trillion rupiahs, consisting of the release of debt instruments or SBN amounting to 112 trillion rupiahs and the rest came from the stock market valued at 9.2 trillion. This uncertain situation is not surprising if investors prefer to hold cash compared to holding more risky securities.

The large number of capital outflows that were quickly carried out by foreign investors during the Covid 19 period pushed the rupiah down against the dollar due to the high demand for dollars caused by the transfer of funds and the repatriation of profits from within the country and abroad, which were mostly in the form of foreign currency or dollar.

Bank Indonesia, as the party most responsible for monetary matters in Indonesia, strives to maintain the stability of the rupiah exchange rate as a result of the rupiah exchange rate against the US dollar through buying back securities released by foreigners, so as not to aggravate financial stability and shock the stock market. In addition, the financial services authorities have not stayed silent in safeguarding the continuity of the Indonesian stock market which continues to decline by intervening, namely the limit for the decline in share price transactions is limited to a maximum of 7 percent in order to maintain market conditions as a result of the Covid 19 pandemic. by panic selling, OJK issued a regulation that is to allow companies to carry out a check for shares that have been issued without going through the GMS process. The OJK policy was carried out to keep share prices from falling continuously, this opportunity was very welcomed by issuers, especially issuers from BUMN, allocating 10.5 trillion funds to save shares from Covid 19, while the private sector was recorded as having a buyback of 9.19 trillion. The strategy carried out by the OJK was quite effective in preventing the fall in stock prices on the stock exchange, as evidenced by the fact that the stock price index continued to increase and tended to be stable to maintain the demand and supply of shares on the market.

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The study was conducted by Kiky, A. (2020). Researching the Risk Management of the March 2020 Black Swan Event concerning the Covid-19 Effect on the Indonesian Capital Market concludes that the existence of covid 19 has an impact on the downtrend in the stock price index on the Indonesia Stock Exchange, further research conducted by Burhanudin and Andi (2020) which examines threats the global economic crisis from the impact of the spread of the coronavirus (covid-19). Further research conducted by Burhanudin and Andi (2020) which examines threats the global economic crisis from the impact of the spread of the coronavirus (covid-19) producing economic findings can have an impact on cultural and health changes and the presence of the coronavirus has a negative impact on the world economy.

The outbreak of the coronavirus or what is often called covid-19 has made the market worry so that it has sparked rumors about the duration of the virus pandemic, a study conducted by Burhanudin and Andi (2020) that there is a negative rumor will have a rapid impact on the decline in stock prices. In order to overcome the impact of the weakening economy and maintain stability and security, the government adopted a policy of loosening credit installments for one year. The credit easing policy will create logical consequences for the world of banking and industry where credit relaxation will have an impact on revenue for banks so that it can be predicted that banking growth will be slow which will result in decreased company performance.

This research seeks to try to develop research conducted by Onali (2020) which researched the impact of Covid-19 on the volatility of stock prices in several countries in the world. The difference in this study lies in the addition of the rupiah exchange rate variable so that it can form a new model in measuring the impact of covid-19 and the volatility of stock prices., Departing from the above events the author intends to make a study about the impact of covid-19 on the industry in Indonesia.

Signal theory is a condition in which company managers know better the condition of the company and intend to provide informed guidance to investors in order to invest in the company (Campbel & Kracaw, 1980). When a

company has good prospects, investors will flock to buy shares, but if the information makes the company's prospects bad, investors will try to sell shares owned by the company. The Covid-19 pandemic situation has prompted market signals, especially investors, to react quickly to sell stocks at any price so as not to experience more losses.

Covid-19 is the naming of the Coronavirus which was discovered in December 2019. This virus has infected humans in all countries of the world, the first time it occurred in Wuhan China, China. This virus is a contagious disease where the increasing number of people infected with the virus in the world is currently increasing. Covid-19 cases until April 29, 2020 reached 3,117,756 worldwide. The United States was in first place with 1,012,583 positive coronaviruses. This pandemic outbreak caused the whole world to issue a lockdown policy, namely imposing restrictions on all activities, which caused huge losses to the economy. This pandemic not only endangers the safety of human health but also endangers the health of financial markets and stock markets (Cheng & Yen, 2020; Goodell, 2020).

Stock market volatility uses the sharp up and down movement of stock prices out of the ordinary. Researcher Yilmazkuday (2020) tested the movement of the stock price index to have a negative impact due to Covid. This covid virus has a tremendous impact on stock price volatility compared to similar diseases such as Ebola.

The rupiah exchange rate is the price of a country's currency compared to the currencies of other countries. The exchange rate has the benefit of equalizing the supply and demand for corporate assets such as stocks and bonds (Lee & Brahmasurene, 2019). So that the exchange rate has a significant role in the company's financial movements. The covid virus situation has a negative impact on exchange rates in all countries, both directly and indirectly (Iqbal et al., 2020).

2. Literature Review and Hypothesis

Signaling Theory

Signal theory is a condition in which company managers know better the condition of the company and intend to provide informed guidance to investors in order to invest in the company (Campbel & Kracaw, 1980). When a company has good prospects, investors will flock to buy shares, but if the information makes the company's prospects bad, investors will try to sell shares owned by the company. The situation of the Covid 19 pandemic has prompted market signals, especially investors, to react quickly to sell shares at any price so as not to experience more losses.

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Covid 19 against Stock Market Volatility

Some literature analyzes how the impact of the Covid 19 pandemic on stock prices. The incident of the covid virus outbreak caused all countries in the world to experience economic losses, including Indonesia. During the period of this virus outbreak, the movement of the stock market decreased (Liu et al., 2020; Onali, 2020). Liu et al., (2020) analyzed the short-term impact using a study of events from the covid virus outbreak in 21 stock indexes in virus-affected countries. The results show that the stock market has experienced a drastic decline after the virus outbreak hit the affected countries. Countries in Asia have more negative abnormal returns than in other countries. Investors feel pessimistic about the sustainability of their shares and feel excessive worries so that investors are competing to sell their shares so as not to experience greater losses. This results in significant movement or volatility of the stock market. Based on the arguments and previous research above, the hypothesis adopted in this study is

H1. The influence of covid 19 on stock voting on the IDX

Covid 19 against exchange rates

This virus outbreak is associated with a decline in the stock price index on the stock exchange which makes investors experience heavy losses and investors' attitude is more pessimistic about future economic growth. Several works of literature are analyzing the relationship of this virus to financial markets. Cheng & Yen (2020) found the number of changes in newly confirmed cases in the United States can positively predict the S&P 500 return. And the rate of change in the newly confirmed cases is negatively related to the change in the T-Bill spread. Zhang et al. (2020) show that the level of risk in global financial markets has increased substantially in response to this coronavirus outbreak. Financial markets are experiencing very significant movements on an entirely unprecedented scale. The study conducted by Iqbal et al. (2020) analyzed that the coronavirus outbreak had a negative impact on the RMB exchange rate in the case of Wuhan China. Based on the above, the following hypothesis is taken:

H2. Covid 19 affects the exchange rate.

Financial Market to Volatility Stock Market

Many researchers have conducted literature related to the effect of exchange rates as a proxy for the financial market on the stock price index as a proxy for stock market volatility. Lee & Brahmaresne (2019) tested the long-term and short-term causality of the exchange rate against the Korean composite stock price index. For long-term causality, the exchange rate is negatively related to the Korean stock market, while short-term causality, the exchange rate has a positive relationship with the Korean stock market. The financial crisis that occurred in Korea greatly affected the economy there, especially the negative impact on the money supply. Based on the arguments above, the research hypothesis is taken as follows:

H3. The exchange rate affects the volatility of stock prices

Covid 19 on the volatility of stock prices with the exchange rate as a mediating variable

Exchange rates in several countries have an impact on stock price voting as well as the T-Bill spread. Zhang et al. (2020), which measures the level of risk and the impact of global financial markets on a panic situation against the spread of the coronavirus outbreak. This was responded by the financial market experiencing significant voting as a panic selling reaction. Furthermore, Iqbal et al. (2020) researched in Wuhan China trying to combine the coronavirus outbreak with the Chinese RMB which proved to have a negative impact on the RMB exchange rate.

H4. The effect of covid 19 on the voting price of shares on the IDX with the exchange rate as a mediating variable

3. Methodology and Data

Research on the impact of covid 19 on exchange rates and the volatility of the stock market is designed as a quantitative study that can be used to test the impact of covid 19 mediation on the stock market volatility on the IDX.

This research was conducted to find the impact of Covid 19 on the rupiah exchange rate and stock voting on the

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Indonesian Stock Exchange, the study used secondary data derived from daily reports issued by BNPB on positive cases of Covid 19, as well as data on movements of the rupiah exchange rate against the US Dollar published by Bloomberg, while the voting price of shares is measured based on the frequency of stock trading which is used to measure the voting volume of stock sales on the IDX through www.idx.com. This research was started in early March 2020 as the beginning of the occurrence of positive cases of Covid 19 in Indonesia until July 2020.

Covid 19

Is an independent variable or independent (X). Measurement of positive covid 19 incidence variables uses the number of positive events per day of covid 19 cases in Indonesia published by the Disaster Management Agency (BNPB) by calculating the daily percentage change in the period March 2020 to July 2020.

Financial Market

Is the dependent variable (Y1) using a proxy for the exchange rate: The price of the rupiah currency compared to the US dollar. To measure the exchange rate variable, it is done by performing a daily percentage change in the rupiah exchange rate against the US dollar published by Bloomberg

Volatility Stock Market

Is the dependent or dependent variable (Y2), measuring the volatility of the share price using the number of shares traded or the frequency of stock trading on the Indonesia Stock Exchange.

Method of collecting data

To expedite research on the effect of Covid 19 on the Rupiah exchange rate and stock price volume, data collection was carried out with secondary data in the form of documentation from the announcement of positive cases of Covid 19 published by BPNP in the daily, while data on the exchange rate of Rupiah against US Dollar was obtained

through Bloomberg publication in the daily, meanwhile, the daily data on stock price voting data is obtained from the daily share trading frequency reports on the IDX through the website www.idx.com.

Research Data Analysis

Research on the impact of Covid 19 on the rupiah exchange rate and the voting price of shares used SEM-PLS analysis because the model is complex, path analysis is very appropriate for this research besides testing the direct relationship but also testing the indirect relationship as (Ghozali, 2013).

In conducting the hypothesis test, the stages used are two (2) stages (Baron and Kenny, 1986). The first stage is estimating the direct effect of Covid 19 on the stock price voting, estimating the indirect effect of Covid 19 on the exchange rate of the rupiah the voting stock price.

To get the path coefficient in this covid study I calculated it by making two structural equations, namely the regression equation which is used to show the hypothesized relationship that has been made. Here are the two equations:

$$NT = \alpha + COV + \varepsilon \dots\dots\dots (1)$$

$$VHS = \alpha + \beta_{COV} + \beta_{3NT} + \varepsilon \dots\dots\dots (2)$$

Information:

VHS: Volatility of Share Prices

COV: A Positive Covid Case

NT: The Exchange Rate of Rupiah against Dollars

α : Constant

ε : error

β_1 - β_{12} = Regression Coefficient

4. Results

The path diagram or path analysis provides an overview of the relationship or correlation seen from the one-headed arrow which is a regression relationship and the two-headed arrow is a correlation. Covid-19 direct relationship to stock market volatility without any mediating variable. An indirect relationship occurs as a result of the influence of Covid-19 on the Stock Market Volume through the rupiah exchange rate. The results of data analysis can be presented as follows:

Model		Coefficients ^a			t	Sig.	Correlations		
		Unstandardized Coefficients		Standardized Coefficients			Zero-order	Partial	Part
		B	Std. Error	Beta					
1	(Constant)	-.027	.162		-.167	.868			
	COVID	.003	.003	.131	1.143	.257	.131	.131	.131

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From the results of the SPSS calculation above, it can be seen that the standard beta variable of the case of covid-19 against the rupiah exchange rate is 0.131 with a sig value of 0.257 or > 0.05 so it is not significant, which means that the positive incident case variable covid-19 does not have a significant effect on The US dollar exchange rate, the standardized beta value, shows the path value of the pathway p2. Furthermore, to see the effect of the Covid-19 incident and the exchange rate on the volatility of the stock market, it can be seen in the following figure:

☒

Coefficients ^a									
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			
	B	Std. Error	Beta			Zero-order	Partial	Part	
1	(Constant)	-.061	.274						
	COVID	-.001	.004	-.025	-.228	.820	-.076	-.026	-.024
	NILAI TUKAR	-.716	.196	-.394	-3.659	.000	-.397	-.391	-.390

a. Dependent Variable: VOTALITY IHSG

From the SPSS analysis, it can be seen that the standard beta for the positive case variable covid-19 is 0.025 with a sig value of 0.820. while the standard exchange rate variable beta is 0.394 with a Sig value of 0.000 so that it has a significant effect because it is below 0.05.

The analysis results also found that positive cases of Covid-19 can have a direct effect on the volatility of the stock market and can also have an indirect effect on the exchange rate. Furthermore, the volatility of the stock market, the amount of direct influence is 0.025, while the indirect effect is calculated through the indirect coefficient, namely $(0.031) \times (0.394) = 0.00154$ or the total effect of the positive case of covid-19 on the stock price voting is $= 0.025 + (0.131 \times 0.394) = 0.0766$.

From this study, it was found that the Covid-19 incident did not have a significant effect on stock price volatility in the long term but only in the short term. This can be seen from the shift in share price volatility that occurred on the Indonesia Stock Exchange where the volatility occurred in the period March to the end of April 2020 only, while in May to July 2020 there was no volatility of share prices on the Indonesia Stock Exchange which is inversely proportional to Positive cases of Covid-19 which experience a sharp spike every month. The results of this study reject the theory put forward by Cheng & Yen, 2020; Goodell (2020) states that this pandemic not only endangers the safety of human health but also endangers the health of financial markets and stock markets

Some literature analyzes how the impact of the Covid-19 pandemic on stock prices. The incident of the covid virus outbreak caused all countries in the world to experience economic losses, including Indonesia. During the period of this virus outbreak, the movement of the stock market decreased (Liu et al., 2020; Onali, 2020). Liu et al., (2020) analyzed the short-term impact using a study of events from the covid virus outbreak in 21 stock indexes in virus-affected countries. The results show that the stock market has experienced a drastic decline after the virus outbreak hit the affected countries. Countries in Asia have more negative abnormal returns than in other countries. Investors feel pessimistic about the sustainability of their shares and feel excessive worries so that investors are competing to sell their shares so as not to experience greater losses. This results in significant movement or volatility of the stock market

From the results of this study, it can be seen that the positive case of Covid-19 does not have a significant effect on the rupiah exchange rate in the long term, but in the short term it has a big effect, this is due to investor panic over the coronavirus pandemic which has resulted in capital outflows by foreign investors. from mid-March 2020 to April only and then the rupiah exchange rate tends to be stable even though the covid-19 infection rate has increased until July 2020. The results of this study reject the theory put forward by (Lee & Brahmastrene, 2019). Exchange rates have the benefit of equalizing the supply and demand for company assets such as stocks and bonds. So that the exchange rate has a significant role in the company's financial movements. The covid virus situation has a negative impact on exchange rates in all countries, both directly and indirectly (Iqbal et al., 2020).

From the results of this study, it was also found that the exchange rate of the rupiah greatly influenced the volume of stock prices during the Covid-19 pandemic where many investors were panic selling their shares on the Indonesia Stock Exchange as a result of investors preferring to hold cash in dollars rather than holding securities. who tend to have investment risk. The results of this study are in line with the findings (Iqbal et al., 2020) currency exchange rates have a significant role in the movement of company finances. The covid virus situation has a negative impact on

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exchange rates in all countries, both directly or indirectly

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Financial markets are experiencing very significant movements on an entirely unprecedented scale. The study conducted by Iqbal et al. (2020) analyzed that the coronavirus outbreak had a negative impact on the RMB exchange rate in the case of Wuhan China.

Many researchers have conducted literature related to the effect of exchange rates as a proxy for the financial market on the stock price index as a proxy for stock market volatility. Lee & Brahmasurene (2019) tested the long-term and short-term causality of the exchange rate against the Korean composite stock price index. For long-term causality, the exchange rate is negatively related to the Korean stock market, while short-term causality, the exchange rate has a positive relationship with the Korean stock market. The financial crisis that occurred in Korea greatly affected the economy there, especially the negative impact on the money supply.

CONCLUSION

The exchange rate of the rupiah greatly affected the volume of stock prices during the Covid-19 pandemic. The case of the positive incident Covid-19 does not have a significant effect on the rupiah exchange rate in the long run, but in the short term, it has a big effect. Further research can add a variable hedging strategy in overcoming the impact of a pandemic on stock price volatility. The object of research can be expanded to several countries so that the results can be generalized and add more global insight regarding the impact of the pandemic on stock prices on world stock exchanges.

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