THE EFFECT OF NEW CASES AND VACCINATION ON THE JOINT STOCK PRICE INDEX ITS IMPLICATIONS ON RUPIAH EXCHANGE RATES
(Case Study in Indonesia in 2021)

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Abstract

This study aims to examine the effect of new cases and vaccination on the JCI and the implications for the rupiah exchange rate. Type of desk study research with a quantitative approach. Data analysis technique uses path analysis. The results of the study concluded that (1) new cases of Covid-19 had a negative and significant effect on the JCI. An increase in new cases of Covid-19 can cause the JCI value to weaken. Vaccination has a positive and significant effect on the JCI. The vaccination program succeeded in encouraging the strengthening of the JCI value in the capital market (2) the JCI had a negative and significant effect on the rupiah exchange rate. The increase in the JCI will encourage the strengthening of the rupiah exchange rate against the US $ (3) New cases of Covid-19 and vaccinations have a positive and significant effect on the rupiah exchange rate. The increase in Covid-19 cases and vaccinations caused the rupiah exchange rate to weaken against US$ (4). The JCI was unable to mediate the effect of new Covid-19 cases and vaccinations on the rupiah exchange rate. The addition of the Covid-19 case had a direct impact on the decline in the rupiah exchange rate against the US$ without considering the movement of the JCI. The Covid-19 vaccination program encouraged the strengthening of the JCI but the increase in the JCI was unable to make the rupiah exchange rate strengthen against the US$.

Keywords: JCI, Covid-19 Cases, Vaccination, Rupiah Exchange Rate

INTRODUCTION

In early March 2020 the President announced the first positive cases of Covid-19 in Indonesia totaling 2 people. After that, the spread of Covid-19 continued to increase from time to time until now. The corona virus outbreak spreads very quickly and has transformed into a pandemic. The addition of daily new cases of corona in Indonesia from 2020-2021 has fluctuated. In July 2021, Indonesia was facing a second wave of spikes in Covid-19 cases. This condition was marked by the highest increase in daily cases of 56,757 to be precise on July 15 2021. The spike in new corona cases in Indonesia has triggered uncertainty in the capital market, affecting the movement of the Jakarta Composite Index which tends to weaken. After the second wave of Covid-19 hit Indonesia, many investors withdrew their funds from the capital market, causing the stock price index to decline. On May 19, 2021, the JCI corrected by 1.27% to the level of 5,760.58 and was the lowest closing level in 2021. The spike in new cases of Covid-19 did not only affect the fall in the capital market but resulted in movements in the rupiah exchange rate against the US dollar.

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pressure. On March 2, 2020 the rupiah exchange rate was in the position of Rp. 14,413 per US dollar. Then on March 17 2020 the value of the rupiah weakened to a level of IDR 15,000. On March 20, 2020, the rupiah sank again to the level of Rp. 16,273 per US dollar, then decreased again and lowest at Rp. 16,741 per US dollar on April 2 2020 (Laucereno 2020). The JCI corrected by 1.27% to the level of 5,760.58 and is the lowest closing level so far in 2021. The surge in new cases of Covid-19 has not only affected the fall in the capital market but has resulted in pressure on the movement of the rupiah against the US dollar. On March 2, 2020 the rupiah exchange rate was in the position of Rp. 14,413 per US dollar. Then on March 17 2020 the value of the rupiah weakened to a level of IDR 15,000. On March 20, 2020, the rupiah sank again to the level of Rp. 16,273 per US dollar, then decreased again and lowest at Rp. 16,741 per US dollar on April 2 2020 (Laucereno 2020). The JCI corrected by 1.27% to the level of 5,760.58 and is the lowest closing level so far in 2021. The surge in new cases of Covid-19 has not only affected the fall in the capital market but has resulted in pressure on the movement of the rupiah against the US dollar. On March 2, 2020 the rupiah exchange rate was in the position of Rp. 14,413 per US dollar. Then on March 17 2020 the value of the rupiah weakened to a level of IDR 15,000. On March 20, 2020, the rupiah sank again to the level of Rp. 16,273 per US dollar, then decreased again and lowest at Rp. 16,741 per US dollar on April 2 2020 (Laucereno 2020). The surge in new cases of Covid-19 has not only affected the fall in the capital market but has resulted in pressure on the movement of the rupiah exchange rate against the US dollar. On March 2, 2020 the rupiah exchange rate was in the position of Rp. 14,413 per US dollar. Then on March 17 2020 the value of the rupiah weakened to a level of IDR 15,000. On March 20, 2020, the rupiah sank again to the level of Rp. 16,273 per US dollar, then decreased again and lowest at Rp. 16,741 per US dollar on April 2 2020 (Laucereno 2020). The surge in new cases of Covid-19 has not only affected the fall in the capital market but has resulted in pressure on the movement of the rupiah exchange rate against the US dollar. On March 2, 2020 the rupiah exchange rate was in the position of Rp. 14,413 per US dollar. Then on March 17 2020 the value of the rupiah weakened to a level of IDR 15,000. On March 20, 2020, the rupiah sank again to the level of Rp. 16,273 per US dollar, then decreased again and lowest at Rp. 16,741 per US dollar on April 2 2020 (Laucereno 2020).

To overcome the Covid-19 pandemic, the government has issued various policies and quick actions, one of which is the vaccination program. The government is targeting the coverage of the Covid-19 vaccination in Indonesia at 70% of the total population to receive the first dose of vaccine. This target is expected to be achieved by the end of December 2021. The government stated that the Covid-19 vaccine would be given free of

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charge to the public. This is a form of the government's seriousness in dealing with the impact of the Covid-19 pandemic in Indonesia.

New Cases of Covid-19

Covid-19 (Corona Virus Disease 2019) is a type of infectious disease caused by a type of virus (SARS-CoV-2). Patients with Covid-19 will generally experience fever, dry cough, and difficulty breathing (Ministry of Health, 2020).On March 2, 2020, President Joko Widodo announced the first positive case of Covid-19 in Indonesia. Since the announcement, the number of positive cases in Indonesia has continued to increase day by day. On March 9, 2020, the World Health Organization (WHO) officially declared the COVID-19 outbreak a global pandemic. The addition of Covid-19 cases in Indonesia has a very fast vulnerable time. Based on Kompas.com calculations, the spread of the corona virus in Indonesia takes a relatively short time.

Vaccination

One of the Indonesian government's efforts to prevent and control the Covid-19 pandemic is by accelerating the provision of vaccinations in the community. The first vaccination was carried out for President Joko Widodo and a number of public officials and community leaders to be precise on January 13 2021. Administering the Covid-19 vaccine is the most appropriate solution in efforts to reduce and break the chain of transmission of Covid-19. The Covid-19 vaccine is a type of vaccine developed to increase the body's immunity against the SARS coV-2 virus which causes Covid-19 disease. From the Ministry of Health's website, it is revealed that there are 4 benefits of the Covid-19 vaccine including: (1) Stimulating the immune system (2) Reducing the risk of transmission (3) Reducing the severe impact of the virus (4) Achieve group immunity. The government continues to accelerate the implementation of national vaccinations to quickly achieve herd immunity. According to the Ministry of Health, the total number of injections for the first dose had reached 85.26% or 177,577,002 injections, while the second dose was around 58.09% or 120,985,959 injections and the third dose was around 0.80% or 1,676,424 injections. Covid-19 national vaccination coverage has reached more than 300 million injections or 72% of the total target of 416.4 million injections on January 18 2022 (Rokom 2022).

Composite Stock Price Index

The Composite Stock Price Index was first introduced on April 1, 1983 as an indicator of stock price movements, called the Jakarta Stock Exchange (JSE). The Composite Stock Price Index is a stock chart that shows the average movement of all stocks on the stock exchange. Through this JCI chart, the public and capital market

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participants can see a summary of the condition of the capital market on the Indonesia Stock Exchange directly without having to analyze stock instruments one by one.

Rupiah exchange rate

The exchange rate (exchange rate) is the value or price of a country's currency measured in another country's currency. According to Ekananda (2014) Exchange rate is the price of a country's currency relative to another country's currency. determining the foreign currency value system in which the central bank fixes the price of various foreign currencies, (b) Flexible exchange rate system: determining the foreign currency value which is determined based on changes in demand and supply in the foreign exchange market from day to day.

RESEARCH METHODOLOGY

The study is desk research with a quantitative approach.

The research sample is data on the addition of new cases of Covid-19, the number of vaccination recipients, the movement of the JCI and the rupiah exchange rate against the US dollar as many as 49 observations. Presentation of data on a weekly basis from January 2021 to December 2021. Data comes from several sources, such as www.bi.go.id, www.idx.co.id and the Covid-19 Task Force. Data analysis technique using path analysis. The definitions and measurements of research variables are summarized in Table 1

Table 1 Variable Definition and Measurement

Variable	Operational Definition	Indicator
Rupiah exchange rate (Y)	Comparison of the value of the rupiah against other foreign currencies, namely the US dollar	Weekly average movement of the rupiah exchange rate against the US dollar
JCI (Z)	The Jakarta Composite Index is a description of the increase or decrease in the investment market in Indonesia	The average weekly JCI movement on the Indonesia Stock Exchange

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New Cases of Covid-19 (X1)	The total addition of new positive daily cases of Covid-19 in Indonesia comes from data reported by the Covid-19 Task Force.	Total new cases of covid-19 every week
First dose of vaccination (X2)	The number of recipients of the first dose of the covid-19 vaccine in Indonesia comes from data presented by the Covid-19 Task Force.	Total weekly first dose of vaccine recipients

Source: Data processed, 2022

RESULTS AND DISCUSSION

First Hypothesis Testing Results

ResultsThe first hypothesis test aims to prove the effect of new cases of Covid-19 and vaccination on the JCI both partially and simultaneously as summarized in Table 2.

Table 2. First Hypothesis Testing Results

Variable	Coefficients	t-Statistics	Sig.
(Constant)	8,774	142,774	0.000
LnKB	-0.018	-7,385	0.000
LnVK	0.008	2,239	0.030
F-Statistics= 39,652		F-Sig. = 0.000	
R = 0.796a	R Square = 0.633	Adjusted R Square = 0.617	

Source: Research Results, 2022 (data processed)

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From table 2 it is known that the t-statistic value of the variable new cases of covid-19 (LnKB) on the JCI is -7,385 with a significance level of 0.000 <0.05. These results explain that new cases of Covid-19 have a negative effect on the JCI. The LnKB coefficient value of -0.018 indicates that every time there is an additional 1% new Covid-19 case, it will result in a decrease in the JCI by 0.018%. The relationship between the new cases of Covid-19 and the JCI reversed. Furthermore, the results of the t-statistic test for vaccination (LnVK) for the JCI were 2,239 with a significance level of 0.030 <0.05. This proves that the implementation of vaccination has a positive effect on the JCI. The regression coefficient of the LnVK variable is 0.008, meaning that each vaccination increases by 1%, the JCI movement increases by 0.008%. The relationship between vaccination and the movement of the JCI is unidirectional. The significance level of the F-statistic test of 0.000 <0.05 explains that new cases and vaccinations have a simultaneous effect on the JCI. The adjusted R square value of 0.617 means that the movement of the JCI can be explained by the variables of new cases of Covid-19 and vaccination of 61.70%, while the remaining 38.30% is explained by other variables outside the regression model.

Second Hypothesis Testing Results

The results of testing the second hypothesis will explain the effect of the Jakarta Composite Index on the rupiah exchange rate as summarized in Table 3.

Table 3. Second Hypothesis Testing Results

Variable	Coefficients	t-Statistics	Sig.
(Constant)	10.214		0.000
LnIHSG	-0.074	-0.284	0.048
R = 0.284a	R Square = 0.081	Adjusted R Square = 0.061	

Source: Research Results, 2022 (data processed)

From the results of the regression test in Table 3, the t-statistic value of the JCI for the rupiah exchange rate is -0.284 with a significance level of 0.048 <0.05. This concludes that the Jakarta Composite Index has a negative effect on the rupiah exchange rate. The coefficient value of the JCI variable indicates the direction of the relationship between the JCI and the rupiah exchange rate against the US dollar. If the JCI increases by 1%, the

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rupiah exchange rate against the US dollar will decrease by 0.074%. The JCI can only explain the rupiah exchange rate by only 6.1% while the remaining 93.90% is explained by other variables outside the research model. The R value of 0.284 indicates a weak relationship between the JCI and the rupiah exchange rate.

Third Hypothesis Testing Results

The third hypothesis is intended to analyze the effect of new cases of Covid-19 and vaccination on the good rupiah exchange rate as summarized in Table 4.

Table 4. Third Hypothesis Testing Results

Variable	Coefficients	t-Statistics	Sig.
(Constant)	9,496	398,305	0.000
LnKB	0.002	2,540	0.015
LnVK	0.004	2,662	0.011
F-Statistics= 5,082		F-Sig. = 0.010	
R = 0.425a	R Square = 0.181	Adjusted R Square = 0.145	

Source: Research Results, 2022 (data processed)

The results of the t test in table 4, obtained a t-statistic value of 2.540 with a significance level of 0.015 <0.05. These results reveal that new cases of Covid-19 have a positive effect on the rupiah exchange rate. The LnKB coefficient value of 0.002 means that if new cases of Covid-19 increase by 1%, then the movement of the rupiah exchange rate will increase by 0.002%. The vaccination variable also has a positive effect on the rupiah exchange rate. This can be seen from the results of the t statistical test of 2.662 with a significance level of 0.011 <0.05.

Fourth Hypothesis Testing Results

The results of the fourth hypothesis aim to prove the role of the JCI in mediating the effect of new cases of Covid-19 and vaccination on the rupiah exchange rate. To test whether the JCI can play a role as a mediating variable, it is known by comparing the value of the standardized coefficient (test results of the influence of variable X on variable Y) to the value of the standardized coefficient of influence (test results of the influence of variables X and Z on Y). A larger coefficient value will state the actual relationship (Ghozali, 2018).

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Table 5 Direct and Indirect Effects

Variable	Standardized Coefficients		Influence	
	JCI	NTR	Direct	Indirect
Ln KB	0.700	0.359	0.359	0.700 x 0.284 = 0.199
Ln VK	0.212	0.377	0.377	0.212 x 0.284 = 0.060
JCI	-	0.284		

Source: Research Results, 2022 (data processed)

From table 5, the value of the direct effect of new cases on the rupiah exchange rate is 0.359 while the indirect effect, namely new cases on the rupiah exchange rate through the JCI, is 0.199. The value of the direct effect is greater than the indirect effect, so it can be concluded that the JCI is not proven to be able to mediate the effect of new cases on the exchange rate. vaccination against the exchange rate of 0.377 while the indirect effect is 0.060. The value of the direct effect is greater than the indirect effect, so it is concluded that the JCI cannot mediate the effect of vaccination on the rupiah exchange rate. Based on the results of path analysis testing, the results of the path analysis diagram in this study have been presented in Figure 1.
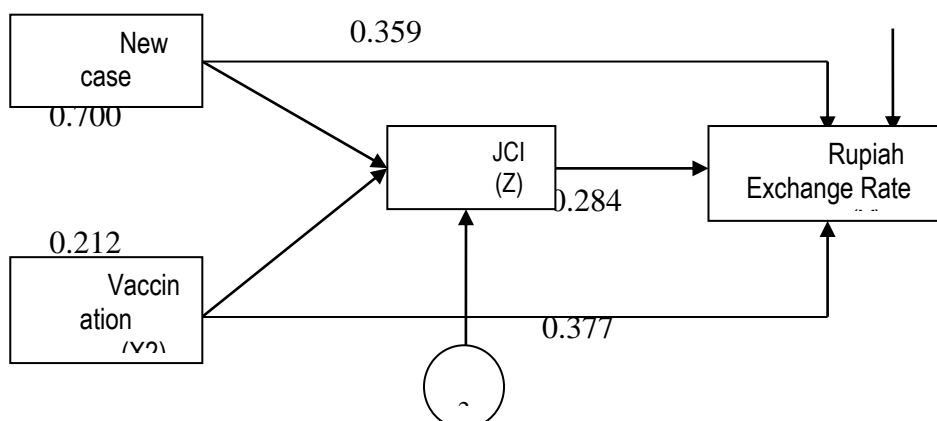
Source: Research Results, 2022 (data processed)

Figure 1 Path Analysis Diagram

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CLOSING

From the results of the research and discussion, the following conclusions were obtained: (1) New cases of Covid-19 had a negative and significant effect on the JCI. While vaccination has a positive and significant effect on the JCI. (2) The Composite Stock Price Index has a negative and significant effect on the rupiah exchange rate. (3) New cases and vaccinations have a positive and significant effect on the rupiah exchange rate (4) The Jakarta Composite Index cannot mediate the effect of new cases and vaccination on the rupiah exchange rate.

The implications of the results of this study include: (1) Theoretical implications, the results of this study strengthen the opinion of experts who state that the main enemy of capital market players is uncertainty. The emergence of uncertainty about the Covid-19 pandemic has triggered the decline in the JCI rate in the capital market and the weakening of the rupiah exchange rate against the US dollar. This is because market participants experience a feeling of panic and excessive fear in dealing with a surge in corona cases, which triggers panic selling. (2) Practical implications, the findings of this study can be used as input for the government that the handling of the Covid-19 case in Indonesia is a momentum that can encourage the strengthening of the rupiah exchange rate and the JCI.

The results of this study have several limitations including (1) The number of samples in this study is still too small because the data taken is weekly data with a fairly short span of time, starting from January 2021 to be precise the third week until December 2021 so that only 49 samples were obtained observations (2) The vaccination variable still uses the first dose of vaccination data because data on recipients of the second dose of vaccination during the study period is still relatively small (3) The ability of the independent variables, namely new cases of Covid-19 and the first phase of vaccination in explaining variations in the rupiah exchange rate is quite small (4) The Jakarta Composite Index is not proven to be able to mediate the effect of new cases and vaccinations on the rupiah exchange rate.

Based on the limitations obtained in this study, the suggestions put forward to further researchers are: (1) Using a larger number of samples by using daily data and increasing the study period (2) Future researchers are advised to use first and second doses of vaccination data to see the effect of vaccination on both the JCI and the rupiah exchange rate (3) Adding other variables such as inflation rates, government policies and interest rates which might influence the strengthening of the rupiah exchange rate against the US dollar (4) JCI cannot be used as a mediating variable, for this reason researchers Furthermore, it is recommended to test the JCI as a moderating variable between the effect of new cases and vaccination on the rupiah exchange rate.

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