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INVESTOR SENTIMENT AND STOCK RETURNS DURING COVID-19 PANDEMIC IN INDONESIA

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ABSTRACT

The Covid-19 pandemic that has hit the world has had an impact on financial markets, one of which is the capital market in Indonesia. In addition to providing benefits to investors, the presence of the capital market contributes to economic development in Indonesia. The conditions that occurred in the Indonesian capital market during the Covid-19 epidemic raised concerns for investors who have the same goal, namely financial returns. However, on the other hand, interest in companies to enter the capital market is still high. This condition is certainly a concern for investors, especially during the Covid-19 epidemic. Therefore, matters that affect investor sentiment need to be identified as the causes of stock price fluctuations. This study aims to predict investor sentiment, and macroeconomics (interest rates, and inflation) on stock returns during the COVID-19 pandemic in Indonesia. Investor sentiment can be interpreted as the tendency of investors to speculate. Investors who are overly optimistic or pessimistic about an investment risk can influence stock prices for a significant period of time. The Covid 19 pandemic may cause investors to feel pessimistic about the future of companies in Indonesia. This study uses stock return variables as measured by using the monthly Jakarta Composite (IHSG) return index data. Investor sentiment variables are proxied by monthly consumer confidence index data, monthly interest rates, and monthly inflation during March 2020 – April 2021. This research uses the Autoregressive Conditional Heteroskedasticity (GARCH) model which is estimated by the Maximum Likelihood method. Results show that, investor sentiment, interest rate and inflation have no significant effect on the return during this period. The behavior investors are not influenced by the consumer confidence index, but other factors are not examined in this study. Macroeconomic indicators, such as interest rates and inflation, also do not affect yields on the Indonesian stock market. The government, financial institutions, and investors can consider the results of this study before making a decision. However, this study was limited by its short period.

Keywords: *investor sentiment, foreign financial flows, exchange rates, interest rates, inflation, stock returns*

INTRODUCTION

The development of the capital market shows the level of economic activity in a country (Iddrisu & Malik, 2017), through which companies can obtain long-term capital and the public can invest (IDX,2020). Public companies listed on the stock exchange are required to provide financial reports regularly so that investors can use them as a basis for analysis. This encourages companies to go public to improve their performance. The literature show that the stock market tends to affect the company's performance (Sulong & Ahmed, 2018). Company performance can be influenced by internal and external factors. One of the external conditions that have an impact on all aspects is the COVID-19 pandemic, one of which is the condition of the Composite Stock Price Index (JCI) in Indonesia.

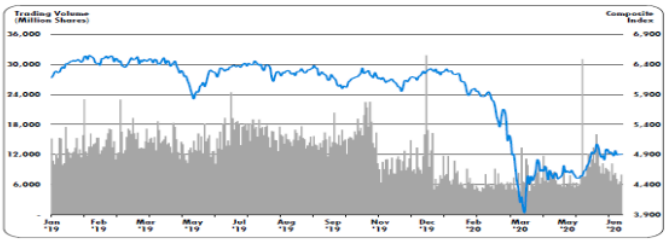

Figure 1. Jakarta Composite Stock Price Index and Trading Volume
Source: IDX (2020)

Data shows a sharp correction occurred in March 2020; this is further strengthened by a Bloomberg report by Pratomo (2020) that the JCI correction was the lowest since semester I/2002 in the last 18 years. In addition, Sahala (2020) stated that the JCI recorded a decline of 26.43 percent, followed by a decrease in market capitalization of 26.11 percent, as well as a decrease in the average daily transaction value of 23.84 percent at the close of trading on April 17, 2020. The conditions that occurred in the Indonesian capital market during the COVID-19 pandemic raised concerns for investors who have the same goal, namely financial returns. On the other hand, IDN Financials (2020) argues that the company's interest in entering the capital market is still relatively high, this is indicated by the presence of 28 companies that will be included in the pipeline for listing new shares. These two conditions are certainly a concern for investors, especially during this COVID-19 pandemic. Therefore, things that affect investor sentiment need to be known as the cause of stock price fluctuations. First, the sentiment caused by data on the movement of the number of Covid-19 cases in Indonesia. Our World in Data shows that the graph and the death rate in Indonesia due to COVID-19 is the second highest in the Asia Pacific and number one in ASEAN (Kurnia, 2020). The next sentiment was caused by the Large-Scale Social Restrictions (PSBB) policy which caused the JCI to plunge 154.7 points or 2.99 percent to position 4,988.33 on Thursday, September 10, 202 (Ramadhani, 2020)

French *et al*. (2017) proved that investor sentiment and foreign financial flows affect stock returns. Muguto *et al*. (2019) found that investor sentiment also affects foreign financial flows. Furthermore, Iddrisu and Malik (2017) stated that capital market conditions are related to economic conditions. This study aims to predict stock returns and macroeconomics (interest rates, and inflation) on investor sentiment, during the COVID-19 pandemic in Indonesia. This research is expected to contribute to the development of studies and literature review, especially in the field of finance, besides that it can be utilized by stakeholders (such as government, financial institutions, and investors).

LITERATURE REVIEW AND HYPOTHESIS

Investor sentiment is the result of researchers who find that the return relationship is not by the Market Efficiency Hypothesis which was popularized by Fama in 1970 (Oprea *et al*., 2014). Investor sentiment can be interpreted as the tendency of investors to speculate (Chowdhury *et al*., 2014). Investor sentiment is an individual's feeling of being pessimistic or excessively optimistic about a situation (Mehrani *et al*., 2014). A tendency to show a behavior that shows psychological behavioral factors, namely feelings and beliefs about certain situations. In addition, what is expressed by Oprea *et al*., (2014) behavioral finance shows that irrational sentiments, namely investors who expect too optimistic or pessimistic about an investment risk, can affect stock prices for a significant period.

The findings Chowdhury *et al*. (2014) stated that extreme sentiment plays an important role in determining changes in market returns. [14] shows that several previous researchers have tested whether investor sentiment is influenced by sto 8 market returns and volatility. Generally, bullish investors expect higher returns than average investors, so high sentiment can push stock prices away from their fundamental values (Chowdhury *et al*., 2014). In the context of the Covid-19 pandemic, investors can feel pessimistic about the future of co 6 panies in Indonesia. This causes investors to sell their shares which causes the stock price to fall or it can be said that there is a negative investor sentiment towards the stock price. Based on this, the research hypotheses are:
H_1 : Investor sentiment has a significant effect on stock returns during the COVID-19 pandemic

The interest rate will affect changes in the amount of investment, the interest rate will affect investors to withdraw their stock investments and then move them to other forms of investment, such as savings or deposits. The Bank Indonesia Interest Rate (SBI) is used by Bank Indonesia to control the circulation of money in the community. [19] stated that interest rates hurt stock returns. Tandelilin (2010) states that inflation hurts stock returns, this is because an increase in inflation will have an impact on increasing selling prices and production costs which will be followed by a decrease in profitability which results in a decrease in stock returns.

H_2: Interest rates have a significant effect on stock returns

H_3: Inflation) have a significant effect on stock returns

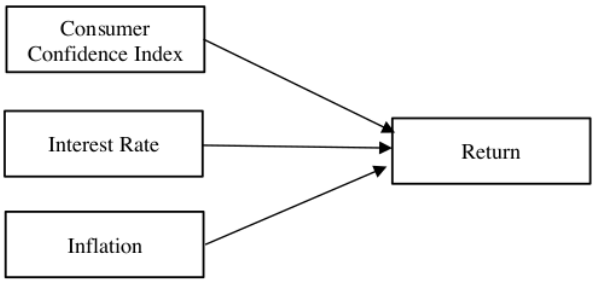

Figure 2. Conceptual Framework

RESEARCH METHOD

This research uses descriptive quantitative research with multiple regression methods. The population is all companies listed on the Indonesia Stock Exchange (IDX) and the sample is companies that are included in Jakarta Composite (IHSG) shares during the research period. The data used is sourced from IDX start March 11, 2020 (WHO's the first announcement of the Covid-19 pandemic) to April 30, 2021. The data used is time series data which can provide complete financial statement information. This study uses stock return variables as measured by using the monthly Jakarta Composite (IHSG) return data. Investor sentiment variables are proxied by monthly consumer confidence index, monthly interest rates (BI-7 Day Reverse Repo Rate) data, and monthly inflation data. Jakarta Composite (IHSG) return data were obtained from yahoo finance, while interest rate data and inflation data were taken from Bank Indonesia. This research uses the Autoregressive Conditional Heteroskedasticity (GARCH) model which is estimated by the Maximum Likelihood method.

FINDINGS

Descriptive Statistics

The number of data for each variable is 14, table 1 shows that the consumer confidence index (CCI) has a mean value of 1.124160, a mean value of 1.151819, a maximum value of 1.474123, and a minimum value of 0.654804. The results of the Skewness test show that the CCI, JCI return (RTN), inflation (INF), and interest rate (IRT) have values that are still between -1.96 to 1.96, so the data is close to symmetrical. The results of the Kurtosis test on CCI, RTN, and INF have a value of more than 1.96 which indicates that the data distribution is uneven so that the data is not normal. The curve has a conical distribution because all variables have positive kurtosis values.

Table 1

Descriptive Statistics Test Results

	RTN	CCI	INF	IRT
Mean	0.009046	1.124160	0.114286	0.039643
Median	0.024593	1.151819	0.090000	0.040000
Maximum	0.094417	1.474123	0.450000	0.045000
Minimum	-0.167581	0.654804	-0.100000	0.035000
Std. Dev.	0.067667	0.211870	0.144792	0.003650
Skewness	-1.286811	-0.613601	0.704789	0.254360
Kurtosis	4.347552	3.210507	3.298687	1.864066
Jarque-Bera	4.923001	0.904365	1.211073	0.903666
Probability	0.085307	0.636238	0.545782	0.636461
Sum	0.126643	15.73824	1.600000	0.555000
Sum Sq. Dev.	0.059524	0.583556	0.272543	0.000173
Observations	14	14	14	14

Classic Assumption Test

Correlation regression analysis requires the fulfillment of various assumptions so that the model can be used as a good predictor. However, it is not uncommon for researchers to face problems in their model. Various problems that are often encountered in regression and correlation analysis, such as: multicollinearity, heteroscedasticity, autocorellation, and normality. The following are the results of testing the four problems:

Table 2

Classic Assumption Test Results

Test	Result
Multicollinearity	VIF CCI: 1,331087 VIF INF: 1,070871 VIF IRT: 1,409862
Heteroscedasticity	Probability: 0,2465 Obs*R-squared: 11,55889
Autocorellation	Durbin-Watson statistic: 2,373969
Normality	Jarque-Bera: 1,008911 Probability: 0,603834

The multicollinearity test aims to test whether in the regression model there is a high or perfect correlation between the independent variables. Table 2 shows that the RTN, INF, and IRT Variance Inflation Factors (VIF) values show values below 10, meaning that there are no symptoms of multicollinearity.

The heteroscedasticity test aims to test whether in the regression model there is an inequality of variance from the residuals of one observation to another observation. A heteroscedasticity test was carried out using the white test. The results in table 2 show the Obs*R-squared value of 11.55889 and the probability value is 0.2465 (greater than = 5%), it can be concluded that the data is homoscedastic or there is no heteroscedasticity.

The autocorrelation test aims to test whether in a linear regression model there is a correlation between the residual error in period t and the error in period t-1 (previous). Table 2 shows the Durbin-Watson statistic of 2.373969, so it can be concluded that the data does not contain autocorrelation.

The normality test aims to test whether, in the regression model, the residuals have a normal distribution. Normality test was performed using the Jarque-Bera (JB) test. The test results show the JB value of 1.008911 (less than 2) and the probability is greater than 5%, so the data is normally distributed

Stationarity Test and Cointegration Test

In time series analysis, the assumption of stationarity of the data is an important property. In the stationary model, statistical properties in the future can be predicted based on historical data that has occurred in the past (Rosadi, 2012). Stationarity testing was carried out using a unit root test using the Augmented Dickey-Fuller (ADF) Test model. The results of the Augmented Dickey-Fuller (ADF) Test can be seen in table 3:

Table 3

Stationary test results

Variable	*ADF test statistic*		
	Level	Probability	Result
CCI	Level	0.0007	Stasioner
RTN	Level	0.0009	Stasioner
INF	2nd difference	0.0068	Stasioner
IRT	2nd difference	0.0063	Stasioner

Based on the stationary test results from table 3, it is stated that the probability of the ADF test statistic from CCI, RTN, INF, and EXC is stationary. Stationary time series data have the same mean, variance, and autocovariance (at various lags) regardless of time (time-invariant). INF and IRT are not stationary before differentiation but are stationary at the second level of differentiation, cointegration will likely occur, meaning that there is a long-term relationship between the two. Therefore, the researcher conducted a cointegration test.

A cointegration test was carried out using the Johansen test. The test results show that the trace statistic value of 8.207575 is smaller than the critical value at the 5% confidence level of 15.49471, so it can be concluded that the two variables are not cointegrated.

Hypothesis Test

Based on the results of the classic assumption test, it was found that the data were free from all problems, so this study did not require ARCH/GARCH testing. Hypothesis testing was carried out by multiple linear regression analysis using the Ordinary Least Squares (OLS) method.

Table 4

Results of Multiple Linear Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.117702	0.314624	-0.374104	0.7161
CCI	0.129403	0.100908	1.282389	0.2286
INF	0.100175	0.132438	0.756391	0.4669
IRT	-0.761050	6.027797	-0.126257	0.9020
R-squared	0.250056	Mean dependent var		0.009046
Adjusted R-squared	0.025073	S.D. dependent var		0.067667
S.E. of regression	0.066813	Akaike info criterion		-2.338876
Sum squared resid	0.044640	Schwarz criterion		-2.156288
Log likelihood	20.37213	Hannan-Quinn criter.		-2.355778
F-statistic	1.111443	Durbin-Watson stat		2.373969
Prob(F-statistic)	0.389731			

The results in table 4 show the amount of adjusted R^2 of 0.250056, this means that 25% of the variation in JCI returns can be explained by variations in the consumer confidence index, inflation, and interest rate, while 65% is explained by other reasons outside the model. . However, the standard error of regression shows a small value of 0.066813, this value indicates that the regression model is more accurate in predicting the JCI return. The variables of consumer confidence index, inflation, and interest rate that are included in the model are all insignificant, this can be seen from the probability of their significance being well above 0.05. So, it can be concluded that the JCI return is not influenced by investor sentiment, inflation, and interest rate during the study period. The mathematical equations are as follows:

RTN = -0.117701948297 + 0.129402838945*CCI + 0.100175068439*INF - 0.761050450611*IRT

DISCUSSION

The results of testing the first hypothesis show that investor sentiment has no effect on JCI returns during the COVID-19 pandemic from March 2020 to April 2021. This shows that investor sentiment, which is indicated by the value of the consumer confidence index, does not affect JCI returns. The value of the standard deviation of the CCI and the log return on the JCI indicate the range of data variations is getting closer, which has an impact on the test results. Investor sentiment has no effect on stock returns because the consumer confidence index is more related to consumer confidence in earning income, especially in the midst of the current pandemic. On the other hand, the JCI's downward movement has recovered relatively quickly. This is due to the presence of retail investors who take momentum when stock prices decline, not because of the consumer confidence factor. The movement of the stock index is also influenced by external factors such as stock movements on Wall Street (Prasuamitra, 2021). The results of this study are in line with the research of Canbas and Kandir (2009) which found that investor sentiment has no effect on returns in the Turkish stock market. However, the results of this study differ from those of Muhammad (2021); Xiong and Wu (2020) who found that investor sentiment has a significant effect on stock returns.

The second hypothesis gives the result that macroeconomic variables (inflation and interest rates) have no effect on stock returns during the COVID-19 pandemic from March 2020 to April 2021. These results are due to inflation and interest rate data during the study period not having high volatility so that these two macroeconomic variables have no effect on the JCI return. In addition, the BI 7-Day Reverse Repo Rate (BI7DRR) used in the variable interest rate is determined by the Meeting of the Board of Governors of Bank Indonesia. The determination was based on several things, such as: maintaining the stability of the Rupiah exchange rate, strengthening the monetary operations strategy, and lowering the maximum limit for credit card interest rates (BI, 2021). On the other hand, Bank Indonesia carried out various policies to maintain inflation in accordance with the inflation target set. The results of this study are in accordance with research conducted by Banchit, et al (2020), which found that investor

sentiment had no effect on economic indicators in the Australian and New Zealand markets. Combey and Togbenou (2017) find that inflation has no effect on returns in Togo. The results of this study are also supported by research by Abbas, et al (2019) that macroeconomic variables have weak evidence of returns in the Chinese market.

CONCLUSION

There are three variables that have no significant effect on the return of the Jakarta Composite (JCI) during the period March 2020 - April 2021, namely investor sentiment, interest rate, and inflation. These results can be used as a consideration for the government and investors. The short study period and the availability of data (monthly) caused the limitations of the research data. It is considered to increase the research period so that causality testing can be carried out using Vector Autoregression (VAR) and Impulse Response Function (IRF) to capture dynamic and casual relationships.

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