Research Article

Effect of Macroeconomic Variables on Jakarta Composite Index before and the Time of Covid19

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Abstract: The aim of this study is to examine the effect of macro-economic variables on the Jakarta composite index in Indonesia, both in the short and long term before Covid19 and the Covid19 period, as well as to examine whether there is a difference before Covid19 and the Covid19 period. Macroeconomic variables include exchange rate (ER), inflation (INF), interest rate (INT) and output growth (IP). This study uses data from the times series for the period 2019.1 to 2020.12 by including dummy variables. The first stage is to test the stationary of the data with the root test unit, and the result is that the data is only stationary in the first and second differences. In addition, the co-integration test between the variables and the results shows a co-integration relationship between the variables so that the model can be analyzed using the Error Correction Model (ECM) to see the short-term balance. The results of the ECM model analysis show that, in the short term, the only macroeconomic variables affecting the Jakarta composite index in Indonesia prior to Covid19 and the Covid19 period are only the exchange rate. In the long run before Covid19, the only ones affecting the Jakarta composite index were the exchange rate, while the eCovid19 period was the rate of exchange and inflation. Other results indicate that there is a difference in the average.

Keywords: Composite Index, Macroeconomic Variables, Dummy Variables, Error Correction Model.

1. Introduction

Indonesia's capital market is vulnerable to macroeconomic conditions, the global economy, and the world capital market. Macroeconomic changes are predicted to affect stock prices as a result of investors taking into account their positive and negative impacts on the company's performance over the next few years, and additionally, investors decide whether to buy, sell or hold shares, so the stock price will adjust more quickly to changes in macroeconomic variables. Other factors that may influence capital market activities include the external environment, such as political conditions, natural disasters, wars, legal issues, and so on. The Covid19 pandemic, which has affected almost all countries in the world, including Indonesia, has had an impact on various sectors so that business and production activities have experienced many disruptions and even decided to close their businesses. Covid19, which is currently taking place, is one of the events suspected of causing changes in stock prices in 2020. The value of the Jakarta composite index, which represents stock fluctuations, decreased significantly during March, although there was evidence of a decline at the beginning of 2020.

Stocks are the most popular form of investment among investors, as they can provide an attractive return. The development of stocks as an instrument that is very much in demand by investors will always be considered because they are at higher risk of price fluctuations compared to other instruments. The price fluctuations of the stock market should be taken seriously by investors. In general, investors use guidelines for investing and monitoring trends in stock price movements, i.e. through the stock market index, better known as the Jakarta composite index, which can be used as a reflection of capital market activities in general. Capital market indicators may fluctuate in line with changes in existing macroeconomic assumptions, as the impact of macro-economic variables cannot be avoided. Macroeconomic variables affect not only one or two companies but all companies on the stock exchange. This means that fluctuations in the capital market will be linked to changes in the various macro-economic variables. Macroeconomic factors are factors outside the company but which have an impact on the increase or decrease in the performance of the company, either directly or indirectly. (Tandellilin, 2010). Siegel (1991) concluded that there is a strong relationship between stock prices and macro-economics. The capital market performance will respond to macroeconomic changes such as changes in exchange rates, economic growth, inflation, and interest rates.

Changes in exchange rates will have an impact on the capital market share prices, in addition to the fact that the increase in the Rupiah exchange rate, especially against the USD, has a positive impact on the capital market, one of which is due to an improvement in the fundamental conditions of issuers on the capital market who have debt in the form of USD because they are lighter when paying off their bonds. Thus, it can be concluded that if the Rupiah exchange rate increases, the performance of the CI tends to increase, and vice versa. Production growth

indicates the country's economic growth, improved production growth will tend to increase sales, and company profits will also increase to influence the increase in company stock prices and, overall, this will be accompanied by a strengthening of CI (Tandelin, 2010: 342). Inflation is a negative signal for investors as it will increase the cost of production of the company. If the price increase enjoyed by the company is lower than the increase in the cost of production, the company's profits will decrease. A decrease in company profits will bring down the company's share price (Tandelilin, 2010: 343). Once the number of stock prices have decreased, the JCI will be weakened.

The increase in interest rates will weaken the CI, and the interest rate that is too high will have an impact on the current value of the cash flow of the company so that existing investments will no longer be attractive. If there is an increase in bank interest rates, investors will be able to move investments from stocks to savings or deposits with higher interest rates compared to stocks with higher risk (Tandelilin, 2010: 343). The number of investors withdrawing their funds from the stock market will reduce the stock price. If a lot of stock prices fall, CI will be weakened. The purpose of this study is to explore the nature of the relationship between four macro-economic variables (exchange rates, economic growth, inflation, and interest rates). These four variables are the most reliable macro-economic variables that can explain stock market fluctuations (Graham & Harvey, 2001; Kim, 2003; Rapach et al., 2005; Yau & Nieh, 2006; Adrangi et al., 2011).

1. Literature Review

Previous studies show that macro-economic factors have a short-term or long-term relationship to the Composite Index. In the Turkish Stock Market, Kandir (2008) defines the significant effect of exchange rates on the stock price index, while Gay (2008) concludes that there is no strong relationship between the exchange rate and the level of common stock prices. Chi-Wei Su, Ya-Wen Chang, Yahn-Shir Chen, Hsu-Ling Chang (2008) Research conducted on the dynamic interaction of four macro-economic variables (consumer price index, producer price index, exchange rate, and interest rate) with Pakistan's stock prices using co-integration and aggregate causality tests, the results of this study show that there is strong co-integration between macro-economic variables. Except for the Index of Consumer Prices. Another conclusion is that the interest rate has a short-term effect on stock prices. Akay and Nargelecekenler (2009) examined the long-term and short-term correlation between monetary policy, interest rate inflation and industrial production indices on stock prices under the Structural VAR (SVAR) model.

Mohamed Asmy, Wisam Rohilina, Aris Hassam and Md. Fouad (2009) examines the short-term and long-term relationship between the Kuala Lumpur composite index and the macroeconomic variables consisting of: inflation, money supply and exchange rates before and after the economic crisis, using the error correction model (ECM) analysis, variance decomposition. And the function of impulse response. The findings show that inflation, money supply and exchange rates have a significant influence on the composite index. On the Chinese stock market, Xiufang Wang (2010) is trying to find evidence of the relationship between stock prices and macroeconomic parameters (real GDP, CPI). The objective of this study is to assess the volatility and causal relationship between stock price volatility and macro-economic variables using the generalized self-regressive heteroscedasis (EGH) exponential model for each variable. The results of the study concluded that there is no causal relationship between stock price volatility and production growth, and that there is a causal relationship between inflation and stock price volatility bilaterally.

Huang and Chen (2011) used various methods of time series analysis, such as VR, Granger Causality Test, Impulse Response Function and Variable Decomposition, and concluded that there was a relationship between stock prices, interest rate structure and economic activity. Stock results and industrial production have been established. Hosseini (2011) examines the relationship between Chinese and Indian stock market indices. Both the macro-economic variables and the stock index have long-term and short-term relationships in both countries with four macro-economic variables, including crude oil, cash stock, industrial output and inflation, from January 1999 to January 2009. JaWaid and Haq (2012) analyzed in their research paper, using the 2004-2010 GARCH model and monthly data in Pakistan, which concluded that there was no impact on interest rates and stock prices. Gupta and Reid (2012) assessed monetary policy and macroeconomic news on the basis of daily data from 2002 to 2011 and found that CPI and PPI had a negative impact on stocks. The effect of macroeconomic variables on stock prices between 1994 and 2011 was studied by Naik and Padhi (2012) using the Vector Error Correction Model and Johansen's co-integration behavior. The findings show that macroeconomic variables have a long-term relationship to stock prices. Kibria Pakistan (2012), using annual data from 1991 to 2013, analyzed macroeconomic variables in their impact on stock prices, evaluated the regression analysis and the Granger Causality Test and concluded that the macro-economic variables had an impact on stock prices.

Based on the monthly data for 1993-2012, Talla (2013) examined the effect of the macro-economic variables on Swedish stock prices. In this study, inflation, interest rates and currency have a negative effect, while money supply has a positive relationship with the JCI, and on the basis of the Grager test, it is found that all macroeconomic variables have a two-way relationship, except inflation. Ahmed Sadek Yousuf (2013), whose research looked at the influence of macroeconomic variables on Bangladesh's stock market prices, studied the macroeconomic variables of interest rates, exchange rates, consumer price index, oil price and money supply using time data. The series with an analysis of the vector error correction model (VECM), the impulse response function (IRF) and the variance decompotition (VDC) and the results conclude that the interest rate, the oil price and the money supply have a positive relationship to the stock prices, while the exchange rate has a negative relationship to the stock prices. Meanwhile, in the long run, macro-economic variable shocks explain only a few variations in stock prices. Ahmad A. Al-Majali, Ghazi I. Al-Assaf (2014), Examining whether macroeconomic variables affect stock market performance as measured by the stock price index, macro-economic variables are measured by real gross domestic product, consumer price index, private sector credit. and the interest rate. Use a vector error correction model (VECM). The results have shown that there is a long-term influence between the macroeconomic variables and the stock prices. There is a two-way relationship between private sector credit and stock prices, and another conclusion is that when interest rates rise, stock prices also rise. Coovadia (2014) concluded that interest rates, inflation, dollar exchange rates, increased supply of industrial output currencies, GNP, gold and petroleum prices, using quarterly data from 1994 to 2012, had both short-term and long-term effects on stock prices.

Vena (2014) looked at the effect of inflation and the asymmetrical effects of asymmetric shocks on the Kenyan stock exchange with GARCH from 1998 to 2013. The analysis shows that inflation has a negative effect on stock prices. The relationship between macroeconomic variables and Egyptian and Tunisian stock returns was analyzed by Barakat (2015) using the 1998-2014 VAR and Granger causality assessments. The findings of the study showed that macro-economic variables are causally related to share prices in Egypt, while in Tunisia there is no causal relationship between the consumer price index (inflation) and stock prices. Mahmood (2015) studied the relationship between inflation and stock prices using six years of data from 2005 to 2010 in Pakistan. Mahmod uses VAR and finds a negative relationship between them. Meanwhile, China has a positive relationship to share prices. Swatari analyzed the macro-economic factors in the South African stock market (2015). Macroeconomic relations, including industrial production, money supply, inflation and exchange rates, and stock prices, are based on monthly averages between 1998 and 2010, which conclude that macro-economic impacts have a significant effect on stock prices. Robert D. Gay, Jr., Nova (2016), Examining the relationship between macroeconomic variables, namely exchange rates and oil prices, on stock prices in the USA using time series data, and the test results concluded that neither the exchange rate nor the price of oil had an effect on stock prices.

Tursoy (2017) uses ARDL and Convergence to assess the impact of stock prices and exchange rates in Turkey. The results show bidirectional causality for short-term and long-term unidirectional causality with monthly data between 2001 and 2016. The error correction model (ECM) shows that the exchange rate is related to the stock price. Ho, Sin-Yu, Odhiambo, N.M. (2018) examines the impact of inflation rate, exchange rate, economic growth, trade openness and stock market liquidity developments on the development of the Philippine stock market price. Using the ARDL model, it can be concluded that, in the long run, trade openness has a negative impact on the development of the Philippine stock market while, in the short term, the exchange rate has a positive impact on the Philippine stock market. Vikram Megaravalli, Gabriele Sampagnaro (2018), his research aims to examine the long-term and short-term relationship between the macroeconomic variables (exchange rate, inflation) and the stock prices of India, China and Japan using time series data, the results show that exchange rates have a positive effect on stock prices in the long run, while inflation has a negative effect on stock prices in the meantime. In the short term, neither the exchange rate nor inflation has an impact on stock prices. Jung Wan Lee, Tantatape Brahmasrene (2018), examines the dynamic relationship between macroeconomic variables and stock prices in Korea using monthly data from January 1986 to October 2016 using the Vector Error Correction Model (VECM) analysis and the results show that in the long run there is a relationship between macroeconomic variables and stock prices, while for the short term money supply and stock prices. The Industrial Production Index has a positive effect on export prices, while inflation has a negative impact on stock prices.

1. Data Analysis Technique

This study uses the dependent variable data, namely the composite stock price index; whereas the independent variable is the macro-economic variable represented by: exchange rate, inflation rate, interest rate and production growth. The data used are the monthly time seris data for the period 2019.1 to 2020. (the period before Covid19 is 2019.1 to 2020.2 and the Covid19 period is 2020.3 to 2020.12). For the analysis of the difference in the average common stock price index variable and the difference in the impact of the macro-economic variables before

covid19 and the covid19 period, the model used is a dummy variable model with the following criteria: D = 1 for the covid19 period, D = 0 for the covid19 period.

The models used are:

$CI = \alpha_1 + \alpha_2 Dt + \beta_1 ER + \beta_2 ER*Dt + \beta_3 INF + \beta_4 INF*Dt + \beta_5 INT + \beta_6 INT*Dt + \beta_7 IP + \beta_8 IP*Dt + \mu t$

CI = Composit Index

ER = Exchange Rate

INF = Inflation

INT = Interest Rate

IP = Production Index Growth

The data used is time series data and time series data usually stores many problems including autocorrelation, autocorrelation causes the data to be non-stationary, which indicates that the mean and variable values of time series data change systematically over time or average value. And the variance is not constant, which will result in a less good model to be estimated so that the results given may be spurious (Gujarati, 2015). Therefore, the data characteristics will be tested using the root test unit before further analysis is carried out.

The data characteristics will be tested using the root test unit. The unit root test is needed to determine whether or not the data is stationary, i.e. through the Augmented Dickey Fuller (ADF) test. The results of the root test will indicate that the data are stationary at the level, stationary at the first difference, or stationary at the second difference. If the data is stationary at the level, the model is stationary and can be immediately continued by registering the model using the Ordinary Lowest Square model.

If it is stationary in the first difference or second difference, then it is necessary to check whether the data has a relationship between the variables by performing the co-integration test, the method that can be used to perform the co-integration test is the Johansen test, and after the results of the co-integration test, the model used is the Error Correction Model (ECM).), a co-integration relationship can be seen as a long-term (equilibrium) relationship, but it is suspected that a short-term imbalance exists (Gujarati, 2015). ECM (Error Correction Model) is a model used for the analysis of short-term relationships. If the variable has a long-term relationship (there is co-integration), it is assumed that the variable does not have a balance relationship in the short term, then it is necessary to correct the model in the short term by using the residuals obtained from the previous stage so that the variables can return to a long-term equilibrium process. The ECM model uses a two-step Engle-Grager model, the ECM model can be written as the following equation:

$\mathbf{\Delta}\, CI_{it} = \alpha_1 Dt + \alpha_2 \mathbf{\Delta} Dt + \beta_1 \mathbf{\Delta} ER_t + \beta_2 \mathbf{\Delta}(ER_t*Dt) + \beta_3\, \mathbf{\Delta} INF_t + \beta_4 \mathbf{\Delta}(INF_t*Dt) + \beta_5 \mathbf{\Delta}(INT_t) + \beta_6 \mathbf{\Delta}(INT_t*Dt) + \beta_7 \mathbf{\Delta} X_t + \beta_8 \mathbf{\Delta} INT_t + \beta_9 EC_{t-1}$

Where Δ is the difference; α is the intecept; β is the slope of the independent variable, ECT is the correction of the error. If the ECM imbalance error coefficient is statistically significant, this means that the ECM specification model used in the study is valid.

2. Hypothesis of Research:

1. Macroeconomic variables have a short-term effect on the Jakarta composite index in Indonesia before covid19 and the Covid19 period.
2. Macroeconomic variables have a long-term effect on the Jakarta composite index in Indonesia before covid19 and the Covid19 period.
3. There is a difference in the average Jakarta composite index variable between the period before Covid19 and the period before Covid19.

3. Result

The test begins with the stationary data test, which is to see whether or not the data is stationary. The stationary data test used the root unit test using the ADF test, with the following results:

Table 1. ADF Test

Variable	ADF Probability		
	At Level	First Difference	Second Difference
CI	0,1532	0,0000	-
ER	0,3968	0,0001	-
INF	0,7268	0,0672	0,0014
INT	0,7662	0,0066	-
IP	0,0943	0,0000	-

Source: Capital market statistic, processing data

Based on the unit root test with ADF in Table 1, it can be seen that all variables CI, ER, INF, INT, IP are not significant at level, which means that they are not stationary at level but stationary at the first and second differences with the results showing that the probability value of all variables is less than 5%, which means that all data variables are stationary. After performing the stationarity test, a co-integration test is needed to determine whether or not there is a long-term relationship between variables. The results of the Co-integration Test are as follows:

Table 2. Cointegration Variables Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.961882	159.6934	95.75366	0.0000
At most 1 *	0.814052	87.81764	69.81889	0.0010
At most 2 *	0.729232	50.80733	47.85613	0.0257
At most 3	0.506193	22.06448	29.79707	0.2949
At most 4	0.246147	6.541062	15.49471	0.6315
At most 5	0.014655	0.324802	3.841466	0.5687

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
Source : Capital market statistic, processing data

Based on the results of Table 2, it is shown that there is co-integration between variables at 95% confidence level, which means that there is no co-integration of the null hypothesis. Thus, accepting Ha, which says that there is a co-integration between variables, means that there is a long-term balance, but it is suspected that there is a short-term imbalance.

The co-integration that occurs between variables requires an error correction of the model in order to eliminate the imbalances that occur in the short term, the results of an error correction model (ECM) using Engle-Granger are as follows:

Table 3. ECM Model

Dependent Variable: D(CI)
Method: Least Squares
Sample (adjusted): 2019M02 2020M12
Included observations: 23 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.946054	321.2592	0.002945	0.9977
D(D01)	84612.25	34362.73	2.462326	0.0299
D(ER)	6.154063	2.462916	2.498690	0.0280
D(ER*D01)	-6.229461	2.567930	-2.425868	0.0320
D(INF)	-1331.795	1521.508	-0.875312	0.3986
D(INF*D01)	971.6742	2231.279	0.435478	0.6709
D(INT)	-332.2625	2452.280	-0.135491	0.8945
D(INT*D01)	-474.5135	3874.626	-0.122467	0.9046
D(IP)	-10.34351	122.5754	-0.084385	0.9341
D(IP*D01)	69.41451	175.7400	0.394984	0.6998
EC(-1)	-1.387532	0.261386	-5.308372	0.0002
R-squared	0.781884	Mean dependent var		-24.08561

			1754.603
Adjusted R-squared	0.600121	S.D. dependent var	
			17.16721
S.E. of regression	1109.540	Akaike info criterion	
			17.71027
Sum squared resid	14772938	Schwarz criterion	
			17.30379
Log likelihood	-186.4229	Hannan-Quinn criter.	
			2.196119
F-statistic	4.301670	Durbin-Watson stat	
Prob(F-statistic)	0.009948		

Source: Capital market statistic, processing data

Based on Table 3 above. The EC probability (-1) shows that it is less than 5 percent, which means that the error correction model (ECM) used in this study is valid and can then be analyzed. The value of the EC coefficient =-1.387532 means that the difference between the actual JCI value and the balance value of-1.387532 will be adjusted within one month so that the following equation can be made.

The short-term formula for the Jakarta composite index before covid19 is as follows:

CI = 0.946054 + 6.154063ER -1331.795INF - 332.2625INT - 10.34351PI

The independent variable that is statistically significant for the JCI variable in the short term before Covid19 is the change in the exchange rate (ER), while inflation (INF), the interest rate (INT) and the increase in production (IP) have no effect. The short-term equation for the composite stock price index Covid19 is as follows:

CI = (0.946054 + 84612.25) + (6.154063 - 6.229461)ER - 1331.795INF - 332.2625INT - 10.34351PI

CI = 84613.196 – 0,075398ER - 1331.795INF - 332.2625INT - 10.34351PI

The independent variable that is statistically significant for the JCI variable in the short term of the Covid19 period is the change in the exchange rate (ER), while inflation (INF), the interest rate (INT) and the growth in production (IP) have no effect. The long-term composite stock price index regression equation model that has passed for the multi-colline, heteroscedastic and autocorrelation test is as follows:

Tabel 4. Model CI Long Run

Dependent Variable: CI
Method: Least Squares
Sample: 2019M01 2020M12
Included observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-87100.80	40561.40	-2.147382	0.0498
D01	97868.66	42902.36	2.281195	0.0387
ER	7.985675	3.320511	2.404954	0.0306
ER*D01	-8.029045	3.500763	-2.293513	0.0378
INF	-3019.739	1195.459	-2.526007	0.0242
INF*D01	3134.357	1763.971	1.776876	0.0973
INT	-1823.855	999.9353	-1.823974	0.0896
INT*D01	490.4835	2979.436	0.164623	0.8716
IP	-131.6953	190.3865	-0.691726	0.5004
IP*D01	177.2414	287.9001	0.615635	0.5480

			5498.264
R-squared	0.443084	Mean dependent var	
			1234.436
Adjusted R-squared	0.085067	S.D. dependent var	

S.E. of regression	1180.764	Akaike info criterion	17.28005
Sum squared resid	19518848	Schwarz criterion	17.77090
Log likelihood	-197.3606	Hannan-Quinn criter.	17.41027
F-statistic	4.237607	Durbin-Watson stat	2.206924
Prob(F-statistic)	0.047627		

Source: Capital market statistic, processing data

For the composite stock price index before Covid19, the long-term equation is as follows:

CI = -87100,80 + 7,985675ER – 3019,739INF – 1823,855INT – 131,6953IP

Independent variables that are statistically significant (5-007 = 5 per cent) for the long-term JCI before Covid19 are exchange rate (ER) and inflation (INF) changes, while interest rate (INT) and output growth (IP) have no effect. Interest has an effect on the composite stock price index at 90% confidence level.

The long-term equation for the composite stock price index of Covid19 is as follows:

CI = (-87100,80 + 97868,66) + (7,985675 – 8,029045)ER + (– 3019,739 + 3134,357)INF + (– 1823,855 INT – 131,6953IP

CI = 10767,86 – 0,04337ER + 114,618INF – 1823,855INT - 131,6953PI

Independent variables that are statistically significant (5-007 = 5%) for the long-term variable JCI covid19 are exchange rate (ER) and inflation (INF) changes, while interest rate (INT) and output growth (IP) have no effect. On the basis of the dummy model equation, it can be stated that there are differences in the results of the composite stock price index prior to Covid19 and the Covid19 period, only the impact of the exchange rate and inflation variables.

4. Discussion

The results of the data analysis show that the exchange rate (ER) both in the short and long term before and during the Covid period has an impact on stock prices (CI) in line with the results of the research: Kandir (2008), Mohammed (2009), Naik & Padi (2011), Tala (2013), Covadia (2014), Tursoy (2017) and Ho Sin Yu (2018). However, it is not in line with research by Robert (2016) who concluded that the exchange rate had no effect on stock prices. The direction of the influence of the exchange rate on the stock prices before Covid19, both in the short and long term, shows a positive value, which means that when the rupiah exchange rate decreases, which means that the rupiah depreciation occurs, the composite stock price index decreases, and vice versa, when the rupiah is valued, the stock price increases, which is because when the rupia rises.

The effect of the exchange rate on stock prices during the Covid-19 period shows a negative direction, which means that if the rupiah exchange rate decreases (depreciation) against the US dollar, the composite stock price index increases, and vice versa, when the rupiah appreciates, the stock price decreases. A situation that differs from the theory of the Covid19 period in which the Rupiah depreciated, which would cause production costs to increase and entrepreneurs to reduce or stop production, but the share price of the company increased, was possible because many companies offered their shares to increase capital and responded to high-income people so that the money they owned was valuable. Buying shares, then increasing the demand for shares, which of course causes the stock price to rise.

The results show that inflation (INF) has a long-term impact on stock prices (CI) in line with the results of research conducted by Hosseini (2011), Sayilgan (2011), Tala (2013), Covadia (2014), Gupta and Reid (2012). However, it is not in line with the results of Wilson (2006), Varkam Mega (2018) and Xiufang Wang research (2010). The effect of inflation on stock prices varies between before Covid19 and after Covid19. Before Covid19, inflation had a negative effect, which means that, when inflation increased, stock prices decreased, and vice versa, when inflation fell, stock prices rose, in line with existing theories. But inflation has a positive effect for the Covid19 period, which means that, when inflation rises, stock prices also rise, and vice versa, when inflation declines, stock prices also fall. This is because, during the Covid19 period, the decline in inflation did not cause the public to divert the funds they had to buy shares, but remained on hold due to a downturn in the economy. Covid-19 also led global investors to release high-risk assets. These investors tend to choose safe haven investments such as gold and currencies that are not affected by inflation, such as USD.

Interest rate (INT) and output growth (IP) show insignificant results in the short and long term, both before Covid19 and Covid19, in line with the research findings of Gunasekarager (2004), Chi-Wei Su (2008), Xiu Feng Wang (2010), JaWaid and Haq (2012) and not in line with the research findings of Ahmad (2014), Covadia (2014), Akay & Nargelecekenler (2009), Jung Wan Lee (2018) (2018). Interest rate and production growth have no effect on stock prices in the long and short term, both before Covid19 and Covid19, which means that fluctuations in interest rates and growth in production will not affect the ups and downs of stock prices.

5. Conclusion

Macroeconomic variables has relationship with Jakarta composite index in Indonesia. The purpose of this study is to explore the nature of the relationship between four macro-economic variables (exchange rates, economic growth, inflation, and interest rates). The study result show that macroeconomic variables affecting the Jakarta composite index in Indonesia prior to covid19 and the short term covid19 are only the exchange rate. Macroeconomic variables affecting the Jakarta composite index in Indonesia in the long run before Covid19 are the exchange rates, while the Covid19 period is the exchange rate and inflation rate. The difference in the average Jakarta composite index variable for the period prior to Covid19 and the period prior to Covid19 is only for the exchange rate and inflation variables.

This study has several limitation that will impact on the research result. First, this study only using Indonesia capital market index. Second, this study only use some of macroeconomics variables, that is the most reliable macro-economic variables from researcher observation. Accordingly, suggest to the next researchers to use more of the capital market index and macro-economic variables related to previous theory and research result.

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