International Conference on Islam, Law, and Society (INCOILS) 2022 Confrerence Proceedings

Article

Influence Of International Sharia Stock Index, Macroeconomic Variables and Commodity Prices on The Jakarta Islamic Index During The Covid-19 Pandemic

Adimas Agus Ahmad Asy'arie,[1] Agus Eko Sujianto,[2] Khusnul Mufidati,[3]

Universitas Islam Negeri Sayyid Ali Rahmatullah Tulungagung
Correponding Author, email: adimas.asyarie@gmail.com

ABSTRACT:

This research was motivated by the decline in the Islamic stock price index in Indonesia as indicated by the Jakarta Islamic Index (JII) which occurred during the Covid-19 pandemic. In addition, on an international scale, the Syrian stock index also shows a downward trend as indicated by the Dow Jones Islamic Market Index (DJIM) and the FTSE Shariah Global Index (FTSWORLDS). In addition, macroeconomic variables and commodity prices have not been spared during this pandemic. This research is a quantitative study using the Vector Error Correction Model (VECM) and processed with the Eviews Version 12 program. The sample of this study was during the Covid-19 pandemic, namely the period from September 2019 to February 2022. The results showed that: DJIM had a significant positive effect against JII; FTSWORLDS has a significant positive effect on JII; inflation has no significant effect on JII; the Rupiah exchange rate has a significant negative effect on JII; world gold prices have a significant negative effect on JII; world oil prices have a significant negative effect on JII; and DJIM, FTSWORLDS, inflation, rupiah exchange rate, world gold prices and world oil prices did not have a dominant impact on JII fluctuations.

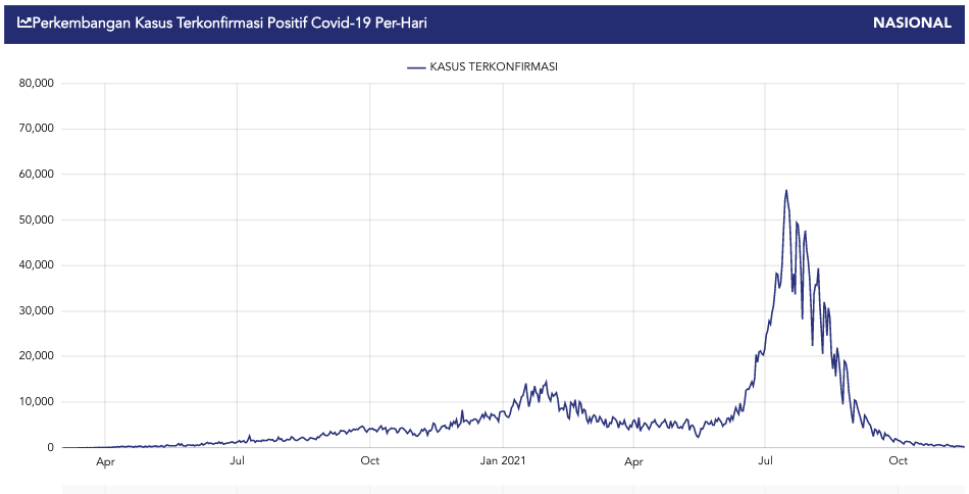
Key words: *Macroeconomic Variables, Sharia Stock Index, Jakarta Islamic Index, Commodity Prices, Vector Error Correction Model (VECM)*

INTRODUCTION

Corona Virus Disease 2019 (Covid-19), which was designated by the *World Health Organization* (WHO) as a global pandemic on March 11, 2020, makes countries have to be responsive and responsive to overcome it. WHO data on November 13, 2021, showed that there were 252,902,685 people confirmed positive for infection, 5,094,826 died, and 216 countries were infected. The figures show there has been a very massive spread that endangers the right to life and the right to health for all human beings. Meanwhile, in Indonesia, as of November 13, 2021, the positive number was 4,251,076, 4,098,884 people recovered, and 143,670 died.

[1] Universitas Islam Negeri Sayyid Ali Rahmatullah Tulungagung
[2] Universitas Islam Negeri Sayyid Ali Rahmatullah Tulungagung
[3] Universitas Islam Negeri Sayyid Ali Rahmatullah Tulungagung

Graph 1
Development of Covid-19 in Indonesia November 2019 – November 2021



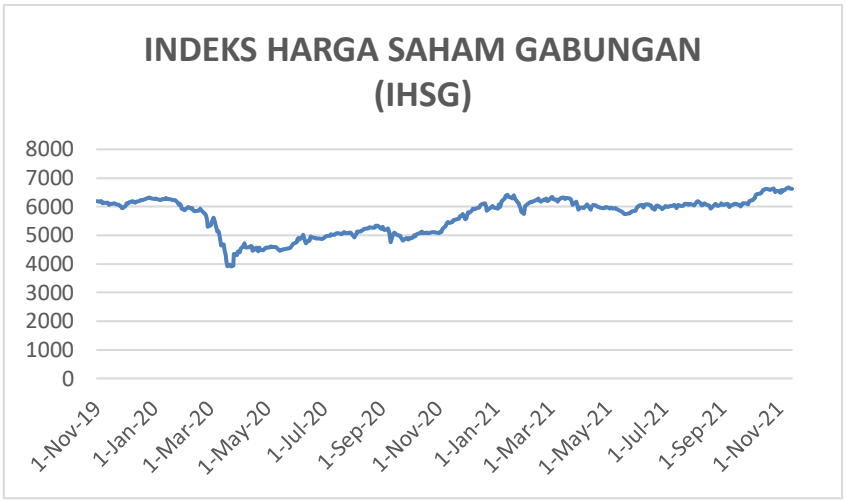
Source: covid.go.id

According to the chart above, there are at least 2 highest daily case peaks during the Covid-19 pandemic in Indonesia. That is the first peak on January 30, 2021, with 14,518 confirmed cases and on July 15, 2021, with 56,757 confirmed cases. So that it can be categorized that the Covid-19 pandemic in Indonesia occurs in 5 main phases, namely; Phase 1 of the Pre-Pandemic Period (previous month – February 2020); Phase 2 of the Beginning of the Pandemic (March – October 2020); Phase 3 of Wave 1 Surge (November 2021 – April 2021); Phase 4 of Wave 2 Surge (May – October 2021); Phase 5 Recovery (November 2021 until now).

In terms of experience, countries in the world have faced several economic crises, including in 1997/1998, namely the Asian economic crisis and the 2008 global economic crisis. The economic crisis of 1997/1998 was an economic crisis that was preceded by a series of currency crises that developed into financial and economic crises while the 2008 economic crisis was a crisis initiated by a domestic financial crisis in the United States whose impact spread throughout the world through global trade and financial relations, causing bank failures, falling stock indices, and a decline in world demand for many manufactured products exported by developing countries (Tambunan, 2018). With the experience of dealing with some of these economic crises, the affected countries should already have the formula to deal with the next economic crisis. However, the economic crisis caused by the current Covid-19 pandemic is different and more unique than the previous economic crisis. In addition to handling it differently, this pandemic also affects the behaviour and patterns of economic activity, business, and business opportunities. This condition causes many policymakers to experience doubts about the implementation of handling Covid-19, especially the desire to save lives (health) on the one hand, with the desire to save the economy on the other.

The Covid-19 pandemic has almost been felt by all financial institutions including the Islamic Financial Market, at least in the financial market, two main indicators have been affected by this. First, the rupiah exchange rate reached 16,575 rupiahs as of 23rd March 2020. The exchange rate was the weakest since the 1998 financial crisis.

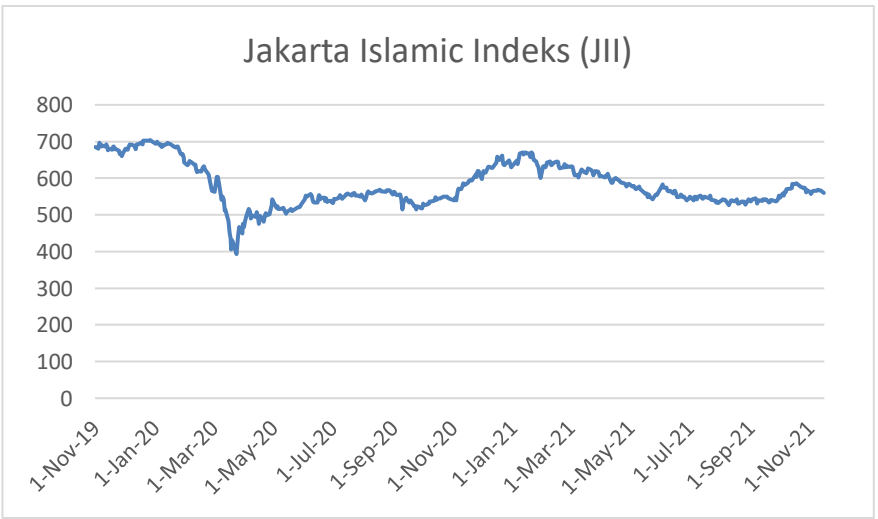
Graph 2
Composite Stock Price Index (JCI) data for the period November 2019 – November 2021



Source: investing.com

Second, is the Jakarta Composite Index (JCI) which has experienced ups and downs. According to the above data on January 3, 2020, the JCI was still perched at 6,323. The index left the 6,000 level after closing at 5,940 on January 31, 2020. Entering March 2020, the index seemed to plunge freely and headed towards the nadir on March 24, 2020. At that time, JCI closed at 3,937 or down 26.55 percent since the beginning of the year. From March to August 2020, JCI fluctuated in the red zone with an increasing trend. Although JCI's movement was depressed again after August 2020, the official index came out of negative territory in the second week of November 2020. The strengthening of the JCI continued until November 11, 2021, with the highest achievement being at the level of 6,691.

Graph 3
Jakarta Islamic Index (JII) data for the period of November 2019 – November 2021

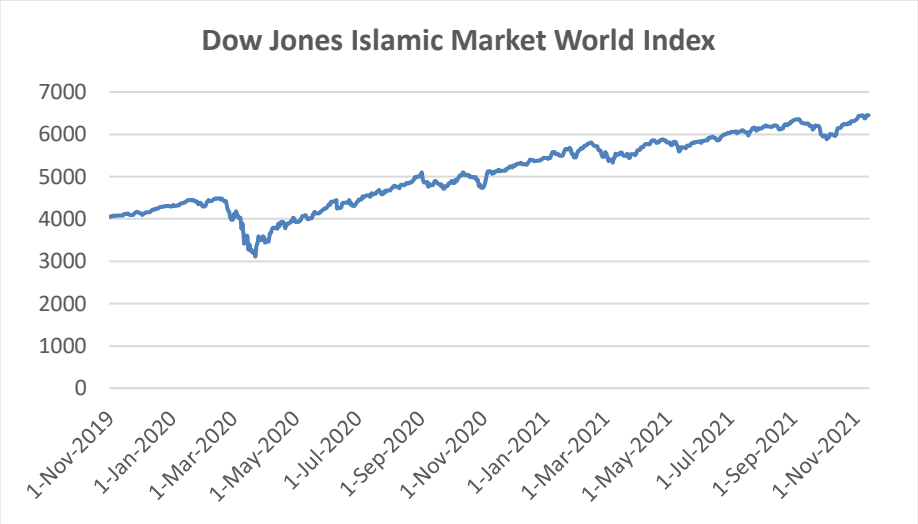


Source: investing.com

The Jakarta Islamic Index (JII) also experienced significant ups and downs. The index left the 600 level after closing at 587 on March 6, 2020, until it fell to its lowest point on March 24,

2020, at 393. In April 2020 the index began to crawl up until it reached its highest point at the level of 671 on January 14, 2021, although in the following month it experienced fluctuations that went up and down but still above the 520 level.

Graph 4
Dow Jones Islamic Market World Index data period
November 2019 – November 20201



Source: spglobal.com (data processed 2022)

Furthermore, if we look at the world Islamic stock index through the Dow Jones Islamic Market World Index (DJIMWI) also shows the same trend, namely a drastic decline in March 2020 to precisely touching the lowest point on March 24, 2020, at the level of 3,111.

According to Simbolon *et al.* (2018), The stock price index is a picture of a country's economic growth trend that is very important in policy formulation and market intervention. Stock price indices are essentially non-linear and non-stationary time series that outline univariate time series before modelling takes place, to get more accurate predictions. The factors influencing the stock price index are the interest rate, inflation rate, growth rate, foreign exchange rate, and stock price indices of other countries.

Based on the picture above, we tried to compare the growth trend of the Islamic economy using the indicators of the International Sharia Stock Index, Macroeconomic Variables and International Commodity Prices during the Covid-19 pandemic whether it has been proven to have an impact on the Jakarta Islamic Index (JII). The international sharia stocks that were studied for their influence in this study were the Dow Jones Islamic Market Index (DJIM) and the FTSE Shariah Global Index (FTSWORLD). Meanwhile, the macroeconomic variables used are Inflation (INF) and the Rupiah Exchange Rate against the US Dollar (KURS). The Commodity Prices in this study include the World Gold Price (GP) and the World Oil Price (OP).

Based on this, there are several hypotheses based on theory as well as some previous studies. According to Wira (2014), International stock indices as an indicator of global macroeconomic variables have a positive influence on domestic stock price indices. The theory of economic integration in the financial market states that there is a positive correlation between stock exchanges in the world so if there is an accident (crash) on the stock exchange abroad, it will trigger a crash on the domestic stock exchange. Based on this theory, the hypothesis in this study is that DJIM and FTSEWORLDS have a positive effect on JII. Supported by previous research from Agus, Darwanto and Egan

According to Hogan (2017), Inflation is a process of increasing prices that are generally applicable in the economy. Unstable inflation has a negative influence on stock price indices. An increase in inflation can increase the cost of production higher than an increase in prices that can be set by the company. This can reduce the company's profitability assuming sales remain and even decrease and increase the risk of investing. Based on this theory, the hypothesis in this study is that INF negatively affects JII. Supported by previous research from Farida *et al.* and Nadia *et al.*

According to Mukhibin (2012), Value exchange or exchange rate means the value at the rate of two different currencies traded against each other. The rupiah exchange rate against the US dollar influences the stock price index. When the rupiah exchange rate weakens against the dollar, it will harm the equity market, causing the capital market to have no appeal. This causes investors to switch to the money market because the return on profits obtained in the money market is greater than in the capital market which ultimately lowers the stock price index. Based on this theory, the hypothesis in this study is that the EXCHANGE RATE negatively affects JII. Supported by previous research from Nazat, Prileka *et al.* and Urai.

According to Purnomo (2018) the expansion that occurs in the world oil price has a big impact on the economy and capital market because when there is an increase in oil prices, the economy always experiences recessions and capital market crashes. Based on this theory, the hypothesis in this study is that OP negatively affects JII. Supported by previous research from Eka and Leo, Umar, Bahrul *et al.*

According to Diantoro (2013) investment in the form of gold is believed to be one of the profitable commodities because, in addition to its price which tends to increase, gold is also a very liquid form of investment, because it can be accepted in any region or country. When the potential return on investing in stocks or bonds is no longer attractive and is deemed unable to compensate for the risks, investors will divert their funds into real assets such as precious metals or property that are considered more viable and safer. Based on this theory, the hypothesis in this study is that OP negatively affects JII. Supported by previous research from Ari, Raditya, and Asri.

According to Pantas (2017), the nature of the movement of the fluctuating national stock index cannot be separated from the influence of several factors that affect it. This influence can come from international stock indices, macroeconomic conditions to commodity prices in the market. It could be that a factor can have a big influence as well as a small effect. Based on this theory, the hypotheses in this study are DJIM, FTSWORLDS, INF, KURS, GP and OP have various effects on JII. Supported by previous research from Theodoris, Trawas, and Ramadhan which proves that each variable has a diverse effect on the movement of JII.

METHODS

Analysis of the influence of the world Islamic stock price index, macroeconomic variables and international commodity prices on the Jakarta Islamic Index (JII) is viewed using several variables, namely the Jakarta Islamic Index (JII), Dow Jones Islamic Market World Index (DJIM), FTSE Shariah Global Index (FTSEWORLDS), Inflation (INF), Exchange Rate (KURS), World Gold Price (GP) and World Oil Price (OP)

The following is an explanation of the variables used in the study:

a. Jakarta Islamic Index (JII) is a sharia-based stock index in Indonesia.
b. The Dow Jones Islamic Market World Index (DJIM) is a sharia-based stock price index on a world scale managed by the Dow Jones Industrial Average
c. The FTSE Shariah Global Index (FTSEWORLDS) is a world-scale sharia-based stock price index managed by the FTSE Group.
d. Inflation (INF) is one of the macroeconomic variables that is an increase in all prevailing price levels in Indonesia.

e. The Exchange Rate (KURS) is one of the macroeconomic variables is the exchange rate of the rupiah against the US dollar (Rp/USD).
f. The World Gold Price (GP) is one of the international commodities measured by the spot price of the world oil market.
g. World Oil Price (OP) is one of the international commodities measured by the spot price of the world oil market.

The type of data used in this study is secondary data in the form of a monthly time series from September 2019 to February 2022. The data for this research was obtained from various sources, namely Investing, Bank Indonesia and Yahoo Finance. The data used are Jakarta Islamic Index (JII) price index data, Dow Jones Islamic Market World Index (DJIM) data, FTSE Shariah Global Index (FTSEWORLDS) data, Inflation data (INF), Exchange Rate data (KURS), World Gold Price (GP) data and World Oil Price (OP) data.

This research uses descriptive and quantitative analysis methods. The analytical tool used in this study is the Vector Autoregression (VAR) method if the data used is stationary at the level. However, if the data is not stationary at the level, it is continued with the Vector Error Correction Model (VECM) method.

RESULT

The data taken in this JII variable comes from the investing website using a monthly time series in the period from September 2019 to February 2022.

Table 1
Jakarta Islamic Index September 2019 - February 2022

MONTH	2019	2020	2021	2022
Januari		642,80	601,75	556,83
Februari		565,01	631,45	571,41
Maret		476,39	605,69	
April		542,50	585,43	
Mei		528,97	567,62	
Juni		533,80	544,30	
Juli		555,63	532,79	
Agustus		556,67	540,67	
September	685,92	518,90	552,53	
Oktober	686,92	545,66	567,93	
November	667,44	597,80	558,15	
Desember	698,09	630,42	562,02	

Source: www.investing.com

The data taken in this DJIM variable comes from the investing website using a monthly time series in the period from September 2019 to February 2022.

Table 2
Dow Jones Islamic Market World Index September 2019 - February 2022

MONTH	2019	2020	2021	2022
Januari		4.377,53	5.537,72	6.090,62

Februari		4.373,08	5.672,28	5.823,93
Maret		3.621,68	5.492,90	
April		3.794,24	5.782,90	
Mei		4.078,05	5.749,24	
Juni		4.356,19	5.913,40	
Juli		4.577,18	6.078,86	
Agustus		4.838,59	6.194,60	
September	3.922,01	4.843,58	6.218,12	
Oktober	3.933,32	4.954,00	6.116,12	
November	4.102,83	5.102,13	6.409,89	
Desember	4.221,83	5.345,95	6.343,42	

Source: www.investing.com

The data taken in this FTSWORLDS variable comes from the investing website using a monthly time series in the period from September 2019 to February 2022.

Table 3
FTSE Shariah Global Index September 2019 - February 2022

MONTH	2019	2020	2021	2022
Januari		2.551,39	3.061,44	3.400,78
Februari		2.325,18	3.070,85	3.329,66
Maret		2.027,18	3.151,55	
April		2.243,66	3.256,56	
Mei		2.349,53	3.300,73	
Juni		2.430,53	3.350,06	
Juli		2.574,56	3.389,05	
Agustus		2.746,06	3.460,04	
September	2.373,57	2.663,52	3.307,39	
Oktober	2.448,77	2.560,05	3.460,75	
November	2.500,04	2.886,29	3.411,38	
Desember	2.609,14	3.052,15	3.584,55	

Source: www.investing.com

The data taken in this INF variable comes from the Bank Indonesia website using a monthly time series in the period from September 2019 to February 2022.

Table 4
Inflation September 2019 - February 2022

MONTH	2019	2020	2021	2022
Januari		0,0268	0,0155	0,0218

Februari		0,0298	0,0138	0,0206
Maret		0,0296	0,0137	
April		0,0267	0,0142	
Mei		0,0219	0,0168	
Juni		0,0196	0,0133	
Juli		0,0154	0,0152	
Agustus		0,0132	0,0159	
September	0,0339	0,0142	0,016	
Oktober	0,0331	0,0144	0,0166	
November	0,03	0,0159	0,0175	
Desember	0,0272	0,0168	0,0187	

Source: www.bi.go.id

The data taken in this KURS variable comes from the Bank Indonesia website using a monthly time series in the period from September 2019 to February 2022.

Table 5
Rupiah Exchange Rate against US Dollar September 2019 - February 2022

MONTH	2019	2020	2021	2022
Januari		13.662,00	14.084,00	14.381,00
Februari		14.234,00	14.229,00	14.371,00
Maret		16.367,00	14.572,00	
April		15.157,00	14.468,00	
Mei		14.733,00	14.310,00	
Juni		14.302,00	14.496,00	
Juli		14.653,00	14.491,00	
Agustus		14.554,00	14.374,00	
September	14.174,00	14.918,00	14.307,00	
Oktober	14.008,00	14.690,00	14.199,00	
November	14.102,00	14.128,00	14.340,00	
Desember	13.901,00	14.105,00	14.269,00	

Source: www.bi.go.id

Table 6
World Gold Price September 2019 - February 2022

MONTH	2019	2020	2021	2022
Januari		1.589,81	1.846,09	1.796,47
Februari		1.584,74	1.733,49	1.907,90
Maret		1.571,05	1.707,01	
April		1.680,09	1.768,59	
Mei		1.726,30	1.906,36	
Juni		1.780,67	1.769,80	
Juli		1.974,69	1.813,58	
Agustus		1.969,75	1.813,43	
September	1.472,00	1.885,44	1.756,66	
Oktober	1.513,16	1.877,95	1.782,81	
November	1.463,90	1.777,02	1.773,78	
Desember	1.517,01	1.896,49	1.828,39	

Source: www.yahoo.finance.com

The data taken in this OP variable comes from the Yahoo Finance website using a monthly time series from September 2019 to February 2022.

Table 7
World Oil Prices September 2019 - February 2022

MONTH	2019	2020	2021	2022
Januari		2.551,39	3.061,44	3.400,78
Februari		2.325,18	3.070,85	3.329,66
Maret		2.027,18	3.151,55	
April		2.243,66	3.256,56	
Mei		2.349,53	3.300,73	
Juni		2.430,53	3.350,06	
Juli		2.574,56	3.389,05	
Agustus		2.746,06	3.460,04	
September	2.373,57	2.663,52	3.307,39	
Oktober	2.448,77	2.560,05	3.460,75	
November	2.500,04	2.886,29	3.411,38	
Desember	2.609,14	3.052,15	3.584,55	

Source: www.yahoo.finance.com

ANALYSIS

The *Vector Autoregressive* (VAR) model was introduced by Christopher Sims in 1980. Firdaus (2011) explained that if previously *univariate autoregression* was a single equation with a *single-variable linear model*, where the present value of each variable is explained by its lag value, then VAR is an

n-equation with n-variables, where each variable is described by *a lag* value its own, as well as its current and *past values*.

The analytical tools provided by VAR for data description, forecasting, structural inference, and policy analysis are carried out through four types of use, namely Forecasting, Impulse Response Function (IRF), Forecast Error Variance Decomposition (FEVD), and Granger Causality Test.

Vector Error Correction Model (VECM) is a form of restricted VAR (Firdaus, 2011). This additional restriction must be given due to the presence of non-stationary forms of data at the level, VECM then utilizes the cointegration restriction information into its specifications. Therefore, VECM is often referred to as a VAR design for nonstationary series that have a cointegration relationship. Thus, in VECM there is a speed of adjustment from short-term to long-term. The VECM models in general are as follows:

$$\Delta y\ t = \mu 0x + \mu\ 1x\ t + \Pi xy\ t\text{-}1 + \Delta yt\text{-}i + \varepsilon\ t$$

Where:

yt = vector containing variables analyzed in the study
μ0x = vector intercept
μ1x = regression coefficient vector
t = time trend
Πx = αxβ' where b' contains long-term cointegration equations
yt-1 = in-level variable
Γ*ix* = regression coefficient matrix
k-1 = order VECM of VAR
εt = error term

The stages that must be carried out in the VAR / VECM analysis are as follows:

Data Stationarity Test

The first stage carried out in processing *time series* data is the *unit root test*. The root test of this unit is performed to see whether the observed data are stationary or not. Stationary data tends to approach the average value and fluctuates around its average value. Data that is not stationary can produce *spurious regression*, which is a regression that describes the relationship of two or more variables that look statistically significant when they are not.

S test of Data taxation

The nature of this study used *Augmented Dickey-Fuller* (ADF). In the *Augmented Dickey-Fuller* (ADF) test, if the absolute value of t- ADF is greater than the absolute value of its *MacKinnon Critical Values* then the data has been stationary at a predetermined real level. In addition, it can also be seen from the probability value. If the data is stationary then VAR can be used but if it is not stationary then there are two options, namely using VAR in the form of *first difference* or VECM. The existence of non-stationary variables increases the likelihood of a cointegration relationship between variables.

Optimal *Lag* Test

Lag in a VAR system is important. Besides being useful for showing how long a variable reacts to other variables, an optimal *lag* determination is also useful for eliminating the problem of autocorrelation in a VAR system (Firdaus 2011).

Optimal *lag* length testing can be identified by using Akaike Information Criterion (AIC), Schwarz Information Criterion (SIC), *Hannan- Quinn Criterion* (HQ), and so on. *The selected lag* is the model with the smallest AIC and SIC values and the largest HQ values.

VAR Stability Test

The VAR stability test is carried out by calculating the roots of the polynomial function or known as *the roots of characteristic polynomials*. If all the roots of the polynomial function are in the

unit circle then the VAR model is considered stable so that the *Impulse Response Function* (IRF) and *the resulting Forecast Error Variance Decomposition* (FEVD) are considered valid.

Cointegration Test

The cointegration test aims to determine whether non-stationary variables are cointegrated or not. The concept of cointegration was proposed by Engle and Granger (1987) as a linear combination of two or more non-stationary variables would result in a stationary variable. These linear combinations are known as cointegration equations and can be interpreted as long-term equilibrium relationships between variables.

Self-cointegration testing can be done with the Engle-Granger cointegration test, the Johansen cointegration test, and the Durbin-Watson cointegration test. One of the cointegration tests carried out in this study was the Johansen cointegration test. If the *trace statistical* value is greater than the *critical value*, the equation

cointegrated, where H_0 equals non-cointegration and H_1 equals cointegration. In this context, when the *trace statistical* value is greater than the *critical value*, then reject H_0 and accept H_1 which means that the equation is cointegrated.

Granger Causality Test

The Granger causality test was performed to see the causality relationships among the variables present in the model. This test is to find out whether an *independent* variable improves the *forecasting* performance of a *dependent variable* (Firdaus 2011).

Impulse Response Function (IRF)

Impulse Response Function (IRF) is a method used to determine the response of an endogenous variable to a particular *shock*. This is because variable *shock*, for example, the i-th variable, not only affects the i variable but is transmitted to all other endogenous variables through dynamic structures or *lag* structures in VAR.

In other words, the IRF measures the effect of a *shock* at a time on the innovation of endogenous variables at that time and in the future. The IRF aims to isolate a shock to be more specific, which means that a variable can be affected by a certain *shock* or shock. If a variable cannot be affected by shock, then the specific shock cannot be known but shock in general (Firdaus 2011).

Forecast Error Variance Decomposition (FEVD)

FEVD analysis in the VAR model aims to predict the contribution of the percentage of the variance of each changer due to the presence of certain changes in the VAR system. In the previous IRF analysis, it was used to see the impact of shocks from one changer on another, in the FEVD analysis, it was used to describe the relative importance of each changer in the VAR system due to *shock* (Juanda and Junaidi 2012).

DISCUSSION

The data stationarity test is an important stage in analyzing *time series* data. The stationarity test used in this study was the root unit test with the Augmented Dickey-Fuller (ADF) test. In the ADF test, if the ADF test statistics are noticeably smaller than 5% it means stationary data. The test results are presented in the following table.

Table 8
Unit Root Test Results at the Level

Variable	ADF Statistic	Mac Kinnon's Critical Value	Description
		5%	
JII	-1,235332	-2,241853	Not Stationary
DJIM	-1,140957	-2,967767	Not Stationary
FTSWORLDS	-0,936817	-2,967767	Not Stationary

INF	-2,380283	-2,967767	Not Stationary
KURS	-3,413894	-2,967767	Stationary
GP	-2,006731	-2,971853	Not Stationary
OP	-0,936817	-2,967767	Not Stationary

Source: Secondary Data (processed using Eviews 12)

Data stationarity testing is used to see the stability of a variable in the study. Data stationarity testing in this study used the Augmented Dickey-Fuller (ADF) test. Based on Table 8 it can be seen that the variable RATE is stationary at the level. This can be seen from the ADF t-statistics value which is smaller than the critical value of Mac Kinnon. While the variables JII, DJIM, FTSWORLDS, INF, GP and OP are not stationary at the level. This can be seen from the ADF t-statistics value which is greater than the critical value of Mac Kinnon. Therefore, the stationarity test is continued at the first *difference* level.

Table 9
Unit Root Test Results on *First Difference*

Variable	ADF Statistic	Mac Kinnon's Critical Value	Description
		5%	
JII	-4,685332	-2,971853	Stationary
DJIM	-4,405047	-2,971853	Stationary
FTSWORLDS	-4,84465	-2,971853	Stationary
INF	-3,692221	-2,971853	Stationary
KURS	-3,413894	-2,967767	Stationary
GP	-5,725654	-2,971853	Stationary
OP	-4,84465	-2,971853	Stationary

Source: Secondary Data (processed using Eviews 12)

Based on the table of 9 ADF tests at the first difference level, the variables JII, DJIM, FTSWORLDS, INF, KURS, GP and OP are stationary. This can be seen from the ADF's smaller t-statistics value compared to the Mac Kinnon christ value.

In the VAR model, the determination of the optimal *lag* is very useful for eliminating autocorrelations. The results of optimal *lag* testing can be seen in the following table.

Table 10
Optimum *Lag* Test

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-702,6616	NA	1,59E+14	52,56753	52,90348	52,66742
1	-660,3503	59,54919*	2,97E+14*	53,06299	55,75065*	53,86217*
2	-594,3282	58,68631	2,00E+14	51,80209*	56,84146	53,30056

Source: Secondary Data (processed using Eviews 12)

Based on Table 10, the value containing an asterisk (*) is the smallest value contained in the criteria, so lag at that value is the most optimal lag. The determination of optimum lag in this study is based on the Schwarz Criterion (SC) value. Thus, the lag that will be used in the model as the optimum *lag* is *lag* one.

The VAR stability test is carried out by calculating the roots of the polynomial function or known as the roots of characteristic polynomials. If all the roots of the polynomial function are inside the unit circle or if the absolute value is <1 then the VAR model is considered stable so that the Impulse Response Function (IRF) and Forecast Error Variance Decomposition (FEVD) generated are considered valid.

Table 11
VAR Stability Test Results

Root	Modulus
0.136653 - 0.496472i	0.514935
0.136653 + 0.496472i	0.514935
-0.494177 - 0.116091i	0.507630
-0.494177 + 0.116091i	0.507630
0.445509	0.445509
-0.093352 - 0.116138i	0.149006
-0.093352 + 0.116138i	0.149006

Source: Secondary Data (processed using Eviews 12)

According to table 11 of the VAR stability test results in this study, it can be seen that the modulus for all variables ranges from 0.514935 to 0.149006. Based on these data, it can be concluded that the VAR system used in this study is stable so that subsequent tests on the resulting IRF and FEVD are considered valid.

A cointegration test is performed to determine whether or not individually stationary variables can be cointegrated. A cointegrated equation if the trace statistic > critical value, at a predetermined critical point.

Table 12
Cointegration Test Results

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.929477	189.2036	125.6154	0.0000
At most 1 *	0.791763	117.6046	95.75366	0.0007
At most 2 *	0.742517	75.23953	69.81889	0.0173
At most 3	0.552021	38.60587	47.85613	0.2763
At most 4	0.279740	16.92461	29.79707	0.6456
At most 5	0.201232	8.064745	15.49471	0.4585
At most 6	0.071337	1.998256	3.841465	0.1575

Source: Secondary Data (processed using Eviews 12)

Based on Table 12, the results of the Johansen Cointegration test show that there are 3 cointegration equations (r=1) at a real level of 5%. With the cointegration of this equation, the Vector Error Correction Model (VECM) analysis will continue.

The granger causality test was performed to see the causality relationships among the variables present in the model. This test is to find out whether an independent variable improves the forecasting performance of a dependent variable.

Table 13
Granger Causality Results

Pairwise Granger Causality Tests
Date: 06/16/22 Time: 14:56
Sample: 2019M09 2022M02
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
DJIM does not Granger Cause JII	29	0.08332	0.7751
JII does not Granger Cause DJIM		0.08545	0.7724
FTSWOLDS does not Granger Cause JII	29	0.10575	0.7476
JII does not Granger Cause FTSWOLDS		0.68245	0.4163
INF does not Granger Cause JII	29	0.00106	0.9743
JII does not Granger Cause INF		1.49459	0.2325
KURS does not Granger Cause JII	29	3.07666	0.0912
JII does not Granger Cause KURS		3.22145	0.0843
GP does not Granger Cause JII	29	0.11175	0.7408
JII does not Granger Cause GP		3.86688	0.0600
OP does not Granger Cause JII	29	0.10574	0.7476
JII does not Granger Cause OP		0.67948	0.4173

Source: Secondary Data (processed using Eviews 12)

As summarized in Table 13. The results of this test show that there is no two-way relationship between the variables. It can be seen that in terms of Granger DJIM causality does not affect JII and vice versa, FTSWORLDS does not affect JII and vice versa, INF does not affect JII and vice versa, KURS does not affect JII and vice versa, GP does not affect JII and vice versa and OP does not affect JII and vice versa

Vector Error Correction Model (VECM) estimation is performed to see the short- and long-term relationship between dependent variables and independent variables. The variables that are designated as dependent variables in this study are the Jakarta Islamic Index (JII) variables, while the variables designated as independent variables are the DJIM, FTSWORLDS, INF, KURS, GP and OP variables. The results of the Vector Error Correction Model (VECM) estimate show the relationship between the influence of independent variables on dependent variables in the long and short term.

Table 14
***Vector Error Correction Model* (VECM) Estimation Results**

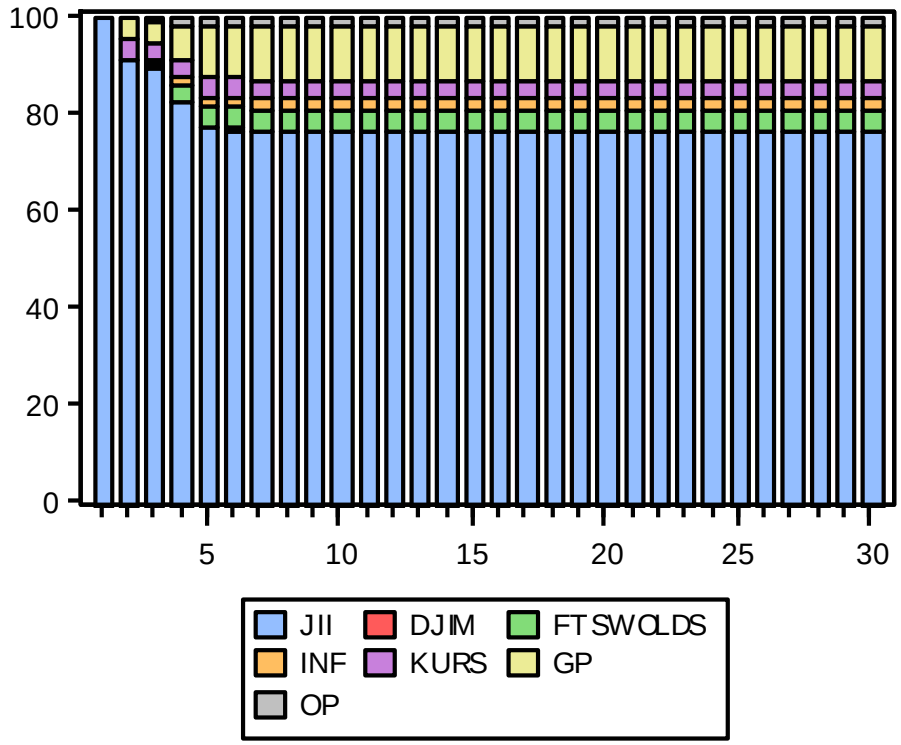
Variable	Koefisien	t-statistik
Sort Term		
CointEq1	0,119636	2,20936*
D(JII(-1))	0,039873	2,42810
D(DJIM(-1))	0,015339	2,50512*
D(FTSWORLD(-1))	0,009406	1,29514*
D(INF(-1))	0,009406	1,29514
D(KURS(-1))	-0,174265	-0,59807
D(GP(-1))	0,059832	0,14480
D(OP(-1))	0,044884	0,78193
C	0,003027	0,45385
Long Term		
DJIM (-1)	2,855884	9,87662*
FTSWORLD(-1)	0,006475	-0.77205*
INF(-1)	0,006475	-0,77205
KURS(-1)	-1,237386	2,64307*
GP(-1)	-2,664234	4,65453*
OP(-1)	-0,267687	3,76677*
C	2,257978	

Source: Secondary Data (processed using Eviews 12)

Based on Table 14, it can be seen that in the short term only the DJIM and FTSWORLDS variables have a significant effect on JII. A variable reacting to another variable takes time (*lag*) and in general, the reaction of one variable to another occurs in the long term. In JII, there is also an adjustment mechanism from short-term to long-term which is indicated by the cointegration of significant and positively valued errors. In the long run, five variables have a significant effect on JII, namely DJIM, FTSWORLDS, KURS, GP and OP. Meanwhile, the INF variable has no significant effect on JII.

Forecast Error Variance Decomposition (FEVD) describes innovation in one variable against components in another variable in VAR. The information that can be conveyed in FEVD is the proportion of sequential movements caused by self-shock and other variables.

Graph 4
Variance Decomposition of JII



Source: Secondary Data (processed using Eviews 12)

Based on chart 4 in the first month, jii diversity is 100% only influenced by jii itself. JII which was affected by the shock of other variables was only responded to in the second month. At the end of the observation, the largest contribution was still influenced by JII by 75.74% while the DJIM variable contributed 0.23%, FTSWORLDS contributed 4.37%, INF contributed 2.35%, KURS variable contributed 4.18%, GP contributed 11.29% and OP contributed 1.80%. From all of them, it can be concluded that JII fluctuations are dominant by JII itself with a percentage above 75% every month.

CONCLUSION

Based on the results of the study, several conclusions were obtained. *First*, the DJIM variable has a significant positive effect on JII in the short and long term. In the long run, when there is a 1% increase in DJIM, it will increase JII by 2.855884% assuming *ceteris paribus* or with things remaining the same.

Second, the FTSWORLDS variable has a significant positive effect on JII in the short and long term. In the long run, when there is a 1% increase in FTSWORLDS, it will increase the JII by 2.855884% assuming ceteris paribus. This study is on the previous hypothesis that states DJIMUS has a positive and significant effect.

Third, INF variables have no significant effect on JII. The results of this study differ from the initial hypothesis that inflation has a significantly negative influence on JII. The results of this study show that the inflation observation period does not affect investors' decisions to invest in stocks directly. Investors do not use inflation as a benchmark or consideration in making decisions to make investments. This can be due to the basic principles of JII which are based on sharia, where interest rates are instruments that are not by sharia, besides that inflation that occurs in

Indonesia is still under control or less than 10% so that it does not significantly affect the movement of stock indices.

Fourth, the exchange rate variable has a significant negative effect in the long term on JII. When there is a 1% increase in the exchange rate, it will reduce ISSI by 1.237386%. This study is on the initial hypothesis that the Exchange Rate has a significant negative effect on JII.

Fifth, variable OP has a significant negative effect on the long-term JII. When there is a 1% increase in OP, it will reduce JII by 0.267687%. This study is on the previous hypothesis that states OP has a negative and significant effect.

Sixth, GP variables have a positive and significant effect on the long-term JII. When there is a 1% increase in GP, it will reduce JII by 2.64307%. It can be explained that when the price of gold experiences a decline caused by the decline in the economy, investors in the capital market, especially Islamic stocks, feel pessimism and then divert their funds to investment instruments outside the capital and gold markets so JII also experiences a decline.

Seventh, from the FEVD results to JII, it can be seen that in the first month, the contribution to the variability of the JII index 100 percent comes from JII itself. This percentage then decreases gradually until the end of the observation period. At the end of the observation, the largest contribution was still influenced by JII by 75.74% while the DJIM variable contributed 0.23%, FTSWORLDS contributed 4.37%, INF contributed 2.35%, KURS variable contributed 4.18%, GP contributed 11.29% and OP contributed 1.80%. From all of them, it can be concluded that JII fluctuations are dominant by JII itself with a percentage above 75% every month.

REFERENCES

Akman, Baizatul. Dan Sapha, Diana. 2018. *Pengaruh Korupsi Terhadap Pertumbuhan Ekonomi Di Indonesia.* Jurnal Ilmiah Mahasiswa (Jim). Vol.3 No.4 November 2018: 531-538.

Al-Tariqi. Husain, Abdullah Abdul. 2004. *Ekonomi Islam: Prinsip, Dasar dan Tujuan*. Yogyakarta: Magistra Insania Press

Alatas, Syed Hussein. 1982. Sosiologi Korupsi. Jakarta: Matahari Bhakti.

Bayina. 2017. *Role of Zakat as Social Finance Catalyst to Islamic Banking and Economic Growth.* International Journal of Zakat Vol.2 (2)

Bidang Haji Zakat dan Wakaf. 2011. *Fiqh Zakat.* Surabaya: Kementerian Agama Provinsi Jawa Timur

Blackburn. Dkk. 2005. *Public Expenditures, Bureaucratic Corruption and Economic Development*. Economic Discussion Paper EDP-0530, The University of Manchester.

Dewi, Nyoman Lilya Santika. Dkk. 2014. *Pengaruh Komponen Indeks Pembangunan Manusia Terhadap Pertumbuhan Ekonomi Provinsi Bali*. E-Jurnal Ekonomi Pembangunan Universitas Udayana Vol. 3, No. 3, Maret

Diantoro,Yimi. 2013. *Emas Investasi dan Pengolahannya*. Jakarta: Granedia

Fajar, Muhammad. Dan Azhar, Zul. 2018. *Indeks Persepsi Korupsi dan Pembangunan Manusia Terhadap Pertumbuhan Ekonomi di Negara-negara Asia Tenggara.* Jurnal EcoGen. Volume 1, Nomor 3, 5 September

Hadiyanto, Tommy. 2012. *Dampak Investasi Modal Manusia terhadap Pertumbuhan Ekonomi Indonesia*. Tesis : Sekolah Pasca Sarjana Institut Pertanian Bogor, Bogor.

Hogan, Nicky. 2017. *Yuk Nabung Saham*. Jakarta: Gramedia.

Irawanti. 2015. *Pengaruh Good Local Governance, Net Ekspor dan Pertumbuhan Ekonomi Terhadap Korupsi (Studi Kasus 33 Provinsi di Indonesia)*. Jurusan Ilmu Ekonomi dan Studi Pembangunan Fakultas Ekonomika dan Bisnis Universitas Diponegoro

Irfan, Beik Syauqi. 2016. *Ekonomi Pembangunan Syariah.* Jakarta: PT RajaGrafindo Persada

Lutfi, Akhmad F. 2020. *Dampak Korupsi Terhadap Pertumbuhan Ekonomi: Studi Kasus 4 Negara di ASEAN*. Jurnal E-JEBA Volume 7 Nomor 1

M.L. Jhingan M.L. 2016. *Ekonomi Pembangunan dan Perencanaan,* ed.1, cet. 17, Penerjemah: D. Guritno, Jakarta: PT. Rajagrafindo Persada

Maharany, Yunita. 2012. *Pengaruh Indikator Komposit Indeks Pembangunan Manusia Terhadap Pertumbuhan Ekonomi di Sulawesi Selatan*. Jurnal Ekonomi.

Mukhibin. 2012. *Menciptakan Aliran Rupiah dari Saham*. Yogyakarta : Pustaka Solomon.

Pantas, Pribawa. 2017. *Guncangan Variabel Makroekonomi Terhadap Jakarta Islamic Index (JII).* Yogyakarta: Universitas Ahmad Dahlan.

Purnomo, Lucky Bayu. 2018. *Menjadi Raja Minyak Dunia*. Jakarta: Gramedia.

Simbolon, L., & Purwanto. 2018. The influence of macroeconomic factors onn stock price: the case of real estate and property companies. Global Tensions in Financial Markets.

Syahputra, Rinaldi. 2017. *Analisis Faktor-faktor Yang Mempengaruhi Pertumbuhan Ekonomi di Indonesia.* dalam *Jurnal Samudra Ekonomika,* Vol 1, No. 2

Tambunan, Tulus T. H. 2018. The Impact of The Economic Crisis on Micro, Small, and Medium Enterprises and Their Crisis Mitigation Measures in Southeast Asia with Reference to Indonesia, *Asia & The Pacific Policy Studies* 06, no. 02 2018.

Tawas, Hendra. 2017. *Kemudahan Berbisnis Dan Investment Grade Sebagai Modal Pertumbuhan Ekonomi Sulawesi Utara. Jurnal Riset Bisnis Dan Manajemen Vol 5 ,No.4: 523-538 Edisi Khusus 1*

Theodoris, Daniel. 2017. *Pengaruh Indeks Kemudahan Berbisnis, Foreign Direct Investment, Dan Populasi Penduduk Terhadap Perekonomian Asean*. E-Jurnal Ekonomi Pembangunan Universitas Udayana Vol.6, No.12 Desember

Wira, Desmond. 2014. *Analisis Fundamental Saham.* Jakarta: Exceed.

https://www.who.int/dg/speeches/detail/who- director-general-s-opening-remarks-at-the-media- briefing-on-covid-19---11-march-2020. Diakses pada 13 November 2021.

https://www.who.int/emergencies/diseases/novel- coronavirus-2019. Accessed at 13 November 2021.

https://covid19.go.id. Accessed at 13 November 2021.