Domestic and International Macroeconomic Variables on Indonesian Sharia Stock Index with Vector Error Correction Model Approach

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Abstract. The fluctuating movement of the Indonesian Sharia Stock Index (ISSI) is thought to be caused by domestic and international macroeconomic factors. Previous research revealed inconsistent results regarding the factors that influence ISSI price movements with the research time horizon generally in the short to medium term. This study aims to analyze and see the magnitude of the influence of domestic and international macroeconomic variables on ISSI. This study uses the Vector Error Correction Model (VECM) method with monthly time series data from May 2011 to July 2022. The results of the study show that in the long-term, inflation, amount of money supply, world oil price, and Dow Jones Islamic Market US have a significant effect on ISSI. In the short term, only world gold price has a significant effect on ISSI. BI repo rate and exchange rate did not significantly affect ISSI in the short and long term. The Indonesian Sharia Stock Index reaches stability the fastest when it responds to shocks in gold prices. This study recommends the promotion of ISSI and Islamic finance, careful consideration in investment decisions by companies and investors, and the need for an early warning system in the Islamic capital market to anticipate the financial crisis.

Key words: ISSI, macroeconomic variables, sharia stocks, VECM.

Abstrak*. Pergerakan Indeks Saham Syariah Indonesia (ISSI) secara fluktuatif diduga disebabkan oleh faktor makroekonomi domestik dan internasional. Penelitian terdahulu mengungkap hasil yang tidak konsisten terkait faktor-faktor yang memengaruhi pergerakan harga ISSI dengan horizon waktu penelitian umumnya dalam jangka pendek hingga menengah. Penelitian ini bertujuan untuk menganalisis dan melihat besarnya pengaruh variabel makroekonomi domestik dan internasional terhadap ISSI. Penelitian ini menggunakan metode* Vector Error Correction Model (VECM) *dengan data runtut waktu bulanan dari Mei 2011 sampai dengan Juli 2022. Hasil studi menunjukkan bahwa dalam jangka Panjang, inflasi, jumlah uang beredar, harga minyak dunia, dan* Dow Jones Islamic Market US *signifikan berpengaruh terhadap ISSI. Dalam jangka pendek, hanya harga emas dunia yang berpengaruh signifikan terhadap ISSI.* BI repo rate *dan kurs tidak signifikan memengaruhi ISSI dalam jangka pendek dan jangka panjang. Indeks Saham Syariah Indonesia paling cepat mencapai kestabilan ketika merespons guncangan terhadap harga emas dunia. Penelitian ini merekomendasikan promosi ISSI dan keuangan syariah, pertimbangan matang dalam keputusan investasi oleh perusahaan dan investor, serta perlunya* early warning system *dalam pasar modal syariah untuk mengantisipasi krisis keuangan.*

Kata kunci*: ISSI, saham syariah, variabel makroekonomi,* VECM.

INTRODUCTION

Investment is a commitment to several of assets in the form of money or other assets that may provide benefits in the future (Tandelilin, 2017). The launch of the sharia capital market as part of the capital market on the Indonesia Stock Exchange is an alternative investment for companies and investors who want an investment scheme following Islamic principles and sharia (Ardana, 2016). Sharia shares are one of the investment instruments with high returns but are still based on sharia principles in the capital market. A high rate of return is directly proportional to a large level of risk so when investing in stocks, adequate knowledge is needed about things that affect the risk of fluctuations. Therefore, companies and investors need a stock price index as an indicator to observe the price movements of securities in the capital market (Tandelilin, 2017).

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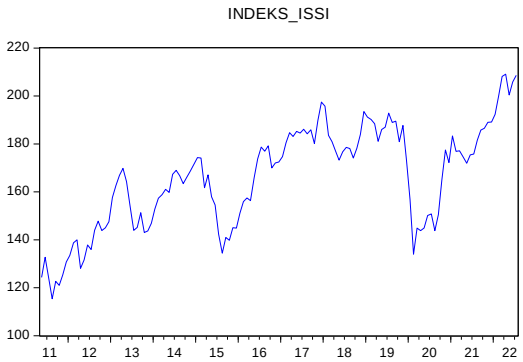
Indicators of economic performance can also be seen from the performance of the index in the capital market which reflects conditions that occur in the macroeconomy. Concerning the sharia capital market, Indonesia Stock Exchange and Financial Services Authority launched the Indonesia Sharia Stock Index (ISSI) in May 2011. ISSI is a sharia stock index consisting of all companies included in sharia shares that are incorporated in the Sharia Securities List (DES). Although the age of this index is still relatively new, the development of the Indonesian Sharia Stock Index (ISSI) for each period is quite significant. The following is the movement of the Indonesian Sharia Stock Index (ISSI) during the period from May 2011 to July 2022.



Source: Indonesia Stock Exchange, 2011-2022 (processed).

Figure 1 Indonesian Sharia Stock Index (in rupiah)

Figure 1 shows that the ISSI price movement since it was first launched in May 2011 has been volatile, although the trend shows a positive trend. At the launch of ISSI in May 2011, the price of this index was 124.29 rupiah, then continued to grow until it reached a price of 208.63 rupiahs in July 2022. ISSI had touched the point of deepest decline in May 2020 by 29% since the beginning of 2020 from 173.15 to 133.99 rupiah during the Covid-19 pandemic that hit the world and the homeland. Fluctuatingly, ISSI has grown by 67.8% since its launch as an index that summarizes all sharia-compliant stocks in the capital market.

Fluctuations in the movement of the Islamic stock index in the capital market should indeed be actively responded to and observed by investors and companies. According to Tangjitprom (2012), several factors can affect the stock price, namely domestic monetary conditions, conditions of economic growth, inflation, and the general price level that applies to key assets such as world oil price, as well as international activities that affect world finances such as foreign investment and exchange rates domestic. The occurrence of globalization and international connectivity in investing has resulted in investment activities in a country being also influenced by the situation and conditions of other countries, especially developed countries. This is following the contagion effect theory, namely that larger fluctuations in the capital market can affect smaller capital market fluctuations in other countries (Chevallier et al., 2017).

As a complete picture of sharia shares listed on the Indonesia Stock Exchange, ISSI is also expected to be affected by the turmoil in the international stock market. Several studies have tried to explain the variables that affect the Islamic stock price index. However, a review of the literature between macroeconomic variables and stock indices shows that there are different views and results among researchers regarding the relationship between the variables studied. In this regard, this research was conducted by examining the effect and response of price movements of the Indonesian Sharia Stock Index (ISSI) on domestic macroeconomic conditions (BI repo rate, inflation, amount of money supply, and exchange rates), and international macroeconomics (world oil price, world gold price, and Dow Jones Islamic Market US), as well as the speed of ISSI's response to related conditions. The approach used in this study is VAR-VECM with a period from May 2011 to July 2022.

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LITERATURE REVIEW

Indonesian Sharia Stock Index (ISSI)

ISSI or the Indonesian Sharia Stock Index is a stock price index that includes all sharia shares from issuers listed on the Indonesia Stock Exchange and incorporated in the DES (Sharia Stock List) constituents released by the MUI National Sharia Council (DSN-MUI), the Indonesian Financial Services Authority. Finance (OJK), and the Indonesia Stock Exchange (IDX) twice a year in June and December (Financial Services Authority, 2022). The ISSI index was launched on May 12, 2011, by utilizing the weighted average of market price and covering 493 stock issuers in the first period of 2022 (Indonesian Stock Exchange, 2022).

Domestic and International Macroeconomic Variables

Definitively, macroeconomic variables are variables that can provide projections and a general picture of the economic conditions that occur in a country (Sukirno, 2011). According to Samsul (2015), macroeconomic variables are subject to change and greatly affect the movement of domestic stocks as a result of changes in central bank interest rates, foreign exchange rates, economic cycles, inflation rates, and the money supply, as well as tax regulations, as well as international trade which also influences changes in stock movements because it is included in international macroeconomics that is involved across countries as a result of globalization and economic integration between nations, especially since the liberalization of trade and finance since the end of the 20th century (Samsul, 2015).

BI Repo Rate

BI repo rate or BI 7-Days repo rate is the interest rate set by the Central Bank to replace the BI rate which was launched on August 10, 2016. The Central Bank Interest Rate is the price that borrowers have to pay to borrow money from lenders for a certain period and is expressed as a percentage of interest rates. The interest rate determined in the form of a percent serves to control the inflation rate, the money supply, and as a monetary instrument carried out by the Central Bank in managing and regulating the national economy (Bank Indonesia, 2022).

The increase in the BI repo rate causes the stock price to fall. This is because investors tend to invest their funds in other forms of investment, such as saving and depositing their funds in the banking sector in the form of deposits. Thus, it becomes an incentive for investors to release their shares and suppresses stock price which has an impact on the stock index on the stock exchange. Thus, the BI repo rate has a negative effect on Islamic stock prices according to research by Beik and Fatmawati (2014), Damayanti (2014), Ardana (2016), Firdausi et al., (2016), Gulo et al., (2017), Sudarsono (2018), Kalam (2020), Tripuspitorini (2021), and Wibowo and Aminda (2021). However, Widowati and Feriyanto (2018) found a positive relationship between interest rates and the stock price index.

Inflation

Inflation is a process of increasing the price of goods and services that applies generally and continuously at a certain period and location in an economy that is influenced by various factors. According to Mankiw (2010), inflation can cause changes in the price level in general due to several factors, including an increase in the money supply, excessive public consumption, uneven distribution of goods in the economy, as well as other factors that at a macro level can shape inflation. In this condition, the Central Bank has a role in regulating the inflation rate in the economy through the determination of the BI repo rate discount rate in a stably and measurably (Bank Indonesia, 2022).

When inflation occurs, it will encourage investors to prefer saving and be less interested in buying shares because it is considered to have a high risk. Declining investor interest in investing can lead to a decline in the company's stock price and can lower the stock index. This shows a negative correlation between inflation and stock index as research conducted by Beik and Fatmawati (2014),

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Kalyanaraman and Tuwajri (2014), Anriansyah et al. (2018), Lee and Brahmasrene (2018), and Kalam (2020). However, this is disputed by Antonio et al., (2014), Sikalao-Lekobane and Lekobane (2014), Apriyani et al., (2015), Gulo et al., (2017), Sudarsono (2018), Fernando (2018), Rokhaniyah (2020) and Wibowo and Aminda (2021) which state that inflation has a positive effect on the stock price index. Another study conducted by Aditya et al. (2018), Rahmiyanti and Fianto (2019), and Tripuspitorini (2021) find that inflation has no significant effect on stock indices.

Amount of Money Supply

Amount of money supply is the amount of money available in the form of stock assets that can be used to conduct transactions at a certain time or period determined by the market mechanism for money supply and demand and controlled by Bank Indonesia as the Monetary Authority at the Central Bank for economic behavior in society (Mankiw, 2010). Amount of money supply is not only the government's decision but is also the result of the demand and supply of money interacting to form a market equilibrium (Sukirno, 2011).

Research conducted by Kalyanaraman and Tuwajri (2014), Fernando (2018), and Fauzan and Khairunnisa (2019) shows that the amount of money supply has a positive effect on stock prices and indexes in the capital market. On the other hand, some studies find that if there is an increase in the amount of money supply, it will have a negative effect if it is not balanced with an increase in domestic production and will cause inflation so that it will be able to affect the discount rate policy issued by the Central Bank (Mankiw, 2010). The results of the study were revealed by Beik and Fatmawati (2014), Sikalao-Lekobane and Lekobane (2014), Apriyani et al., (2015), Sudarsono (2018), and Wibowo and Aminda (2021). There is also a study that finds that the amount of money supply does not significantly affect the stock index proposed by Lee and Brahmasrene (2018).

Exchange Rate

Exchange rate is the value that becomes the reference for conducting cross-country exchanges or trades that have different currencies, for example between rupiah and dollars, euros and dollars, and so on. Exchange rate also describes the value or price level agreed upon to carry out international trade between residents of two different countries (Mankiw, 2010). Every change in the exchange rate is very meaningful for business people with different impacts and risks for companies or actors related to foreign exchange, whether they have positions as producers, consumers, distributors, or speculators who want to take advantage of changes in the exchange rate (Noor, 2014).

Changes in the exchange rate in this case the Rupiah (IDR) against the United States Dollar (USD) have the opposite effect (negative impact) on the stock price index which in this case is described by the Indonesian Sharia Stock Index (ISSI). This is supported by research conducted by Beik and Fatmawati (2014), Sikalao-Lekobane and Lekobane (2014), Firdausi et al., (2016), Sudarsono (2018), Aditya et al., (2018), Anriansyah et al., (2018), and Rahmiyanti and Fianto (2019). The cause of the negative impact is that the weakening of the exchange rate will have a negative impact on companies that rely on production factors from imported goods. The increase in the value of the dollar will also increase the company's foreign debt. As a result, the company's profitability decreases and produces a low stock return.

However, there are also different findings as stated by Kalyanaraman and Tuwajri (2014), Lee and Brahmasrene (2018), Fauzan and Khairunnisa (2019), Kalam (2020), and Wibowo and Aminda, (2021) that the exchange rate has a positive and negative effect significant to the Islamic stock index in Indonesia. In the research of Damayanti (2014) and Tripuspitorini (2021), it was revealed that the exchange rate did not affect on the stock index.

World Oil Price

The world oil price is still one of the important indicators and factors that affect every form of production and distribution in the world which is still massively dependent on crude oil and its

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derivatives. Because the impact of petroleum is still very large on the economy, especially for the production process in the industry to produce products involving machinery, transportation, generating electricity and energy, as well as distribution activities, any fluctuations and movements in world oil price will have an impact on the economy which is great for the international economy and integrated world capital markets (Chevallier et al., 2017). The stock market reflects trends, the operational status of companies, and the economic development of a country, so the influence of oil prices on the real sector economy can be reflected in the stock market (Kalyanaraman and Tuwajri, 2014).

An increase in world oil price will increase production price (costs) as a result of increased input price so that ceteris paribus will erode company revenues due to increased production costs, company dividends decrease, demand for related company shares decreases, and then the stock price index also decreases. will also go down as stated by Gulo et al., (2017), Rahmiyanti and Fianto (2019), Rokhaniyah (2020), and Karim et al., (2021). In contrast to the research of Antonio et al., (2014), Kalyanaraman and Tuwajri (2014), and Ardana (2016) found that world oil price had a positive effect on the movement of stock price indexes.

World Gold Price

Gold is an alternative investment available for investors to invest long-term capital or diversify in gold instruments with lower risk factors than the money market and capital market. Investment in gold is believed to be one of the profitable commodities because in addition to the price tending to increase, gold is also a very liquid form of investment because it can be accepted in any region or country. Gold is one form of investment that tends to be risk-free, gold investment is one of the profitable commodities because the price tends to rise.

When many investors switch their investment portfolios to gold bullion, this will result in a decline in the stock price index in the country concerned because of the selling action by investors. Damayanti (2014), Gulo et al., (2017), and Rahmiyanti and Fianto (2019) stated that gold has a positive effect on the stock market. On the other hand, Aditya et al., (2018) found that the Gold Price did not affect the stock index.

Dow Jones Islamic Market United States (DJIMUS)

Conceptually, a country's economic system is a subsystem of the international economic system (Chevallier et al., 2017). This causes conditions and global economic growth to affect domestic economic conditions and growth. Because the economy of a country can be influenced by the global economy, it is possible that the capital market of a country can also be influenced by the capital market of various other countries. This study involves Dow Jones Islamic Market United States (DJIMUS) as a research variable in the international macroeconomic group because Dow Jones is the largest average stock index in the world, as well as Dow Jones Islamic which is based in the United States as a country with a large influence on the world economy (Antonio et al., 2014).

Referring to the research conducted by Damayanti (2014), Chevallier et al., (2017), Aditya et al., (2018), Widowati and Feriyanto (2018), and Wibowo and Aminda (2021) the results show that the Dow Jones Islamic US has a significant positive effect on the Stock Index. In contrast to Beik and Fatmawati (2014) and Firdausi et al., (2016) who get the results that the stock index variables of other countries have a significant negative effect. Kalyanaraman and Tuwajri (2014) and Rahmiyanti and Fianto (2019) reveal that the stock index is not significantly influenced by stock indexes of other countries. With various opinions, a multinational stock index with large capitalization is needed that can describe any macro changes in the Indonesian Sharia Stock Index (ISSI), namely the Dow Jones Islamic Market United States (Antonio et al., 2014).

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METHOD

This study applies the time series econometric model quantitatively and descriptively. The data used in this study is quantitative secondary data in the form of a monthly time series with a data period spanning from May 2011 to July 2022. The data sources used in this study came from Bank Indonesia, Central Statistics Agency, Indonesia Stock Exchange, and Investing.com. Operational definitions in the study are shown in Table 1.

Table 1 Definition of operational variables

Variable	Definition	Symbol	Reference
Indonesian Sharia Stock Index	Indonesian Sharia Stock Index (ISSI) is a price index for sharia-based stocks that are included in the Sharia Securities List (DES).	ISSI	Ardana (2016)
BI Repo Rate	BI Repo Rate is an illustration of the monthly interest rate issued by Bank Indonesia and is expressed in percent.	BI_RATE	Sudarsono (2018)
Inflation	Inflation is a general and continuous increase in commodity price related to market mechanisms that can be caused by various money factors and is expressed are percent.	INF	Beik and Fatmawati (2014)
Amount of Money Supply	Amount of Money Supply is the money supply in Indonesia in a broad sense (M2) and is expressed in nominal terms.	JUB	Sudarsono (2018)
Exchange Rate	Exchange Rate is the rate of exchange of the Indonesian Rupiah against the United States Dollar (USD/IDR) expressed in nominal terms.	KURS	Beik and Fatmawati (2014)
World Oil Price	World Oil Price is the price of crude oil traded by WTI internationally and is expressed in nominal terms.	OIL	Ardana (2016)
World Gold Price	World Gold Price is the standard price of the London Gold Fixing Market which is the reference for gold price in the international world and is expressed in nominal terms.	GOLD	Aditya et al. (2018)
Dow Jones Islamic Market US	Dow Jones Islamic Market US (DJIMUS) is the market price of a sharia-based stock index whose constituents are companies in the United States (US).	DJIMUS	Beik and Fatmawati (2014)

Data Analysis Technique

This study applies the time series econometric model quantitatively and descriptively. The analysis used in this study uses the Vector Autoregression (VAR) and Vector Error Correction Model (VECM) methods. BI repo rate and inflation data can be directly inputted, while other variable data must be first transformed into Natural Logarithm (ln) form. The data were processed using Microsoft Excel 2019 and E-Views 10 software. The procedure steps for performing the VECM method were starting with the Unit Root Test, Lag Length, VAR Model Stability Test, Engle-Granger Cointegration Test, Vector Error Correction Model, and ending with Impulse Response Function and Forecast Error and Variance Decompositions (Firdaus, 2011).

Vector Autoregression (VAR) Method

The VAR method is one of the multivariate time series analysis methods by trying to minimize the theory or referred to as a non-structural model. Arsana (2005) cited in Firdaus (2011) explained that the VAR Model serves to explain changes in data and interdependence relationships between variables in econometrics which includes descriptions of data, structural data inference, forecasting, and for policy analysis that can be done through its features namely the Impulse Response Function (IRF), Forecast Error Variance Decomposition (FEVD), and the Engle-Granger Causality Test.

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Data Stationarity Test

The first step that is very crucial in estimating the time series econometric model is the data stationarity test. The purpose of this data stationarity test is to eliminate the unit root trend that is usually found in time series data. In this study, the stationarity test used was Augmented Dickey Fuller (ADF-Test) at the level and first difference by looking at the ADF t-Statistic value of each variable. Data that is stationary at this level can use the VAR method, but data that is not stationary at this level can be continued by using VAR in the form of the first difference or VECM, namely restricted VAR. Variables that are not stationary in this method allow a cointegration relationship between variables so that a cointegration test is needed to prove the estimated potential of the relationship in the model used (Juanda and Junaidi, 2012).

VAR Model Stability Test

The application of calculating the roots of a polynomial function is called the VAR model stability test. This VAR model stability test is the next step to test the optimum lag stability in this VAR method. This stage serves to ensure that the Impulse Response Function (IRF) and Forecast Error Variance Decomposition (FEVD) generated from the VAR model can be considered valid, namely if all the roots of the polynomial functions contained in the unit circle have an absolute value (modulus) less than 1 (Firdaus, 2011).

Optimum Lag Test

In the VAR-VECM method, it is imperative to determine the optimum lag which serves to represent the length of the reaction period from one variable to another variable. Determination of optimum lag serves to eliminate autocorrelation problems that commonly occur in multivariate time series using the VAR-VECM method so that autocorrelation problems no longer occur, accurate, and unbiased estimates are obtained (Firdaus, 2011).

Cointegration Test

The cointegration test aims to determine the co-integration of variables that are not stationary at the level stage but are stationary at the first difference stage. According to Verbeek in Firdaus (2011), the existence of a cointegration relationship in the model indicates that in a system there is an ECM (Error Correction Model) and ECT (Error Correction Term) which describe the dynamics of the relationship between the long term and the short term consistently. After the number of cointegration equations is known, the model can be continued using the VECM method.

Vector Error Correction Model (VECM) Method

The Vector Error Correction Model (VECM) is a development of the restricted VAR form and functions for variables that are not stationary but have the potential to have integration in the model. The VECM method is often referred to as a VAR design for non-stationary time series that have a cointegration relationship, especially at the first difference or I(1) level. Thus, in the VECM method, there is a speed of adjustment from short to long term if the t-statistic is greater than alpha so that the model is said to be significant (Firdaus, 2011).

Impulse Response Function (IRF)

Firdaus (2011) explained that the Impulse Response Function (IRF) is the output of the VAR-VECM method that can be used to determine the response of a variable used in the model to a particular shock that intersects with that variable in the current and future periods, as well as knowing how much the value of the shock that occurs to the variables in the model is one standard deviation.

Forecast Error Variance Decomposition (FEVD)

Changes in a variable (in the form of a percentage) in the model can be shown by the method of changing the error variance which is influenced by other variables in the model specification that

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describe the dynamic structure of the VAR-VECM model (Firdaus, 2011). The output of the Forecast Error Variance Decomposition is that researchers can find out how much of the contribution of each variable under study to endogenous variables within a certain period with details of the variance of forecasting errors in the VECM system (Juanda and Junaidi, 2012).

Granger Causality Test

To see the causal relationship (cause and effect) that occurs between the variables contained in the model, the Granger causality test is used. This test is used to see whether there is a one-way, two-way relationship, or no causal relationship at all between the variables tested by using the parameter of past influence on current conditions. This causality test also aims to determine whether an independent variable can improve the forecasting performance of the dependent variable (Firdaus, 2011).

RESULTS AND DISCUSSION

Stationarity Test

The stationarity test of this data can be done by comparing and seeing the ADF value with Mackinnon Critical Value at 1%, 5%, and 10%.

Table 2 Unit root test for level

Variable	ADF Value	MacKinnon Critical Value			Prob.	Result
		1%	5%	10%		
LN_ISSI	-1.926765	-3.479656	-2.883073	-2.578331	0.3192	Non-Stationary
BI_RATE	-1.128176	-3.480425	-2.883408	-2.578510	0.7034	Non-Stationary
INF	-2.195448	-3.480038	-2.883239	-2.578420	0.2090	Non-Stationary
LN_JUB	-2.615991	-3.480038	-2.883239	-2.578420	0.0923	Non-Stationary
LN_KURS	-2.201908	-3.479656	-2.883073	-2.578331	0.2067	Non-Stationary
LN_OIL	-2.430975	-3.480038	-2.883239	-2.578420	0.1353	Non-Stationary
LN_GOLD	-1.522411	-3.479656	-2.883073	-2.578331	0.5193	Non-Stationary
LN_DJIMUS	-0.394937	-3.479656	-2.883073	-2.578331	0.9056	Non-Stationary

Source: Processed E-views, 2022.

From the test results above, it can be seen that all of the endogenous variables tested at the level were proven not to be stationary. Therefore, it is necessary to carry out a unit root test again at the first difference.

Table 3 Unit root test for first difference

Variable	ADF Value	MacKinnon Critical Value			Prob.	Result
		1%	5%	10%		
LN_ISSI	-10.40288	-3.480038	-2.883239	-2.578420	0.0000	Stationer
BI_RATE	-5.199681	-3.480425	-2.883408	-2.578510	0.0000	Stationer
INF	-8.545949	-3.480425	-2.883408	-2.578510	0.0000	Stationer
LN_JUB	-15.71330	-3.480038	-2.883239	-2.578420	0.0000	Stationer
LN_KURS	-12.54458	-3.480038	-2.883239	-2.578420	0.0000	Stationer
LN_OIL	-9.110937	-3.480425	-2.883408	-2.578510	0.0000	Stationer
LN_GOLD	-12.41322	-3.480038	-2.883239	-2.578420	0.0000	Stationer
LN_DJIMUS	-12.51660	-3.480038	-2.883239	-2.578420	0.0000	Stationer

Source: Processed E-views, 2022.

In Table 3 it can be seen that at the first difference level all variables are stationary with a significance level of α = 1%, 5%, and 10%. The use of stationary data in the first difference will eliminate the long-term relationship so that to maintain a long-term relationship, the VAR model will be modified

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into an error correction model, namely the Vector Error Correction Model (VECM) if there is cointegration in the model.

Optimum Lag Test

The optimum lag test is run using the lag sequence selected based on the criteria of Likelihood Ratio (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC), and Hannan-Quin Creation (HQ) (Firdaus, 2011).

Table 4 Optimum lag test

Lag	LogL	LR	FPE	AIC	SC	HQ
0	1399.964	NA	3.50e-20	-2.209.466	-21.91458*	-22.02150*
1	1500.584	**186.8656***	**1.96e-20***	**-22.67593***	-2.105.520	-2.201.748
2	1548.027	82.08528	2.58e-20	-2.241.313	-1.935.175	-2.116.939
3	1594.890	75.12856	3.49e-20	-2.214.111	-1.763.907	-2.031.207
4	1641.694	69.09234	4.86e-20	-2.186.816	-1.592.548	-1.945.383
5	1690.498	65.84619	6.81e-20	-2.162.695	-1.424.361	-1.862.733

Source: Processed E-views, 2022.

This study uses a lag length of 0 to 5 by default in the E-Views application. The optimum lag based on predetermined criteria from the five test criteria is lag 1, indicating the order of the most selected lags is indicated by the presence of an asterisk.

VAR Model Stability Test

VAR stability testing needs to be done because if the estimation results of VAR stability are unstable, then the Impulse Response Function (IRF) and Forecast Error Variance Decomposition (FEVD) analysis will be invalid or biased (Firdaus, 2011). In this study, based on the VAR Model Stability Test shown in Table 5, it can be concluded that the estimated VAR stability to be used for IRF and FEVD has been stable (modulus < 1) (Firdaus, 2011).

Table 5 VAR model stability test

Root	Modulus
0.406756	0.406756
-0.194606 - 0.265641i	0.329297
-0.194606 + 0.265641i	0.329297
0.281392	0.281392
-0.275038	0.275038
0.158338 - 0.190765i	0.247916
0.158338 + 0.190765i	0.247916
-0.012043	0.012043

Source: Processed E-views, 2022.

Cointegration Test

Cointegration relationship testing is carried out using the optimum lag following the previous test, namely, lag 1 on the Johansen Test. Based on the Johansen Cointegration Test (see Table 6), there are cointegrated variables. This indicates that the tested equation is cointegrated because the value of the Trace Statistics and Maximum Eigen Statistics of the endogenous variables is greater than the critical value of 5%. Thus, the model used in this study can be continued by using the VECM (Vector Error Correction Model).

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Table 6 Cointegration test (unrestricted cointegration rank test)

Hypothesized No. of CE(s)	Trace Statistics			Maximum Eigen Statistics		
	Trace Statistic	0.05 Critical Value	Prob.	Max-Eigen Statistic	0.05 Critical Value	Prob.
None*	486.6425	143.6691	0.0000	114.9040	48.87720	0.0000
At most 1*	371.7385	111.7805	0.0000	94.07638	42.77219	0.0000
At most 2*	277.6621	83.93712	0.0000	70.95473	36.63019	0.0000
At most 3*	206.7074	60.06141	0.0000	61.98809	30.43961	0.0000
At most 4*	144.7193	40.17493	0.0000	54.33940	24.15921	0.0000
At most 5*	90.37992	24.27596	0.0000	43.16532	17.79730	0.0000
At most 6*	47.21460	12.32090	0.0000	27.95319	11.22480	0.0000
At most 7*	19.26140	4.129906	0.0000	19.26140	4.129906	0.0000

Source: Processed E-views, 2022.

VECM Estimate

The interpretation of the test results from the VECM is by comparing the t-statistics value with the t-table. By looking at the t-table list with 135 data, it can be seen that the t-table is worth 1.99834. The results of the VECM estimation can be seen in the Table 7 below:

Table 7 VECM Estimation Results

Variable	Coefficient	t-Statistics	t-Table	Result
		Long-term		
BI_RATE(-1)	-0.082183	[-1.98338]	1.99834	Non-Significant
INF(-1)	0.123275	**[4.82913]**	1.99834	**Significant**
LN_JUB(-1)	-8.060621	**[-6.80397]**	1.99834	**Significant**
LN_KURS(-1)	-0.030155	[-0.03076]	1.99834	Non-Significant
LN_OIL(-1)	-0.726906	**[-5.82637]**	1.99834	**Significant**
LN_GOLD(-1)	-0.603124	[-1.58186]	1.99834	Non-Significant
LN_DJIMUS(-1)	1.198881	**[3.25825]**	1.99834	**Significant**
C	113.1220			
		Short-term		
CointEq1	-0.068277	**[-3.53774]**	1.99834	**Significant**
D(LN_ISSI(-1))	0.100292	[1.20065]	1.99834	Non-Significant
BI_RATE(-1)	-0.007869	[-0.42235]	1.99834	Non-Significant
INF(-1)	0.005829	[0.91143]	1.99834	Non-Significant
LN_JUB(-1)	-0.148761	[-0.53935]	1.99834	Non-Significant
LN_KURS(-1)	0.007627	[0.04567]	1.99834	Non-Significant
LN_OIL(-1)	0.004275	[0.14033]	1.99834	Non-Significant
LN_GOLD(-1)	0.167034	**[2.20517]**	1.99834	**Significant**
LN_DJIMUS(-1)	-0.076819	[-0.80711]	1.99834	Non-Significant
C	0.004591	[1.12904]	1.99834	Non-Significant

Source: Processed E-views, 2022.

In the short-term there is an error correction of -0.068277, this indicates that towards long-term balance the independent variables need time to affect the ISSI with a correction percentage of 0.068277%. The CointEq1 coefficient shows that in the short term ISSI is affected by the first lag of ISSI's fundamentals. The VECM estimation results show that in the long-term inflation, amount of money supply, world oil price, and the Dow Jones Islamic Market US have a significant effect on ISSI. Meanwhile, in the short-term, only the world gold price variable has a significant effect on ISSI.

The BI repo rate has no significant effect on ISSI both in the short and long term. The BI repo rate has an insignificant negative effect of -0.007869% in the short-term and -0.082183% in the long-term on ISSI. These results support the research conducted by Lee and Brahmasrene (2018) and Fauzan and Khairunnisa (2019) that interest rates have no significant effect on stock indexes. Normatively, the Sharia Stock Index is not influenced by interest rate movements, considering that sharia principles applied in the Islamic capital market seek to eliminate interest or usury (Firdausi et al., 2016).

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Inflation in the short-term has no significant effect on ISSI. While in the long-term, inflation has a significant effect on ISSI with a coefficient value of +0.123275 or +0.12%. This is consistent with the research of Antonio et al., (2014), Sikalao-Lekobane and Lekobane (2014), Apriyani et al., (2015), Gulo et al., (2017), Sudarsono (2018), Fernando (2018), and Wibowo and Aminda (2021). At a stable inflation rate below 10%, even though it has increased, at least inflation will provide a sense of security for investors in conducting investment activities in the capital market. Inflation will also encourage economic growth to a positive level, encourage job expansion, and encourage an increase in savings and retail investment (Suta, 2000).

Amount of money supply in the short-term has no significant effect on ISSI. Meanwhile, in the long-term, amount of money supply has a significant effect on ISSI with a coefficient value of -8.060621 or -8.06% on ISSI. The high amount of money supply (M2) makes investors divert their funds from stocks into safer investment instruments, resulting in a decline in the stock price index (Tandelilin, 2017). The negative effect of the level of the money supply on the stock index is in line with the results of research by Beik and Fatmawati (2014), Sikalao-Lekobane and Lekobane (2014), Apriyani et al., (2015), Sudarsono (2018), and Wibowo and Aminda (2021).

Exchange rate has no significant effect on ISSI in the short and long term. The exchange rate has no significant effect of +0.007627% in the short-term and -0.030155% in the long-term on the ISSI. The results of this study support the findings of Damayanti (2014) and Tripuspitorini (2021) that the exchange rate has no significant effect on the stock price index. The exchange rate does not have a significant effect, possibly because of the difference in targets between companies in ISSI in terms of export-import. In export-import practices, companies do not always use US Dollars as the basis for exchange rates but can use other currencies so that investors do not use exchange rates as the basis for making investment decisions. Some investors who make long-term investments also consider that the impact of exchange rate fluctuations is only temporary and not significant to the movement of stock indexes (Gay, 2016).

World oil prices in the short-term has no significant effect on ISSI. While in the long-term world oil prices have a significant effect on ISSI with a coefficient value of -0.726906 or -0.72% on ISSI. World oil prices as a vital factor in company inputs positively correlated to fluctuations in production input price in the real sector. An increase in world oil price indicates an increase in production costs as a result of increased input price so that ceteris paribus will erode the company's revenue. Production costs for companies will increase, demand for company shares will decrease, and the stock price index will also weaken. The results of this study are in line with research conducted by Gulo et al., (2017), Rahmiyanti and Fianto (2019), Rokhaniyah (2020), and Karim et al., (2021).

World gold price in the short-term has a significant effect on ISSI with a coefficient value of +0.167034 or +0.17% against ISSI. Meanwhile, in the long-term, the world gold price does not significantly affect ISSI. This phenomenon is in accordance with research from Gulo et al., (2017) and Rahmiyanti and Fianto (2019) that, if investors have sufficient liquidity, the gold market and the stock market tend to go hand in hand. Therefore, investing in gold is only part of portfolio diversification by investors, but the stock market is still preferred for the long term. On the other hand, an increase in the world gold price will also provide benefits for some companies that have mining business lines and the gold industry in Indonesia, which covers around 11% of the total capitalization of issuers who are members of ISSI (Financial Services Authority, 2022).

Dow Jones Islamic Market US in the short-term has no significant effect on ISSI. While in the long-term Dow Jones Islamic Market US has a significant effect on ISSI with a coefficient value of +1.198881 or +1.20%. The Dow Jones Islamic Market United States (DJIMUS) is one indicator that reflects the performance of the global capital market as reflected in the United States capital market as a superpower (Chevallier et al., 2017). This study supports the research of Antonio et al., (2014), Damayanti (2014), Chevallier et al., (2017), Aditya et al., (2018), Widowati and Feriyanto (2018), and Wibowo and Aminda (2021) that the increase in DJIMUS also positively supports ISSI's growth.

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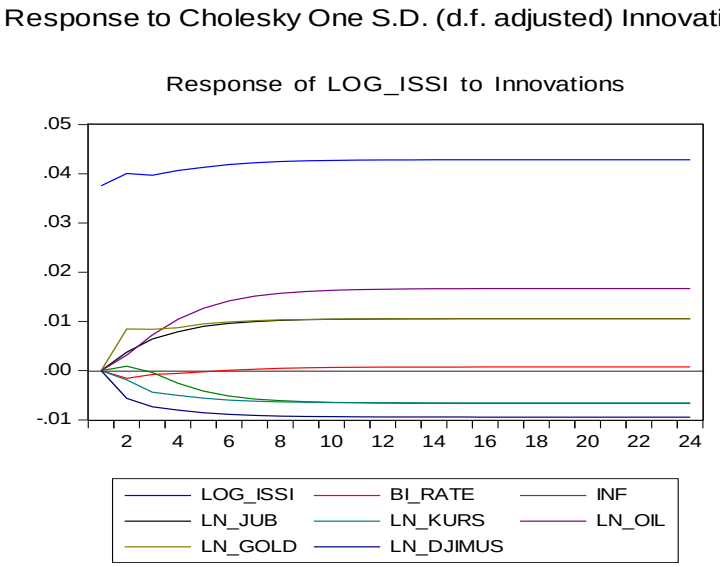
Impulse Response Function (IRF) Test

Impulse Response Function (IRF) analysis serves to determine the response of a dependent variable if it gets a shock or an independent variable innovation of one standard deviation. IRF analysis with ISSI as a response concludes that in the next 24 periods, the highest response will be ISSI's response to the world gold price, which is expected to stabilize at the seventh standard deviation. The next highest response is ISSI's response to the shock of Dow Jones Islamic Market US, amount of money supply, oil price, exchange rate, and inflation which will stabilize at the eighth and sixteenth standard deviations, respectively. ISSI's response to the BI repo rate is close to zero standard deviation.

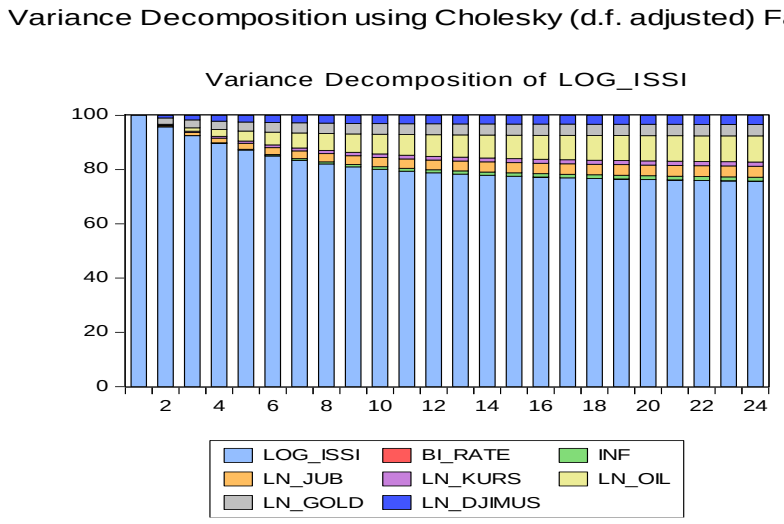


Source: Processed E-views, 2022.

Figure 2 IRF test results

Forecasting Error Variance Decomposition (FEVD) Test

Forecasting the decomposition of variance in this study is to see how big the role of variables in domestic and international macroeconomic variables in explaining changes in the Indonesian Sharia Stock Index (ISSI). The result of forecasting the decomposition of variance is shown in the Figure 3 below:



Source: Processed E-views, 2022.

Figure 3 FEVD test results

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Based on the results of the FEVD, it can be explained that in period 1, the biggest shock contribution to the ISSI price increase was the variable itself. The Indonesian Sharia Stock Index (ISSI) only responded to shocks to other variables in the second period, namely the value of the BI repo rate, inflation, amount of money supply, exchange rate, world oil price, world gold price, and the Dow Jones Islamic Market US of 0.075%, 0.026%, 0.445%, 0.114%, 0.318%, 2.288%, and 1.010%.

In the last period, the largest contribution was still influenced by ISSI at 75.71427% while the rest was influenced by other variables with the contribution of BI repo rate at 0.021410%, inflation at 1.460164%, amount of money supply at 4.035465%, exchange rate at 1.556648%, world oil price at 9.614857%, world gold price at 4.244158% and Dow Jones Islamic Market US at 3.353031%. Thus, it can be seen that the variables of world oil price, world gold price, amount of money supply, and the Dow Jones Islamic Market US are the four most dominant variables influencing ISSI price movements.

Granger Causality Test

Table 8 Granger causality test

Null Hypothesis:	F-Statistic	Prob.
LOG_ISSI does not Granger Cause LN_KURS	41.4374	1.E-14
LOG_ISSI does not Granger Cause LN_JUB	3.38848	0.0368
LOG_ISSI does not Granger Cause LN_DJIMUS	16.4153	5.E-07
LOG_ISSI does not Granger Cause LN_OIL	6.87894	0.0015
LN_KURS does not Granger Cause BI_RATE	4.03474	0.0200
LN_DJIMUS does not Granger Cause LN_JUB	4.29060	0.0157
LN_JUB does not Granger Cause LN_DJIMUS	3.36528	0.0376
INF does not Granger Cause LN_GOLD	3.60083	0.0301
LN_GOLD does not Granger Cause INF	7.22594	0.0011
LN_GOLD does not Granger Cause BI_RATE	4.46844	0.0133
INF does not Granger Cause BI_RATE	6.33079	0.0024
LN_OIL does not Granger Cause INF	3.73528	0.0265
LN_OIL does not Granger Cause BI_RATE	4.37229	0.0146

Source: Processed E-views, 2022.

The results of the Granger causality test are summarized in Table 8 above. The results of this test indicate that there is a unidirectional relationship and a two-way relationship between the variables studied. It can be seen that in Granger causality there are several unidirectional relationships between the ISSI variable affecting the exchange rate, ISSI influencing the amount of money supply, ISSI influencing the Dow Jones Islamic Market US, ISSI influencing the world oil price, exchange rate influencing the BI repo rate, world gold price influencing the BI repo rate, inflation influencing BI repo rate, world oil price influencing inflation, and world oil price influencing BI repo rate. Meanwhile, there is a two-way relationship between the Dow Jones Islamic Market US with amount of money supply and inflation with world gold price based on the Granger causality test.

CONCLUSION

Conclusion

1. BI repo rate has no significant effect on ISSI in the short and long term. BI repo rate has no significant effect of -0.007869% in the short-term and -0.082183% in the long-term on ISSI.
2. Inflation in the short-term has no significant effect on ISSI. While in the long-term inflation has a significant effect on ISSI with a contribution value of +0.12%.
3. Amount of money supply in the short-term has no significant effect on ISSI. While in the long-term amount of money supply has a significant effect on ISSI with a contribution value of -8.06%.

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4. Exchange rate has no significant effect on ISSI in the short and long term. Exchange rate has no significant effect of +0.007627% in the short-term and -0.030155% in the long-term on the ISSI.
5. World oil price in the short-term have no significant effect on ISSI. While in the long-term world oil price have a significant effect on ISSI with a contribution value of -0.73%.
6. World gold price in the short-term has a significant effect on ISSI with a contribution value of +0.17%. Meanwhile, in the long-term, world gold price does not significantly affect ISSI.
7. Dow Jones Islamic Market US in the short-term has no significant effect on ISSI. While in the long-term Dow Jones Islamic Market US has a significant effect on ISSI with a contribution value of +1.20%.

Recommendation

1. The government should take more innovative steps in promoting ISSI and the Indonesian Islamic financial market as investment gateways for investors.
2. It is necessary to build an early warning system to detect and overcome the impact of fluctuations that occur in the stock markets of other countries which greatly affect the performance of the Islamic stock market in Indonesia.
3. Companies and investors who invest and engage in stocks in the ISSI Index should consider macroeconomic conditions and commodity prices so that they can obtain maximum results and benefits and minimize the risk of loss.

REFERENCES

Aditya, Sinaga, B. M. & Maulana, A. (2018). Pengaruh indeks bursa luar negeri, indikator makroekonomi dan krisis ekonomi global terhadap indeks harga saham gabungan di Indonesia. *Jurnal Aplikasi Manajemen dan Bisnis*, 4(2), 284–295.

Anriansyah, I., Siregar, H. & Maulana, T. N. A. (2018). Pengaruh guncangan makroekonomi terhadap integrasi pasar modal di ASEAN-5. *Jurnal Aplikasi Bisnis dan Manajemen*, 4(1), 52–62. https://doi.org/10.17358/jabm.4.1.52.

Antonio, M. S., Hafidhoh & Hilman Fauzi. (2014). Volatilitas pasar modal syariah dan indikator makro ekonomi: studi banding Malaysia dan Indonesia. *Liquidity: Jurnal Riset Akuntansi dan Manajemen*, 2(1), 1-12.

Apriyani, N., Rindayati, W. & Wiliasih, R. (2015). Analisis pengaruh variabel EPS dan makroekonomi terhadap return saham Jakarta Islamic Index sektor pertanian. *Al-Muzara'ah*, 3(1), 44–61. https://doi.org/10.29244/jam.3.1.44-61.

Ardana, Y. (2016). Variabel makroekonomi terhadap Indeks Saham Syariah Indonesia (periode Mei 2011-september 2015 dengan model ECM). *Media Trend*, 11(2), 117-130.

Beik, I. S. & Fatmawati, S. W. (2014). Pengaruh indeks harga saham syariah internasional dan variabel makro ekonomi terhadap Jakarta Islamic Index. *Al-Iqtishad: Journal of Islamic Economics*, 6(2), 155-178. https://doi.org/10.15408/ijies.v6i2.1228.

[BEI] Bursa Efek Indonesia. (2022). *Fact Sheet Indeks Saham Syariah Indonesia* [online]. [accessed 2022 Mar 28]. Retrieved from: https://www.idx.co.id/media/20220980/fs-issi-2022-08.pdf.

[BI] Bank Indonesia. (2022). *BI-7 Day Reverse Repo Rate (BI7DRR)* [online]. [accessed 2022 Mar 28]. Retrieved from: https://www.bi.go.id/id/fungsi-utama/moneter/bi-7day-rr/default.aspx.

Chevallier, J., Nguyen, D. K., Siverskog, J., & Uddin, G. S. (2018). Market integration and financial linkages among stock markets in Pacific Basin countries. *Journal of Empirical Finance*, 46, 77-92. https://doi.org/10.1016/j.jempfin.2017.12.006.

Damayanti, S. M. (2014). Analisis pengaruh variabel-variabel makroekonomi terhadap tingkat pengembalian di pasar modal hasil estimasi OLS, GLS, dan MLE. *Binus Business Review*, 5(1), 267–277.

Fauzan, E. & Khairunnisa. (2019). Analisis pengaruh jangka pendek dan jangka panjang variabel makroekonomi terhadap return indeks saham syariah periode 2014-2018. *Jurnal Wawasan dan Riset Akutansi*, 7(1), 17–27.

Fernando, A. (2018). Macroeconomic impact on stock market returns and volatility: evidence from Sri Lanka. *Business and Economics Journal*, 9(4), 1–15. https://doi.org/10.4172/2151-6219.1000379.

Firdaus, M. (2011). *Aplikasi Ekonometrika untuk Data Panel dan Time Series*. Bogor (ID), IPB Press.

Firdausi, A. N., Fahmi, I. & Saptono, I. T. (2016). Pengaruh indeks harga saham regional ASEAN dan variabel makroekonomi terhadap indeks Harga Saham Syariah Indonesia (ISSI). *Al-Muzara'ah*, 4(2), 76–96. https://doi.org/10.29244/jam.4.2.76-96.

Gay, Jr., R. D. (2016). Effect of macroeconomic variables on stock market returns for four emerging economies: Brazil, Russia, India, and China. *International Business & Economics Research Journal (IBER)*, 15(3), 119–125. https://doi.org/10.19030/iber.v7i3.3229.

Gulo, V. I. S., Subiyantoro, H. & Tobing, W. R. L. (2017). Analisis pengaruh variabel makroekonomi dan volume pedagangan saham terhadap indeks harga saham gabungan di Bursa Efek Indonesia: pendekatan dua model penelitian pengaruh gaya. *Jurnal Eksekutif*, 14(1), 25–50.

Juanda, B. & Junaidi. (2012). *Ekonometrika Deret Waktu: Teori dan Aplikasi*. Bogor (ID), IPB Press.

Kalam, K. (2020). The effects of macroeconomic variables on stock market returns: evidence from Malaysia's stock market retum performance. *Journal of World Business*, 55(8), 1-13. https://www.researchgate.net/publication/344158504.

Kalyanaraman, L. & Tuwajri, B. Al. (2014). Macroeconomic forces and stock price: some empirical evidence from Saudi Arabia. *International Journal of Financial Research*, 5(1). https://doi.org/10.5430/ijfr.v5n1p81.

Karim, M. M., Chowdhury, M. A. F. & Masih, M. (2021). Re-examining oil and BRICS' stock markets: new evidence from wavelet and MGARCH-DCC. *Macroeconomics and Finance in Emerging Market Economies*, 1–19. https://doi.org/10.1080/17520843.2020.1861047.

Lee, J. W. & Brahmasrene, T. (2018). An exploration of dynamical relationships between macroeconomic variables and stock price in Korea. *Journal of Asian Finance, Economics and Business*, 5(3), 7–17. https://doi.org/10.13106/jafeb.2018.vol5.no3.7.

Mankiw, N. G. (2010). *Macroeconomics (7th Ed)*. Belper (UK), Worth Publishers.

Noor, H. F. (2014). *Investasi, Pengelolaan Keuangan, dan Pengembangan Ekonomi Masyarakat*. Bogor (ID), Mitra Wacana Media.

[OJK] Otoritas Jasa Keuangan. (2022). *Data Produk Daftar Efek Syariah* [online]. [accessed 2022 Mar 28]. Retrieved from: https://www.ojk.go.id/id/kanal/syariah/data-dan-statistik/daftar-efek-syariah/default.aspx.

Rahmiyanti, D. & Fianto, B. A. (2019). Pengaruh variabel makroekonomi dan indeks saham internasional terhadap indeks saham Jakarta Islamic Index (JII). *Jurnal Ekonomi Syariah Teori dan Terapan*, 6(12), 2381–2392.

Rokhaniyah, S. (2020). Pengaruh indikator fundamental dan makroekonomi terhadap harga saham yang tergabung dalam ISSI. *Akuntansi Dewantara*, 4(1), 70–80. https://doi.org/10.26460/ad.v4i1.5840.

Samsul, M. (2015). *Pasar Modal & Manajemen Portofolio Edisi 2*. Jakarta (ID), Erlangga.

Sikalao-Lekobane, O. L. & Lekobane, K. R. (2014). Do macroeconomic variables influence domestic stock market price behaviour in emerging markets? a Johansen cointegration approach to the Botswana stock market. *Journal of Economics and Behavioral Studies*, 6(5), 363–372. https://doi.org/10.22610/jebs.v6i5.499.

Sudarsono, H. (2018). Indikator makroekonomi dan pengaruhnya terhadap indeks saham syariah di Indonesia. *Esensi: Jurnal Bisnis dan Manajemen*, 8(2), 115–132. https://doi.org/10.15408/ess.v8i2.7219.

Sukirno, S. (2011). *Teori Pengantar Ekonomi Makro*. Jakarta (ID), Rajawali Press.

Suta, I. (2000). *Menuju Pasar Modal Modern*. Jakarta (ID), Yayasan Sad Satria Bhakti.

Tandelilin, E. (2017). *Pasar Modal Manajemen Portofolio & Investasi*. Yogyakarta (ID), PT Kanisius.

Tangjitprom, N. (2012). The review of macroeconomic factors and stock returns. *International Business Research*, 5(8), 107–115. https://doi.org/10.5539/ibr.v5n8p107.

AL-MUZARA'AH Vol. 11 No. 1, 2023
(ISSN p: 2337-6333; e: 2615-7659)
DOI: 10.29244/jam.11.1.31-46

Tripuspitorini, F. A. (2021). Analisis pengaruh inflasi, nilai tukar rupiah, dan BI-rate terhadap harga Indeks Saham Syariah Indonesia. *Jurnal Manajemen Perbankan Syariah*, 4(2), 112–121. https://doi.org/10.37366/akubis.v5i01.102.

Wibowo, C. Y. & Aminda, R. S. (2021, December). Pengaruh variabel makroekonomi terhadap indeks harga saham gabungan. In *Prosiding Seminar Nasional & Call for Paper STIE AAS* (Vol. 4, No. 1, pp. 272-282).

Widowati, N. D. & Feriyanto, N. (2018). Analisis integrasi indeks saham syariah dunia dan kinerja variabel makroekonomi terhadap ISSI. In *Prosding National Conference on Applies Business* (pp. 1–14).

AL-MUZARA'AH Vol. 11 No. 1, 2023
(ISSN p: 2337-6333; e: 2615-7659)
DOI: 10.29244/jam.11.1.31-46