The Influence and Contribution of Macroeconomics to The Indonesian Sharia Stock Index for The Period 2011-2021

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Abstract: This study aims to determine the impact of macroeconomic variables on the Indonesian Sharia Stock Index (ISSI). The macroeconomic variables used are Industrial Production Index (IPI), Indonesian Sharia Bank Certificate (ISBC), Money Supply (MS), Exchange Rates (ER), Interest Rates (IR), and inflation. The observed data is in the form of monthly data for the period 2011 to 2021. The method used is to test the impact and contribution of VECM. The test results with the VECM model found that in the short term, all variables had no effect on the Indonesian Sharia Stock Index, whereas, in the long term, IPI, ISBC, and inflation had a negative effect, and MS, ER, and IR had a positive effect, based on the IRF test showed that ISSI responding to fluctuations from all positive macroeconomic variables except inflation which responded negatively and the contribution of each macroeconomic variable was IPI (0.64), ISBC (2.01), MS (0.45), ER (0.64), IR (0.01), and inflation (1.16) against the Indonesian Sharia Stock Index.

Keywords: ISSI, Macroeconomics, VECM.

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INTRODUCTION

The Islamic financial industry in Indonesia is developing from year to year both domestically and internationally (Refinitiv, 2020). This is evidenced by the increasingly widespread application of Islamic finance not only in the Islamic financial sector but also in the micro and social finance sector (Hanafi, 2021).

Table 1. Islamic financial assets in Indonesia

Islamic Financial Assets	Assets (Trillion)	Market share in national finance
Sharia Capital Market	1.235,85	17.37%
Sharia Banking	693,80	6.74%
Sharia NBFI	120,81	4.25%
Total	2.050,44	10.16%

Source: Otoritas Jasa Keuangan (OJK), processed 2022

As a sub-sector with the contribution of the largest Islamic financial assets, the Islamic capital market continues to grow and develop its products (OJK, 2021). This is reflected in an increase in the number of products, market capitalization, and market share of Islamic securities such as sharia stocks, corporate sukuk, sovereign sukuk, and sharia mutual funds, and in December 2021, sharia shares recorded an increase in market capitalization by 0.22%, outstanding corporate sukuk amounted to 18.20% and government bonds of 9.28% (OJK, 2021).

Figure 1. Development of the Indonesian Sharia Stock Index

	1	2	3	4	5	6	7	8	9
ISSI	143,7	168,6	145,0	172,0	189,8	184,0	187,7	177,4	176,8
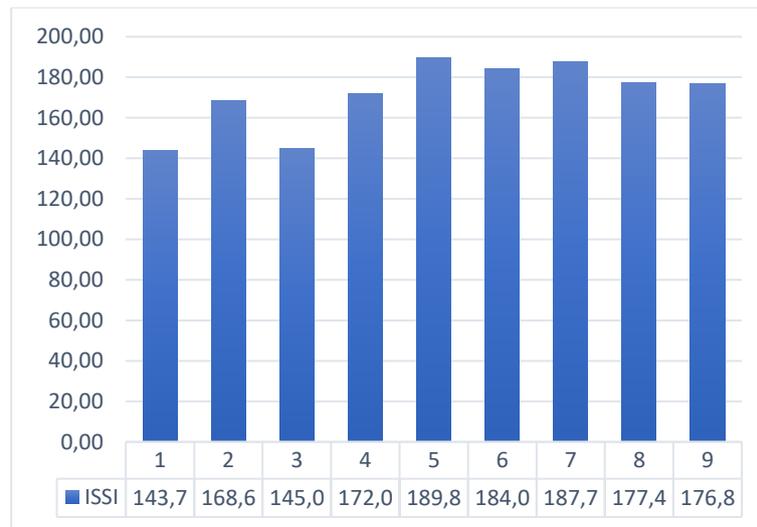
Source: Otoritas Jasa Keuangan (OJK), processed 2022

Based on data from the Financial Services Authority, Islamic equity was found as the largest contributor to the Islamic capital market assets, with a market share of 48%, compared to other sharia securities. Corporate Sukuk 6.93%, Sharia Mutual Fund 12.97%, and sovereign sukuk 18.58% (OJK, 2021). According to POJK Nomor, 35 of 2017, sharia effects are stocks that are not in conflict with the principles of sharia in terms of assets that underlie the contract, asset expenditure, business activities, how to administer and contract itself (Andika et al., 2021).

The performance of a stock can be measured in the direction of the ISSI movement indicated by the stock index. The stock index is a statistical measure that reflects the overall price movement of a group of shares selected and evaluated based on certain criteria and methodologies (Hastiarto, 2021). The Composite Stock Index (CSPI) is used to measure the price performance of all stocks listed on the Indonesia Stock Exchange (IDX). To measure the performance of sharia shares, IDX launched the Jakarta Islamic Index (JII) in 2000, the Indonesian Sharia Stock Index (ISSI) in 2011, and the Jakarta Islamic Index 70 (JII70) in 2018 (BEI, 2022).

One of the factors that can affect ISSI is the macroeconomic variable (Gu et al., 2021). According to Mustafa et al. (2017), macroeconomic variables are a factor that encourages changes in stock valuation. Several studies have been conducted to prove this relationship. Previous studies have tested the impact of macroeconomic variables on prices or stock indexes for two different market characteristics: conventional and sharia. The influence of macroeconomic variables on conventional stock indexes is explored in research by Candy & Winardy (2019), Ranto (2019), Sinay et al. (2018), and Thamrin & Sembel (2020). A study examining the impact of macroeconomic variables on the sharia stock index was preceded by Ahmed et al. (2018), Kumar & Sahu (2018), Mashudi et al. (2020), Halim (2020), and Junaidi et al. (2021). Previous studies assume that different market characteristics cause different market behavior and risks.

Some of the above studies found a relationship between macroeconomic variables and ISSI. The intended relationship means whether a macroeconomic variable is up or down, its effect is the same on ISSI. For example, the value of the inflation factor is -0.2. In other words, when inflation rose 1%, stocks dropped 2%, and vice versa, when inflation dropped 1%, stocks rose 2%. The economic crisis has more impact than economic recovery, which can cause inflation to be higher than if the price is stable. This statement shows that there is a relationship between macroeconomic variables and ISSI. Research on the relationship between macroeconomic variables and Islamic ISSI is still very limited, especially in Indonesia. The relationship is using several macroeconomic variables, namely the amount of money supply, industrial production index, exchange rate, and interest rates. Thus, there are still some macroeconomic variables that have not been tested for the impact on Islamic ISSI (Widarjono et al., 2021).

With the background above, the researcher explores the Islamic ISSI response to the macroeconomic variables because it is interested in investigating more comprehensively and in detail in the period 2011 to 2021. Test the influence and contribution is carried out using the Correlation Model (VECM) variable, the macroeconomic variable used in testing These are the seven independent variables, namely IPI, ISBC, MS, ER, IR, Inflation, and Dependent variables in the form of ISSI.

LITERATURE REVIEW

The theoretical framework is the basis of research in which relevant networks are collected, explained, elaborated logically, and identified literature reviews for each relevant variable of the problem under study (Sekaran & Bougie, 2019). Based on the literature review, this study uses independent variables such as IPI, ISBC, the amount of money supply, exchange rates, interest rates, and inflation, and the dependent variable, namely the ISSI. The relationship is explained as follows:

IPI and ISSI relationship

Based on a macro perspective, higher oil prices cause higher marginal production costs, so companies with additional costs cut production costs such as raw material costs and labor. As a result, production will decrease and unemployment will increase. Both of these phenomena show a decrease in economic output and the expected estimated income will make investors careful in investing, meaning that ISSI will go down (Beik & Fatmawati, 2014). Ash-shiddiqy (2018) explains that oil imports and export activities cause the transfer of wealth from importing countries to exporting countries. This reduces demand or purchasing power for importing countries, weakens the economy, and ultimately decreases ISSI. According to Ranto (2019) when oil prices rise, consumption of investment products or purchasing power decreases due to discharged revenue, investment or productivity decreases due to business costs rising, ISSI falls due to decreased productivity, this can result in decreased profits and even losses.

Relationship between ISBC and ISSI

Investing in the sharia sector does not always invest in Islamic stocks, but there are also Islamic investment products that are growing rapidly in Indonesia, namely ISCB. Similar to the sharia index, ISBC is a tool in the field of Islamic investment, offering a return of ISBC similar to those available when investing in the Sharia Index (Umam et al., 2019). In addition, the development of ISBC is always changing every month. Fluctuations in ISBC yields can affect Islamic banks to invest in ISBC so that Islamic banks can benefit and share benefits with savings or deposit customers. The distribution also increases, and this can cause investors to switch to Islamic banks rather than Islamic capital markets (Harahap & Tambunan, 2022).

Money supply and ISSI relationship

The relationship between the money supply and ISSI remains unclear. First, the money supply has a negative impact on ISSI. When the money supply increases, it causes inflation, and the government raises interest rates and lowers ISSI. On the other hand, an increase in the money supply stimulates the economy, increases corporate earnings, and ultimately has a positive impact on ISSI (Ranto, 2019). Godfrey (2021) uses an approach from Fisher's quantity theory of money to explain the relationship between the money supply and ISSI. According to this, ISSI is directly proportional to the money supply. According to Conrad (2021), the positive relationship between the money supply and ISSI can be explained in three different ways. First, higher economic productivity leads to higher demand and higher ISSI. Therefore, the central bank must provide money or increase the money supply to prevent deflation. Second, the money supply causes an increase in purchasing power or an increase in the demand for wealth, and ISSI rises at a constant number of shares. Third, an increase in the money supply leads to a lower interest rate, lowering the discount rate of future cash flows from the firm's expected earnings. A study by Qing & Kusairi (2019) supports the reasons above, that expansionary monetary policy stimulates the economy and increases people's cash flow. This will also increase the demand for stocks and other assets. After these needs are met into actual purchases, ISSI can go up.

Exchange rate relations and ISSI

The relationship between the exchange rate and ISSI is explained by Junaidi et al. (2021) who argue that changes in exchange rates can directly change the ISSI of multinational companies and indirectly increase the ISSI of domestic companies. For multinational companies, changes in exchange rates change the value of the company's foreign operations and are reflected on the balance sheet as profit or loss. The company's assets and liabilities change, so the net effect is profit or loss. After earnings are announced, the company's ISSI fluctuates. A depreciating exchange rate causes multinational companies to incur additional production costs on local inputs, thereby reducing dividends and reducing ISSI (positive relationship). According to Tripuspitorini et al. (2021), exchange rate fluctuations can hinder capital flows by increasing the risk and uncertainty of foreign direct investment. Therefore, the exchange rate must form a balance. A study by Qing & Kusairi (2019) found that capital markets perform better when exchange rates are low (when the domestic currency strengthens). Studies by Ding (2021) also

prove that ISSI rises when the exchange rate rises. However, according to Ghazo et al. (2021), the increase in the local currency means that foreign investors are reluctant to invest in the domestic capital market. This is because the ISSI for foreign investors is rising. Thus, the funds you need to spend to buy these shares will be more or more expensive. Therefore, foreign investors' demand for shares decreased and ISSI fell.

Interest rate and ISSI relationship

According to Cornell (1983), ISSI decreases because the real component of the nominal interest rate is expected to rise. This increase can have direct and indirect effects on ISSI. This increase immediately indicates that the real discount rate or interest rates on loans and bonds are also increasing, making financial market returns more favorable than capital (investment) market returns. Ultimately, the demand for shares will decrease and ISSI will fall. Research Conrad (2021) finds that ISSI is affected by a decrease in interest rates. Low-interest rates increase the value of dividends. This is because the company will pay a lower interest rate on loans, so the company's profits are higher and higher dividends are paid. According to Fuad & Yuliadi (2021), reduced interest rates can be used by companies to expand their operations. According to Ghazo et al. (2021), an increase in real interest rates has a negative impact on investment decisions. This he can explain in two terms. The first condition is that if interest rates are high and investors are willing to borrow for speculation on the stock market, the increase in investor costs (loan interest rates) will be high. This limits his investment decisions in the stock market. The second case is when real interest rates are high and investors are willing to invest their money in the stock market. Investors prefer to keep their money in the bank rather than take risks in the stock market. As a result, investment and demand for shares will decrease.

The relationship between inflation and ISSI

High inflation causes the fall of ISSI and vice versa. The reason behind this statement is that higher inflation indicates lower expected dividend growth or higher subjective risk premium (Fuadi, 2020). This leads to the conclusion that when inflation is high, investors' returns are small. According to Shih & Hoang (2021), higher inflation can lead to higher production costs and product selling prices. Higher selling prices result in lower market demand, so companies respond by reducing production, which ultimately leads to lower efficiency and profitability. His research found that inflation had little impact on ISSI. This is because inflation is only one

digit, so changes in inflation do not have a significant impact on ISSI's decisions. According to Luwihono et al. (2021), Rising inflation reduces the real income of people with fixed income. This reduces purchasing power. Therefore, people's low purchasing power reduces demand for the company's products and reduces net profit. Lower profits can be interpreted as lower company performance, which can lead to lower demand for various types of shares.

METHOD

This study uses a quantitative approach. Data was collected using several research instruments. The data was then analyzed using the Eviews 10 software which aims to test the hypotheses that have been formulated (Sugiyono, 2019). This study aims to analyze the effect and contribution of IPI, ISBC, MS, exchange rates, IR, and inflation on ISSI before and during the pandemic.

The type of data used in this research is secondary data. The data used was obtained from BI, OJK, IDX, and BPS websites. The secondary data in this study is quarterly time series data from 2011 to 2021. The data is analyzed using the Vector Error Correction Model (VECM) method which is operated using Eviews 10 software. The VECM method itself is an equation modeling that shows each dependent variable which is explained by lag, past, and the lag values of other variables in the model (Widarjono, 2018).

In testing the optimal lag, the criteria used in determining the optimal lag are:

Akaike Information Criterion (AIC):
$$AIC = -2\left(\frac{1}{t}\right) + 2(k+T) \tag{1}$$
Schwarz Information Criterion (SIC):
$$SIC = -2\left(\frac{1}{t}\right) + k\log(T)/T \tag{2}$$
Hannan-Quinn Information Criterion (HQ):
$$HQ = -2\left(\frac{1}{t}\right) + 2k\log(\log(T))/T \tag{3}$$

Where:

1 = the value of the log-likelihood function

T = number of observations

K = estimated parameters

The VECM model is formulated as follows (Widarjono, 2013):

$$Y_t = A_0 + A_1 Y_{t-1} + A_2 Y_{t-2} + A_3 Y_{t-3} + \ldots + A_p Y_{t-p} + e_t \qquad (4)$$

Information:

Y_t = Vector dependent variable

A_0 = intercept vector of size n x 1

A_1 = Parameter matrix of size n x 1

e_t = residual vector

The simple equation in IRF testing is as follows:

$$yt = a_{11} y_{t-1} + a_{12} y_{t-1} + e_{1t} \qquad (5)$$
$$xt = a_{21} y_{t-1} + a_{22} y_{t-1} + e_{2t} \qquad (6)$$

With the following equation model:

$$ISSI = \alpha_0 + \sum_{I-1}^{6} \alpha_1 IPI_{t-1} + \sum_{I-1}^{6} \alpha_2 ISBC_{t-1} + \sum_{I-1}^{6} \alpha_3 MS_{t-1} + \sum_{I-1}^{6} \alpha_4 ER_{t-1} +$$
$$\sum_{I-1}^{6} \alpha_5 IR_{t-1} + \sum_{I-1}^{6} \alpha_6 inf_{t-1} + \mu_{iT} \qquad (7)$$

RESULTS

The results of data processing explain each dependent variable which is explained by statistics, stationarity, optimal lag, stability, cointegration, and long-term and short-term effects, along with the results of descriptive statistics:

Table 2. Descriptive Statistics Results

Variable	Mean	Std. Dev.	Probability
ISSI	5.069933	0.137093	0.018686**
IPI	4.837783	0.120916	0.054265**
ISBC	8.853317	0.552017	0.003165***
MS	15.29283	0.294795	0.028443**
ER	9.409772	0.178327	0.000348***
IR	5.880081	1.224473	0.026821**
Inflation	4.436098	1.871637	0.014106**

Note: the signs ***, **, * respectively indicate the significance of the data at α=1%, α=5%, and α=10%.

Source: Processed data, 2022

Based on the table above, shows that in the period 2011 to 2021, the ISSI variable has a mean value of 5.069933 with a standard deviation of 0.137093 and a probability of 0.018686. The IPI variable has a mean of 4.837783 with a standard deviation of 0.120916 and a probability of 0.054265. The ISBC variable has an average value of 8.853317 with a standard deviation of 0.552017 and a probability of 0.003165. The money supply variable has a mean value of 15.29283 with a standard deviation of 0.294795 and a probability of 0.028443. The exchange rate variable has a mean value of 9.409772 with a standard deviation of 0.178327 and a probability of 0.000348. The interest rate variable has an average value of 5.880081 with a standard deviation of 1.224473 and a probability of 0.026821. The inflation variable has an average value of 4.436098 with a standard deviation of 1.871637 and a probability of 0.014106. In this description, it can be explained that the data used in this study are normally distributed based on statistics.

Table 3. Stationarity Test

LEVEL Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.07172	0.0000	7	846
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.17524	0.1199	7	846
ADF - Fisher Chi-square	18.9722	0.1660	7	846
PP - Fisher Chi-square	25.3130	0.0316	7	854
FIRST DIFFERENCE Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-25.4074	0.0000	7	843
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-23.9512	0.0000	7	843
ADF - Fisher Chi-square	398.484	0.0000	7	843
PP - Fisher Chi-square	447.424	0.0000	7	847

Source: Processed data, 2022

The results of the stationarity test at the level are not stationary while at the first difference level, it shows stationary using the Im, Pesaran, and Shin W-stat, ADF-Fisher Chi-square, and

PP-Fisher Chi-square methods because the probability is below 0.05, therefore it is used stationary data at the first difference level.

Table 4. Optimal Lag Test Results

Lag	LogL	LR	FPE	AIC	SC	HQ
0	217.5496	NA	5.68e-11	-3.726541	-3.557588	-3.657981
1	1100.881	1641.590	2.20e-17	-18.49347*	-17.14185*	-17.94500*
2	1151.370	87.57323	2.16e-17	-18.51982	-15.98552	-17.49143
3	1204.436	85.46975*	2.06e-17*	-18.59179	-14.87482	-17.08348
4	1237.183	48.68612	2.88e-17	-18.30413	-13.40449	-16.31591
5	1277.859	55.43395	3.61e-17	-18.15680	-12.07448	-15.68866
6	1330.108	64.73327	3.84e-17	-18.21430	-10.94931	-15.26624
7	1372.034	46.74905	5.20e-17	-18.08909	-9.641431	-14.66112
8	1405.393	33.06406	8.83e-17	-17.81227	-8.181931	-13.90438
9	1459.637	47.04332	1.14e-16	-17.90508	-7.092070	-13.51727
10	1522.299	46.58041	1.45e-16	-18.14688	-6.151198	-13.27916

Note: the signs * respectively indicate the significance of the data at α=5%.

Source: Processed data, 2022

Based on the results of the optimal lag test in this study, it shows that the smallest values of AIC, SC, and HQ are in the lag 1 position with values, namely: -18.49347*, -17.14185*, -17.94500*. So that it can be ascertained that the optimal lag used in this study is lag 1.

Figure 2. Stability Test Results

Inverse Roots of AR Characteristic Polynomial
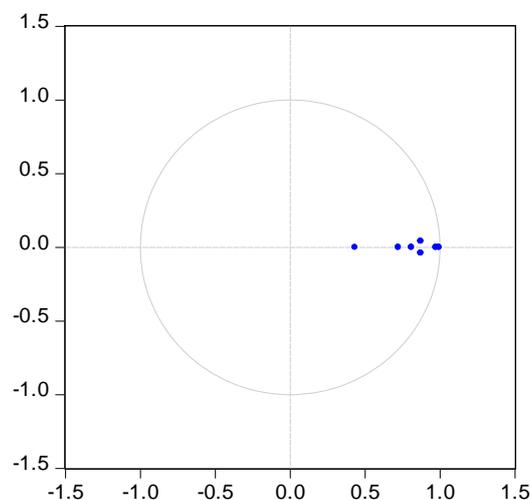
Source: Processed data, 2022

The stability test is said to be good when the variable points are in a circle, so it can be stated that the VECM model used is stable. Thus the VECM estimation results are not biased.

Table 5. Cointegration Test Results

Hypothesized	Trace Statistic	Critical Value (0,05)	Probability
None *	176.5805	150.5585	0.0007
At most 1 *	119.8139	117.7082	0.0366
At most 2	81.99426	88.80380	0.1402
At most 3	54.33066	63.87610	0.2438
At most 4	32.50268	42.91525	0.3618
At most 5	17.04471	25.87211	0.4116
At most 6	6.663194	12.51798	0.3810

Source: Processed data, 2022

Based on the cointegration test above, shows that a cointegration equation is indicated by a trace statistic value that is greater than the critical value (119.8139 > 117.7082) with a probability of 0.0366 < 0.05. Because there are 2 cointegrations, the model used in this study is the Vector Error Correction Model (VECM).

Vector Error Correction Model (VECM) estimation

The VECM model test was carried out because the results of the cointegration test showed that there was cointegration between the IPI, ISBC, money supply, exchange rates, interest rate, and inflation variables with ISSI. The results of the VECM estimation will show the relationship in the long term and the relationship in the short term for each variable. The VECM estimation results are as follows:

Table 6. Long Term Estimation Results

Variable	Coefficient	T-Statistics
IPI	0.21668	-8.30868
ISBC	0.05571	-1.47084
MS	0.21448	0.67770
ER	0.31485	0.94564

	IR	0.01846	2.10608
	Inflation	0.01114	-4.48109

The table above is the result of long-term VECM estimation, from these results some variables have an influence on ISSI, as follows: The IPI variable has a negative effect on ISSI with a T-statistic value of -8.30868 smaller than T-table -2.02619, meaning that if IPI experiences an increase of 1% means that ISSI decreases by 0.21%, and the inflation variable has a negative effect on ISSI with a T-statistic value of -4.48109 which is smaller than T-table -2.02619, meaning that if inflation increases by 1% then ISSI decreases by 0.01%. Then the IR variable has a positive effect on ISSI as evidenced by the T-statistic value of 2.10608 which is greater than T-table 2.02619, so if IR increases by 1%, then ISSI increases by 0.01%. Meanwhile, the ISBC variable does not have a negative effect on ISSI with a T-statistic value of -1.47084 greater than T-table -2.02619, so if ISBC increases by 1%, then ISSI remains the same as ISBC, the MS variable, and ER do not have a positive effect on ISSI with a T value. -statistics 0.67770 and 0.94564 are smaller than T-table 2.02619, so, if the MS and the ER increase by 1%, then ISSI remains the same.

Table 7. Short Term Estimation Results

Variable	Coefficient	T-Statistik
IPI	0.08524	0.37765
ISBC	0.03261	1.38683
MS	0.32290	0.60300
ER	0.60300	1.03486
IR	0.02032	0.21134
Inflation	0.00701	-1.41231

Based on the VECM estimation test in the short term, it was found that all variables did not affect ISSI because the T-statistics were below the T-table. As for a more detailed explanation of how the variable responds when experiencing shock or shock, it can be explained through the results of the Impulse Response Function (IRF).

Impulse Response Function (IRF)

Impulse Response Function (IRF) analysis is used to see the response of dependent variables in the VECM caused by shock. IRF also provides information on how long the effect of the shock on the variable will be in the future for 60 periods. The following are IRF results from IPI, ISBC, MS, ER, IR, and Inflation.

Figure 3. IRF Test Results

Response of LOG_ISSI to Innovations
using Cholesky (d.f. adjusted) Factors
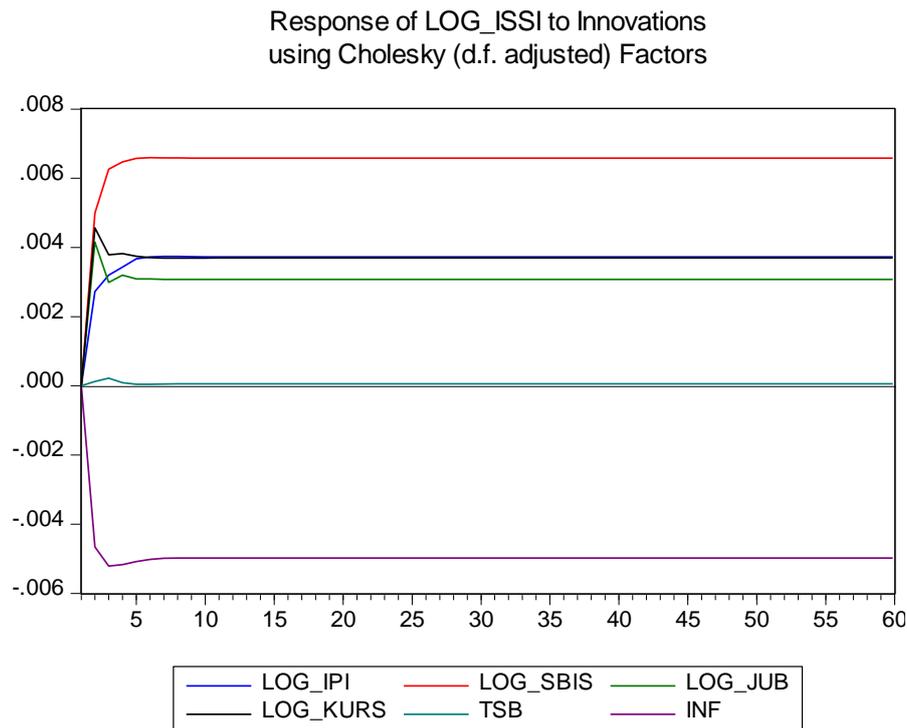
Source: Processed data, 2022

The results of the IRF test in the figure above show the ISSI response to shock for all variables. The first is a positive stable response after experiencing shocks in periods 1-5 and is stable until the end is responded by IPI (blue) ISBC (orange) MS (green) and the ER (black), the two negative responses in 1-7 experience ups and downs to shocks but from period 8 to the end of that the response was stable as shown by inflation (purple) and IR (light green) fluctuated until the 4th period and then stabilized close to the ISSI stable line. But the essence of the IRF test shows that when there is a shock raised by several dependent variables, ISSI responds quickly and stably until the end of the test.

Forecast Error Variance Decomposition (FEVD)

Forecast Error Variance Decomposition analysis is used to see how much a variable contributes to changes in each variable. Where the amount of value used is in the form of a percentage so that it can be seen what percentage of the contribution of all variables to the ISSI The following are the results of the Forecast Error Variance Decomposition test:

Table. 8. Forecast Error Variance Decomposition (FEVD) test results

Variable	Contribution
IPI	0.64
ISBC	2.01
MS	0.45
ER	0.64
IR	0.01
Inflation	1.16

Source: Processed data, 2022

DISCUSSION

IPI's influence and contribution to ISSI

Based on the results of the VECM test, IPI has a long-term negative impact on ISSI. That is, as the IPI increases, the ISSI will decrease. IRF test results, ISSI responded positively to the shock caused by IPI, stable in the 5th period until the end of the test. Based on the results of the FEVD test, the IPI variable contributes an average of 0.64% to ISSI growth. This is following research by Widarjono et al. (2021) which states that IPI has a negative relationship with the Indonesian sharia stock index, and Nur & Fatwa (2022) find the same thing. According to Mankiw (2010), there is a reciprocal relationship between the production index and ISSI. Economic growth shows the extent to which economic activity generates additional income for the community during a certain period. Because economic activity is essentially a process of using factors of production to produce products, this process creates a flow of rewards for the factors of production owned by the community (Todaro & Smith, 2011). Increased industrial activity is reflected in the Industrial Production Index. The higher the production level of an

industry, the better management is needed to continue to meet consumer needs. And the better the company's manufacturing index, the better its stock index.

ISBC influence and contribution to ISSI

Based on the results of the VECM test, ISBC has a long-term negative impact on ISSI. This means that as ISBC increases, ISSI will decrease. IRF test results, ISSI responded positively to the shock caused by ISBC. Based on the results of the FEVD test, the ISBC variable contributed an average of 2.01% to ISSI growth. This is in line with the research of Umam et al. (2019) that Indonesian Sharia Bank Certificate (ISBC) has a negative effect on the Indonesian Sharia Stock Index and Rachmawati & Laila (2015) explains that ISBC does not affect ISSI. Islamic banks that invest their funds in ISBC get a fee for services that help maintain the balance of the Indonesian currency. Since the rate of return offered by Bank Indonesia is related to its ISBC, there is no difference in profit resulting from the placement of these funds by Bank Indonesia. If the compensation received by the Indonesian bank for investing in its ISBC is large, then the profit generated by the Indonesian bank will be shared among the owners. This allows investors to switch to other investment vehicles, namely ISBC, not the Islamic capital market. It is not surprising that investor interest in investing in the Islamic capital market decreases, this will trigger a decline in the Islamic stock index.

Money supply influence and contribution to ISSI

Based on the results of the VECM test, MS has a long-term positive impact on ISSI. This means that as MS increases, ISSI will also increase. IRF test results, ISSI responded positively to the shock caused by MS. Based on the results of the FEVD test, the MS variable contributes an average of 0.45% to ISSI growth. The money supply (MS) can affect the results of sharia investments. If the MS increases, interest rates will increase. In this context, investors invest their money in the capital market (Mahfiroh & Ratno, 2021). MS growth influences economic growth, it also affects ISSI growth. A large increase in the money supply will cause inflation and can expand the company's funding sources by increasing the money supply for businesses which can increase production activities, improve performance and increase income. This is an incentive for investors to invest (Hakimi et al., 2020).

Exchange rate influence and contribution to ISSI

Based on the results of the VECM test, exchange rates have a long-term positive impact on ISSI. That is, when the exchange rate increases, the ISSI will also increase. IRF test results, ISSI responded positively to the shock caused by the exchange rate. Based on the results of the FEVD test, the exchange rate variable contributes an average of 0.64% to ISSI growth. This is following research by Wulan (2020) which states that exchange rates have a positive impact on ISSI. According to Handri et al. (2021), the exchange rate and ISSI have a mutually influencing relationship both in the short and long term. The strengthening of the exchange rate has a positive impact on ISSI as a whole. The government's policy when the exchange rate rises are to lower interest rates to attract capital inflows so that the rupiah depreciates. However, a small interest rate can reduce the present value of a company's future cash flows and increase ISSI's growth.

The influence and contribution of IR to ISSI

Based on the results of the VECM test, IR has a long-term positive impact on ISSI. This means that as the IR increases, the ISSI will also increase. IRF test results, ISSI responded positively to the shock caused by IR. Based on the results of the FEVD test, the IR variable contributes an average of 0.01% to ISSI growth. Sebo & Nafi (2020) argues that one of the advantages of sharia instruments is that these shares have undergone a screening process following sharia instruments so that changes in interest rates have a significant impact on sharia stock indexes. It states that it is not. The next factor that affects investment returns is interest rates, or what is commonly called the BI interest rate (Wijaya, 2019). A high BI rate is a promising investment opportunity for investors because it generates higher returns. A high BI rate can put pressure on the capital market. Misharni (2018) and Tripuspitorini et al. (2021) low BI rates encourage economic activity and investment. The low BI rate has an impact on ISSI appreciation, which also has an impact on sharia investment results.

Influence and contribution of inflation to ISSI

Based on the results of the VECM test, inflation has a long-term negative impact on ISSI. That is, when inflation increases, ISSI will decrease. IRF test results, ISSI responds negatively to the shock caused by inflation. Based on the results of the FEVD test, the inflation variable

contributed an average of 1.16% to ISSI growth. This is following research by Ranto (2019), and Fuadi (2020) which states that inflation is negatively related to the Indonesian sharia stock index. Inflation is a general and sustainable increase in commodity prices (Mishkin, 2010). Inflation can have a positive or negative impact on the economy, depending on the inflation rate. Even though Indonesia's inflation rate continues to fluctuate, it is possible that the level of investment in the Indonesian capital market, including the Indonesian Sharia Stock Index (ISSI), will be affected. According to Sanjaya & Pratiwi (2018), inflation has a negative and statistically significant effect on JII, and according to Fathurrahman & Widiastuti (2021), inflation has a significant negative effect on investment risk.

CONCLUSION

Based on the discussion above, this study concludes: IPI has a negative influence on ISSI with a contribution of 0.64%. ISBC has a negative effect on ISSI with a contribution of 2.01%. Meanwhile, MS has a positive effect on ISSI with a contribution of 0.45%. Then the exchange rate has a positive effect on ISSI with a contribution of 0.64%. Meanwhile, IR has a positive effect on ISSI with a contribution of 0.01%, and inflation has a negative effect on ISSI with a contribution of 1.16%.

REFERENCES

Ahmed, B. A., Isah, S. I., & Chika, U. A. (2018). Long-run Relationship between Islamic Stock Indices and US Macroeconomic Variables. *Munich Personal RePEc Archive*, *104167*.

Andika, N., Abubakar, L., & Handayani, T. (2021). Implementation of principle for responsible investment in distribution of bank credits on infrastructure projects. *Legality : Jurnal Ilmiah Hukum*, *29*(1), 130–143. https://doi.org/10.22219/ljih.v29i1.15063

Ash-shiddiqy, M. (2018). Pengaruh Indeks Produksi Industri (IPI), Sertifikat Bank Indonesia Syariah (SBIS), Inflasi Dan Nilai Tukar Terhadap Indeks Saham Syariah Indonesia. *Jurnal Penelitian Agama Dan Masyarakat*, *3*(1), 39–50.

BEI. (2022). *Indeks Saham*. Www.Idx.Co.Id.

Beik, I. S., & Fatmawati, S. W. (2014). Pengaruh Indeks Harga Saham Syariah Internasional dan Variabel Makro Ekonomi Terhadap Jakarta Islamic Index. *Al-Iqtishad: Jurnal Ilmu Ekonomi Syariah*, *6*(2), 155–178. https://doi.org/10.15408/aiq.v6i2.1228

Candy, & Winardy, A. (2019). Pengaruh Faktor Ekonomi Makro Terhadap Stock Return Pada Indeks Saham LQ45. *JESYA; Jurnal Ekonomi Dan EKonomi Syariah*, *2 (1)*, 65–79. https://doi.org/https://doi.org/10.36778/jesya.v2i1.35

Conrad, C. A. (2021). The Effects of Money Supply and Interest Rates on Stock Prices, Evidence from Two Behavioral Experiments. *Applied Economics and Finance*, *8*(2), 33. https://doi.org/10.11114/aef.v8i2.5173

Cornell, B. (1983). The Money Supply Announcements Puzzle: Review and Interpretation. *American Economic Review*, *73*(4), 644–657.

Ding, L. (2021). Conditional Correlation between Exchange Rates and Stock Prices. *Quarterly Review of Economics and Finance*, *80*, 452–463. https://doi.org/10.1016/j.qref.2021.02.004

Fathurrahman, A., & Widiastuti, R. A. (2021). Determinan Indeks Saham Syariah Indonesia (Pendekatan Error Correction Model). *Islamic Banking*, *7*(1), 179–194.

Fuad, F., & Yuliadi, I. (2021). Determinants of the Composite Stock Price Index (IHSG) on the Indonesia Stock Exchange. *Journal of Economics Research and Social Sciences*, *5*(1), 27–41. https://doi.org/10.18196/jerss.v5i1.11002

Fuadi, A. (2020). Inflasi dan Nilai Tukar Rupiah Terhadap Indeks Saham Syariah Indonesia. *Jurnal Akuntansi Bisnis*, *5*(1), 1–12.

Ghazo, A., Abu-Lila, Z., & Ajlouni, S. (2021). The Macroeconomic Determinants of Stock Price Fluctuations in Amman Stock Exchange. *Accounting*, *7*(1), 23–32. https://doi.org/10.5267/j.ac.2020.10.018

Godfrey, O. U. (2021). Money Supply and Stock Prices – A Case Study of Nigeria. *Journal of Economics, Finance And Management Studies*, *04*(10), 1893–1904. https://doi.org/10.47191/jefms/v4-i10-10

Gu, G., Zhu, W., & Wang, C. (2021). Time-Varying Influence of Interest Rates on Stock Returns: Evidence from China. *Economic Research-Ekonomska Istrazivanja*, *0*(0), 1–20. https://doi.org/10.1080/1331677X.2021.1966639

Hakimi, F., Millatina, N. A., & Herianingrum, S. (2020). Determinasi Makroekonomi Terhadap Produk Pembiayaan Bank Islam Di Indonesia (Periode 2017-2019). *Jurnal Penelitian IPTEKS*, *5*(1), 116–126. https://doi.org/10.32528/ipteks.v5i1.3025

Halim, S. (2020). Analysis Of The Effect On Inflation, Interest Rate, Dow Jones Islamic Malaysia Index, and Profitability on Stock Prices as Selected as Indonesia Sharia Stock Index. *Journal of Islamic Accounting and Finance Research*, *2*(2), 259–294. https://doi.org/10.21580/jiafr.2020.2.2.6357

Hanafi, S. M. (2021). Determinant of Market Share in the Indonesian Islamic Banking Industry. *Muqtasid: Jurnal Ekonomi Dan Perbankan Syariah*, *12*(1), 1–16. https://doi.org/10.18326/muqtasid.v12i1.1-16

Handri, H., Mulyaningsih, H. D., Hidayat, A. K., Kurniawan, R., & Rachmawati, A. W. (2021). The Impact of Indonesian Oil Price (CPI) and Macroeconomics on Investments in The Manufacturing Sector in Indonesia. *F1000Research*, *10*(May), 338. https://doi.org/10.12688/f1000research.27958.1

Harahap, I., & Tambunan, K. (2022). The Effect Of SBI and SBIS as Monetary Instruments On The Indonesia Economy. *Share: Jurnal Ekonomi Dan Keuangan Islam*, *11*(1), 1–19. https://doi.org/10.22373/share.v11i1.8603

Hastiarto, O. (2021). The Effect of Liquidity, Leverage, and Profitability on Financial Distress with Audit Committee as a Moderating Variable. *International Journal of Current Science Research and Review*, *04*(10), 1304–1315. https://doi.org/10.47191/ijcsrr/v4-i10-13

Junaidi, A., Ghafur Wibowo, M., & Hasni. (2021). Pengaruh Variabel Ekonomi Makro Terhadap Indeks Saham Syariah Indonesia (ISSI) Periode Tahun 2014-2019. In *Jurnal Ekonomi Dan Bisnis* (Vol. 24, Issue 1). https://doi.org/10.31941/JEBI.V24I1.1364

Kumar, K. K., & Sahu, B. (2018). Dynamic Linkages Between Macroeconomic Factors and Islamic Stock Indices in a Non-Islamic Country India. *The Journal of Developing Areas*, *51*(1), 193–205. https://doi.org/https://doi.org/10.1353/jda.2017.0011

Luwihono, A., Suherman, B., Sembiring, D., Rasyid, S., Kalbuana, N., Saputro, R., Prasetyo, B., Taryana, Suprihartini, Y., Asih, P., Mahfud, Z., & Rusdiyanto. (2021). Macroeconomic Effect on Stock Price: Evidence from Indonesia. *Accounting*, *7*(5), 1189–1202. https://doi.org/10.5267/j.ac.2021.2.019

Mahfiroh, N., & Ratno, F. A. (2021). Pengaruh Variabel Makroekonomi Terhadap Pertumbuhan Nilai Outstanding Sukuk Korporasi Indonesia Tahun 2016-2019. *Jurnal IMARA*, *5*(2), 149–165.

Mankiw, N. G. (2010). *Principles of Economics Pengantar Ekonomi Makro.* (Edisi Keti). Salemba Empat.

Mashudi, D., Ibrahim, M. A., & Ilahi, F. (2020). The Effect of Macroeconomic Variables on Sharia Stock Prices in the Jakarta Islamic Index. *Advances in Social Science, Education, and Humanities Research, Volume 409*. https://doi.org/10.2991/assehr.k.200225.068

Misharni. (2018). Pengaruh Suku Bunga Sertifikat Bank Indonesia, Inflasi dan Perubahan Kurs Terhadap Indeks Harga Saham Gabungan. *Journal of Islamic Management and Bussines*, *2*(2), 68–89.

Mishkin, F. S. (2010). The Economics of Money, Banking and Financial Markets. *Mishkin Frederic–Addison Wesley Longman*.

Mustafa, S. A., Ramlee, R., & Kassim, S. (2017). Economic Forces and Islamic Stock Market: Empirical Evidence from Malaysia. *Asian Journal of Business and Accounting*, *10*. https://doi.org/10.2991/assehr.k.200225.068

Nur, S., & Fatwa, N. (2022). Analisis Pengaruh Indikator Makroekonomi Terhadap Indeks Saham Syariah Indonesia. *Jurnal Tabarru*, *5*(1), 122–131.

POJK Nomor 35, Pub. L. No. 35, www.ojk.go.id (2017).

OJK. (2021). Market Update Pasar Modal Syariah. In *www.ojk.go.id*. https://doi.org/10.1002/9781119196709.app1

Qing, Y. K., & Kusairi, S. (2019). The Effect of Money Supply, Exchange Rate, and Interest Spread toward the Performance of Stock Market in Malaysia. *Widyakala Journal*, *6*(2), 142. https://doi.org/10.36262/widyakala.v6i2.217

Rachmawati, M., & Laila, N. (2015). Faktor Makroekonomi Yang Mempengaruhi Pergerakan Harga Saham Pada Indeks Saham Syariah Indonesia (ISSI) di Bursa Efek Indonesia (BEI). *Jurnal Ekonomi Syariah Teori Dan Terapan*, *2*(11), 928–942.

Ranto, S. R. (2019). Pengaruh Jangka Pendek Dan Jangka Panjang Variabel Makro Ekonomi Terhadap IHSG Di Bursa Efek Indonesia Dengan Pendekatan Error Correction Model (ECM). *Jurnal Derivat: Jurnal Matematika Dan Pendidikan Matematika*, *6*(1), 12–24. https://doi.org/10.31316/j.derivat.v6i1.332

Refinitiv. (2020). Islamic Finance Development Report 2020: Progressing Through Development. *Islamic Finance Development Report*, 1–54.

Sanjaya, S., & Pratiwi, N. (2018). Pengaruh Tingkat Suku Bunga, Kurs Dan Inflasi Terhadap Jakarta Islamic Index (JII). *Jurnal Ekonomi Dan Bisnis Islam*.

Sebo, S. S., & Nafi, H. M. (2020). Pengaruh Inflasi, Nilai Tukar, Suku Bunga, dan Volume Transaksi Terhadap Harga Saham Perusahaan Pada Kondisi Pandemi Covid-19. *Jurnal Akuntansi Dan Perpajakan*, *6*(2), 113–126.

Sekaran, U. (2019). *Metode Penelitian Untuk Bisnis* (Kedua). Salemba Empat.

Sekaran, U., & Bougie, R. (2019). *Metode Penelitian Untuk Bisnis Buku 2* (6th ed.). Salemba Empat.

Shih, V. hyung, & Hoang, C. (2021). The Impact of Accounting Fundamentals and Macroeconomic Indicators on Manufacturing Companies' Stock Prices. *Journal La Bisecoman*, *2*(3), 22–29. https://doi.org/10.37899/journallabisecoman.v2i3.404

Sinay, L. J., Tihurua, F. R. N., & Rahakbauw, D. L. (2018). Analisis Harga Saham PT. ANTAM tbk Berdasarkan Harga Emas,dan Nilai Tukar Rupiah Terhadap Dolar Menggunakan Model Autoregressive Distributed Lag. *BAREKENG: Jurnal Ilmu Matematika Dan Terapan Dan Terapan*, *12*(1), 53. https://doi.org/10.30598/vol12iss1pp53-62ar364

Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Alfabeta.

Thamrin, J., & Sembel, R. (2020). The Effect of Company's Fundamental, Market Return, and Macroeconomic to Stock Return: A Case Study of Consumer Goods Companies Listed in BEI Period 2009-2018. *Ipmi BUSINESS STUDIES*, *4*(3), 184–197.

Todaro, M., & Smith, S. (2011). *Pembangunan Ekonomi di Dunia Ketiga* (Eleventh). Addison-Wesley.

Tripuspitorini, F. A., Setiawan, & Setiawan, N. J. (2021). Effect of Macroeconomic Factors on Sharia Stock Index Prices Using The VECM Method Approach. *Jurnal Inovasi*, *17*(2), 365–376.

Umam, A. K., Ratnasari, R. T., & Herianingrum, S. (2019). The Effect of Macroeconomic Variables in Predicting Indonesian Sharia Stock Index. *Jurnal Ekonomi Dan Bisnis Islam (Journal of Islamic Economics and Business)*, *5*(2), 223. https://doi.org/10.20473/jebis.v5i2.15031

Widarjono, A. (2013). *Ekonometrika: Pengantar dan Aplikasinya*. Ekonosia.

Widarjono, A. (2018). *Ekonometrika Pengantar dan Aplikasi Disertai Panduan Eviews*. UPP STIM YKPN.

Widarjono, A., Saddam, J., Shidiqie, A., Lak, L., & El, N. (2021). *The Sensitivity of the Indonesian Islamic Stock Prices to Macroeconomic Variables : An Asymmetric Approach **. *8*(3), 181–190. https://doi.org/10.13106/jafeb.2021.vol8.no3.0181

Wijaya, R. S. (2019). Pengaruh Faktor Makro Ekonomi terhadap Kredit Bermasalah pada Bank Umum di Indonesia. *OECONOMICUS Journal of Economics*, *4*(1), 36–48. https://doi.org/10.15642/oje.2019.4.1.36-48

Wulan, A. N. (2020). Analisis Pengaruh Indikator Makroekonomi Terhadap Indeks Harga Saham Syariah di Indonesia Tahun 2011-2020. *Journal of Islamic Economics, FInance and Banking*, *4*(2), 59–84.