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An Empirical Study on Effect of Macroeconomic and United States Economic Policy Uncertainty on Jakarta Islamic Index Movement in the Indonesian Islamic Capital Market

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Abstract

This study aimed to investigate the long-term effects of macroeconomic factors and U.S. economic policy uncertainty on Jakarta Islamic Index (JII). In addition, it closely examined JII's responses to macroeconomic shocks and U.S. EPU fluctuations from January 2018 to September 2022. The analysis included macroeconomic elements such as Inflation, exchange rate, GDP, and EPU, using Vector Error Correction Model (VECM). The results showed a persistent influence of GDP on JII, and in the structural analysis, JII capitalization showed volatility in response to Inflation, positive responses to exchange rate movements (USD/IDR), and adverse reactions to U.S. GDP and EPU. The study also showed USD/IDR exchange rate as the primary contributor, followed by U.S. EPU, GDP, and Inflation, in explaining variations in the variable. **Keywords**: JII, Inflation, Exchange rate, GDP, US EPU

Abstrak

Tujuan penelitian adalah menganalisis secara empiris pengaruh jangka panjang variabel makroekonomi dan ketidakpastian kebijakan ekonomi Amerika Serikat terhadap *Jakarta Islamic Index* (JII) serta menganalisis kecepatan respon *Jakarta Islamic Index* (JII) terhadap guncangan makroekonomi dan EPU US pada periode Januari 2018 – September 2022. Metode yang digunakan untuk analisis adalah *Vector Error Correction Model* (VECM). Hasil penelitian ini mengungkapkan bahwa secara jangka panjang PDB berpengaruh signifikan terhadap *Jakarta Islamic Index* (JII). Dalam analisis struktural, pergerakan inflasi direspon secara fluktuatif oleh kapitalisasi JII, sedangkan pergerakan PDB dan EPU US direspon negatif oleh kapitalisasi JII. Penelitian ini juga mengungkapkan bahwa nilai tukar (kurs USD/IDR) memiliki varians terbesar dalam menjelaskan variabel JII, disusul oleh EPU US, PDB, dan inflasi. **Kata kunci**: JII; Inflasi; Nilai Tukar; PDB; EPU US

INTRODUCTION

The investment sector plays a crucial role in fostering economic growth and development within a country's economy. According to Hartono in Rochmania & Sukmaningrum (2022), investment is postponing consumptive spending in favor of directing funds towards productive assets for a predetermined period. In Indonesia, investment can be realized through capital market instruments, including stocks and bonds (Tandelilin in Rochmania & Sukmaningrum, 2022). Correa & Montero as cited in Wijayaa & Hariyani (2022), stated that capital market functioned as a long-term marketplace for trading bonds, equities, and various financial products. The well-being of a nation's economy relies on capital market's ability to fund businesses and generate long-term profits, as suggested by Bustaman et al. (Wijayaa & Hariyani, 2022).

According to Muttaqiena (2013), there has been significant global growth in the Islamic banking and finance industry. This growth needs to be integrated with the influx of Middle Eastern investment funds and the general understanding of Sharia-based finance (Muttaqiena, 2013). More specifically, in capital market investment sector, there is an increasing recognition of investment activities, particularly due to the prevalence of financial assets governed by Islamic Sharia.

Indonesia as a country with the world's largest Muslim population, has the potential to establish a robust Sharia-compliant capital market industry (Afendi, 2017). Saputro, in Pratitis & Setiyono (2021), outlined the components of capital market, including composite indices, sectoral stock indices, and indices with specific criteria. The latter category includes stocks meeting unique requirements, such as Jakarta Islamic Index (JII), which follows Islamic law.

The initiation of Sharia-compliant stocks in the Indonesian capital market can be traced back to the launch of JII in July 2000 (Agestiani & Sutanto, 2019). This effort was supported by DSN-MUI Fatwa No. 05 of 2000, concerning the buying and selling of shares, and Fatwa No. 40 of 2003, which laid down the basic Sharia principles for capital market. JII comprises 30 liquid equities with substantial market capitalization, all of which follow Sharia principles (Agestiani & Sutanto, 2019).

Islamic stock index and Sharia principles mandate that corporations maintain interest-based debt below 45% of their total assets and restrict non-halal revenue from interest income to no more than 10%. JII paved the way for Islamic stock transactions in the Indonesian capital market, offering investors the opportunity to invest in a Sharia-compliant manner without participating in haram and riba financial practices (Pantas, 2017). Muslim investors are drawn to JII due to its substantial market capitalization, consistent stock price performance, and compliance with Sharia-compliant stock criteria (Utami & Darmawan, 2018).



Figure 1. JII Capitalization (January 2018-September 2022 Period)

Source: www.ojk.go.id (data processed for the period January 2018-September 2022)

Figure 1 shows the fluctuating JII, which is Islamic stock index. In March 2020, JII experienced a substantial drop of 15.68% from February 2020, reducing its market capitalization to 1,582.238 trillion rupiahs, marking the most significant decrease. On the other hand, the highest market capitalization occurred in January 2019, reaching a value of 2,376.03 trillion rupiahs, reflecting a 6.10% increase from the previous month at 2,239.50 trillion rupiahs. The second-largest market capitalization was recorded in January 2018 at IDR 2,372.95 trillion.

The figure also shows the annual changes in Islamic stock investments. JII market capitalization tends to decline in the middle of the study data period. For example, a significant reduction in JII capitalization was recorded in March 2020, which may be attributed to the uncertain national and international economic conditions resulting from Covid-19 pandemic and escalating global geopolitics. As a result, investors may be prompted to sell their shares to meet various financial needs.

According to Samsul in Pantas (2017), investment is an activity carried out by investors to reap future benefits. Consequently, investors need to pay close attention to fluctuations in index movements to safeguard their assets. This means that stock market participants need to study and analyze the global economic policy cycle and the movements of macroeconomic variables such as exchange rate and inflation (Ginting et al., 2016).

Both conventional and Islamic financial market is sensitive to global events and play a critical role in economy (Sumarjo et al., 2022). Most events have an impact on the speed of capital market. For example, events including Covid-19 outbreak and Russia's invasion of Ukraine have raised concerns about the potential for a third world war, which could affect a country's economic stability, particularly in capital market. To mitigate the potential impact of global crisis on capital market, various international policies were proposed. Specifically, in United States, economic policies have been formulated to counteract the significant effect of global financial crisis. However, some of these policies introduce uncertainty into the global economic, both directly and indirectly. As a result, stock price movements was influenced due to United States' status as a superpower (Istiak & Alam in Prasetyo, 2020). Economic Policy Uncertainty (EPU) of United States can have a significant impact on stock price movements, necessitating a more in-depth analysis of its effect.

In an uncertain economy, fiscal and monetary policy can lead to deeper economic downturns and slow recovery (Alam in Prasetyo, 2020). Fiscal policy is closely linked to the level of money in circulation, or inflation, which comprises a continuous increase in prices for goods and services (Mishkin in Suciningtias & Khoiroh, 2015). It is important to be aware that the impact of inflation on economic can be positive or negative, depending on its level. Generally, it is assumed that increased money circulation due to inflation can weaken or strengthen the stock market, as suggested by Dadang Gagas et al. in Suciningtias & Khoiroh (2015).

Another set of macroeconomic indicators that need to be explored are exchange rate and Gross Domestic Product (GDP) (Suciningtias & Khoiroh, 2015). Exchange rate can significantly affect the trade sector, particularly in relation to export and import activities. Consequently, company issuers in capital market are closely linked to international transactions. Exchange rate can fluctuate during significant global events, such as Covid-19 pandemic and the Russian invasion. Therefore, it is essential to consider how USD/IDR exchange rate movements influences the stock index. The duration of the epidemic and its subsequent effect have presented challenges for various industries, including coal and wheat, which eventually affect the global economic's well-being (Agestiani & Sutanto, 2019). To assess economic progress of a country, it is important to examine the GDP because it reflects a nation's economic growth and its impact on public welfare and the entire economic. This implies that a low GDP corresponds to slower economic growth.

The fluctuations in capitalization growth of JII have shown the need for exploration, prompting studies to analyze and evaluate the influence of macroeconomic indicators, including inflation, exchange rate, GDP, and global events causing EPU in United States from January 2018 to September 2022 on JII stock price index.

LITERATURE REVIEW

As showed by Sawidji in Ni Wayan Sri Asih Masithah Akbar (2016), the success of a nation is closely linked to capital market. One of the significant advantages of capital market is the ability to provide long-term capital without limitations. The Indonesian capital market serves various economic and financial purposes, making it an essential destination for investors. The stock price index plays a dual role as both a statistical and economic indicator, charting patterns and changes in stock prices over time.

Capitalization of JII

Market capitalization, as outlined by Niawaradila et al. (2021), results from multiplying the closing market price by the total issued shares. Indari (2016) further proposed that market capitalization reflects the total value of a company, making it a crucial measure of a public company's success, economic significance, diversification potential, comparability, and liquidity. Investors often consider market capitalization when deciding to invest in a particular stock. High capitalization stocks, according to Novirman in Niawaradila et al. (2021), are particularly attractive to investors due to their above-average industrial capabilities. Investors tend to hold these stocks because they have financial stability and reliability.

Changes in market capitalization are influenced by price fluctuations and alterations in the number of shares available on the stock exchange, as discussed by Hidayat et al. (2019). This forms the basis for including variables that can impact stock prices and issuances, such as inflation, exchange rate, GDP, and uncertainty in US economic policy (EPU US).

Circulating Currencies

Various factors, including macroeconomic variables, can influence stock price trends. In the context of the study by Irham in Ni Wayan Sri Asih Masithah Akbar (2016), inflation occurs when events lead to rising prices and a weakened currency. High inflation can have a widespread impact on economy, resulting from increased production costs for issuers and companies due to rising raw material expenses, and decreased demand as a result of high prices (Agestiani & Sutanto, 2019). People's purchasing power diminishes due to the currency's declining value (Arif Afendi, 2017). As product and service prices rise, public interest wanes, affecting company share prices. When stock prices drop and investors lose interest, capitalization of the stock price index decreases. Agestiani & Sutanto (2019) suggested that inflation had minimal impact on JII Islamic stock price index. However, Pantas (2017) showed that inflation shocks negatively affected the index.

USD to IDR Rate

Reka Suciningtias & Khoiroh (2015) explained that exchange rate determined the value of domestic and international currencies. The USD/IDR exchange rate, which converts Indonesian Rupiah (IDR) into US Dollars (USD), is determined by the interplay of demand and supply. These exchange rate have far-reaching effect on macroeconomic factors, such as current account transactions. According to Afendi (2017), market method shows that fluctuations in the Rupiah-to-foreign currency exchange rate can significantly impact a company's profits and share prices. When the value of US currency rises, the cost of imported goods increases, and this can lead to higher national debt, particularly in debtor nations. Meanwhile, when costs exceed revenue, a company's profits will decrease. Agestiani & Sutanto (2019) further explained that when exchange rate weakened, it tended to result in lower company dividends, returns, and capital gains. As a result, the demand for shares will be reduced, thereby affecting the stock price index in an inverse manner.

Riduwan & Utoyo (2016) showed a strong inverse connection between exchange rate and JII Islamic stock price index. As the Rupiah depreciates against the US Dollar, it spells trouble for Indonesia's economic. When economic fundamentals are unsound, the Rupiah will continue to depreciate, prompting investors to sell their shares and causing a decline in JII. A study by Ash-Shidiq & Setiawan (2020) reinforced this, showing a huge negative association between the currency rate and JII.

Investment, Consumption, Government, and Exports

According to Agestiani & Sutanto (2019), a positive GDP shows a healthy economic for a country. The growth of GDP reflects an improving economic and an increase in public well-being. As the welfare of the public rises, it stimulates higher levels of public consumption. As a result, the increased consumption will result in higher production and revenue. A healthy financial cycle and rising corporate income indirectly attract investors, as it promises high returns. However, Masliyah et al. (2020) suggested that JII company share prices are relatively unaffected by GDP. Ni Wayan Sri Asih Masithah Akbar (2016) showed that GDP could have both positive and negative effect on the Composite Stock Price Index (JCI), including JII.

U.S. EPU

Suwito et al. (2020) proposed that economic policy of major countries contributed to global economic uncertainty (EPU). Bloom, cited in Djulianto & Nugroho (2022), suggested that EPU could lead to a prolonged recession. Uncertain economic policy can impact price indices, leading to slower demand for goods and services. Chatjuthamard et al. (2020) found that EPU can burden businesses, as it affects investor decisions (Liu et al., 2018). This situation can reduce investor activity and capital investment. The study by Prasetyo (2020) confirmed that US EPU could affect JCI. This implies that uncertainty in US economic policy is capable of harming JII Islamic stock index.

Based on the above description, the current study aims to investigate and assess various variables that may affect JII, in order to describe the interconnections between these factors, as described in the figure below.



Figure 1. Study Model

METHODS

Akbar (2016) outlined the study process, comprising operational variables, data sources, data collection methods, hypothesis testing design, and statistics. The investigation was performed quantitatively, using monthly time series data from January 2018 to September 2022. Secondary data sources such as BPS, BI, and OJK were used to define variables. The analysis focused on companies listed on JII and considered total sampling, consisting of data collected from all 30 companies from 2018 to 2022.

The study assessed variables using Vector Autoregression (VAR) model. VAR is a data processing framework that depicted each variable as a linear function of constants, lag values, and other system variables. As Febrina et al. (2018) explained, VAR's explanatory variables comprised lags of all independent variables in the system, necessitating the establishment of constraints for equality through equation interpretation. Ariefianto, cited in Febrina et al. (2018), described the components of VAR model's analysis, including data description, forecasting, structural inference, and policy analysis. The exploration incorporated several stages, namely data stationarity testing, cointegration analysis, stability assessment, lag length determination, Granger causality examination, VAR estimation for hypothesis testing or unit root analysis, and variance decomposition to measure each independent variable's impact on the dependent variable. When the data proved non-stationary at the level and showed cointegration, Vector Error Correction Model (VECM) analysis model was used. The software used for data processing was Eviews 12.

RESULT AND DISCUSSION

Data Stationarity Test

In accordance with Sella et al. (2021), the stationarity test aimed to identify stationarity and avoid spurious regression. When each variable is stationary, the model coefficients will be valid. The Augmented Dickey-Fuller (ADF) method was used to detect data stationarity, which conducted unit root tests up to the second difference.

Variables	Augmented Dickey-Fuller (ADF) value					
	Level	1 st Difference	2 nd difference			
JII	-2.658242	-7.023914	-			
Inflation	1.152552	-1.352853	-5.450270			
USD/IDR Rate	-4.570908	-	-			
GDP	-1.338336	-7.597627	-			
EPU	-0.923876	-2.601210	-5.204989			
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Table	2.	Stationarity	' Test	Results
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Source: Eviews 12 (data processed)

Based on the table, it was evident that all data variables, except for exchange rate data, were non-stationary at the level. Non-stationarity was determined from t-ADF value, which exceeded the MacKinnon critical value at the 5% level. This suggested the possibility of an integrated long-term relationship among JII, Inflation, GDP, and EPU variables.

Optimum Lag Test

In VAR model study, it was essential to determine the optimal lag, as the lag of an endogenous variable was used as an exogenous variable. This helped mitigate autocorrelation issues in VAR model system. The Akaike Information Criterion (AIC) was used in this study to identify the best lag. The AIC criteria showed the lowest value at lag one, marked with an asterisk (*) after the number, suggesting the use of lag 1 in the VAR model estimation.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1811.436	NA	1.51e+24	69.86292	70.05054*	69.93485
1	-1775.760	63.11866*	1.01e+24*	69.45232*	70.57803	69.88389*
2	-1753.540	35.03947	1.15e+24	69.55923	71.62305	70.35045
3	-1729.896	32.73746	1.30e+24	69.61140	72.61331	70.76226
4	-1706.499	27.89727	1.59e+24	69.67302	73.61303	71.18353

 Table 3. Optimum Lag Test Results

*The criterion's lag order

L.R.: sequential modified L.R. test statistic (each test at 5% level)

FPE: Final Prediction Error

AIC: Akaike Information Criterion

SC: Schwarz Information Criterion

H.Q.: Hannan-Quinn information criterion

VAR Stability Test

The stability of a VAR method was determined by the modulus of its roots, which had to be less than one and lie in the unit circle or beyond. In this study, the modulus values of various macroeconomic indicators (Inflation, exchange rate, GDP), EPU, and JII ranged from 0.093629 to 0.687448, showing the stability of the VAR model.

Figure	2.	VAR	Stability	Test
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Inverse Roots of AR Characteristic Polynomial



Johansen Cointegration Test

According to Engle and Granger in Pantas (2017), cointegration incorporated creating linear combinations of non-stationary variables to identify long-term equilibrium relationships through a linear combination. The cointegration equation helped detect and explain these long-term connections among variables. The Johansen cointegration test applied in this study, aimed to determine the cointegration rank, allowing for the establishment of a set of equations that described the long-term relationships between variables.

Hypothesized	Eigenvalue	Trace	0.05	Prob.
No. of CE(s)		Statistic	Critical Value	
None*	0.538746	103. 1663	69.81889	0.0000
At most, 1*	0.380316	61.38070	47.85613	0.0016
At most, 2*	0.332715	35. 53927	29. 79707	0.0098
At most 3	0.223947	13. 69421	15. 49471	0.0917
At most 4	6.19E-05	0,003341	3. 841465	0.9521

Table	4.	Johansen	Cointegration	Test
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Source: Eviews 12 (data processed)

Notes: An asterisk (*) shows the presence of cointegration at the 5% real level.

Table 4 showed three cointegration ranks at the absolute level $\alpha = 5\%$. This implied that three cointegrating equations could effectively describe all variables (JII, Inflation, exchange rate, GDP, EPU). These ranks were used in the error correction model (ECM) for the VAR model, transforming it into a VECM.

Granger Causality Test

Table 5. Granger	Causality	Test
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	JII	Inflation	Rate	GDP	EPU
JII	Ι	0.0505	0.6495	0.6495	0.2408
Inflation	0.1311	Ι	0.3343	0.9492	0.0216*
Rate	0.0430*	0.9476	Ι	0.2152	0.1490
GDP	0.2485	0.0010*	0.2114	Ι	0.0326*
EPU	0.6457	0.0881	0.1303	0.3617	Ι

Source: Eviews 12 (data processed)

Notes: Numbers marked with an asterisk (*) show a significant causal relationship at the 5% absolute level.

The Granger Causality test at a 5% significance level showed a mutual association between Inflation, exchange rate, GDP, and EPU on JII. It was observed that the dollar-rupiah exchange rate had a significant impact on the Index, while Inflation, GDP, or EPU did not. Therefore, JII did not affect Inflation, currency rate, GDP, or EPU.

Estimation of VECM

Before estimation, JII, Inflation, exchange rate, GDP, and EPU showed cointegration. Consequently, the analysis adopted VECM estimation. According to Anwar in Sella et al. (2021), VECM could describe dynamic equilibrium relationships for the long and short terms, comprising a system of equations and price combinations across various markets in both short and long-term scenarios. The general VECM model with lag p-1 was as follows:

 $\Delta yt = \alpha et-1 + Q1 \ \Delta yt-1 + Q2 \ \Delta yt-2 + \dots + Qp \Delta yt-p+1 + stt$

where $et-1 = Yt-1 - (\varphi + \omega Xt-1)$

Description:

- Δyt : vector of first derivatives of the dependent variable
- Δvt -1 : first derivative vector of the dependent variable with the first lag
- *et*-1 : error obtained from the regression equation between Y and X at the first lag and also called ECT (*Error Correction Term*)
- st : residual vector
- α : cointegration coefficient matrix
- β_i : coefficient matrix of the i-th dependent variable, where i = 1, 2, ..., p

Table 6. VECM Test Results

	Short Term	
Variables	Coefficient	T-Statistic
CoinEq1	-0.992911	-5.09898
D(JII(-1),2)	0.095844	0.65387
D(INF(-1),2)	-3043709.0	-0.60988
(COURSE(-1))	42.73694	0.80728
D(GDP(-1),2)	0.968929	3.62571
D(EPU(-1),2)	69.84475	0.52176
	Long Term	
Variables	Coefficient	T-Statistic
D(INF(-1))	-10127532	-1.93172
COURSE(-1)	-17.15627	-0.55458
D(GDP(-1))	1.220753	2.88316
D(EPU(-1))	360.0917	1.07620
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Source: Eviews 12 (data processed)

Table 6 showed VECM estimation results, where ECT coefficient had a negative value of 0.992911 from the short term to the long term. This showed a rapid response to long-term trends, with ECT coefficient value of -0.992911. Statistically, the error correction was significant as the t-statistic (5.09898) surpassed the t-table (2.00665). In the short term, VECM analysis showed that GDP (GDP(-1),2)) significantly influenced JII (JII(-1),2) as its absolute t-statistic value (3.62571) exceeded the t-table (2.00665). In the long run, using the same variables, GDP(-1) continued to exert a substantial

influence on the Index (JII(-1)), with its absolute t-statistic value (2.88316) exceeding the t-table (2.00665). This illustrated a consistent connection between JII and GDP. However, Inflation, currency rate, and EPU did not show cointegration. In the short term, JII was only cointegrated with GDP.

The integration of JII and GDP reflected a close correlation with Indonesia's economic situation. Stock price volatility and capitalization were linked to GDP through spending strategies. Therefore, assessing Indonesia's GDP, rather than focusing on segmented Inflation, exchange rate, and EPU characteristics, could help investors make more efficient investment decisions. JII Islamic stock price index followed a random walk algorithm. Based on technical investigation, it suggested that Islamic capital market investors had limited chances of achieving sustained abnormal returns. Consequently, VECM estimation generated the following equation:

- D(EPU,2) = 0.000638846865734*(D(JII(-1)) - 10127531.5169*D(INF(-1)) _ 17.156265565*KURS(-1) 1.22075259992*D(PDB(-1)) ++ 360.0917329*D(EPU(-1)) 239330.412146 +) _ 0.000844553903952*D(JII(-1),2) -27555.9909486*D(INF(-1),2) +0.0136765418166*D(KURS(-1)) - 0.000735419593154*D(PDB(-1),2) -0.556480898464*D(EPU(-1),2) + 34.3921566487

Impulse Response Function (IRF)

IRF analysis showed how dynamic variables responded to shocks from other variables in a fixed time frame, contributing to the dynamic structure of this model.



Figure 3. IRF Test Results

Source: Eviews 12 (Data processed)

The 5 IRF in Figure 3 spanning 57 periods showed the response of a variable to a shock of 1 standard deviation originating from the variable or others. For example, in Figure 3, the IRF analysis of JII response to various macroeconomic indicators and EPU was observed:

- The response of JII to a shock in the first four months dropped from 110,000 to negative values. However, in the fifth period, it rose positively, followed by fluctuations until the 15th period. The reaction eventually stabilized between the 15th and 57th periods. This implied that capitalization declined after a shock.
- From the first to the 10th period, the response of JII to inflationary shocks showed high volatility. Subsequently, it followed a smoother pattern from the 10th to the 20th period and from the 21st to the 57th period, till the response stabilized. This pattern described how inflation shocks could show the volatility and uncertainty of their impact on JII capitalization.
- The response of JII to exchange rate shocks grew until it nearly reached 40,000 in the first five periods, then it declined and fluctuated until the 20th period. Subsequently, it stabilized. Exchange rate shocks contributed positively to capitalization.

- When subjected to GDP shocks, the response dropped in the first four periods, then showed a range between -20,000 and -10,000 in the fifth period. Subsequently, it fluctuated in that range until the 15th period, where it stabilized. This implied that GDP shocks had a negative impact on JII capitalization.
- EPU shocks led to a sharp drop in response in the first and second periods, followed by a reversal in the third and sixth periods. It then decreased somewhat in the seventh period and remained stable until the 57th period. EPU shocks also had an adverse effect on capitalization.

Variance Decomposition

The Variance Decomposition analysis showed the extent to which each variable influenced the variance of others and the manner these variables interacted in the model. In this study, the Variance Decomposition analysis showed how Inflation, exchange rate, GDP, and EPU factors affected JII. Furthermore, E-Views 12 provided insights into how endogenous factors impacted exogenous variables:

Period	S.E.	JII	INF	COURSE	GDP	EPU
1	109387.8	100.000	0.000000	0.000000	0.000000	0.000000
2	127229.7	74.40992	0.549144	1.235590	0.011837	23.79351
3	139198.4	62.63792	1.622499	3.334857	5.737284	26.66744
4	147010.7	56.42964	1.886054	9.056672	6.206322	26.42131
5	152250.0	53.80370	2.239081	11.63928	6.802500	25.51544
6	157696.1	50.23130	2.255176	13.78257	7.078264	26.65269
7	162958.2	47.42464	2.254056	15.31461	7.751523	27.25517
8	168040.0	44.63415	2.136883	17.19683	8.111813	27.92033
9	172791.1	42.43249	2.063478	18.64420	8.612720	28.24711
10	177430.5	40.33895	1.958319	20.10654	8.901512	28.69468
11	181924.7	38.54288	1.880562	21.27602	9.267708	29.03283
12	186351.4	36.83196	1.792345	22.42664	9.534603	29.41445
13	190643.3	35.32783	1.722056	23.42255	9.824682	29.70288
14	194855.2	33.91736	1.64935	24.37447	10.05681	30.00201
15	198964.9	32.64854	1.587732	25.21891	10.29247	30.25234
16	203000.5	31.46125	1.526964	26.01671	10.49354	30.50154
17	206951.3	30.37604	1.473389	26.73998	10.69107	30.71952
18	210832.4	29.36131	1.421792	27.42085	10.86598	30.93007
19	214639.9	28.42417	1.375136	28.04669	11.03437	31.11964
20	218383.3	27.54638	1.330695	28.63498	11.18720	31.30075
21	222062.0	26.72934	1.289838	29.18105	11.33290	31.46687
22	225682.0	25.96213	1.251102	29.69489	11.46727	31.62462
23	229243.9	25.24376	1.215092	30.17527	11.59481	31.77107
24	232751.9	24.56729	1.180995	30.62816	11.71369	31.90986
25	236207.4	23.93089	1.149049	31.05385	11.82640	32.03981
26	239613.4	23.32987	1.118785	31.45615	11.93221	32.16299
27	242971.4	22.76223	1.090269	31.83590	12.03260	32.27900

Table 7. Variance Decomposition Results

28	246283.8	22.22365	1.063214	32.19569	12.12735	32.38910
29	249552.1	21.71524	1.037612	32.53652	12.21737	32.49326
30	252778.2	21.23153	1.013277	32.86023	12.30268	32.59229
31	255963.7	20.77185	0.990168	33.16780	12.38387	32.68631
32	259110.0	20.3343	0.968159	33.46061	12.46106	32.77587
33	262218.5	19.91741	0.947199	33.73956	12.53467	32.86115
34	265290.6	19.51969	0.927196	34.00571	12.60486	32.94255
35	268327.6	19.1399	0.908099	34.25984	12.67191	33.02025
36	271330.5	18.77681	0.889839	34.50281	12.73599	33.09455
37	274300.6	18.42938	0.872368	34.73529	12.79732	33.16564
38	277238.9	18.09659	0.855632	34.95799	12.85606	33.23374
39	280146.3	17.77754	0.839589	35.17147	12.91238	33.29902
40	283023.9	17.47141	0.824193	35.37633	12.96641	33.36166
41	285872.5	17.17741	0.809409	35.57306	13.01830	33.42182
42	288693.1	16.89485	0.795200	35.76214	13.06818	33.47964
43	291486.3	16.62307	0.781532	35.94400	13.11615	33.53525
44	294253.0	16.36146	0.768377	36.11906	13.16233	33.58878
45	296993.9	16.10946	0.755704	36.28768	13.20681	33.64034
46	299709.8	15.86656	0.743489	36.45022	13.24968	33.69004
47	302401.3	15.63226	0.731707	36.60700	13.29104	33.73799
48	305069.0	15.40613	0.720335	36.75832	13.33095	33.78426
49	307713.6	15.18774	0.709353	36.90446	13.36950	33.82894
50	310335.7	14.97669	0.69874	37.04569	13.40676	33.87213
51	312935.8	14.77263	0.688478	37.18223	13.44277	33.91388
52	315514.5	14.57522	0.678551	37.31434	13.47762	33.95428
53	318072.3	14.38412	0.668941	37.44221	13.51135	33.99338
54	320609.6	14.19906	0.659635	37.56604	13.54402	34.03125
55	323127.1	14.01974	0.650617	37.68604	13.57567	34.06794
56	325625.1	13.8459	0.641875	37.80236	13.60635	34.10351
57	328104.0	13.67729	0.633396	37.91519	13.63611	34.13801
Average	242476.4	27.79686	1.14547	28.86393	11.13943	31.05429

Source: Eviews 12 (Data processing results)

The variance decomposition test showed that the initial error variance estimate was 100% attributed to JII, while the variables Inflation, Exchange Rate, GDP, and EPU had no significant influence as shown in Table 8. JII dominated the following period at 74.4%, followed by EPU at 23.79%, exchange rate at 1.23%, Inflation at 0.54%, and GDP at 0.011%. All these factors continued to cause effect till the 57th period. After the 17th period, the EPU variable became dominant, accounting for 30.94%.

As exchange rate, GDP, and EPU variables fluctuated, inflation also showed changes. In the 57th period, exchange rate variable showed the highest relationship value at 37.92%, while inflation variable had the lowest at 0.64%. Based on error variance and analysis, it could be concluded that JII was most influenced by exchange rate, followed by EPU, GDP, and inflation.





The results of the variance decomposition test showed the varied contributions of several variables in influencing JII. Initially, the short-term variable, Kurs, held sway, as supported by Pantas (2017), followed by EPU and GDP. Inflation, with its unique characteristics, did not have any influence on JII, and while it initially dominated the shocks, as time progressed, other factors took over.

DISCUSSION

Effect of Macroeconomic Indicators and U.S. EPU on JII

According to VECM estimation, macroeconomic indicators, particularly GDP, had a positive and significant impact on market capitalization of JII in the long run. The performance of the Index rose in line with GDP growth, signifying that investment, output, and consumption driven by spending played an important role in long-term economic growth. An increase in constant price GDP caused expectations that the stocks included in JII had substantial growth potential. To enhance market capitalization, issuers increased the number of shares available to investors. These results were consistent with Akbar (2016), who similarly stated that GDP had a significant positive effect on JCI. This contradicted the results of Agestiani & Sutanto (2019), who contended that GDP failed to motivate investors to invest in JII.

Variables such as inflation, exchange rate, and United States EPU did not have a significant impact on JII in the long term. Tripuspitorini et al. (2021) and Rachmawati & Laila (2015) supported this by showing that inflation had no significant effect on the

Sharia Stock Index. In the context of Indonesia, inflation rate remained below 10% and well under control, which did not sway market capitalization. Similarly, SETYANI (2018) and Tripuspitorini et al. (2021) stated that exchange rate did not significantly influence JII capitalization. This showed the dominance of fundamental factors such as company revenue, profit growth, and domestic economic conditions in shaping market capitalization. Royhana & Warninda (2021) also corroborated this by stating that uncertainty of United States policy (EPU US) lacked a significant impact on JII capitalization. This suggested that JII tended to be more independent and less susceptible to US economic policy fluctuations, thereby instilling confidence in investors seeking long-term investment opportunities in the Indonesian stock market.

JII Response to Inflation

Shocks in inflation led to fluctuations in JII capitalization, showing the volatility and unpredictability of inflation factors. Inflation tended to have a positive impact on JII until the end of the observation period. This result was supported by ASSIDIQ (2022) and Faizin & Oktawati (2020), stating that JII's response to inflation shocks varied but generally remained positive till the conclusion of the study. This is in opposition to the study by Suciningtias & Khoiroh (2015), stating that an increase in inflation led to higher prices, diminishing investor enthusiasm for buying shares and potentially harming the Indonesian Sharia Stock Index. These insights assisted investors and stock market participants in making long-term and short-term investment and risk management decisions. Furthermore, they provided valuable information for shaping future economic and monetary policy aimed at stabilizing the stock market.

JII Response to Exchange Rate (KURS USD/IDR)

Shocks in exchange rate positively influenced JII capitalization movement. An increase in exchange rate shock resulted in higher market capitalization. This outcome was in line with Pantas (2017) and ASSIDIQ (2022), suggesting that exchange rate shocks benefited JII. However, the result contradicted the study of Suciningtias & Khoiroh (2015). A depreciation of the rupiah against the dollar led to increased foreign competition for local goods, which increased exports and sales. Higher exports indirectly contributed to a trade balance surplus and improved investor confidence in JII Islamic equities.

JII Response to GDP

Shocks in GDP had a negative impact on market capitalization. This outcome was in line with Muttaqiena (2013), showing that GDP had a broad negative effect on Islamic banking deposit growth. Meanwhile, this result contradicted the study by Basuki & Yusuf (2018), stating that GDP boosted JII. A short-term decrease in JII's market capitalization when GDP rose implied that as people's income increased, they might spend more, invest in the real economy, or save money.

JII Response to U.S. EPU

As the US EPU rose, JII market capitalization declined. This result was consistent with Das et al. (2019) and Prasetyo (2020), showing that US EPU significantly impacted stock indicators in 24 developing countries. An increase in US EPU adversely affected the Composite Stock Price Index (CSPI). However, this result contradicted the study by Royhana & Warninda (2021), claiming that JII was unaffected

by US EPU. U.S. fiscal and monetary policy uncertainty might have led to lower stock prices, driven by factors such as low-interest rate, trade disputes with China, and the Russia-Ukraine war. Consequently, JII fell when the Fed's monetary policy initially raised interest rate, then reduced them, creating uncertainty about changes in U.S. interest rate.

CONCLUSION

In conclusion, long-term ECM calculation showed that GDP had a positive impact on market capitalization. However, Inflation, USD/IDR exchange rate, and U.S. EPU showed minimal long-term influence on JII. USD/IDR rate affected JII in a unidirectional causal relationship. In the structural VECM analysis, capitalization showed volatility in response to inflation, a positive response to exchange rate (USD/IDR), and an adverse reaction to GDP and EPU. In the variance decomposition study, the USD/IDR exchange rate was the most significant, enabling it to explain fluctuations in market capitalization from January 2018 to September 2022.

This information served as a valuable guide for Islamic stock investors as it assisted in making investment decisions concerning stocks listed on JII. Investors were equipped to consider macroeconomic variables such as exchange rate (USD/IDR) and GDP. Consequently, the investors were able to make choices with their financial goals, whether in the short term for trading or in the long term for investment.

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