

Impact of monetary policy towards Islamic capital markets: An ARDL-ECM approach

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Abstract

This study examines the dynamic relationship between the Indonesian Sharia Stock Index and selected macroeconomic variables using the autoregressive distributed lag approach combined with the error correction model. The analysis incorporates policy interest rates, interbank rates, exchange rates, inflation, and the Indonesia Composite Index as explanatory factors. The results of the bounds testing procedure indicate the absence of a long-run cointegrating relationship between the Islamic stock index and the included macroeconomic variables. This finding suggests that the Islamic equity market in Indonesia does not follow a stable equilibrium path determined by conventional macroeconomic fundamentals. In the short run, the analysis reveals that monetary policy exerts delayed and complex effects, while the exchange rate shows little influence on the Islamic stock index. The Indonesia Composite Index emerges as the most significant driver, highlighting the importance of overall market sentiment and domestic equity performance in shaping the dynamics of sharia-compliant stocks. Interestingly, inflation and the interbank rate, although initially included in the model, were excluded in the final estimation due to their lack of measurable impact within the study period. These findings emphasize that the Indonesian Sharia Stock Index is largely influenced by short-term market fluctuations and domestic equity conditions, rather than by long-run macroeconomic fundamentals.

Keywords: monetary policy, Islamic capital markets, ARDL-ECM approach.

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Introduction

The Islamic capital market in Indonesia has experienced significant growth over the past few decades, establishing itself as a vital component of the country's financial system (Paltrinieri et al., 2020). As a distinct segment of the broader capital market, it operates in accordance with Shariah principles, prohibiting activities involving interest (*riba*), excessive uncertainty (*gharar*), and speculative behavior (Saiti et al., 2014). This market encompasses a variety of financial instruments, including sukuk (Islamic bonds), Islamic equities, and Islamic mutual funds (Alam et al., 2017). The interplay between monetary policy and the Islamic capital market in Indonesia has become increasingly important, as policymakers and investors seek to understand the unique dynamics and impacts of this sector (Majdoub et al., 2016).

The significance of this study lies in its focus on the impact of monetary policy on the Islamic capital market in Indonesia, a subject that remains underexplored compared to its conventional counterpart (Majdoub et al., 2016; Mensi et al., 2017). While numerous studies have extensively analyzed the relationship between monetary policy and conventional financial markets, the Islamic capital market's distinct features necessitate a separate investigation. This research aims to bridge this gap by providing a comprehensive analysis of how monetary policy decisions affect the performance and stability of Indonesia's Islamic capital market.

Understanding the impact of monetary policy on Indonesia's Islamic capital market is crucial for several reasons. Firstly, monetary policy, typically executed through interest rate adjustments and other financial regulations, plays a pivotal role in shaping economic conditions (Bernanke & Gertler, 1995; Mishkin, 2001). For Islamic financial institutions and investors who adhere to Shariah principles, the conventional tools of monetary policy, especially interest rate adjustments, pose unique challenges (Aysan et al., 2016; Ascarya, 2012). This study will explore how these institutions navigate such challenges and the subsequent effects on the Islamic capital market.

Secondly, the Islamic capital market has become increasingly relevant in Indonesia's financial landscape. According to the Islamic Financial Services Board (IFSB), the total value of Islamic finance assets exceeded USD 2.5 trillion in 2018, with a significant portion attributed to the Islamic capital market (IFSB, 2019). As this market continues to grow, understanding the factors that influence its stability and performance becomes imperative for policymakers, investors, and scholars in Indonesia.

Thirdly, the global economy's interconnected nature means that monetary policy decisions in one part of the world can have far-reaching effects. With the Islamic capital market spanning numerous countries, including Indonesia, the ripple effects of monetary policy are both complex and significant (Miranda-Agrippino & Rey, 2015; Mensi et al., 2017). This study will shed light on these cross-border impacts, providing valuable

insights for international investors and policymakers.

Adherence to Shariah principles means that the Islamic capital market in Indonesia operates under unique constraints, including prohibitions on interest-based transactions (*riba*), excessive uncertainty (*gharar*), and speculative activities (*maysir*) (Muchlis & Habbe, 2021). This fundamental difference necessitates a distinct approach to monetary policy analysis, as the transmission of conventional monetary instruments may differ in Shariah-compliant financial systems (Ibrahim, 2015). The challenges and opportunities in this market underscore the need for tailored monetary policies aligned with Shariah principles.

The rapid growth of Indonesia's Islamic capital market underscores its importance in the global financial system. As noted by Al-Amine (2008), the increasing issuance of *sukuk* and the proliferation of Islamic investment products signify a growing investor base that requires a nuanced understanding of the impacts of monetary policy. This observation is consistent with the findings of Ho et al. (2014), who argue that the expansion of Islamic financial instruments has strengthened the resilience, competitiveness, and international integration of Islamic capital markets. This study aims to provide such an understanding, contributing to more informed policy-making and investment decisions.

Moreover, the interconnected nature of the global economy means that monetary policy decisions in major economies can impact the Islamic capital market worldwide, including in Indonesia. For instance, the Federal Reserve's interest rate decisions can influence global liquidity conditions, which in turn affect the performance of Islamic financial instruments (Miranda-Agrippino & Rey, 2020; Majdoub et al., 2016). Thus, understanding these interconnections is crucial for managing risks and capitalizing on opportunities in the Islamic capital market.

The findings of this study will have significant implications for policymakers in Indonesia. By elucidating the relationship between monetary policy and the Islamic capital market, this research can inform the development of more effective and inclusive monetary policies. As highlighted by Chapra (2016) and Khan and Jabeen (2021), integrating Islamic financial principles into monetary policy frameworks can enhance financial stability and economic growth in countries with significant Islamic finance sectors.

Method

Data Collection

This study employs secondary data collected from three main official institutions, namely Statistics Indonesia (BPS), the Financial Services Authority of Indonesia (OJK), and Bank Indonesia (the central bank). The dataset covers a ten-year period, from 2014 to 2023, providing a comprehensive overview of macroeconomic indicators and financial market performance relevant to the Islamic Capital Market.

The dependent variable of this study is the Indonesia Sharia Stock Index (ISSI), which reflects the performance of Sharia-compliant equities listed on the Indonesia Stock Exchange. As the main proxy for the Islamic Capital Market, ISSI serves as a benchmark to examine the influence of monetary policy instruments.

The independent variables consist of several macro-financial indicators. First, the BI Rate (BIRATE), representing the benchmark interest rate set by Bank Indonesia, is used to capture the monetary policy stance. Second, the Jakarta Interbank Offered Rate (JIBOR) is included as a measure of short-term interbank lending costs, reflecting liquidity conditions in the money market. Third, the Indonesia Composite Index (ICI) serves as a proxy for the overall performance of the capital market, allowing for comparative analysis with the Sharia index.

Additionally, the Exchange Rate (ER), measured as the Rupiah against the U.S. Dollar, is included to account for external sector influences. Finally, Inflation (INF), obtained from Statistics Indonesia, represents price stability and macroeconomic conditions. These variables collectively enable a robust assessment of the impact of monetary policy on Indonesia's Islamic Capital Market.

Estimating model

The estimation strategy in this study is designed to examine the dynamic relationship between monetary policy instruments and Indonesia's Islamic Capital Market. Based on the theoretical and empirical foundations of time series econometrics, the model adopts the Autoregressive Distributed Lag (ARDL) approach developed by Pesaran et al. (2001). This approach is well-suited for analyzing datasets with a relatively small sample size and variables that are integrated of different orders, specifically $I(0)$ and $I(1)$, but not $I(2)$.

The dependent variable in this model is the Indonesia Sharia Stock Index (ISSI), which represents the overall performance of the Islamic Capital Market. The independent variables consist of the BI Rate (BIRATE), Jakarta Interbank Offered Rate (JIBOR), Indonesia Composite Index (ICI), Exchange Rate (ER), and Inflation (INF). Together, these variables provide a comprehensive framework for capturing the impact of monetary policy and macroeconomic fluctuations on the Islamic equity market.

The general form of the ARDL ($p, q_1, q_2, q_3, q_4, q_5$) model can be expressed as follows:

$$ISSI_t = \alpha_0 + \sum_{i=1}^p \alpha_i ISSI_{t-i} + \sum_{j=0}^{q_1} \beta_j BIRATE_{t-j} + \sum_{k=0}^{q_2} \gamma_k JIBOR_{t-k} + \sum_{l=0}^{q_3} \delta_l ICI_{t-l} + \sum_{m=0}^{q_4} \theta_m ER_{t-m} + \sum_{n=0}^{q_5} \phi_n INF_{t-n} + \epsilon_t \quad \dots (1)$$

where p represents the lag length of the dependent variable, q_1, q_2, q_3, q_4, q_5 are the lag lengths of each independent variable, and ϵ_t is the error term.

The ARDL estimation begins with the bounds test for cointegration to determine whether the variables have a long-run relationship. If the computed F-statistic exceeds the

critical upper bound value, the null hypothesis of no cointegration is rejected, confirming the existence of a long-run equilibrium. Conversely, if the statistic falls below the lower bound, no cointegration is established.

If cointegration is confirmed, the next step is to estimate the long-run coefficients of the ARDL model. These coefficients capture the equilibrium relationship between monetary policy variables and ISSI. The signs and magnitudes of the estimated parameters provide insights into how interest rates, liquidity conditions, capital market performance, exchange rate fluctuations, and inflation impact the Islamic Capital Market over time.

In addition to long-run analysis, the ARDL framework also estimates short-run dynamics using an Error Correction Model (ECM). The ECM is derived from the ARDL specification and incorporates the Error Correction Term (ECT), which measures the speed at which deviations from the long-run equilibrium are corrected. The inclusion of the ECT enables researchers to distinguish between short-run adjustments and long-run equilibrium dynamics, making the ARDL-ECM approach particularly useful for time-series analysis involving variables with mixed orders of integration (Banerjee, Dolado, & Mestre, 1998). The ECM is written as:

$$\Delta ISSI_t = \gamma_0 + \sum_{i=1}^{p-1} \gamma_i \Delta ISSI_{t-i} + \sum_{j=0}^{q_1-1} \beta_j \Delta BIRATE_{t-j} + \sum_{k=0}^{q_2-1} \gamma_k \Delta JIBOR_{t-k} + \sum_{l=0}^{q_3-1} \delta_l \Delta ICI_{t-l} + \sum_{m=0}^{q_4-1} \theta_m \Delta ER_{t-m} + \sum_{n=0}^{q_5-1} \phi_n \Delta INF_{t-n} + \lambda ECT_{t-1} + \mu_t \quad \dots (2)$$

where λ indicates the adjustment speed toward equilibrium, and is expected to be negative and statistically significant.

To validate the model, a series of diagnostic tests is conducted. These include the Breusch–Godfrey test for serial correlation, the Breusch–Pagan test for heteroskedasticity, and the Jarque–Bera test for normality of residuals. Furthermore, the stability of the estimated parameters is tested using the CUSUM and CUSUMSQ procedures. These tests ensure that the model is free from specification errors and that the results are robust.

The ARDL approach is particularly appropriate for this study for three reasons. First, the dataset covers only 10 years (2014–2023), which is relatively small, and ARDL is known to perform well in small samples. Second, the method allows for distinguishing between short-run and long-run effects of monetary policy on the Islamic Capital Market. Third, ARDL avoids the pre-testing bias of conventional cointegration techniques because it does not require all variables to be integrated to the same order.

Result and Discussion

Results of unit root tests

Table 1. Unit Root Tests

Variables	Augmented Dickey-Fuller (ADF)		Phillips-Perron (PP)		Stationarity Status
	Level	First difference	Level	First difference	
ISSI	-3.486	-10.120***	-3.486	-10.166***	I(1)
BIRATE	-1.874	-6.699***	-1.686	-6.842***	I(1)
JIBOR	-1.722	-5.853***	-1.554	-5.853***	I(1)
ICI	-1.669	-11.565***	-1.605	-11.565***	I(1)
ER	-2.041	-12.526***	-1.690	-14.154***	I(1)
INF	-2.694*	-8.674***	-2.692	-8.514***	I(0)

* Significance at 10% ; ** Significance at 5%. ; ***Significance at 1%.

Table 1 reveals that the ISSI variable is non-stationary in levels but becomes stationary after first differencing. Both ADF and PP tests reject the null hypothesis of a unit root at the 1% significance level in first difference (ADF = -10.120 ; PP = -10.166), confirming that ISSI follows an $I(1)$ process. Similarly, BIRATE, JIBOR, ICI, and ER are all non-stationary at their levels, with test statistics failing to reach critical thresholds. However, after first differencing, each variable achieves stationarity at the 1% level. For instance, the exchange rate (ER) shows strong evidence of stationarity in first differences, with ADF and PP values of -12.526 and -14.154 , respectively. These results consistently classify BIRATE, JIBOR, ICI, and ER as $I(1)$.

In contrast, inflation (INF) demonstrates a different pattern. At the level, the ADF statistic (-2.694) is significant at the 10% threshold, while the PP statistic (-2.692) yields similar evidence. This suggests that inflation is stationary at the level, thereby identified as $I(0)$. Consequently, the dataset is characterized by a mix of $I(0)$ and $I(1)$ variables.

The combination of variables integrated at order zero and one provides a strong justification for employing the ARDL bounds testing framework. Unlike traditional cointegration techniques that require all variables to be integrated at the same order, the ARDL model accommodates a mixture of $I(0)$ and $I(1)$ variables, provided none are integrated at order two or higher. This flexibility allows researchers to explore both the short-run dynamics and long-run equilibrium relationships among variables.

The unit root test results confirm that ISSI, BIRATE, JIBOR, ICI, and ER are integrated at order one, while inflation is integrated at order zero. These findings validate the appropriateness of applying the ARDL methodology to further investigate the dynamic linkages in Indonesia's Islamic capital market context.

Optimal Lag Selection

Determining the optimal lag length is an essential step in ARDL estimation, as it directly influences the accuracy of both short-run and long-run dynamics. An appropriate lag structure ensures that the model adequately captures the dynamic relationships among variables while avoiding over-parameterization and residual misspecification, thereby improving the reliability of statistical inference (Jordan & Philips, 2018; Kripfganz & Schneider, 2023).

In this study, the optimal lag was selected automatically by EViews using the Akaike Information Criterion (AIC). The maximum lag for the dependent variable was set to 4, and the explanatory variables were also allowed up to 4 lags. Based on this specification, EViews evaluated 12,500 possible models and selected the ARDL(1,4,0,1,1,0) model, which minimizes the AIC value. This implies that ISSI is modeled with one lag, BIRATE with four lags, JIBOR with zero lag, ER with one lag, ICI with one lag, and INF with zero lag.

The use of AIC is preferred because it provides a balance between model fit and complexity, especially in small to medium sample sizes. Compared to the Schwarz Information Criterion (SIC) and Hannan Quinn Criterion (HQ), AIC tends to select slightly longer lags, which is beneficial in capturing dynamic relationships without underfitting the model (Lütkepohl, 2005; Pesaran et al., 2001). This approach ensures robust estimation while avoiding omitted variable bias in the ARDL framework. Hence, the chosen specification based on AIC enhances the reliability of both long-run cointegration testing and short-run adjustment dynamics.

Results of the cointegration test: Bounds F-test

Tabel 2. Results of Bounds F-test for long-run relationship

Test Statistic	Value	Levels of significance	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	1.881.599	10%	2.08	3
k	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15
Actual Sample Size	116	Finite Sample: n=80		
		10%	2.303	3.154
		5%	2.55	3.606
		1%	3.351	4.587

The results of the bounds test are summarized in Table 2. The computed F-statistic from the ARDL estimation is 1.881, while the number of regressors (k) is five. According to the bounds testing decision rule, the null hypothesis of no cointegration is rejected

when the computed F-statistic exceeds the upper bound critical value ($I(1)$) at a chosen significance level. Conversely, if the statistic falls below the lower bound ($I(0)$), the null hypothesis cannot be rejected, indicating no evidence of a long-run relationship. If the value lies between the two bounds, the result is inconclusive (Pesaran et al., 2001).

For the asymptotic case with large samples ($n = 1000$), the critical bounds at the 5% significance level are 2.39 ($I(0)$) and 3.38 ($I(1)$). In the finite sample case ($n = 80$), which more closely reflects the actual sample size of 116 monthly observations used in this study, the bounds at the 5% significance level are 2.55 ($I(0)$) and 3.606 ($I(1)$). The computed F-statistic of 1.881 is below both the asymptotic and finite-sample lower bounds. This clearly indicates that the null hypothesis of no level relationship cannot be rejected at conventional significance levels. Thus, there is no statistical evidence of cointegration between ISSI and the included macroeconomic variables during the study period.

The absence of cointegration implies that ISSI does not share a stable long-run equilibrium relationship with interest rates, exchange rate, inflation, or the Indonesia Composite Index. In practical terms, this means that shocks to these macroeconomic variables do not lead ISSI to adjust toward a long-term equilibrium path. Instead, ISSI may react more strongly to short-run fluctuations and transitory shocks rather than to fundamental long-run determinants. This finding is consistent with the notion that emerging Islamic capital markets often exhibit weaker linkages to macroeconomic fundamentals than conventional markets.

For example, interest rates, both BIRATE and JIBOR, are often considered major determinants of stock performance in conventional financial markets. However, the theoretical foundation of Islamic finance, which prohibits *riba*, suggests that Islamic stocks may be less sensitive to interest rate movements in the long run. Similarly, while inflation and exchange rate are expected to affect asset prices by influencing purchasing power and international competitiveness, the empirical results here suggest that these factors do not anchor ISSI in a stable equilibrium over time. Even the Indonesia Composite Index, designed to capture Islamic consumption patterns, fails to cointegrate with ISSI, suggesting that its impact is primarily short-term. This finding is consistent with Majdoub et al. (2016), who argued that Islamic stock markets exhibit distinct long-run dynamics compared with conventional markets due to their Shariah-compliant investment principles.

It should be emphasized that the absence of cointegration does not render the ARDL model invalid. Instead, it directs the analysis toward the short-run dynamics and the error correction mechanism (ECM). As emphasized in econometric literature, ARDL models remain informative in exploring short-run relationships even in the absence of cointegration (Nkoro & Uko, 2016). By analyzing the short-run coefficients and adjustment dynamics, researchers can still identify ISSI's responsiveness to immediate changes in macroeconomic indicators.

Moreover, the lack of a long-run relationship between ISSI and macroeconomic variables is not unique to this study. Similar findings have been documented in other contexts, particularly within developing or Islamic financial markets. Narayan (2005), for instance, noted that in small-sample settings, evidence of cointegration is often weaker, and results may depend heavily on the chosen variables and sample period. This indicates that long-term equilibrium may not always exist, especially in relatively young markets or those subject to higher volatility.

The bounds test results reveal that the computed F-statistic of 1.881 falls below the critical lower bounds in both asymptotic and finite-sample scenarios. This leads to the acceptance of the null hypothesis, confirming that no cointegration exists between ISSI and the five macroeconomic variables examined. The implication for policymakers and investors is that ISSI movements are more likely to be influenced by short-run shocks than by long-run macroeconomic fundamentals. Therefore, monitoring short-term dynamics, market sentiment, and temporary fluctuations may provide more relevant insights into ISSI's behavior than modeling its long-run equilibrium with macroeconomic variables. This finding contrasts with Sudarsono and Latifatunnisa (2024), who reported a significant long-run relationship between ISSI and several macroeconomic variables using the VECM approach, suggesting that differences in estimation methods, sample periods, and model specifications may produce different cointegration outcomes.

Estimates of the short-run relationship and the ECM

Table 3. Results of the ARDL short-run estimate and the ECM

Variable	Coefficient	Standard Error	t-Statistic	Probability
D(BIRATE)	-79,445.74	57,369.43	-13.848	0.1691
D(BIRATE(-1))	49,834.36	60,905.41	0.8182	0.4151
D(BIRATE(-2))	113,113.7	61,276.01	18.460	0.0678
D(BIRATE(-3))	-168,501.1	58,980.80	-28.569	0.0052
D(ER)	-310.960	319.480	-0.9733	0.3327
D(ICI)	3.905.299	471.827	82.770	0.0000
CointEq(-1)	-0.018939	0.005073	-37.334	0.0003

R-squared = 0.5165, Adjusted R-squared = 0.4899, Durbin-Watson = 2.2441, Akaike info criterion = 26.032, Schwarz criterion = 26.198.

Functional Form X^2 (1)	9.166 [0.003]
Serial correlation X^2 (4)	4.147 [0.387]
Heteroscedasticity X^2 (1)	20.001 [0.067]
Normality X^2 (2)	57.890 [0.000]

The table above shows the results of the ARDL short-run estimate and ECM between the Indonesian Sharia Stock Index (ISSI) and selected macroeconomic indicators. The

explanatory variables initially included in the model specification were the policy interest rate (BIRATE), the interbank rate (JIBOR), the exchange rate (ER), inflation (INF), and the Indonesia Composite Index (ICI). However, after model selection and estimation, only a subset of these variables remained in the short-run specification. Specifically, inflation and JIBOR were excluded from the final results because the automatic lag selection procedure in EViews determined that their optimal lags were zero, indicating they did not exert a statistically significant influence on ISSI in the observed sample. This exclusion does not mean that these variables lack economic relevance, but rather that, within the given period, their impact on ISSI was not detectable under the ARDL approach.

The estimation results provide several important insights. Beginning with the interest rate variables, the short-run dynamics of BIRATE are captured through its contemporaneous effect and up to three lags. The contemporaneous coefficient of $D(\text{BIRATE})$ is -79,445.74 with a standard error of 57,369.43. Although the t-statistic is reported as -13.848, the corresponding p-value is 0.1691, indicating that the contemporaneous effect of the policy rate on ISSI is not statistically significant at conventional levels. This suggests that immediate changes in the policy rate do not directly translate into changes in the Islamic stock index.

The first lag of BIRATE, $D(\text{BIRATE}(-1))$, carries a coefficient of 49,834.36 with a probability of 0.4151. Again, the effect is not significant, indicating that the impact of monetary policy adjustments on ISSI does not materialize with a one-month delay. However, the second lag of BIRATE, $D(\text{BIRATE}(-2))$, has a large positive coefficient of 113,113.7 with a p-value of 0.0678. This is close to the 10% significance threshold, suggesting that changes in the policy interest rate may influence ISSI after a two-month delay, potentially due to the time required for monetary policy to be transmitted through the financial system and corporate balance sheets. Interestingly, the third lag, $D(\text{BIRATE}(-3))$, shows a strong negative and significant effect, with a coefficient of -168,501.1 and a probability of 0.0052. This indicates that increases in BIRATE exert a pronounced downward effect on ISSI three months later, consistent with theoretical expectations that higher interest rates raise borrowing costs, reduce profitability, and diminish equity valuations. The alternating positive and negative signs across the lags highlight the complex and dynamic nature of monetary policy transmission in the Islamic financial market.

Turning to the exchange rate, $D(\text{ER})$ is estimated with a coefficient of -310.960, a standard error of 319.480, and a probability of 0.3327. This suggests that short-run changes in the exchange rate do not have a statistically significant effect on ISSI in the sample. The result aligns with prior findings that exchange rate volatility may affect certain sectors more strongly than the aggregate Islamic stock index. Given the ISSI's diversified nature, the impact of exchange rate movements may be diluted.

By contrast, the Indonesia Composite Index (ICI) demonstrates a highly significant and economically meaningful effect. The coefficient of $D(\text{ICI})$ is 3,905,299, with a

standard error of 471,827 and a t-statistic of 82.770, accompanied by a probability of 0.0000. This finding underscores the critical role of domestic market performance in shaping ISSI dynamics. Since ICI reflects overall stock market conditions in Indonesia, its strong positive relationship with ISSI is intuitive: when the broader market performs well, sharia-compliant stocks tend to rise as well. This reinforces the notion that Islamic stock performance is driven more by general investor sentiment and domestic equity market trends than by macroeconomic fundamentals alone.

The adjustment mechanism toward long-run equilibrium is captured by the error-correction term, $\text{CointEq}(-1)$, which has a coefficient of -0.018939 and a standard error of 0.005073. The associated t-statistic of -37.334 and probability of 0.0003 confirm that the coefficient is highly significant and appropriately negative. This indicates that although no strong cointegration was established in the bounds test, the ECM nonetheless identifies a modest adjustment process: approximately 1.9 percent of deviations from equilibrium are corrected each month. This adjustment speed is relatively slow, suggesting that ISSI remains largely influenced by short-run shocks rather than quickly reverting to long-run fundamentals.

The diagnostic statistics provide further insights into model validity. The R-squared value of 0.5165 indicates that approximately 52 percent of the variation in ISSI is explained by the model. The adjusted R-squared of 0.4899 suggests a slightly lower but still reasonable explanatory power after accounting for degrees of freedom. The Durbin-Watson statistic of 2.2441 is close to the ideal value of 2, suggesting no significant autocorrelation in the residuals. The Akaike information criterion (26.032) and Schwarz criterion (26.198) provide benchmarks for model fit, both pointing to a parsimonious specification.

The Ramsey RESET test for functional form yields a chi-square statistic of 9.166 with a p-value of 0.003, indicating that the model's functional form may be misspecified. This suggests caution when interpreting the results, as the exclusion of certain nonlinearities could bias the estimates. The Breusch-Godfrey test for serial correlation reports a chi-square statistic of 4.147 with a probability of 0.387, implying that residuals are free from autocorrelation. The heteroscedasticity test yields a chi-square statistic of 20.001 with a p-value of 0.067, which is slightly above the 5% significance level, indicating marginal evidence of heteroscedasticity. Lastly, the Jarque-Bera test for normality yields a chi-square statistic of 57.890 with a p-value of 0.000, strongly rejecting the null hypothesis of normality. Although non-normal residuals can affect inference, the large sample size of 116 observations mitigates some of these concerns due to the central limit theorem.

A noteworthy aspect of these findings is the absence of inflation (INF) and JIBOR in the short-run specification. Although these variables were included in the initial ARDL model, the automatic lag selection process excluded them from the final ECM regression. From an economic perspective, this result may reflect the distinct characteristics of the Islamic financial market. Since Islamic finance avoids *riba*-based instruments, the

sensitivity of sharia-compliant stocks to conventional interest rate benchmarks such as JIBOR is reduced. Similarly, inflationary dynamics may not translate directly into performance in the Islamic stock market, as investors may prioritize other factors, such as consumption sentiment and equity market trends. Nevertheless, the exclusion of these variables should not be interpreted as a dismissal of their broader economic relevance, but rather as evidence that, within the ARDL-ECM framework and the given dataset, their impact was not sufficiently strong to be retained.

The short-run results of the ARDL-ECM estimation highlight three key points. First, monetary policy, as reflected in BIRATE, exerts lagged and complex effects on ISSI, with evidence of both positive and negative influences depending on the time horizon. Second, the Indonesia Composite Index emerges as the dominant determinant, demonstrating the critical role of investor sentiment and overall market conditions in shaping sharia-compliant stock performance. Third, while the adjustment process toward long-run equilibrium is slow, it underscores the dominance of short-run fluctuations over structural drivers.

These findings carry important implications. For policymakers, the results highlight the need to recognize that conventional monetary instruments may affect Islamic stock performance only indirectly and with a delay, reflecting the distinctive transmission mechanism of Islamic capital markets (Rasyidin & Sulong, 2019). For investors, the strong link between ISSI and ICI suggests that monitoring general equity market trends provides valuable insights into Islamic stock market behavior, as macroeconomic variables and market conditions jointly influence the performance of Islamic equity indices (Irfan et al., 2021). Finally, for researchers, the exclusion of INF and JIBOR invites further exploration of alternative variables, such as economic policy uncertainty, liquidity, and investor sentiment, which may better capture the distinctive characteristics of Islamic capital markets (Wafi & Merlinda, 2023)

Stability Tests

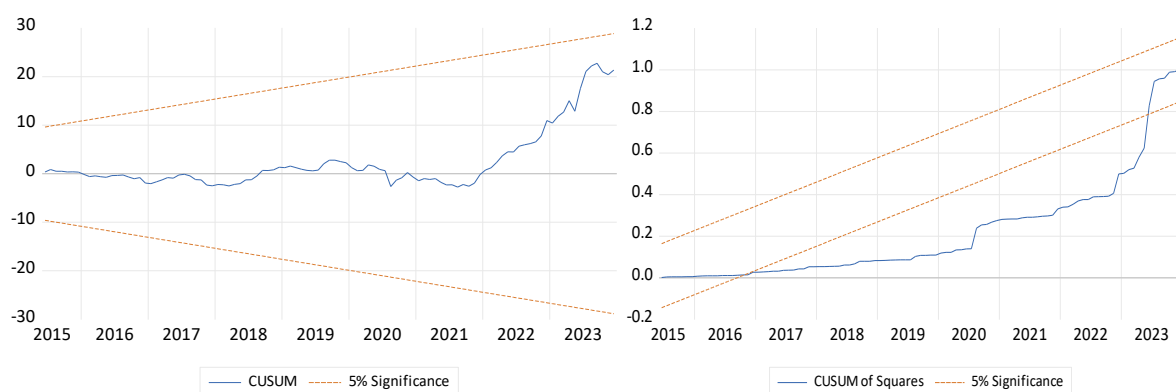


Figure 1. CUSUM and CUSUMQ Stability Test

The stability of the estimated ARDL-ECM model was assessed through the application of the CUSUM and CUSUM of Squares tests. These diagnostic tools are widely employed in econometric studies to evaluate whether the model parameters remain stable over the period of analysis. A model is considered stable when the cumulative sum of recursive residuals remains within the 5% critical bounds, as indicated by the dashed lines in the figures.

The first figure presents the CUSUM test results.. This indicates that during this period, the estimated parameters remained stable, with no evidence of structural change. However, beginning in late 2021 and continuing into 2023, the CUSUM line gradually approaches and eventually crosses the upper boundary. This breach suggests the presence of parameter instability, likely driven by external shocks or significant economic adjustments, such as the lingering effects of the COVID-19 pandemic, policy responses, or heightened market volatility.

The second figure displays the CUSUM of Squares (CUSUMQ) test results. In contrast to the CUSUM test, the CUSUMQ line demonstrates a steady upward trend and remains well within the critical limits for much of the period under review. It is only toward the very end of the sample, around 2022–2023, that the line comes close to the upper boundary, though it does not substantially exceed it. This finding suggests that while there are some signs of increasing variance in the residuals, the overall model does not suffer from severe structural instability in terms of variance.

Conclusion

The findings of this study provide important insights into the relationship between the Indonesian Sharia Stock Index (ISSI) and selected macroeconomic variables using the ARDL bounds testing and ECM approach. The bounds test results revealed that the computed F-statistic of 1.881 falls below the lower critical bounds, both in the asymptotic and finite-sample cases, thereby confirming the absence of a long-run cointegrating relationship. This implies that ISSI does not maintain a stable long-term equilibrium with interest rates (BIRATE, JIBOR), exchange rate (ER), inflation (INF), or the Indonesia Composite Index (ICI). Instead, ISSI is largely driven by short-term fluctuations, transitory shocks, and investor sentiment rather than by fundamental macroeconomic anchors.

In the short run, the ARDL-ECM estimates show mixed effects of BIRATE. While the contemporaneous and first-lag effects were statistically insignificant, the second lag indicated a nearly significant positive impact, and the third lag revealed a strong negative and significant effect. This reflects the delayed and complex transmission of monetary policy into Islamic stock performance. The exchange rate variable, ER, showed no significant effect on ISSI, suggesting that exchange rate volatility has a limited influence at the aggregate Islamic market level. By contrast, the Indonesia Composite Index (ICI)

emerged as the strongest determinant, with a highly significant and positive effect, reinforcing the dominant role of domestic market conditions in shaping ISSI.

Notably, inflation (INF) and JIBOR were excluded from the final specification by the model selection procedure, indicating that within the studied period, these variables lacked measurable explanatory power. This result underscores the unique characteristics of Islamic finance, where sensitivity to *riba*-based instruments such as interbank rates may be limited, and inflationary pressures may be less directly transmitted to sharia-compliant equities.

From a policy perspective, these findings highlight that conventional monetary tools may have only lagged or indirect effects on Islamic equity markets. Therefore, regulators and policymakers should recognize that ISSI is more responsive to overall equity market performance than to standard macroeconomic indicators. For investors, monitoring ICI and broader stock market sentiment provides more actionable insights than focusing solely on interest rates or inflation. For future research, the exclusion of INF and JIBOR suggests the need to explore alternative variables, such as liquidity, sectoral performance, or global Islamic indices, that may better capture the distinctive dynamics of Islamic financial markets.

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