Asian Journal of Islamic Management
2024, 6(2), 122-139

Resilience of Islamic and conventional stocks to geopolitical conflict: A GARCH model analysis

Fuad Hasyim[1], Moh. Nurul Qomar[2], Husny Gibreel Musa Saleh[3]
[1,2]Department of Sharia Economics, Airlangga University, Surabaya, Indonesia
[1]Department of Islamic Banking, UIN Raden Mas Said, Surakarta, Indonesia
[2]Department of Zakat and Waqf Management, IAIN Kudus, Kudus, Indonesia
[3]Al-Neelain University, Khartoum, Sudan

Article History
Received : 2024-09-09
Revised : 2024-11-17
Accepted : 2024-11-26
Published : 2024-12-02

Keywords:
Geopolitical, Volatility, Stocks, GARCH model, Emerging markets

DOI:
https://doi.org/10.20885/AJIM.vol6.iss2.art4

JEL Clasification:
G10, G11, G15, C58, F30

Corresponding author:
Fuad Hasyim
fuad.hasyim-2023@feb.unair.ac.id

Author's email:
moh.nurul.qomar-2023@feb.unair.ac.id
husnygibreel88@gmail.com

Paper type:
Research paper

Center for Islamic Economics Studies and Development, Faculty of Business and Economics, Universitas Islam Indonesia

Abstract

Purpose – This study examines the volatility behavior and resilience of conventional and Islamic stock indices in Indonesia during periods of geopolitical uncertainty, focusing on the Israeli–Palestine conflict.

Methodology – This study employs the GARCH(1,1) model to examine the volatility dynamics of four major stock indices: the Jakarta Composite Index (JKSE), LQ45, the Indonesia Sharia Stock Index (JKISSI), and the Jakarta Islamic Index (JII). The analysis covers the period from January 1, 2023, to July 31, 2024, enabling an evaluation of market dynamics before, during, and after the conflict on October 7, 2023.

Findings – The results show that conventional indices (JKSE and LQ45) exhibit significant volatility persistence, suggesting a higher susceptibility to prolonged instability during geopolitical tensions. Conversely, the Islamic indices (JKISSI and JII) are more responsive to recent market shocks, indicating greater resilience owing to ethical investment principles that avoid high-risk sectors. Furthermore, this study finds that external macroeconomic factors generally do not significantly influence stock market volatility in Indonesia.

Implications – This may be due to the predominance of internal factors and local market dynamics over external global shocks, reflecting the Indonesian market's less integrated nature in the global financial system. These findings offer valuable insights for investors and policymakers in managing risk and optimizing portfolio strategies amid geopolitical stress.

Originality – This study contributes to the growing body of literature on the comparative analysis of conventional and Islamic investments in emerging markets.

Cite this article:
Hasyim, F., Ratnasari, R. T., Qomar, M. N., & Saleh, H.G.M. (2024). Resilience of Islamic and conventional stocks to geopolitical conflict: A GARCH model analysis. *Asian Journal of Islamic Management*, *6*(2), 122–139. https://doi.org/10.20885/AJIM.vol6.iss2.art4

Introduction

Stock investments remain essential investment instruments for global investors, offering high potential returns. However, stock markets are also susceptible to volatility risks caused by various factors, including geopolitical tension. Stock market volatility often increases during geopolitical events as investors react to uncertainty and fear of potential economic and political impacts (Bouras et al., 2018; Menglong et al., 2021; Salisu et al., 2022; Tabash et al., 2024). A recent example of a geopolitical event that has significantly impacted global stock markets is the renewed conflict

P ISSN 2746-0037 | E ISSN 2722-2330

between Israel and Palestine on October 7, 2023. This conflict caused global tensions and affected the stability of international financial markets (Mbah et al., 2024).

Previous research shows that geopolitical conflicts can significantly impact stock markets. Recent studies have found that events such as the Israel-Palestine conflict can increase stock market volatility, often resulting in drastic declines in stock prices due to perceived investor uncertainty (Goyal & Soni, 2024; Hassouneh et al., 2018; Pandey et al., 2024). In this context, volatility not only reflects the immediate response to negative news but also represents investors' expectations regarding long-term political and economic stability (Salisu et al., 2022; Zhang et al., 2023).

However, despite the growing body of research on the effects of geopolitical tensions on conventional stock markets, a significant gap remains in the literature on the comparative analysis of Islamic and conventional stocks during such periods. Specifically, few studies have explored whether Islamic stocks, along with their ethical investment principles, exhibit greater resilience to geopolitical shocks than conventional stocks. Furthermore, previous research has predominantly focused on developed markets, leaving a notable gap in understanding how emerging markets, such as Indonesia, respond to geopolitical conflicts. Moreover, while many studies have employed traditional volatility measures, there is limited research using advanced econometric models such as GARCH to capture the time-varying volatility in Islamic and conventional stocks during geopolitical events, particularly the Israel-Palestine conflict.

Islamic stocks, which adhere to Islamic financial principles, tend to avoid investments in industries considered unethical under Islamic law, such as alcohol-, gambling-, and interest-based financial activities (Alshater et al., 2022; Trichilli & Boujelbéne, 2022). Several studies suggest that Islamic stocks may be more resilient to market shocks during periods of geopolitical tension because of their conservative investment nature and focus on social value (Aloui et al., 2023; Al-Yahyaee et al., 2020; Godil et al., 2020; Hassan et al., 2023). Therefore, it is important to understand whether Islamic stocks are more resilient to market volatility during the Israel-Palestine conflict than conventional stocks, and how both types of stocks behave during and after the conflict. Additionally, it is crucial to explore whether there are significant differences in the volatility responses of Islamic and conventional stocks to macroeconomic variables such as inflation, interest rates, exchange rates, and global market conditions during periods of geopolitical tensions.

The Indonesian stock market provides an interesting platform for this study, with two main types of stock indices: the Indonesia Sharia Stock Index (ISSI) and the Jakarta Islamic Index (JII) for Islamic stocks, and the Indonesia Composite Index (IHSG) and LQ45 for conventional stocks. Although previous studies have explored the performance of Islamic versus conventional stocks under normal market conditions (Aloui et al., 2023; Nofrianto et al., 2024; Shear & Ashraf, 2022), there is still limited research using the GARCH model to measure time-varying volatility during periods of geopolitical tension, particularly focusing on the Israeli–Palestine conflict.

This research is guided by the primary question of whether Islamic stocks are more resilient to market volatility during the Israel-Palestine conflict than conventional stocks. To answer this question, it is essential to understand how volatility changes in Islamic stocks, as reflected in the Indonesia Sharia Stock Index (ISSI) and the Jakarta Islamic Index (JII), and in conventional stocks represented by the Indonesia Composite Index (IHSG) and LQ45, both during and after geopolitical conflicts such as the Israel-Palestine conflict. Additionally, this study seeks to explore whether there are significant differences in the volatility responses of Islamic and conventional stocks to various macroeconomic variables, including inflation, interest rates, exchange rates, and global market conditions during periods of geopolitical tension.

To achieve these objectives, this study measures and compares the resilience of Islamic and conventional stocks to market volatility during the Israel-Palestine conflict using the GARCH model. This model allows for a more detailed analysis of the volatility changes experienced by both types of stocks in geopolitical uncertainty situations. The study also aims to analyze the differences in volatility between Islamic stocks (ISSI, JII) and conventional stocks (IHSG, LQ45) during the conflict period, and to evaluate how macroeconomic variables such as inflation, interest rates, exchange rates, and global market conditions (S&P 500) influence the volatility of these two types of stocks during geopolitical tensions.

This study is expected to make significant theoretical and practical contributions. Theoretically, it enriches the literature on Islamic finance and stock markets by providing new empirical evidence on the volatility response of stocks to geopolitical tensions. Practically, these findings offer valuable insights for investors and portfolio managers in managing risk and making more accurate investment decisions during periods of geopolitical uncertainty. Moreover, this research is also relevant for policymakers and regulators in developing strategies to maintain financial market stability amid rising geopolitical tensions.

Literature Review

Introduction to the literature review

The study of stock market volatility during geopolitical conflicts has garnered significant academic and practical interest, owing to its profound impact on financial markets worldwide. Geopolitical events such as wars and political instability often lead to increased uncertainty and risk aversion among investors, resulting in increased market volatility (Aloui et al., 2023; Bouras et al., 2018; Hui, 2022; Menglong et al., 2021; Salisu et al., 2022; Zhang et al., 2023). Understanding how different types of stocks react to GPR, specifically Islamic and conventional stocks, is crucial for developing effective risk management strategies and making informed investment decisions. This literature review explores the theoretical underpinnings, empirical evidence, and gaps in the understanding of the comparative resilience of Islamic and conventional stocks during periods of geopolitical tension (Aloui et al., 2023; Nofrianto et al., 2024; Shear & Ashraf, 2022).

Theoretical framework

The theoretical framework for understanding stock market responses to geopolitical events is grounded in several theories. The Efficient Market Hypothesis (EMH) suggests that markets quickly absorb new information, including geopolitical risks, into stock prices, resulting in market efficiency (Irwaningtyas et al., 2023; Roemanasari et al., 2022). However, during periods of geopolitical tension, markets often exhibit signs of inefficiency due to heightened uncertainty and investor panic, leading to increased volatility (Fiorillo et al., 2023; Zhang et al., 2023). By contrast, behavioral finance theory posits that investor sentiment and cognitive biases significantly influence market behavior, especially during periods of uncertainty. Geopolitical conflicts can trigger irrational behavior among investors, such as panic selling or herd behavior, contributing to increased volatility (Irwaningtyas et al., 2023; Shiller, 2020).

In addition, the principles of Islamic finance provide a unique perspective on how Islamic stocks behave differently than conventional stocks. Islamic finance prohibits investments in certain sectors and emphasizes ethical and socially responsible investing, potentially leading to different volatility patterns in Islamic stocks during geopolitical events (Akhter et al., 2023; Aloui et al., 2023; Al-Yahyaee et al., 2020; Hassan et al., 2023). This review examines how these theoretical frameworks have been applied in empirical studies to understand the resilience of different stock types during geopolitical conflicts.

Geopolitical conflicts and stock market volatility

Geopolitical risk is a well documented driver of financial market volatility. Numerous studies have demonstrated that geopolitical events such as military conflicts and political crises can lead to significant market disruptions and increased volatility. For example, Salisu et al. (2022) highlight that geopolitical tensions, such as the ongoing Israel-Palestine conflict, have caused substantial market turbulence, affecting both the regional and global markets. Similarly, Caldara & Lacoviello (2022) provided empirical evidence that geopolitical risks lead to heightened market uncertainty, resulting in adverse effects on stock returns and increased volatility across different asset classes.

Recent empirical studies have utilized advanced econometric models such as GARCH to analyze the impact of geopolitical risks on market volatility. Menglong et al. (2021) and Salisu et al. (2022) applied a GARCH model to assess how geopolitical events affect the volatility dynamics of major global indices, finding that these risks significantly increase market volatility. Moreover,

studies such as Zhang et al. (2023) have demonstrated that the impact of geopolitical events on volatility can vary significantly depending on the market's perceived stability and the nature of the event. This review delves into these studies to better understand how geopolitical risks influence market volatility, particularly in the context of the Israeli–Palestine conflict (Aloui et al., 2023; Bouras et al., 2018; Hui, 2022; Menglong et al., 2021; Salisu et al., 2022; Zhang et al., 2023).

Comparative performance of Islamic and conventional stocks

Islamic stocks, which are governed by Islamic financial principles, differ from conventional stocks in several ways. These stocks were screened to exclude companies involved in prohibited activities under Islamic law such as alcohol, gambling, and interest-based lending. This ethical screening process creates a distinct investment universe that may exhibit different risk and return characteristics, particularly during periods of geopolitical tensions (Azmi et al., 2020; Hassouneh et al., 2018; Shear & Ashraf, 2022). Empirical research shows that Islamic stocks often have lower leverage and more stable cash flows, which can contribute to their resilience during market downturns (Aloui et al., 2023; Al-Yahyaee et al., 2020; Godil et al., 2020; Hassan et al., 2023).

Conversely, conventional stocks that do not adhere to these ethical restrictions may be more exposed to sectors directly impacted by geopolitical risks such as defense or energy (Antonakakis et al., 2017; Ding et al., 2023). Several studies have compared the performance of Islamic and conventional stocks during periods of market stress. For instance, a recent study found that Islamic stocks demonstrated greater resilience during the global financial crisis than their conventional counterparts did (Arif et al., 2022; Azmi et al., 2019; Hassan et al., 2023; Nofrianto et al., 2024). However, there is limited research specifically comparing the performance of these stocks during geopolitical conflicts, such as the Israel-Palestine crisis, highlighting a significant gap in the literature.

Macroeconomic factors influencing stock volatility during geopolitical conflicts

Macroeconomic factors play a crucial role in stock market volatility during geopolitical events. Inflation, interest rates, and exchange rates are critical determinants of stock market behavior, particularly during periods of geopolitical tensions. Several studies have documented that inflation can exacerbate market volatility by eroding real returns and increasing uncertainty about future economic conditions (Chen et al., 2023). Interest rates also significantly impact market volatility, with changes in monetary policy often leading to shifts in investor sentiment and risk appetites. (Eldomiaty et al., 2020; Gu et al., 2022)

Exchange rates, particularly in emerging markets, are another critical factor influencing stock volatility. Studies El-Diftar (2023) have shown that exchange rate fluctuations can lead to increased volatility in stock markets, especially during periods of geopolitical uncertainty when investors seek safe haven assets. Additionally, global market conditions, reflected in indices such as the S&P 500, can spill over into local markets, amplifying volatility during geopolitical tension(Al-Hajieh 2023). This literature review examines these macroeconomic factors in detail to understand their role in shaping stock volatility during the Israel-Palestine conflict.

Gaps in the existing literature

While a substantial amount of research has examined the impact of geopolitical risks on financial markets, significant gaps remain, particularly in the comparative analysis of Islamic and conventional stocks. Most studies have focused broadly on market indices or specific sectors without exploring the unique characteristics and responses of these two types of stocks during geopolitical conflicts. Although it is well established that geopolitical events such as wars and political crises lead to increased market volatility(Caldara & Lacoviello, 2022; Salisu et al., 2022), there is a limited understanding of how Islamic stocks, governed by Islamic finance principles, may react differently to conventional stocks. Given that Islamic stocks are subject to distinct ethical screenings and investment restrictions, this gap is significant, as it may affect their resilience during periods of geopolitical stress.

Furthermore, while advanced econometric models such as GARCH have been employed to assess stock market volatility during geopolitical tensions (Bouras et al., 2018; Menglong et al., 2021; Tabash et al., 2024; Zhang et al., 2023), few studies have specifically used these models to analyze the effects of the Israel-Palestine conflict on different types of stocks. There is also a lack of research examining how macroeconomic variables such as inflation, interest rates, exchange rates, and global market conditions specifically influence the volatility of Islamic versus conventional stocks during such conflicts. This oversight is particularly notable, as these external economic pressures can have differential impacts on the two stock categories, affecting their performance and offering insights into risk-management strategies. Addressing these gaps will enhance the understanding of financial market resilience in the face of geopolitical risks, and provide valuable insights for investors and policymakers navigating uncertain environments.

Hypothesis development

Periods of geopolitical uncertainty, such as the Israel-Palestine conflict, often trigger significant financial market volatility, particularly in developing countries, such as Indonesia. Stock market volatility can be influenced by various factors including past shocks and current macroeconomic conditions. Therefore, it is essential to understand how these shocks affect volatility and past volatility by using a GARCH model. The GARCH model allows us to explore the dependence of the market's volatility on past shocks (ARCH effects) and the persistence of past volatility (GARCH effects)(Bollerslev, 1986; Engle, 1982). This study analyses the volatility of conventional stocks (JKSE and LQ45) and Islamic stocks (JKISSI and JII) to determine whether past volatility and shocks influence current volatility. Additionally, this study explores the influence of macroeconomic variables such as interest rates (BIRATE), inflation (INFLATION), exchange rates (ER), and global market conditions (S&P 500) on the volatility of stock indices in Indonesia.

Hypothesis on ARCH/GARCH effects

In the GARCH model, ARCH effects measure whether previous volatility shocks influence current volatility, whereas GARCH effects measure whether past volatility still affects current volatility. To assess whether ARCH and GARCH affect the volatility of the stock indices examined, the following hypotheses are proposed.

H_0: There are no ARCH/GARCH effects ($\alpha = \beta = 0$), implying that volatility does not depend on past shocks or volatility.

H_1: There are ARCH/GARCH effects ($\alpha \neq 0$ or $\beta \neq 0$), meaning that volatility is influenced by past shocks ($\alpha \neq 0$) or past volatility ($\beta \neq 0$).

Where:

α is the coefficient of RESID(-1)^2, which represents the ARCH effect; that is, the influence of past shocks on current volatility.

β is the coefficient of GARCH(-1), which represents the GARCH effect; that is, the influence of past volatility on current volatility.

Hypothesis on GARCH parameter significance

The GARCH model also allows us to test whether past volatility has a significant effect on current volatility for each stock index. Testing the significance of the GARCH parameter is important to understand how past volatility persists in the current financial system. Based on this, the following hypotheses are proposed for each stock index (JKSE, LQ45, and JKISSI JII).

H_0: The GARCH parameter is not significant ($\beta = 0$), implying that past volatility does not significantly affect the current volatility.

H_1: The GARCH parameter is significant ($\beta \neq 0$), implying that past volatility significantly affects the current volatility.

Hypothesis on the impact of macroeconomic variables

In addition to the effects of internal volatility, macroeconomic variables can also influence stock index volatility. Interest rates (BIRATE), inflation (INFLATION), exchange rates (ER), and global market conditions (S&P 500) are important factors that often affect stock market movement. In Indonesia, the impact of macroeconomic variables on the volatility of Islamic and conventional stocks requires further exploration. Therefore, we propose the following hypothesis:

H_0: Macroeconomic variables do not significantly influence stock index volatility (coefficient = 0).
H_1: Macroeconomic variables influence stock index volatility significantly (coefficient ≠ 0).

The macroeconomic variables tested included the following:

- BIRATE - Bank Indonesia's interest rate, which can affect market expectations.
- INFLATION - Inflation rate can affect purchasing power and market expectations.
- ER: Exchange rate (USD/IDR), which can affect foreign investors and sectors dependent on international trade.
- S&P 500: A global market index that indicates the influence of international market conditions on volatility in Indonesia.

Research Methods

This study employs a GARCH (Generalized Autoregressive Conditional Heteroscedasticity) model to analyze stock return volatility. The use of GARCH in this study is based on its ability to capture time-varying volatility and the pattern of volatility clustering, where high volatility tends to be followed by further high volatility, and low volatility tends to be followed by low volatility. This pattern is often found in financial time series data, especially during periods of geopolitical uncertainty such as the Israel-Palestine conflict, which can cause significant fluctuations in stock markets. GARCH also allows researchers to model the influence of past volatility shocks (ARCH effects) and the persistence of volatility over time (GARCH effects), which are crucial for analyzing the behavior of Islamic and conventional stock markets that may exhibit different volatility characteristics. Additionally, GARCH can accommodate macroeconomic variables such as interest rates and exchange rates as exogenous variables that influence market volatility. Therefore, this model is well-suited for analyzing the volatility of stock markets in Indonesia, an emerging market influenced by both internal and external dynamics (Asteriou & Hall, 2021; Bollerslev, 1986; Engle, 1982).

This study employs a GARCH(1,1) model to analyze the volatility of four key indices: JKSE, LQ45, JKISSI, and JII. The model evaluates the impact of macroeconomic variables, such as inflation, BI rate, exchange rate (USD/IDR), and the S&P 500 index, on the volatility of these indices, particularly during periods of geopolitical tensions, such as the Israel-Palestine conflict. The study period covers January 1, 2023, to July 31, 2024, allowing for an analysis of market dynamics before, during, and after the conflict (October 7, 2023). The GARCH(1,1) model was selected for its ability to capture time-varying volatility and volatility clustering, which are typical features of financial time-series data (Bollerslev, 1986; Engle, 1982).

The data for this study were obtained from several reputable financial data sources to ensure accuracy and reliability, and investors provided daily historical data for exchange rates (USD/IDR) and the S&P 500 index. Yahoo Finance supplied daily closing prices for the JKSE, JII, JKISSI, and LQ45. Bloomberg offers comprehensive macroeconomic data, including daily inflation rates and the Bank Indonesia 7-Day Repo (BI) rate. These sources collectively provide a robust dataset for analyzing how different economic and geopolitical factors affect stock market volatility.

The GARCH(1,1) model is specified for each of the four indices (JKSE, JKISSI, LQ45, and JII) as follows:

Mean Equation:

$$r_{t,i} = \mu_i + \epsilon_{t,i}$$

where:
$r_{t,i}$ represents the return of index i (JKSE, JKISSI, LQ45, and JII) at time t
μ_i is the mean return for index i
$\epsilon_{t,i}$ is the error term or innovation at time t for index i, assumed to follow a normal distribution with zero mean and conditional variance $\sigma^2_{t,i}$

Variance equation (GARCH model)

$$\sigma^2_{t,i} = \omega_i + \alpha_1, \epsilon^2_{t-1,i} + \beta_1, \sigma^2_{t-1,i} + \gamma_1, iD_t + \gamma_2, iINF_t + \gamma_3, iBIRATE_t + \gamma_4, iEXR_t + \gamma_5, iS\&P500_t$$

where:
$\sigma^2_{t,i}$ is the conditional variance of the error term $\epsilon_{t,i}$for index i at time t
ω_i is a constant term for index i
$\alpha_1, \epsilon^2_{t-1,i}$ represents the ARCH term, capturing the effect of past shocks on current volatility
$\beta_1, \sigma^2_{t-1,i}$ represents the GARCH term indicating the persistence of volatility over time.
γ_1, i, γ_2, i , γ_3, i , $4, i$, γ_5, i are coefficients for the dummy Israel-Palestine conflict and the macroeconomic variables (inflation rate, BI rate, USD/IDR exchange rate, and S&P 500 index) for index i, capturing their impact on market volatility.

The parameters of the GARCH (1,1) model are estimated using Maximum Likelihood Estimation (MLE), a robust method suitable for handling non-normality and heteroskedasticity commonly observed in financial time-series data. This study involves pre-estimation checks, including stationarity tests and tests for autocorrelation, to ensure data suitability. Post-estimation diagnostics, such as the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC), are used to assess the model's fit and ensure that it accurately captures volatility dynamics (Bollerslev, 1986; Bouras et al., 2018; Salisu et al., 2022). By applying this model to each of the four indices, this study provides insights into the volatility patterns influenced by geopolitical events and macroeconomic factors, thereby offering valuable information for investors and policymakers in managing financial risk.

Results and Discussion

Descriptif analysis

Table 1. Descriptive Statistics

	JKSE	LQ45	JKISSI	JII	INF	BIRATE	ER	S&P500
Mean	6980.94	942.13	210.25	541.45	3.41	5.90	15496.26	4658.59
Median	6924.78	946.58	210.87	541.06	3.00	5.75	15490.00	4536.34
Maximum	7433.31	1011.60	219.75	591.84	5.47	6.25	16486.00	5667.20
Minimum	6565.73	839.62	195.18	488.72	2.28	5.75	14665.00	3855.76
Std. Dev.	218.74	32.14	4.72	24.21	0.92	0.19	462.70	479.42
Skewness	0.22	-0.52	-0.62	0.12	1.08	0.80	0.23	0.33
Kurtosis	1.83	3.33	3.43	2.11	2.97	2.15	2.10	1.86
Jarque-Bera	26.92	20.43	29.33	14.53	79.85	55.92	17.42	29.63
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	2883126	389098	86835	223619	1407	2438	6399957	1923999
Sum Sq. Dev.	19713912	425472	9176	241530	349	15	88206404	94696057
Observations	413	413	413	413	413	413	413	413

Source: Data Processed (2024)

From Table 1, we observe that the four stock indices—JKSE, LQ45, JKISSI, and JII—display mean values that indicate their average performance over the study period, with JKSE recording the highest average value of 6980.94 and JII the lowest at 541.45. Volatility, as measured by the standard deviation, shows that JKSE and JII exhibit higher fluctuations compared to LQ45 and

JKISSI, with standard deviations of 218.74 and 24.21, respectively. Skewness reveals that most of the stock data distributions tend to skew to the left, except for JKSE, which is slightly skewed to the right (0.22), suggesting that most stock prices are lower than the mean, while inflation (INF) shows positive skewness (1.08), indicating that significant price increases are more frequent. The kurtosis values of approximately 2–3 for most variables suggest distributions close to normal, except for LQ45 and JKISSI, which are slightly leptokurtic. The significant Jarque-Bera values (with probabilities near 0.00) for all variables indicate that the data distributions are not entirely normal, suggesting the presence of potential outliers or non-perfectly symmetric distributions. This is important to consider in further analyses, particularly when statistical models that assume a normal distribution are used.

Unit root test

Table 2 shows that most indices (JKSE, JKISSI, and JII) are nonstationary, as their p-values are greater than 0.05, meaning that we fail to reject the null hypothesis of a unit root. However, LQ45 was stationary at a level with a p-value less than 0.05. After applying the first difference, the ADF tests for D(JKSE), D(JKISSI), D(LQ45), and D(JII) show highly significant results, with p-values of 0.0000, indicating that we reject the null hypothesis of a unit root at the first difference. This suggests that all the indices become stationary after differencing once. Stationarity is crucial for time-series modeling because it implies that the properties of the series do not depend on time, making them suitable for models such as ARIMA and GARCH. The transformation to stationarity after the first differencing aligns with the findings in the financial time series literature, where many financial indices exhibit non-stationary behavior in levels, but achieve stationarity after differencing (Nelson & Plosser, 1982; Phillips & Perron, 1988). Therefore, using first-differenced data for further modeling, such as volatility analysis with GARCH, is appropriate for ensuring valid statistical inferences.

Table 2. ADF Unit Root Test

Index	ADF Test Statistic	p-value	Critical Value (1%)	Critical Value (5%)	Critical Value (10%)
			Level		
JKSE	-1.8469	0.3576	-3.4461	-2.8683	-2.5705
JKISSI	-2.1752	0.0722	-3.4461	-2.8683	-2.5705
LQ45	-3.4461	0.0247	-3.4461	-2.8683	-2.5705
JII	-1.9359	0.3156	-3.4461	-2.8683	-2.5705
			1st Difference		
D(JKSE)	-21.8372	0.0000	-3.4460	-2.8684	-2.5705
D(JKISSI)	-21.9874	0.0000	-3.4460	-2.8684	-2.5705
D(LQ45)	-21.6700	0.0000	-3.4460	-2.8684	-2.5705
D(JII)	-22.8641	0.0000	-3.4460	-2.8684	-2.5705

Source: Data Processed (2024)

Model identification and heteroskedasticity test

This study utilizes a GARCH (1,1) model, informed by ARIMA test results, to examine the volatility behavior of indices, including JKSE, JKISSI, LQ45, and JII. The ARIMA model was initially applied to determine the optimal lag structure and identify any autoregressive (AR) or moving average (MA) components that affect the returns of these indices. Following the ARIMA findings, the GARCH(1,1) model was selected because of its effectiveness in capturing the volatility clustering often seen in financial time series data, where periods of high volatility tend to be followed by high volatility, and periods of low volatility tend to be followed by low volatility (Bollerslev, 1986). The parameters of the GARCH model were estimated using Maximum Likelihood Estimation (MLE), which is particularly robust in handling non-normality and heteroskedasticity typically found in financial data.

As indicated by the heteroscedasticity test results in Table 3, the application of the GARCH(1,1) model is justified. For example, the heteroskedasticity test for the JKSE index revealed a significant F-statistic of 9.005625 with a p-value of 0.0029, indicating heteroskedasticity at the 5% significance level. This finding suggests that the variance of the residuals is not constant over time, supporting the application of a GARCH model to model such time-varying volatility. Similarly, the results for the JKISSI, LQ45, and JII indices show significant p-values (less than 0.05), indicating that these series exhibit similar volatility clustering patterns. The variance equations in the GARCH models for these indices show significant coefficients for both the ARCH term (past squared residuals) and the GARCH term (past variances), confirming the importance of both recent and older volatility in explaining current market behavior. These findings are consistent with recent literature on financial econometrics, which emphasizes the importance of modeling conditional volatility in financial markets to better understand risk and return dynamics (Mittnik et al., 2015; Rustamov, 2024). These results underscore the necessity of using GARCH models for financial data exhibiting nonconstant variance, enhancing the understanding of market risk, and improving the accuracy of volatility forecasts.

Table 3. Heteroskedasticity Test (1st Difference)

Index	F-statistic	Prob. F(1,409)	Obs*R-squared	Prob. Chi-Square(1)
JKSE	9.0056	0.0029	8.8547	0.0029
JKISSI	21.9874	0.0000	19.8541	0.0000
LQ45	21.6700	0.0000	20.8543	0.0000
JII	22.8641	0.0000	21.8547	0.0000

Source: Data Processed (2024)

GARH (1,1) modelling result

The GARCH(1,1) model estimation results indicate distinct volatility characteristics for the four major Indonesian stock indices: JKSE, LQ45, JKISSI, and JII. Table 4 shows the hypothesis testing related to the ARCH/GARCH effects, the significance of GARCH parameters, and the impact of macroeconomic variables on the volatility of these indices.

1. ARCH/GARCH effects
   Based on the estimation results, the GARCH(-1) coefficients are significant for the conventional stock indices (JKSE and LQ45) with values of 0.6813 (p = 0.0001) for JKSE and 0.7703 (p = 0.0000) for LQ45. This finding suggests the presence of volatility persistence, in which past volatility significantly influences current volatility. In other words, volatility in conventional stock indices tends to cluster, supporting H1 that conventional stocks have GARCH effects. Conversely, for the Islamic stock indices (JKISSI and JII), the GARCH(-1) coefficients are not significant, with values of 0.2556 (p = 0.2646) for JKISSI, and 0.0372 (p = 0.8617) for JII. Instead, only the RESID (-1)^2 (ARCH term) coefficients are significant for both Islamic indices, with values of 0.1561 (p = 0.0123) for JKISSI, and 0.2221 (p = 0.0061) for JII. This finding suggests that the volatility of Islamic stocks is influenced more by recent shocks than by past volatility. Thus, H1 confirms that ARCH effects exist in Islamic stocks, whereas GARCH effects are insignificant for Islamic stocks.
2. Significance of GARCH parameters
   For the conventional stock indices (JKSE and LQ45), the results indicate that the GARCH parameters are significant, implying that past volatility strongly influences current volatility. This is evidenced by the very low p-values of the GARCH(-1) coefficients for both indices, supporting H1, that the GARCH parameter is significant ($\beta \neq 0$) in conventional stocks. However, for Islamic stock indices (JKISSI and JII), the GARCH parameter is not significant, indicating that past volatility does not significantly affect current volatility. Therefore, H0, which is the GARCH parameter, is not significant ($\beta = 0$) for the Islamic stock indices.
3. Impact of macroeconomic variables
   The results on the influence of macroeconomic variables indicate that most macroeconomic variables do not significantly impact the volatility of stock indices for either conventional or

Islamic stocks. The coefficients of the Bank Indonesia interest rate (BIRATE) and inflation (INFLATION) are not significant across all the indices, supporting H0 that these macroeconomic variables do not significantly influence stock index volatility in Indonesia during geopolitical uncertainty. However, the exchange rate (ER) shows a significant impact on the volatility of the JKISSI index ($p = 0.0384$) and is close to significant for the JII index ($p = 0.0706$). This finding suggests that exchange rates may influence the volatility of Islamic stocks, although this effect is less pronounced in conventional stocks. Therefore, H1 states that macroeconomic variables (exchange rates) significantly affect the volatility of Islamic stocks. Conversely, the S&P 500, as an indicator of global markets, is not significant across all indices, indicating that volatility in the Indonesian stock market is driven more by internal factors than external economic factors, as emphasized in the literature. (Mittnik et al., 2015; Rustamov, 2024)

Table 4. GARCH Analysis

Index	Variable	Coeff.	Prob.	Index	Variable	Coeff.	Prob.
JKSE	C	1.2985	0.4280	LQ45	C	0.0836	0.7357
	AR(1)	0.4083	0.2870		AR(1)	0.4205	0.1463
	MA(1)	-0.4890	0.1809		MA(1)	-0.5307	0.0451
	RESID(-1)^2	0.0713	0.1692		RESID(-1)^2	0.0166	0.6530
	GARCH(-1)	0.6813	0.0001		GARCH(-1)	0.7703	0.0000
	DUMMY	175.1111	0.3573		DUMMY	4.2753	0.4055
	BIRATE	320.4052	0.6370		BIRATE	14.3378	0.3600
	INFLATION	25.1183	0.6683		INFLATION	0.3546	0.8144
	ER	0.3038	0.1342		ER	0.0074	0.2128
	S&P500	-0.2400	0.3709		S&P500	-0.0097	0.2320
JKISSI	C	-11.8789	0.0842	JII	C	-0.0977	0.5346
	AR(1)	0.0750	0.9362		AR(1)	0.2823	0.4519
	MA(1)	-0.1274	0.8920		MA(1)	-0.3937	0.2677
	RESID(-1)^2	0.1561	0.0123		RESID(-1)^2	0.2221	0.0061
	GARCH(-1)	0.2556	0.2646		GARCH(-1)	0.0372	0.8617
	DUMMY	-0.2886	0.3836		DUMMY	6.5285	0.1906
	BIRATE	0.3426	0.7760		BIRATE	-9.8782	0.5775
	INFLATION	-0.1564	0.3212		INFLATION	-0.7418	0.6830
	ER	0.0010	0.0384		ER	0.0094	0.0706
	S&P500	-0.0008	0.1963		S&P500	-0.0077	0.2855

Source: Data Processed (2024)

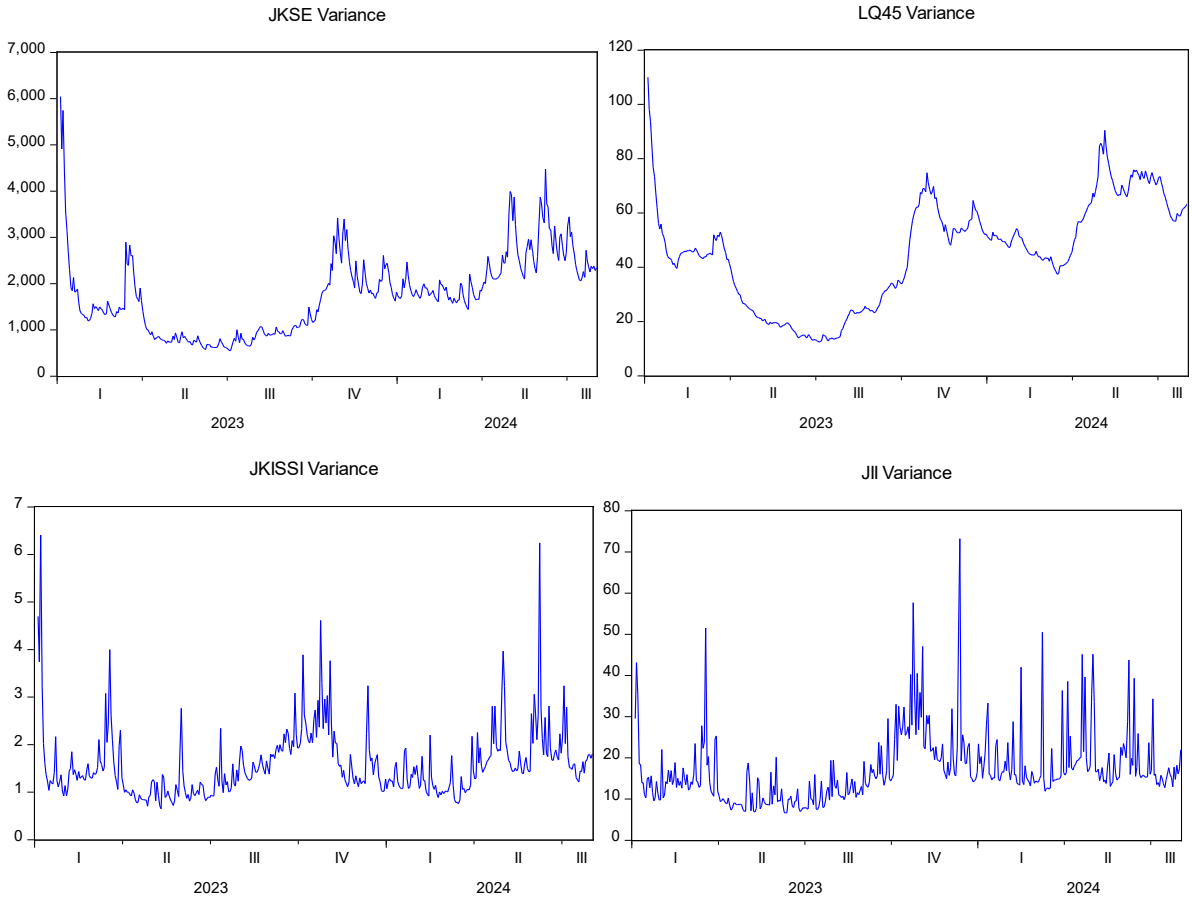
Discussion

The results of the GARCH(1,1) model analysis revealed significant differences in the volatility characteristics of the four major stock indices in Indonesia: JKSE, JKISSI, LQ45, and JII. In the context of rising global uncertainty due to geopolitical conflicts, such as the Israel-Palestine conflict that began on October 7, 2023, this study shows that conventional stock indices, such as JKSE and LQ45, exhibit significant volatility persistence. This is evidenced by the significant GARCH(-1) coefficients, which indicate that past volatility has a substantial impact on current volatility. These findings suggest that conventional stock markets are more vulnerable to existing market conditions, which may become unstable during geopolitical uncertainty periods (Akhtar et al., 2017; Ashraf et al., 2017).

In contrast, Islamic stock indices such as JKISSI and JII display a different pattern; only the ARCH term is significant, suggesting that volatility is influenced more by recent shocks than by past volatility(Akhtar et al., 2017; Ben Nasr et al., 2014; Hassan et al., 2018). This indicates that Islamic stocks may be more responsive to short-term market changes and more resilient in the face of geopolitical uncertainty as they are not involved in sectors that are particularly vulnerable to such conflicts. The resilience of Islamic stocks compared with conventional stocks can be largely attributed to their adherence to ethical investment principles. Islamic finance prohibits investments

in industries deemed unethical such as alcohol, gambling, and interest-based financial activities (Alshater et al., 2022; Trichilli & Boujelbéne, 2022). This conservative approach reduces the exposure to highly volatile and risk-sensitive sectors, making Islamic stocks less vulnerable to geopolitical and macroeconomic shocks (Aloui et al., 2023; Hassan et al., 2018). Moreover, emphasis on socially responsible investing ensures that Islamic stocks focus on sectors with lower systemic risk, which enhances their stability during periods of global uncertainty (Godil et al., 2020).

The variance graph analysis of these indices further supported these findings. Figure 1 for the JKSE shows relatively high and fluctuating levels of volatility, particularly during early 2023 and late 2024, which is consistent with the significant GARCH(-1) coefficient findings, indicating strong volatility persistence. Similarly, the variance for LQ45, although slightly lower than that for JKSE, also exhibits significant spikes, reflecting its vulnerability to sustained market volatility. In contrast, the variance graphs for JKISSI and JII show much lower levels of volatility, with JKISSI displaying only minor fluctuations throughout the period, indicating greater stability. Although generally low, the JII variance shows moderate peaks, indicating sensitivity to specific shocks rather than to continuous volatility. These trends in the graphs support the argument that Islamic stocks are less volatile and more resilient to prolonged market instability than their conventional counterparts are(Akhtar et al., 2017; Rizvi et al., 2015).

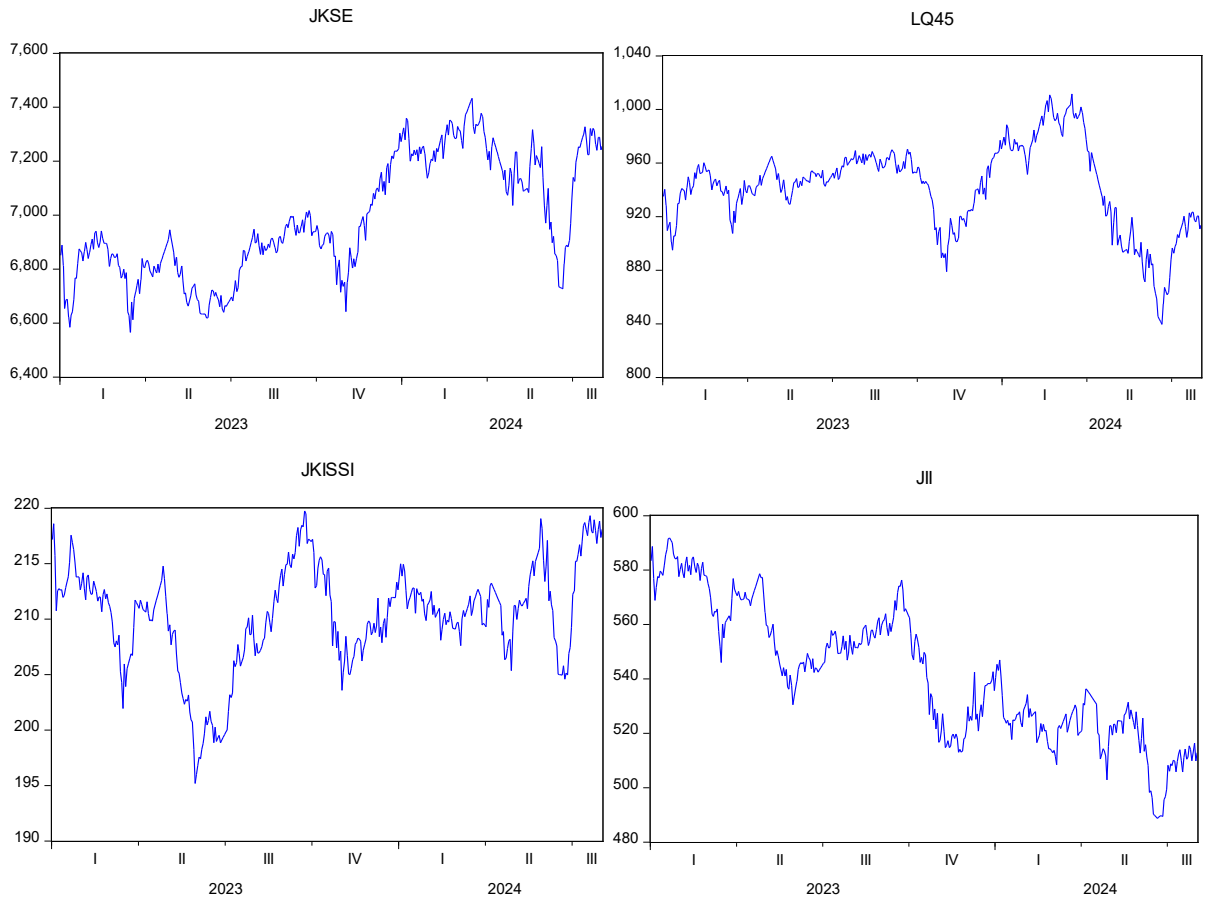


Source: Data Processed (2024)

Figure 1. Variance Graph

Furthermore, Figure 2 shows that the analysis of stock price movements for JKSE, LQ45, JKISSI, and JII during the same period provides additional insights into how each index responds to geopolitical uncertainty. The JKSE and LQ45 indices show increased price volatility immediately following the onset of the Israel-Palestine conflict, with sharp fluctuations and evident periods of instability. This finding highlights the vulnerability of conventional stock markets to geopolitical uncertainty, in which investors are likely to react more swiftly to negative news or global uncertainty (Ashraf et al., 2016; Trabelsi & Naifar, 2017). In contrast, the JKISSI and JII indices display more

stable price performance with more moderate fluctuations, indicating greater resilience to market shocks induced by geopolitical conflicts. This pattern reflects the principles of Islamic investing, which avoids high-risk sectors and focuses on long-term stability, allowing them to withstand geopolitical uncertainty better (Akhtar et al., 2017; Aloui et al., 2023; Godil et al., 2020; Hassan et al., 2023; Rizvi et al., 2015).



Source: Data Processed (2024)

Figure 2. Stock Price Graph

The relatively high resilience of Islamic stocks can be attributed to the core principles of Islamic finance, which mandate investments aligned with ethical and socially responsible values. These principles exclude involvement in sectors considered unethical or excessively risky such as alcohol, gambling, weapons, and interest-based financial activities (Azmi et al., 2020; Bakar et al., 2023; Hassouneh et al., 2018; Shear & Ashraf, 2022). By avoiding such sectors, Islamic investments are shielded from volatility often associated with industries that are highly sensitive to economic cycles and external shocks. For example, industries such as alcohol and gambling are more likely to be impacted during downturns or periods of moral scrutiny, whereas sectors related to weapons are particularly vulnerable to geopolitical instability. As a result, Islamic stocks tend to focus on more stable industries, such as healthcare, technology, and infrastructure, which have lower systemic risks, thus contributing to their resilience during times of uncertainty (Aloui et al., 2023; Al-Yahyaee et al., 2020). This ethical investment framework fosters financial sustainability and limits exposure to assets, which can amplify volatility, particularly during periods of geopolitical tension or market turmoil.

Previous studies have found that Islamic stock indices exhibit lower and more stable volatility than conventional stock indices do, especially in emerging markets during periods of global economic uncertainty (Godil et al., 2020; Hassan et al., 2018). This study highlights that Islamic stocks are less exposed to sectors with high speculative activity, making them less reactive to abrupt market fluctuations. Moreover, due to their ethical and conservative portfolio strategies,

Islamic stocks have shown greater resilience to external shocks, including geopolitical events such as the Israeli–Palestine conflict. For instance, Shahzad et al. (2017) Islamic stocks tend to have a lower correlation with global markets, insulating them from contagion effects that often drive volatility in conventional markets. This detachment from global financial cycles enables Islamic stocks to maintain stability even when conventional stocks are vulnerable to geopolitical risks and economic crises. The lower correlation also suggests that Islamic stocks are better suited for investors seeking diversification during periods of heightened uncertainty, as they offer a more stable investment option than their conventional counterparts.

Furthermore, this study finds that external macroeconomic variables, such as the BI interest rate, inflation, exchange rate, and S&P 500 index, are generally insignificant in influencing the volatility of Indonesian stock indices during the study period. The limited impact of these external factors on stock market volatility suggests that the Indonesian market is influenced more by internal dynamics and domestic economic conditions than by global economic change. This finding is consistent with Ding et al. (2017) those of and Vo & Ellis (2018), who show that in emerging markets, domestic factors often play a more significant role in determining volatility behavior than external factors. Understanding these internal market dynamics and broader economic policies is crucial for managing investment risk amid geopolitical uncertainty, as the results of this study highlight. These insights are valuable for investors and policymakers who must develop adaptive strategies to manage their portfolios during periods of high volatility, especially when considering the relative benefits of conventional versus Islamic stock investments.

This study also provides additional evidence supporting recent literature that highlights the differences in volatility responses between conventional and Islamic stocks, particularly in emerging markets. The distinct volatility characteristics identified in this study underscore the relevance of Islamic finance principles in shaping more resilient portfolios during periods of geopolitical uncertainty. Islamic stocks' lower exposure to high-risk sectors not only minimizes their vulnerability to external shocks but also offers investors a safer haven amidst global financial instability. These findings significantly contribute to the financial literature by reinforcing the value of ethical investment strategies in managing volatility and promoting long-term sustainability, which has gained increasing attention in global markets (Hassan et al., 2023).

Furthermore, by connecting empirical evidence from the variance and stock price graphs with the GARCH(1,1) model results, this study underscores the importance of considering both the ethical nature of stocks and broader economic conditions when formulating investment strategies. These findings offer practical guidance for risk managers, as diversifying portfolios with Islamic stocks can enhance stability and reduce overall risk. As global investors increasingly emphasize Environmental, Social, and Governance (ESG) considerations, Islamic finance has emerged as a complementary model that aligns ethical principles with financial stability. Therefore, this study not only supports global trends in ethical investing but also contributes to the development of more resilient and socially responsible risk-management frameworks (Aloui et al., 2023; Azmi et al., 2020).

Conclusion

This study demonstrates that conventional and Islamic stocks in Indonesia exhibit distinct volatility characteristics during periods of geopolitical tension, such as the Israel-Palestine conflict. Addressing this research gap, this study focuses on how geopolitical events uniquely affect Islamic versus conventional stocks, a topic that has been underexplored, particularly in the context of Indonesia's emerging markets. The relevance of this study is heightened by the ongoing geopolitical uncertainty and its impact on global financial markets. Understanding how Islamic and conventional stocks react to such events offers valuable insights to global investors and policymakers. GARCH(1,1) model analysis reveals that conventional stocks, represented by JKSE and LQ45, show significant volatility persistence, where past volatility strongly influences current market behavior. This pattern suggests that conventional stocks are more susceptible to existing market conditions and may experience greater instability under geopolitical uncertainties. This finding aligns with global literature, where conventional stocks are often linked to sectors that are

more exposed to international market fluctuations, thus increasing their vulnerability during times of geopolitical tension.

In contrast, Islamic stocks, represented by JKISSI and JII, are more influenced by recent shocks than by past volatility, indicating a higher responsiveness to short-term market changes. This suggests that Islamic stocks could offer greater resilience during geopolitical conflicts, likely due to their adherence to ethical investment principles that avoid high-risk sectors such as alcohol, gambling, and defense. This ethical framework, which aligns Islamic finance with socially responsible investing (SRI), ensures that Islamic stocks are less exposed to speculative and volatile sectors, contributing to their stability during periods of market turmoil. This finding also resonates with recent studies that emphasize the lower correlation between Islamic stocks and global markets, which can provide a buffer against international shocks. The study also finds that external macroeconomic variables, such as the BI rate, inflation, exchange rate, and S&P 500 index, are generally not significant in affecting the volatility of these stocks, emphasizing the importance of internal market dynamics. This highlights the unique characteristics of the Indonesian stock market, where domestic factors tend to play a more dominant role in shaping stock volatility than external influences, a trend often observed in emerging markets during times of global instability.

Based on these findings, several practical recommendations have been proposed. First, investors should consider including Islamic stocks in diversified portfolios to enhance resilience during periods of geopolitical uncertainty. The ethical nature of Islamic investments provides a protective layer against the volatility associated with high-risk sectors, offering a relatively stable alternative. Second, policymakers should support the development of Islamic financial products as they can strengthen market stability and reduce systemic risks during global market disruptions. Encouraging the growth of Islamic finance, particularly in emerging markets such as Indonesia, can provide a more robust financial system better equipped to handle external shocks. Finally, future research should investigate the resilience of Islamic stocks in other emerging markets and explore the role of investor sentiment in shaping volatility patterns during geopolitical conflict. Incorporating diverse global perspectives and data, particularly from recent literature and international journals, can further enhance the global relevance of these findings and provide a broader understanding of how Islamic stocks perform under different market conditions.

Author contributions

Conceptualization: Fuad Hasyim
Data curation: Fuad Hasyim
Formal analysis: Fuad Hasyim, Moh. Nurul Qomar
Investigation: Fuad Hasyim, Moh. Nurul Qomar
Methodology: Fuad Hasyim
Project administration: Fuad Hasyim, Moh. Nurul Qomar
Visualization: Fuad Hasyim, Moh. Nurul Qomar
Writing – original draft: Fuad Hasyim, Moh. Nurul Qomar
Writing – review & editing: Fuad Hasyim, Moh. Nurul Qomar, Husny Gibreel Musa Saleh

References

Akhtar, S., Akhtar, F., Jahromi, M., & John, K. (2017). Impact of interest rate surprises on Islamic and conventional stocks and bonds. *Journal of International Money and Finance*, *79*, 218–231. https://doi.org/https://doi.org/10.1016/j.jimonfin.2017.09.003

Akhter, A., Javed, M. Y., & Akhter, J. (2023). Research trends in the field of Islamic social finance: a bibliometric analysis from 1914 to 2022. *International Journal of Ethics and Systems*, *ahead-of-print*(ahead-of-print). https://doi.org/10.1108/IJOES-03-2023-0044

Al-Hajieh, H. (2023). Predictive directional measurement volatility spillovers between the US and selected Asian Pacific countries. *Cogent Economics & Finance*, *11*(1), 2173124. https://doi.org/10.1080/23322039.2023.2173124

Aloui, C., Al-Kayed, L., Asadov, A., & Danila, N. (2023). Geopolitical risk and stock-bond interplay: A comparative study of Islamic and conventional assets in the GCC. *Defence and Peace Economics*, 1–20. https://doi.org/10.1080/10242694.2023.2203477

Alshater, M. M., Saba, I., Supriani, I., & Rabbani, M. R. (2022). Fintech in Islamic finance literature: A review. *Heliyon, 8*(9). Elsevier Ltd. https://doi.org/10.1016/j.heliyon.2022.e10385

Al-Yahyaee, K. H., Mensi, W., Rehman, M. U., Vo, X. V., & Kang, S. H. (2020). Do Islamic stocks outperform conventional stock sectors during normal and crisis periods? Extreme co-movements and portfolio management analysis. *Pacific-Basin Finance Journal*, *62*, 101385. https://doi.org/https://doi.org/10.1016/j.pacfin.2020.101385

Antonakakis, N., Gupta, R., Kollias, C., & Papadamou, S. (2017). Geopolitical risks and the oil-stock nexus over 1899–2016. *Finance Research Letters*, *23*, 165–173. https://doi.org/https://doi.org/10.1016/j.frl.2017.07.017

Arif, M., Naeem, M. A., Hasan, M., M Alawi, S., & Taghizadeh-Hesary, F. (2022). Pandemic crisis versus global financial crisis: Are Islamic stocks a safe-haven for G7 markets? *Economic Research-Ekonomska Istraživanja*, *35*(1), 1707–1733. https://doi.org/10.1080/1331677X.2021.1910532

Ashraf, D., Felixson, K., Khawaja, M., & Hussain, S. (2017). Do constraints on financial and operating leverage affect the performance of Islamic equity portfolios? *Pacific-Basin Finance Journal*, *42*. https://doi.org/10.1016/j.pacfin.2017.02.009

Ashraf, D., Rizwan, M. S., & L'Huillier, B. (2016). A net stable funding ratio for Islamic banks and its impact on financial stability: An international investigation. *Journal of Financial Stability*, *25*, 47–57. https://doi.org/https://doi.org/10.1016/j.jfs.2016.06.010

Asteriou, D., & Hall, S. G. (2021). *Applied econometrics*. Bloomsbury Publishing.

Azmi, W., Mohamad, S., & Shah, M. E. (2020). Ethical investments and financial performance: An international evidence. *Pacific-Basin Finance Journal*, *62*, 101147. https://doi.org/https://doi.org/10.1016/j.pacfin.2019.05.005

Azmi, W., Ng, A., Dewandaru, G., & Nagayev, R. (2019). Doing well while doing good: The case of Islamic and sustainability equity investing. *Borsa Istanbul Review*, *19*(3), 207–218. https://doi.org/https://doi.org/10.1016/j.bir.2019.02.002

Bakar, N. A., Abdelsalam, O., Taamouti, A., & Elmasry, A. (2023). The market uncertainty of ethically compliant equity: An integrated screening approach. *Journal of International Financial Markets, Institutions and Money*, *86*, 101759. https://doi.org/https://doi.org/10.1016/j.intfin.2023.101759

Ben Nasr, A., Lux, T., Ajmi, A. N., & Gupta, R. (2014). Forecasting the volatility of the Dow Jones Islamic stock market index: Long memory vs. regime switching. *Working Papers, University of Pretoria, Department of Economics*, *45*. https://doi.org/10.1016/j.iref.2016.07.014

Bollerslev, T. (1986). Generalized autoregressive conditional heteroskedasticity. *Journal of Econometrics*, *31*(3), 307–327. https://doi.org/https://doi.org/10.1016/0304-4076(86)90063-1

Bouras, C., Christou, C., Gupta, R., & Suleman, M. (2018). Geopolitical risks, returns, and volatility in emerging stock markets: Evidence from a panel GARCH model. *Emerging Markets Finance and Trade*, *55*, 1–16. https://doi.org/10.1080/1540496X.2018.1507906

Caldara, D., & Lacoviello, M. (2022). *Measuring Geopolitical Risk*. https://doi.org/10.17016/IFDP.2022.1222r1

Chen, Y.-F., Chiang, T. C., & Lin, F.-L. (2023). Inflation, equity market volatility, and bond prices: Evidence from G7 Countries. *Risks*, *11*(11). https://doi.org/10.3390/risks11110191

Ding, S., Wang, K., Cui, T., & Du, M. (2023). The time-varying impact of geopolitical risk on natural resource prices: The post-COVID era evidence. *Resources Policy*, *86*, 104161. https://doi.org/https://doi.org/10.1016/j.resourpol.2023.104161

Ding, Z., Liu, Z., Zhang, Y., & Long, R. (2017). The contagion effect of international crude oil price fluctuations on Chinese stock market investor sentiment. *Applied Energy*, *187*, 27–36. https://doi.org/https://doi.org/10.1016/j.apenergy.2016.11.037

El-Diftar, D. (2023). The impact of exchange rates on stock market performance of the Emerging 7. *Journal of Capital Markets Studies*, *7*(2), 125–139. https://doi.org/10.1108/JCMS-03-2023-0005

Eldomiaty, T., Saeed, Y., Hammam, R., & AboulSoud, S. (2020). The associations between stock prices, inflation rates, interest rates are still persistent. *Journal of Economics, Finance and Administrative Science*, *25*(49), 149–161. https://doi.org/10.1108/JEFAS-10-2018-0105

Engle, R. F. (1982). Autoregressive conditional heteroscedasticity with estimates of the variance of United Kingdom inflation. *Econometrica*, *50*(4), 987–1007. https://doi.org/10.2307/1912773

Fiorillo, P., Meles, A., Pellegrino, L. R., & Verdoliva, V. (2023). Geopolitical risk and stock liquidity. *Finance Research Letters*, *54*, 103687. https://doi.org/https://doi.org/10.1016/j.frl.2023.103687

Godil, D. I., Sarwat, S., Sharif, A., & Jermsittiparsert, K. (2020). How oil prices, gold prices, uncertainty and risk impact Islamic and conventional stocks? Empirical evidence from QARDL technique. *Resources Policy*, *66*, 101638. https://doi.org/https://doi.org/10.1016/j.resourpol.2020.101638

Goyal, P., & Soni, P. (2024). Beyond borders: Investigating the impact of the 2023 Israeli–Palestinian conflict on global equity markets. *Journal of Economic Studies*, *ahead-of-print*(ahead-of-print). https://doi.org/10.1108/JES-12-2023-0729

Gu, G., Zhu, W., & Wang, C. (2022). Time-varying influence of interest rates on stock returns: evidence from China. *Economic Research-Ekonomska Istraživanja*, *35*(1), 2510–2529. https://doi.org/10.1080/1331677X.2021.1966639

Hassan, K., Hoque, A., Gasbarro, D., & Wong, W.-K. (2023). Are Islamic stocks immune from financial crises? Evidence from contagion tests. *International Review of Economics & Finance*, *86*, 919–948. https://doi.org/https://doi.org/10.1016/j.iref.2020.08.004

Hassan, M. K., Aliyu, S., Paltrinieri, A., & Khan, A. (2018). A review of Islamic investment literature. *Economic Papers: A Journal of Applied Economics and Policy*, *38*. https://doi.org/10.1111/1759-3441.12230

Hassouneh, I., Couleau, A., Serra, T., & Al-Sharif, I. (2018). The effect of conflict on Palestine, Israel, and Jordan stock markets. *International Review of Economics & Finance*, *56*, 258–266. https://doi.org/https://doi.org/10.1016/j.iref.2017.10.028

Hui, H. C. (2022). The long-run effects of geopolitical risk on foreign exchange markets: Evidence from some ASEAN countries. *International Journal of Emerging Markets*, *17*(6), 1543–1564. https://doi.org/10.1108/IJOEM-08-2020-1001

Irwaningtyas, F. M., Sukmaningrum, P. S., & Rusgianto, S. (2023). Investor sentiments, the Covid-19 pandemic and Islamic stock return volatility in Indonesia. *100 ISRA International Journal of Islamic Finance*, *15*(3), 100–114. https://doi.org/10.55188/ijif.v

Mbah, R. E., Hultquist, L., Fonkem, B., & Mbah, E. (2024). the social, economic, and international relations impact of the 2023 Israel-Hamas War. *Advances in Social Sciences Research Journal*, *11*, 224–236. https://doi.org/10.14738/assrj.112.16499

Menglong, Y., Zhang, Q., Yi, A., & Peng, P. (2021). Geopolitical risk and stock market volatility in emerging economies: Evidence from GARCH-MIDAS model. *Discrete Dynamics in Nature and Society*, *2021*, 1–17. https://doi.org/10.1155/2021/1159358

Mittnik, S., Robinzonov, N., & Spindler, M. (2015). Stock market volatility: Identifying major drivers and the nature of their impact. *Journal of Banking & Finance*, *58*, 1–14. https://doi.org/https://doi.org/10.1016/j.jbankfin.2015.04.003

Nelson, C. R., & Plosser, C. R. (1982). Trends and random walks in macroeconmic time series: Some evidence and implications. *Journal of Monetary Economics*, *10*(2), 139–162. https://doi.org/https://doi.org/10.1016/0304-3932(82)90012-5

Nofrianto, N., Nugraha, D. P., Ahmed, A. M., Muttaqin, Z., Fekete-Farkas, M., & Hágen, I. (2024). Exploring the resilience of Islamic stock in Indonesia and Asian Markets. *Journal of Risk and Financial Management*, *17*(6). https://doi.org/10.3390/jrfm17060239

Pandey, D. K., Kumari, V., Palma, A., & Goodell, J. W. (2024). Are markets in happier countries less affected by tragic events? Evidence from market reaction to the Israel–Hamas conflict. *Finance Research Letters*, *60*. https://doi.org/10.1016/j.frl.2023.104893

Phillips, P. C. B., & Perron, P. (1988). Testing for a unit root in time series regression. *Biometrika*, *75*(2), 335–346. https://doi.org/10.2307/2336182

Rizvi, S. A. R., Arshad, S., & Alam, N. (2015). Crises and contagion in Asia Pacific - Islamic v/s conventional markets. *Pacific-Basin Finance Journal*. https://doi.org/10.1016/j.pacfin.2015.04.002

Roemanasari, F., Sabela, J., & Rusgianto, S. (2022). Islamic financial literacy and financial behavior on investment intention. *Jurnal Ilmu Ekonomi Terapan*, *7*(2), 239–250. https://doi.org/10.20473/jiet.v7i2.40679

Rustamov, O. (2024). Understanding volatility in financial market: a roadmap for risk management and opportunity identification. *International Journal of Innovative Technologies in Economy*. https://doi.org/10.31435/rsglobal_ijite/30062024/8168

Salisu, A. A., Ogbonna, A. E., Lasisi, L., & Olaniran, A. (2022). Geopolitical risk and stock market volatility in emerging markets: A GARCH – MIDAS approach. *The North American Journal of Economics and Finance*, *62*, 101755. https://doi.org/https://doi.org/10.1016/j.najef.2022.101755

Shahzad, J., Ferrer, R., Ballester, L., & Umar, Z. (2017). Risk transmission between Islamic and conventional stock markets: A return and volatility spillover analysis. *International Review of Financial Analysis*, *52*. https://doi.org/10.1016/j.irfa.2017.04.005

Shear, F., & Ashraf, B. N. (2022). The performance of Islamic versus conventional stocks during the COVID-19 shock: Evidence from firm-level data. *Research in International Business and Finance*, *60*, 101622. https://doi.org/https://doi.org/10.1016/j.ribaf.2022.101622

Shiller, R. J. (2020). *Narrative economics: How stories go viral and drive major economic events*. Princeton University Press.

Tabash, M. I., Chalissery, N., Nishad, T. M., & Al-Absy, M. S. M. (2024). Market shocks and stock volatility: Evidence from emerging and developed markets. *International Journal of Financial Studies*, *12*(1). https://doi.org/10.3390/ijfs12010002

Trabelsi, N., & Naifar, N. (2017). Are Islamic stock indexes exposed to systemic risk? Multivariate GARCH estimation of CoVaR. *Research in International Business and Finance*. https://doi.org/10.1016/j.ribaf.2017.07.013

Trichilli, Y., & Boujelbéne, M. (2022). Regime specific spillover between Dow Jones Islamic Market World Index, Islamic gold-backed crypto currencies and the blockchain halal index.

International Journal of Islamic and Middle Eastern Finance and Management, *2020*. https://doi.org/10.1108/IMEFM-09-2021-0395

Vo, X. V., & Ellis, C. (2018). International financial integration: Stock return linkages and volatility transmission between Vietnam and advanced countries. *Emerging Markets Review*, *36*, 19–27. https://doi.org/https://doi.org/10.1016/j.ememar.2018.03.007

Zhang, Y., He, J., He, M., & Li, S. (2023). Geopolitical risk and stock market volatility: A global perspective. *Finance Research Letters*, *53*, 103620. https://doi.org/https://doi.org/10.1016/j.frl.2022.103620