

GEOPOLITICAL RISK ON STOCK RETURNS: EVIDENCE ON THE ROLE OF OIL PRICES IN ASEAN MARKETS

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Abstract:

Purpose – This study examines how geopolitical risk affects stock returns and market volatility in ASEAN countries during the early 2026 geopolitical tension period.

Methods – Using daily data from five ASEAN stock markets, the study analyzes 290 observations through panel regression, robustness testing, and GARCH modelling. Geopolitical risk is measured using the Geopolitical Risk index, while oil returns and exchange rates are included as explanatory variables.

Findings – Geopolitical risk has a negative and statistically significant effect on stock returns ($\beta = -0.0000212$; $p = 0.045$), although its economic magnitude is relatively small. Oil returns show a stronger negative effect ($\beta = -0.0871$; $p = 0.005$), indicating that energy price movements are more strongly associated with ASEAN market responses.

Research implications – The findings suggest that investors and policymakers should pay closer attention to energy-price movements when assessing financial market vulnerability during geopolitical uncertainty.

Originality – This study contributes event-window evidence from ASEAN markets by combining geopolitical risk, oil returns, exchange rates, and GARCH-based volatility analysis.

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INTRODUCTION

The geopolitical conflict between Iran and the United States in 2026 has become one of the greatest sources of uncertainty in the global economic system. This conflict not only impacts political stability in the Middle East but also has a domino effect on energy markets, global inflation, and the stability of international financial markets. According to a report by the International Monetary Fund (IMF), this conflict has caused major disruptions to the global energy supply, which has directly led to rising oil prices and a slowdown in global economic growth ([International Monetary Fund, 2026](#)). In fact, the IMF warns that if the conflict continues, the global economy could approach recessionary conditions due to prolonged energy price pressures.

The escalation of geopolitical tensions between Iran and the United States in early 2026 intensified uncertainty in global financial and energy markets. As ASEAN

economies remain highly dependent on imported energy and external capital flows, geopolitical shocks may be reflected in ASEAN financial markets through oil price movements, exchange rate pressure, and changes in investor risk perception, exchange rates, and stock market volatility ([Bouras et al., 2018](#); [Chiang, 2021](#); [Yang, M., Zhang, Q., Yi, A., & Peng, 2021](#)). This makes ASEAN a relevant regional setting for examining the role of oil prices in explaining market responses to geopolitical risk in financial markets.

Empirically, the Iran-U.S. conflict has triggered a significant spike in oil prices. Data shows that global oil prices have risen by more than 50% since the start of the conflict, even briefly reaching levels above USD 119 per barrel. In an extreme scenario, oil prices are projected to reach USD 150 to USD 200 per barrel if supply disruptions persist. This surge is due to disruptions in global energy distribution channels, particularly in the Middle East, which is the world's primary oil supplier. The IMF also states that every 10% increase in energy prices can raise global inflation by 0.4% and dampen economic growth. This reinforces the link between geopolitical conflict and global economic instability ([International Monetary Fund, 2026](#)).

Geopolitical shocks significantly affect uncertainty in financial markets ([Nisak et al., 2025](#)). Escalating conflicts, particularly in energy-sensitive regions such as the Middle East, have intensified concerns over economic stability and market performance ([Yang, M., Zhang, Q., Yi, A., & Peng, 2021](#)). These developments have drawn substantial attention from both academics and practitioners, as geopolitical events are often associated with abrupt market reactions, increased volatility, and shifts in investor behavior. In this context, understanding how geopolitical risk affects stock market performance has become a critical issue in financial research.

The Asian region, particularly Southeast Asia, is one of the areas most vulnerable to the impacts of this conflict. This is due to the high dependence of countries in the region on energy imports from the Middle East. The IMF states that Asia imports approximately 2.5% of its Gross Domestic Product (GDP) in the form of oil and gas, making it highly vulnerable to disruptions in the global energy supply ([International Monetary Fund, 2026](#)). Furthermore, energy consumption in the Asian region accounts for about 4% of GDP, indicating high energy intensity in economic activity. Consequently, rising energy prices will have a direct impact on production costs, inflation, and financial market performance in the region. Moreover, previous shocks have caused significant volatility ([Chiang, 2021](#); [Zhang et al., 2020](#)).

From a theoretical perspective, the relationship between risk and return has long been central to financial economics. The modern portfolio theory introduced by [Markowitz \(1952\)](#) emphasizes that investors make decisions based on the trade-off between expected return and risk, typically measured by variance. Later developments, such as the efficient market hypothesis proposed by [Fama \(1970\)](#), suggest that financial markets rapidly incorporate available information into asset prices. However, geopolitical risk presents a unique challenge to these frameworks, as it is largely exogenous, difficult to predict, and often associated with sudden and severe shocks.

To capture such uncertainty, Caldara and Iacoviello introduced the Geopolitical Risk (GPR) index ([Caldara & Iacoviello, 2022](#)), which quantifies geopolitical risk based on the frequency of news related to adverse geopolitical events. Empirical studies

have shown that increases in GPR are associated with declines in investment, economic activity, and stock market performance. However, the extent and nature of this relationship remain subject to debate. While some studies find an impact of geopolitical risk on financial markets ([Agoraki et al., 2022](#); [Smales, 2021](#); [Zhang, Y., He, J., He, M., & Li, 2023](#)), others suggest that its effects are indirect and depend on specific economic channels ([Albrecht, P., Kapounek, S., & Kučerová, 2023](#); [Gomez-gonzalez et al., 2019](#); [Salisu & Isah, 2017](#)).

One of the most important yet underexplored aspects in this literature is the role of energy markets, particularly oil prices, which are strongly associated with stock returns rather than geopolitical risk itself ([Yang, T., Dong, Q., Du, M., & Du, 2023](#)). Geopolitical tensions often arise in regions that are critical to global energy supply, making oil prices highly sensitive to political instability. As oil prices increase, production costs rise, inflationary pressures intensify, and corporate profitability may decline, ultimately affecting stock market performance ([Anand, B., Paul, S., & Nair, 2023](#); [Gomez-gonzalez et al., 2019](#); [Salisu & Isah, 2017](#); [Yang, T., Dong, Q., Du, M., & Du, 2023](#)). Therefore, the impact of geopolitical risk may not operate directly on stock returns, but rather through economic channels, with oil prices acting as a key intermediary.

Despite the growing body of literature, several important gaps remain. First, most empirical studies on geopolitical risk focus on developed markets, particularly the United States and Europe. Emerging markets, especially those in the ASEAN region, have received relatively limited attention ([Bouras et al., 2018](#); [Chiang, 2021](#); [Yang, M., Zhang, Q., Yi, A., & Peng, 2021](#)). This is a significant limitation, as ASEAN economies are characterized by higher exposure to external shocks, greater dependence on foreign capital flows, and varying degrees of financial market development ([Bouras et al., 2018](#)). As a result, the response of ASEAN stock markets to geopolitical risk may differ substantially from that observed in developed economies.

Second, existing studies often rely on static or linear models that fail to capture the dynamic nature of financial markets. Stock returns and volatility are known to exhibit time-varying behavior and volatility clustering, which cannot be adequately addressed by conventional regression models. Although some studies have applied GARCH-type models, the issue of volatility where negative shocks have a stronger impact than positive shocks remains relatively underexplored in the context of geopolitical risk. Based on these gaps, this study aims to provide a more comprehensive understanding of the relationship between geopolitical risk, stock returns, and market volatility in ASEAN. Specifically, this study investigates whether geopolitical risk directly affects stock returns or operates indirectly through oil prices as a key energy price channel. In addition, it examines the presence of volatility to determine whether negative shocks associated with geopolitical events have a disproportionate impact on market uncertainty.

This study contributes to the geopolitical finance literature in several ways. First, unlike previous studies focusing primarily on developed markets, this research investigates ASEAN stock markets, which remain underexplored despite their increasing integration into global financial systems. Second, this study simultaneously incorporates geopolitical risk, oil price movements, and exchange rate dynamics

within a panel fixed effects and GARCH framework, enabling the analysis of both return and volatility persistence. Third, the study distinguishes the role of geopolitical shocks in emerging ASEAN markets characterized by varying levels of financial resilience and external vulnerability.

THEORETICAL REVIEW

Financial Behavior

The main theory used in this study is *Modern Portfolio Theory* (MPT), developed by Harry Markowitz ([Markowitz, 1952](#)). This theory emphasizes that rational investors will choose an optimal portfolio by considering the trade-off between return and risk. In this context, risk is measured by the variance or volatility of asset returns. Modern Portfolio Theory explains why geopolitical risk such as the U.S.-Iran matters for stock returns. When uncertainty increases, investors reassess the expected return-risk trade-off and may rebalance their portfolios away from risky assets ([Caldara & Iacoviello, 2022](#); [Markowitz, 1952](#); [Smales, 2021](#)). This portfolio adjustment can reduce stock prices and increase return volatility. Therefore, geopolitical risk is not only a political variable but also a systematic source of financial risk that affects asset allocation decisions.

Building on this foundation, the *Efficient Market Hypothesis* (EMH) proposed by Fama ([Fama, 1970](#)) argues that financial markets incorporate all available information into asset prices. Under this assumption, asset prices should respond quickly to new information, including geopolitical events. However, geopolitical risk challenges the EMH framework due to its unpredictable and often abrupt nature. The Efficient Market Hypothesis suggests that publicly available geopolitical information should be rapidly incorporated into stock prices. However, geopolitical shocks may still generate temporary volatility because investors differ in how they interpret the severity, duration, and economic consequences of such events ([Chiang, 2021](#); [Fama, 1970](#); [Yang, M., Zhang, Q., Yi, A., & Peng, 2021](#)). This explains why market prices may adjust quickly, but return volatility can remain elevated during periods of uncertainty. In this context, geopolitical risk can be interpreted as a form of systematic risk that cannot be easily diversified. As such, it plays a critical role in shaping financial market dynamics, particularly in emerging markets where institutional structures may amplify uncertainty.

In conclusion, Modern Portfolio Theory explains that investors respond to uncertainty by reassessing the trade-off between expected return and risk, which may lead to portfolio rebalancing away from risky assets ([Markowitz, 1952](#)). In the context of geopolitical risk, this adjustment may reduce stock prices and increase return volatility. The Efficient Market Hypothesis further suggests that publicly available geopolitical information should be reflected in prices, although market reactions may vary depending on investor interpretation, market depth, and institutional efficiency ([Fama, 1970](#)). Dornbusch's overshooting model strengthens this explanation by showing how external shocks may trigger short-run exchange rate overreaction, which can affect stock returns through imported costs, inflation expectations, capital flows, and asset repricing ([Dornbusch, 1976](#)). These abrupt adjustments provide a theoretical basis for volatility clustering, which is captured through ARCH/GARCH models ([Bollerslev, 1986](#); [Engle, 1982](#)).

Geopolitical Risk

Geopolitical risk has gained increasing attention in financial research, particularly following the development of the Geopolitical Risk (GPR) index ([Caldara & Iacoviello, 2022](#)). The GPR index measures the intensity of geopolitical tensions based on news coverage related to wars, conflicts, and political instability. It captures both realized adverse events and the threat of such events, making it a comprehensive proxy for geopolitical uncertainty.

Empirical studies suggest that increases in geopolitical risk are associated with declines in investment, economic activity, and stock market returns. However, the magnitude and direction of these effects vary across markets and time periods. Some studies find a direct negative relationship between geopolitical risk and stock returns, indicating that higher uncertainty leads to risk-averse behavior among investors. Other studies argue that the relationship is more complex and may depend on the role of oil prices through which geopolitical risk affects the economy. In emerging markets, the impact of geopolitical risk may be more pronounced due to higher exposure to external shocks, lower market efficiency, and greater dependence on global capital flows. This makes ASEAN markets particularly relevant for examining how geopolitical risk influences financial performance.

Oil Prices

A key theoretical perspective in this study is the role of oil prices as an economic channel linking geopolitical risk to stock market performance. Geopolitical tensions often originate in regions that are critical to global energy supply, making oil prices highly sensitive to political instability. According to macroeconomic theory, increases in oil prices lead to higher production costs, reduced corporate profitability, and increased inflationary pressure. These effects, in turn, negatively influence stock market performance. ([Anand, B., Paul, S., & Nair, 2023](#)) emphasizes that oil price shocks can have significant financial consequences, affecting both supply and demand dynamics.

From a financial perspective, oil prices act as an economic channel through which geopolitical shocks are transmitted to financial markets. This implies that the relationship between geopolitical risk and stock returns may not be direct, but rather reflected through the energy-price channel. Therefore, understanding the role of oil prices is essential for capturing the full impact of geopolitical risk.

Exchange Rate and Interest Rate

The exchange rate overshooting model was originally introduced by Dornbusch ([Dornbusch, 1976](#)). The overshooting model provides an important theoretical bridge between external macroeconomic shocks and short-run financial market volatility. The model explains that exchange rates may react more strongly in the short run than warranted by long-run fundamentals because financial markets adjust faster than goods markets, creating short-run currency pressure after external macroeconomic shocks ([Dornbusch, 1976](#); [Hachicha, 2024](#)). In the context of geopolitical risk, sudden increases in uncertainty may trigger capital flow adjustments, currency pressure, and rapid repricing of financial assets. These abrupt adjustments can generate clustered stock return movements, as investors revise expectations about inflation, corporate costs, capital flows, and risk premiums over a short period ([Bollerslev, 1986](#); [Dornbusch, 1976](#); [Engle, 1982](#); [Hachicha, 2024](#)). Recent studies confirm the relevance

of overshooting dynamics under contemporary global uncertainty conditions. It shows that in the overshooting model, exchange rates can exhibit significant short-term volatility in response to economic shocks ([Hachicha, 2024](#)). In the context of stock markets, exchange rate movements can affect corporate performance through trade competitiveness, import costs, and capital flows.

This theoretical linkage also supports the use of volatility modeling. If geopolitical shocks generate abrupt exchange rate adjustments and rapid asset repricing, stock returns are likely to exhibit volatility clustering, where large return movements are followed by further large movements. The ARCH/GARCH framework is therefore appropriate for capturing the conditional variance dynamics arising from short-run market reactions to geopolitical and macro-financial shocks. In this study, GARCH is used not to test asymmetric volatility, but to examine whether geopolitical uncertainty is associated with short-run volatility clustering in ASEAN stock returns.

Volatility Dynamics and ARCH/GARCH Framework

Financial time series are characterized by time-varying volatility and volatility clustering. The *Autoregressive Conditional Heteroskedasticity* (ARCH) model was used to capture conditional heteroskedasticity, which was later extended to the *Generalized Autoregressive Conditional Heteroskedasticity* (GARCH) model ([Wooldridge, 2020](#)). These models allow volatility to depend on past shocks and past variance, providing a more realistic representation of financial data.

Financial time series often exhibit time-varying volatility and volatility clustering, where large shocks tend to be followed by large shocks and small shocks by small shocks. The Autoregressive Conditional Heteroskedasticity (ARCH) model introduced by [Engle \(1982\)](#) and the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model developed by [Bollerslev \(1986\)](#) provide a framework for modeling conditional variance as a function of past shocks and past volatility. In this study, the standard GARCH model is used to examine short-run volatility clustering in ASEAN stock returns during the event window, rather than to test asymmetric volatility.

Hypothesis Development

Based on the theoretical framework and previous empirical findings, the following hypotheses are proposed:

H1: Geopolitical risk has a negative effect on stock returns. This hypothesis is grounded in risk-return theory and supported by empirical studies showing that increased uncertainty reduces investor confidence and market performance.

H2: Oil prices negatively affect stock returns. This hypothesis is based on the role of oil prices in explaining market responses, where rising energy costs reduce corporate profitability and stock market performance.

H3: Geopolitical risk increases stock market volatility. Geopolitical risk is expected to increase stock market volatility in ASEAN markets. According to financial uncertainty and volatility, geopolitical tensions amplify investor anxiety, increase risk perception, and trigger greater fluctuations in financial asset prices.

RESEARCH METHODS

This study employs a quantitative research approach to examine the impact of geopolitical risk on stock returns and market volatility in ASEAN countries. The analysis is based on panel data combining cross-sectional (countries) and time-series (daily observations) dimensions. This approach enables the study to capture both cross-country heterogeneity and dynamic market responses to geopolitical shocks.

The data used are secondary data with a daily frequency. The unit of analysis for this study is the stock markets of five Southeast Asian countries (ASEAN): Indonesia, Malaysia, Thailand, the Philippines, and Singapore. The data are organized in a panel format, which involves repeated observations across countries and over time. The data structure includes the variables Stock Return, GPR, Oil Return, Exchange Rate, and Interest Rate, with a total of 290 observations that appear consistently across all main variables. The sample period estimated in STATA Software ranges from January to April 2026. The dataset includes several non-trading days, leading to unbalanced panel data with gaps, which is typical in high-frequency financial data.

The sample period is deliberately treated as an event window designed to capture short-term financial market responses to the 2026 geopolitical shock. This approach is appropriate for examining immediate market reactions during a concentrated period of heightened uncertainty. However, because the time span is relatively short, the results should not be interpreted as long-run evidence of ASEAN market behavior. Instead, the study provides event-window evidence on how geopolitical risk, oil price movements, and exchange rates are associated with ASEAN stock returns during the observed crisis period.

The dependent variable in the main model is Stock Return, which is the daily stock return calculated from the logarithmic change in stock prices. The use of returns, rather than price levels, aligns with standard practice in finance because returns are closer to the concept of yield and are more suitable for volatility analysis. The main independent variable is GPR, which is a daily geopolitical risk index that measures the intensity of geopolitical uncertainty. Control variables include Oil Return as the return on global oil prices, Exchange Rate as the exchange rate, and Interest Rate as the benchmark interest rate. The interest rate variable was initially considered as a macro-financial control variable. However, the descriptive statistics show that the variable remains constant at 3.64 throughout the observation period, indicating zero variance within the sample. Since a variable with no variation cannot be estimated in the fixed-effects framework, the interest rate variable was excluded from the final regression specification.

To examine the relationship between geopolitical risk and stock returns, this study employs panel data regression using a fixed effects (FE) model. To ensure robustness, a two-way fixed effects model is also estimated by incorporating time effects. The empirical analysis is conducted in several stages. First, stock returns are calculated as the logarithmic difference of stock market indices:

$$\text{StockReturn}_{it} = \ln(P_{it} / P_{it-1}) \times 100$$

where P_{it} represents the stock market index of country i at time t . Oil returns are calculated using the same logarithmic return approach. The baseline panel regression model is specified as follows:

$$\text{StockReturn}_{it} = \alpha + \beta_1 \text{GPR}_t + \beta_2 \text{OilReturn}_t + \beta_3 \text{ExchangeRate}_{it} + \mu_i + \varepsilon_{it}$$

where $StockReturn_{it}$ denotes the stock return of country i at time t , GPR_t represents the global geopolitical risk index, $OilReturn_t$ denotes global oil price returns, $ExchangeRate_{it}$ captures country-specific exchange rate movements, μ_i represents country fixed effects, and ε_{it} is the error term. Since GPR and $OilReturn$ vary only over time and are common across countries, the model is interpreted as estimating the average ASEAN market response to global geopolitical and energy-related shocks after controlling for country-specific heterogeneity. A two-way fixed-effects specification is also estimated as a robustness test by adding time effects:

$$StockReturn_{it} = \alpha + \beta_1 GPR_t + \beta_2 OilReturn_t + \beta_3 ExchangeRate_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

Finally, the GARCH model is used to examine short-run conditional volatility dynamics:

$$\sigma_t^2 = \omega + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 \sigma_{t-1}^2$$

where σ_t^2 is the conditional variance, ε_{t-1}^2 represents past shocks, and σ_{t-1}^2 represents past conditional variance. Given the short event-window period, the GARCH results are interpreted as indicative evidence of short-run volatility clustering rather than as long-run volatility persistence.

In the model, GPR and $OilReturn$ are treated as global common factors because they vary only across time (t) and affect all ASEAN countries simultaneously. In contrast, $ExchangeRate$ varies across both countries (i) and time (t), reflecting country-specific macroeconomic conditions. The inclusion of country fixed effects (μ_i) aims to control for unobserved heterogeneity across ASEAN markets, while time effects (λ_t) capture common external shocks shared by all countries during the observation period.

The relatively short observation window and limited number of cross-sectional units represent important methodological limitations. The dataset consists of five ASEAN countries and 290 daily observations, with approximately 58 observations per country. Therefore, the GARCH results should be interpreted as short-window evidence of conditional volatility dynamics during a specific geopolitical episode rather than as a definitive long-run volatility model for ASEAN financial markets.

Initially, descriptive statistics are employed to summarize the central tendency and dispersion of the variables, including stock returns, geopolitical risk (GPR), oil returns, exchange rates, and interest rates. This step provides preliminary insights into data distribution and potential outliers, which are particularly relevant in financial time series characterized by high volatility. Subsequently, panel unit root tests are performed using the Fisher-type approach based on augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. This procedure is essential to determine the stationarity properties of the variables and to avoid spurious regression results. Stationary series ensure that the statistical properties, such as mean and variance, remain stable over time, thereby satisfying the assumptions of panel regression analysis.

Following the stationarity confirmation, the study employs a panel regression model using the fixed effects (FE) estimator. The fixed effects approach is selected to control for unobserved heterogeneity across cross-sectional units (countries), capturing time-invariant characteristics that may influence stock returns. The model is estimated with robust standard errors to address potential heteroskedasticity and serial correlation, which are common issues in panel financial data. To further validate the empirical findings, a robustness analysis is conducted using a two-way fixed

effects specification. This model incorporates both cross-sectional (entity) and time fixed effects, allowing the estimation to control for common shocks affecting all countries simultaneously, such as global economic conditions or systemic financial disturbances. This specification enhances the reliability of the estimated coefficients by minimizing omitted variable bias.

Finally, to capture the dynamic nature of financial market volatility, the study applies the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model. The GARCH framework is employed to model time-varying conditional variance and to identify volatility clustering, a stylized fact in financial markets where large fluctuations tend to be followed by large fluctuations. The inclusion of exogenous variables in the mean equation enables the analysis to distinguish between return dynamics and volatility behavior, providing a more comprehensive understanding of market responses to geopolitical risk. Overall, the integration of panel regression and GARCH modeling offers a rigorous econometric framework that captures both the conditional mean and conditional variance of stock returns. This approach allows for a more nuanced analysis of how geopolitical risk influences financial markets, not only through direct effects on returns but also through its impact on volatility dynamics.

RESULTS AND DISCUSSION

Descriptive Statistics

The descriptive statistics in Table 1 provide an initial overview of the data distribution and variability across variables. The average stock return is 0.0000852, with a standard deviation of 0.0135861, indicating that although the mean return is close to zero, the market experiences substantial fluctuations. The minimum value of -0.0762 and maximum value of 0.0438 suggest the presence of extreme negative and positive movements, reflecting market sensitivity to external shocks.

Table 1. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
stock_return	290	0.0000852	0.0135861	-0.0762	0.0438
gpr	290	230.9498	105.693	59.2588	500.8072
oil_return	290	0.0064431	0.0462786	-0.1569	0.0882
exchange_rate	290	3393.702	6751.336	1.2607	17146.1
interest_rate	290	3.64	0	3.64	3.64

Source: Data processed using STATA, 2026

Geopolitical risk (GPR) shows a mean value of 230.9498 with a relatively high standard deviation of 105.693, ranging from 59.2588 to 500.8072. This wide range indicates significant variation in geopolitical conditions during the observation period, which is essential for identifying its impact on financial markets. Oil returns exhibit a mean of 0.0064431 with a standard deviation of 0.0462786, and values ranging from -0.1569 to 0.0882. The relatively high volatility of oil returns reinforces its importance as a potential economic channel linking geopolitical risk to stock market performance. The exchange rate variable has a mean of 3393.702 and a very large standard deviation of 6751.336, with values ranging from 1.2607 to 17146.1, indicating strong heterogeneity across countries. Meanwhile, the interest rate remains

constant at 3.64, confirming its exclusion from the regression model due to lack of variation.

Stationarity Test

The Fisher-type panel unit root test in Table 2 indicates that all variables are stationary at level. The inverse chi-squared statistic is 74.6651, the inverse normal statistic is -7.0992, and the inverse logit t-statistic is -9.3676, all with p-values of 0.0000. These results confirm that the null hypothesis of a unit root is rejected, ensuring that the regression analysis does not suffer from spurious relationships.

Table 2. Unit Root Test (stationarity)

Statistic	Test Symbol	Value	p-value
Inverse chi-squared(10)	P	74.6651	0.0000
Inverse normal	Z	-7.0992	0.0000
Inverse logit t(29)	L*	-9.3676	0.0000
Modified inverse chi-squared	Pm	14.4596	0.0000

Source: Data processed using STATA, 2026

Regression Results

The baseline fixed effects model reveals that geopolitical risk has a negative and statistically significant impact on stock returns. This result is consistent with previous studies showing that geopolitical risk increases uncertainty, weakens investor confidence, and negatively affects stock market performance. The coefficient of GPR is -0.0000212 with a p-value of 0.045, supporting **H1**. However, the magnitude of the coefficient is relatively small, implying that while geopolitical risk affects stock returns, its economic significance is limited. This finding is consistent with previous studies showing that geopolitical risk increases uncertainty, weakens investor confidence, and negatively affects stock market performance ([Agoraki et al., 2022](#); [Caldara & Iacoviello, 2022](#); [Smales, 2021](#)).

These findings should be interpreted within the event-window nature of the study. The negative coefficient of geopolitical risk indicates that ASEAN stock markets reacted adversely during the observed crisis period. However, because the sample covers a short and specific geopolitical episode, the result should be understood as evidence of short-term market sensitivity rather than a general long-run relationship between geopolitical risk and stock returns.

Table 3. Regression Result

Variable	Coefficient	Robust Std. Error	t-statistic	p-value	95% Conf. Interval
Gpr	-0.0000212	0.00000738	-2.88	0.045	[-0.0000417, -0.000000754]
oil_return	-0.0870839	0.0159289	-5.47	0.005	[-0.1313095, -0.0428583]
exchange_rate	0.0000318	0.00000201	15.88	0.000	[0.0000263, 0.0000374]
interest_rate	0	Omitted	Omitted	Omitted	Omitted
_cons	-0.102538	0.0052427	-19.56	0.000	[-0.117094, -0.087982]

Source: Data processed using STATA, 2026

The finding in Table 3 suggests that financial markets do not react strongly to geopolitical risk as a standalone factor. Instead, it may already be partially incorporated into market expectations, consistent with the semi-strong form of the

Efficient Market Hypothesis ([Fama, 1970](#)). In contrast, oil returns exhibit a much stronger negative effect on stock returns, with a coefficient of -0.0870839 and a p-value of 0.005 , supporting **H2**. Economically, this implies that a 1% increase in oil returns is associated with approximately an 8.7% decline in stock returns. This substantial effect highlights the critical role of energy prices in shaping market performance, consistent with studies showing that oil price movements are closely associated with stock returns, inflation expectations, and financial stress ([Anand, B., Paul, S., & Nair, 2023](#); [Gomez-gonzalez et al., 2019](#); [Salisu & Isah, 2017](#); [Yang, T., Dong, Q., Du, M., & Du, 2023](#)).

The exchange rate variable shows a positive and highly significant coefficient of 0.0000318 (p-value 0.000), indicating that currency movements are strongly associated with stock returns. This finding is consistent with [Dornbusch's \(1976\)](#) exchange rate overshooting framework, which explains that exchange rates may react strongly to external shocks in the short run. In the context of ASEAN markets, exchange rate movements may affect stock returns through inflation expectations, imported input costs, trade competitiveness, capital flows, and investor sentiment ([Dornbusch, 1976](#); [Hachicha, 2024](#)). However, given the large variation in exchange rates across countries, this result likely reflects cross-country heterogeneity rather than a pure causal relationship. The model's rho value is 0.99724754 , indicating that approximately 99.7% of the variation in stock returns is explained by cross-sectional differences rather than time variation. This confirms the appropriateness of the fixed effects model.

Robust Test

To validate the robustness of the results, a two-way fixed effects model is estimated. The results in Table 4 show that the coefficient of GPR changes from -0.0000212 (significant) to -0.000700 (not significant). This indicates that the significance of geopolitical risk disappears once time effects are controlled. The two-way fixed-effects result provides an important qualification to the event-window findings. Once time effects are included, the statistical significance of GPR and oil returns disappears, suggesting that these variables are closely embedded in broader global time shocks during the crisis period. Therefore, the baseline findings should not be interpreted as strong evidence of an independent causal effect beyond global time trends. Rather, they indicate that ASEAN stock returns were exposed to common geopolitical and energy-related shocks within the event window.

Table 4. Robustness Test (Two-Way Fixed Effects)

Variable	(1)	(2)
	stock_return	stock_return
gpr	-0.0000212^{**} (0.00000738)	-0.000700 (0.00120)
oil_return	-0.0871^{***} (0.0159)	-1.358 (1.961)
exchange_rate	0.0000318^{***} (0.00000201)	0.0000313^{**} (0.0000131)
interest_rate	0 (.)	0 (.)

Observations

290

290

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Data processed using STATA, 2026

Similarly, oil returns lose their significance, with the coefficient changing from -0.0871 ($p < 0.01$) to -1.358 (not significant), accompanied by a large standard error of 1.961. These results suggest that both GPR and oil returns may be capturing common global shocks rather than independent country-level effects. This interpretation is consistent with panel data concerns regarding common time-varying regressors, where global variables that vary only over time may be absorbed once time effects are included in the model. In contrast, the exchange rate remains significant with a coefficient of 0.0000313 ($p < 0.05$), indicating that it is a more stable determinant of stock returns. These findings imply that the relationship between geopolitical risk and stock returns is highly sensitive to model specification. Specifically, the effect of geopolitical risk appears to be embedded within broader global dynamics rather than acting as an independent driver.

GARCH Model

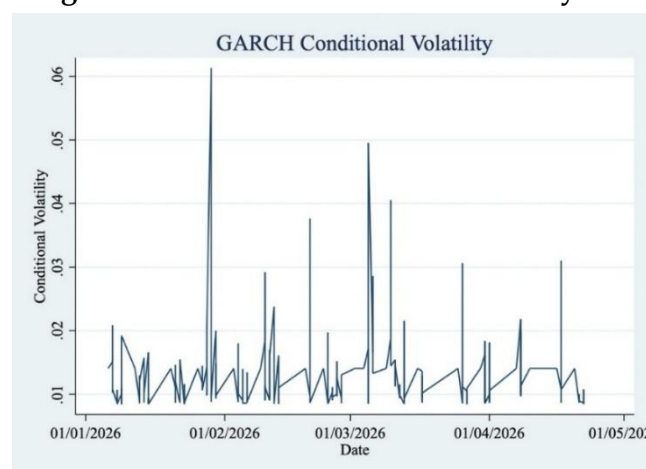
The GARCH model is used to examine volatility dynamics. The ARCH coefficient is 0.7609931 (p-value 0.000), indicating strong volatility clustering. This means that periods of high volatility are likely to be followed by further high volatility show in Figure 1.

Table 5. GARCH Result

Variable	Coefficient	Robust Std. Error	t-statistic	p-value	95% Conf. Interval
Gpr	-0.0000212	0.00000738	-2.88	0.045	[-0.0000417, -0.000000754]
oil_return	-0.0870839	0.0159289	-5.47	0.005	[-0.1313095, -0.0428583]
exchange_rate	0.0000318	0.00000201	15.88	0.000	[0.0000263, 0.0000374]
interest_rate	0	Omitted	Omitted	Omitted	Omitted
_cons	-0.102538	0.0052427	-19.56	0.000	[-0.117094, -0.087982]
ARCH L1.	0.7609931	0.1324782	5.74	0.000	[0.5013407, 1.020646]
GARCH L1.	0.013333	0.0416117	0.32	0.749	[-0.0682244, 0.0948904]
_cons	0.0000701	0.0000147	4.77	0.000	[0.0000413, 0.0000989]

Source: Data processed using STATA, 2026

Figure 1. GARCH Conditional Volatility



Source: Data processed using STATA, 2026

The GARCH results in Table 5 show that GPR remains a negative and significant factor for Stock Returns, Oil Return remains negative and highly significant, while Exchange Rate is negative and highly significant in the volatility model. Most importantly, the ARCH parameters are large and significant, whereas the GARCH components 0.13333 (p-value 0.749) are not significant. Theoretically, this means that current volatility is heavily influenced by recent shocks but does not exhibit strong long-term persistence. This finding is consistent with the ARCH/GARCH framework, where recent shocks influence current conditional variance and generate volatility clustering in financial return series ([Bollerslev, 1986](#); [Brooks, 2014](#); [Engle, 1982](#)) and interprets volatility as a time-varying process, supporting H3. However, because the GARCH coefficient is not statistically significant, the result should be interpreted as evidence of short-run volatility reaction rather than strong long-run volatility persistence.

Discussion

The empirical findings reveal a non-linear and context-dependent relationship between geopolitical risk and stock market performance. While geopolitical risk (GPR) exhibits a statistically significant negative effect on stock returns (-0.0000212 , $p = 0.045$), its economic magnitude remains relatively small. This suggests that financial markets do not fully react to geopolitical risk as a primary driver of returns. This finding aligns with the concept of semi-strong market efficiency ([Fama, 1970](#)), where publicly available information is already incorporated into asset prices. Consequently, geopolitical risk may be partially priced in, reducing its marginal impact on returns.

This interpretation becomes more nuanced when considering the robustness results. After controlling for time effects, the GPR coefficient becomes statistically insignificant (-0.000700 , $p > 0.10$), indicating that its initial significance may be driven by global shocks rather than an independent causal effect. Although the coefficient of GPR is statistically significant, its economic magnitude is relatively small. A one-unit increase in the GPR index reduces stock returns by only 0.0000212 , which is practically negligible. However, a one-standard-deviation increase in GPR, approximately 105.693 points, is associated with a decline in stock returns of about 0.224%. This indicates that geopolitical risk becomes economically meaningful only when geopolitical uncertainty increases substantially.

In contrast, oil returns emerge as the dominant factor, with a coefficient of -0.0871 ($p < 0.01$). This highlights the role of energy markets as the primary oil price association of geopolitical shocks. The magnitude of this effect suggests that stock markets respond more strongly to economic consequences (e.g., rising energy costs) than to geopolitical uncertainty itself. However, the lack of significance of the GARCH component in the previous model indicates that volatility is not persistent in the long run. In other words, the market responds quickly to shocks but also returns to normal conditions relatively quickly.

This suggests the presence of an efficient adjustment mechanism in the ASEAN stock market. This interpretation is consistent with [Engle's \(1982\)](#) ARCH framework and [Bollerslev's \(1986\)](#) GARCH extension, which explain that conditional volatility may be driven by recent shocks and lagged variance. In this study, the significant ARCH coefficient indicates immediate volatility reaction, while the insignificant GARCH coefficient suggests that volatility persistence is not strongly supported

within the short event window. This suggests that volatility in ASEAN stock returns during the observation period is driven primarily by recent shocks rather than by persistent long-term volatility dynamics. In other words, geopolitical and energy-related shocks appear to generate immediate volatility responses, but these responses do not persist strongly over time. This finding may indicate relatively rapid market adjustment to new information, although the interpretation should be made cautiously given the short observation window and limited sample size.

One important aspect to note is the presence of 89 data gaps. In the context of the GARCH model, data continuity is crucial because conditional variance is calculated based on previous values. These gaps have the potential to lead to an underestimation of volatility persistence. Nonetheless, the panel dataset contains non-trading days and asynchronous market holidays across ASEAN countries, resulting in temporal gaps in the series. These gaps are naturally handled by the Stata ARCH procedure through conditional resetting without altering the original market observations.

Within the event-window framework, the significant ARCH coefficient indicates that recent shocks were important in explaining short-run volatility movements. However, the non-significant GARCH coefficient suggests that volatility persistence was not strongly identified during the short sample period. This implies that ASEAN markets may have experienced immediate volatility reactions to geopolitical and energy-related shocks, but the evidence does not support strong long-run persistence in volatility. The estimation results indicate that geopolitical risk and oil price variables primarily operate as common external shocks affecting all ASEAN markets simultaneously. Since these variables vary only over time and not across countries, identifying heterogeneous country-specific responses becomes methodologically challenging within a small panel framework. This issue becomes more pronounced given the limited number of cross-sectional units included in the study.

CONCLUSION

This study examines the response of ASEAN stock markets to geopolitical risk, oil price movements, and exchange rate dynamics during a short geopolitical event window in early 2026. The findings show that geopolitical risk has a negative and statistically significant effect on stock returns, although its economic magnitude is relatively small. Oil returns show a stronger negative association with stock returns, suggesting that ASEAN markets respond more strongly to energy price movements than to geopolitical risk itself. Exchange rates also remain statistically significant, indicating the importance of external financial conditions in shaping stock market performance across ASEAN economies.

The volatility analysis provides additional evidence that market uncertainty during the event window was mainly driven by recent shocks. The significant ARCH coefficient indicates the presence of short-run volatility clustering, while the insignificant GARCH coefficient suggests that volatility persistence is not strongly supported in the sample. These findings imply that ASEAN markets reacted quickly to geopolitical and energy-related shocks, but the evidence does not support a strong long-run volatility process. Therefore, the results should be interpreted as event-window evidence rather than as a general long-term model of geopolitical risk effects in ASEAN financial markets.

This study has several limitations. The observation period is relatively short, the sample consists of only five ASEAN countries, and the data contain temporal gaps caused by weekends, non-trading days, and asynchronous market holidays. In addition, GPR and oil returns are global variables that vary only over time, which limits the identification of heterogeneous country-specific responses. Future studies should extend the observation period, include multiple geopolitical events, develop country-specific exposure measures, and apply country-level or multivariate volatility models such as country-specific GARCH or DCC-GARCH to better capture cross-market differences.

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