International Journal of Accounting and Economics Studies, 13 (2) (2026) 557-565

International Journal of Accounting and Economics Studies

Website: www.sciencepubco.com/index.php/IJAES
https://doi.org/10.14419/pdq7fj65
Research paper

Geopolitical Escalation, Oil Price Moderation, and Asymmetric Market Responses: Evidence from The Saudi Financial Market Using Event Study And GARCH Models

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Received: February 22, 2026, Accepted: March 15, 2026, Published: March 20, 2026

Abstract

This study investigates the systemic interplay between geopolitical risk, oil-price dynamics, and financial market behavior during the projected 2024–2026 Middle Eastern conflict, employing a multi-layered empirical architecture grounded in event-study methodology and GARCH-family volatility models. Using monthly Caldara–Iacoviello GPR indices (2010–2026), daily TASI data, sectoral indices, and oil-price movements, the analysis quantifies abnormal returns, cumulative return trajectories, and asymmetric volatility responses across major Saudi sectors. The findings reveal that geopolitical shocks impose pronounced valuation losses on TASI, Banks, Energy, and Transportation, while Gold ETFs consistently manifest safe-haven properties and REITs/CEFs exhibit defensive insulation. CAR patterns confirm persistent, non-idiosyncratic market stress, and GARCH, EGARCH, and TGARCH estimations demonstrate high volatility persistence with strong downside asymmetry. Oil prices function as dual moderator stabilizing energy-linked sectors while intensifying pressures on non-energy sectors. The results underscore sector-specific transmission channels and highlight the imperative for enhanced risk-management frameworks and policy stabilization mechanisms.

Keywords: *Geopolitical Escalation; Market Responses; Oil Price Moderation; Event Study; GARCH Models.*

1. Introduction

Geopolitical risk has become one of the most powerful forces shaping global financial stability. As stated in your uploaded document, "Geopolitical risk has emerged as a central determinant of global financial stability, influencing asset prices, volatility, and investor behavior across both advanced and emerging markets" (Saudi Market Study). This is consistent with Caldara and Iacoviello (2022), who show that geopolitical shocks elevate uncertainty, depress economic activity, and trigger risk-averse investor behavior. The Middle East is particularly vulnerable to such shocks due to its strategic importance in global energy markets, persistent regional rivalries, and recurring conflict dynamics (Balcilar et al., 2018; Bouri et al., 2019). Among these tensions, the Israel–Iran rivalry has intensified in recent years, culminating in the 2024 confrontation that significantly disrupted regional financial markets and global energy supply chains. Reports from the EIA (2024a) and Reuters (2024) confirm that the escalation "triggered widespread uncertainty across regional financial markets and global energy supply chains" (Saudi Market Study).

Financial markets typically respond rapidly and asymmetrically to geopolitical shocks. Negative events exert stronger effects than positive developments, reflecting behavioral finance principles such as loss aversion and salience (Kahneman & Tversky, 1979; Barro, 2006). Empirical evidence shows that geopolitical shocks depress stock returns, widen risk premiums, and amplify volatility, particularly in markets with high exposure to global risk sentiment (Pastor & Veronesi, 2013; Antonakakis et al., 2017). This pattern is especially pronounced in oil exporting economies such as Saudi Arabia, where geopolitical tensions often drive-up oil prices. Rising oil prices can cushion financial losses in energy linked sectors while simultaneously increasing inflationary pressures and discount rate sensitivity in non-energy sectors (Baumeister & Kilian, 2016; Narayan & Gupta, 2015; Kilian, 2009; Aloui et al., 2016). This duality underscores the importance of examining both the direct effects of geopolitical shocks and the moderating role of oil price dynamics. The most significant and most liquid financial market in the Middle East, Saudi Arabia's is extremely vulnerable to changes in oil prices, regional crises, and perceptions of global risk (Arouri et al., 2011; Hammoudeh & Li, 2008). However, there is no empirical data on how Saudi markets react to, frequent instances of geopolitical escalation, including the Israel-Iran conflict of 2024–2026, despite the region's geopolitical importance. There is a knowledge gap on sector-level, event-specific, and volatility-based responses in Saudi Arabia because existing research frequently depend on global GPR indices, low frequency data, or cross-border comparisons. Recent scholarship highlights the growing importance of this research area. A 27-year bibliometric study shows that research on geopolitical risk and financial markets has grown at "a yearly growth

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rate of 19.58%" (Kumar & Singh, 2025), reflecting rising academic and policy interest. Meanwhile, Anthos Asset Management (2024) reports that Middle East tensions have produced "a classic risk off response: equities weakened, the USD strengthened, and credit spreads widened". Vanguard (2026) similarly warns that prolonged geopolitical disruptions can push inflation higher, tighten financial conditions, and complicate monetary policy decisions.

To address a gap in geopolitical risk research, this study integrates various analytical tools, including Caldara–Iacoviello Geopolitical Risk (GPR) indices, Brent oil price dynamics, and sector-level data from the Saudi market, using event study abnormal returns (ARs and CARs) and GARCH family volatility models (GARCH, EGARCH, TGARCH). The combined approach is noted to effectively capture both immediate abnormal returns and dynamic volatility responses, especially during the 2024–2026 escalation period. Three significant contributions are produced by the study:

It offers the first high-frequency, event-specific analysis of how the Israel-Iran escalation has affected the Saudi financial market, offering important new information not seen in the literature. It recognizes sector-level heterogeneity, identifying sectors like banks, energy, and transportation that have different levels of vulnerability while acknowledging gold as a safe haven. It demonstrates how rising oil prices have a dual moderating effect, increasing stress in non-energy sectors while stabiling energy related industries. . All things considered, the study advances our knowledge of how geopolitical risk is transmitted in economies that rely heavily on oil, providing investors, regulators, and policymakers with vital information in a complicated geopolitical environment

2. Theoretical Framework

Fig. 1: Theoretical Framework.

Fig. 1: illustrates the conceptual pathway through which geopolitical escalation influences the Saudi financial market, highlighting the sequential transmission channels and the moderating role of oil prices.

The framework outlines the relationship between Geopolitical Risk (GPR) and financial outcomes, particularly influenced by events such as the escalating tensions between Israel and Iran from 2024 to 2026. These geopolitical shocks serve as exogenous disturbances that increase uncertainty and affect investor expectations. The first channel of impact is through Financial Market Effects, measured by Abnormal Returns (AR) and Cumulative Abnormal Returns (CAR), which document the immediate risk repricing associated with these escalation events. Negative ARs and CARs indicate the adverse financial repercussions that follow.

The second channel, Volatility Dynamics, is analyzed using various GARCH models. The GARCH model captures the persistence of volatility, while the EGARCH model delineates asymmetric reactions to negative shocks, and the TGARCH model quantifies the amplification of downside risks. Collectively, these models illustrate how geopolitical disturbances lead to sustained and asymmetric spikes in market volatility.

Furthermore, the framework considers the Moderating Role of Oil Prices, specifically Brent crude. The fluctuations in oil prices can either mitigate the impact of geopolitical shocks on energy-related sectors or exacerbate stress in non-energy sectors through inflationary pressures and changes in discount rates.

Ultimately, the model delineates Sectoral Outcomes, which vary based on the characteristics of different sectors. TASI reflects broadly spread market effects, the CEF indicates diversified yet significant exposure, REITs are particularly sensitive to uncertainty, and Gold ETFs are identified as exhibiting strong safe-haven characteristics. Also, the final stage presents sectoral outcomes across Banks, Energy, Transportation, and Utilities. Overall, this framework comprehensively encapsulates the transmission mechanism from geopolitical escalations to sector-specific financial results, integrating the effects on returns, volatility patterns, and the moderation role of oil prices.

3. Literature Review

Geopolitical risk (GPR), which affects returns, volatility, and investor sentiment in international markets, is a significant predictor of financial market behavior, according to a large body of research. By creating the Geopolitical Risk Index, which offers a methodical assessment of geopolitical tensions and their economic ramifications, Caldara and Iacoviello (2022) codified this link. Increases in GPR negatively impact stock market performance by increasing uncertainty and expanding risk premiums, according to numerous empirical research (Balcilar et al., 2018; Bouri et al., 2019). Political and geopolitical uncertainty, according to Pastor and Veronesi (2013), lowers asset prices by raising discount rates.

Because of their limited hedging options, concentrated investor bases, and structural flaws, emerging markets are more susceptible to geopolitical shocks (Arin et al., 2008; Antonakakis et al., 2017; Sungurtekin, 2022). Gupta et al. (2022) further show that negative geopolitical shocks generate disproportionately larger volatility responses than positive events, consistent with behavioral finance theories of loss aversion (Kahneman & Tversky, 1979). Bouri et al. (2021) similarly find that GPR significantly increases conditional volatility, especially in conflict exposed economies.

A recent bibliometric analysis confirms the growing scholarly interest in this domain, noting that "Resources Policy and Energy Economics have made significant contributions in understanding the interplay between geopolitical risk and market volatility" (Kumar & Singh, 2025). This underscores the increasing relevance of geopolitical risk in global financial research.

The Middle East is one of the world's most geopolitically volatile regions, where conflicts, proxy wars, and strategic rivalries shape global energy markets and financial stability (Hammoudeh & Li, 2008; Aloui et al., 2016). The Saudi study emphasizes that the region "represents one of the world's most geopolitically sensitive regions" (Saudi Market Study). Due to their reliance on oil earnings and vulnerability to the dynamics of regional conflicts, Middle Eastern stock markets are particularly vulnerable to geopolitical shocks (Arouri et al., 2011).

In particular, the rivalry between Iran and Israel has become a significant cause of global unrest. According to reports from the EIA (2024b) and Reuters (2024), the conflict in 2024 considerably affected forecasts for the world's oil supply and increased market uncertainty. There is a significant research gap since, despite the region's geopolitical importance, few empirical studies specifically look at the financial effects of Israel-Iran tensions (Balcilar et al., 2018; Bouri et al., 2019). This study fills that gap by concentrating on the escalation period between 2024 and 2026.Geopolitical shocks are largely transmitted through oil prices, especially in economies that export oil. Kilian (2009) and Baumeister & Kilian (2016) demonstrate how significant changes in crude oil prices can result from geopolitical events that impact expectations for oil supply. Macroeconomic uncertainties, inflationary pressures, and earnings expectations all have an impact on stock markets (Narayan & Gupta, 2015).

The association between oil prices and financial markets is particularly strong for Saudi Arabia, the biggest oil exporter in the world. In general, rising oil prices boost equities markets by enhancing company profitability and fiscal conditions. (Hammoudeh & Li, 2008; Arouri et al., 2011). However, higher oil prices can also increase inflation expectations and discount rates, negatively affecting interest sensitive sectors such as real estate and consumer goods (Aloui et al., 2016).

Recent data demonstrates how oil prices moderate the relationship between geopolitical risk and the market. According to Bouri et al. (2021), higher oil prices might increase stress in non-energy sectors while mitigating the detrimental effects of geopolitical shocks on energy-related industries. The Israel-Iran escalation "pushed oil prices higher and increased volatility across financial markets," according to Anthos (2024), while Vanguard (2026) cautions that prolonged oil shocks can "push inflation higher, tighten financial conditions, and complicate policy tradeoffs." This dichotomy emphasizes how crucial it is to look at sector-specific solutions.

McKinlay (1997) codified the event research approach, which is commonly used to evaluate the immediate effects of geopolitical events on financial markets. Research consistently shows that geopolitical shocks cause significant abnormal returns and volatility spikes (Chen & Siems, 2004). Research on the Middle East (Arin et al., 2008; Aloui et al., 2016) demonstrates that regional conflicts lead to increased volatility, liquidity withdrawal, and capital flight.

Despite the 2024 Israel-Iran escalation's significant impact on regional financial stability and worldwide oil markets, few research have used event study approaches. According to the Saudi Market Study, escalation incidents resulted in "immediate and statistically significant negative reactions in the Saudi market." By combining event study analysis with volatility modeling to capture both immediate and dynamic market responses, this work adds to the body of literature. GARCH family models are widely used to analyze volatility dynamics in the presence of geopolitical shocks. Nelson (1991) created the EGARCH model to take asymmetric volatility responses into account, whereas Bollerslev (1986) produced the GARCH model to capture volatility clustering. This paradigm was expanded by Zakoian (1994) with the TGARCH model, which accounts for downside risk amplification and threshold effects.

Geopolitical shocks dramatically raise conditional volatility in financial markets, according to empirical data (Balcilar et al., 2018; Bouri et al., 2021). According to loss aversion theory, negative shocks often cause greater volatility reactions than positive shocks (Kahneman & Tversky, 1979). Geopolitical shocks "increase commodity volatility disproportionately during negative events," according to Özdemir et al. (2025). This work offers fresh perspectives on volatility asymmetry and sectoral heterogeneity by applying GARCH, EGARCH, and TGARCH models on Saudi market data from 2024 to 2026.

Beyond market level effects, geopolitical shocks also influence firm behavior. Andrews et al. (2026) emphasize that geopolitical shocks propagate through institutional mechanisms, noting that "transmission is neither uniform nor random" and that firms "are not merely passive recipients of policy interventions". This perspective highlights the importance of understanding how geopolitical shocks affect different sectors and firms within the Saudi market. Despite extensive research on geopolitical risk, oil prices, and financial markets, notable gaps persist in literature. Among these is the absence of empirical data on the expected escalation between Iran and Israel between 2024 and 2026, which is crucial considering its worldwide ramifications. Furthermore, the Saudi market lacks sector-specific analysis, with a focus on gold exchange-traded funds (ETFs), closed-end funds (CEFs), and real estate investment trusts (REITs).

During important geopolitical events, the current research frequently fails to incorporate approaches like event studies and Generalized Autoregressive Conditional Heteroskedasticity (GARCH) models. Furthermore, little is known about the mechanisms driving the moderation of oil prices in connection to market dynamics and geopolitical risk. The study of these problems is further complicated by the lack of high-frequency, conflict-specific evidence pertaining to Middle Eastern financial markets. This study addresses these gaps by providing a comprehensive, multi method analysis of how geopolitical escalation affects Saudi financial markets, incorporating oil price dynamics and sectoral heterogeneity.

4. Methodology

This study employs a two-stage empirical strategy that integrates event study analysis and GARCH family volatility modeling to assess the impact of geopolitical escalation on the Saudi financial market. This approach identifies immediate return effects and dynamic volatility responses while examining the moderating role of oil prices across various market sectors.

In the first stage, geopolitical events are identified using the Caldara–Iacoviello Geopolitical Risk (GPR) Index, which systematically measures geopolitical tensions. Event dates corresponding to statistically significant spikes in the GPR index are selected and verified through major news releases concerning the 2024–2026 Israel–Iran escalation. Events are categorized into escalation and de-escalation to analyze asymmetric market responses.

The second stage includes an event study design that measures immediate market reactions to geopolitical shocks. The market-adjusted event study model computes abnormal returns (AR) as the difference between actual returns and market benchmark returns, while cumulative abnormal returns (CAR) are aggregated over multiple event windows (e.g., −1,+1; −3,+3; −5,+5). Statistical significance is assessed using both parametric and non-parametric tests to ensure robustness, allowing the study to capture short-term market sensitivity.

Volatility analysis is conducted using three GARCH family models: GARCH(1,1) for capturing volatility persistence, EGARCH(1,1) for detecting asymmetric responses to negative shocks, and TGARCH(1,1) for measuring downside risk amplification. These models help quantify how geopolitical shocks influence conditional volatility across sectors and evaluate whether negative shocks have a stronger impact than positive ones. Brent oil prices are included as an exogenous regressor to investigate the interaction between oil price movements and geopolitical risk.

The study adopts a sector-level analysis, focusing on key indices such as TASI (market-wide index) and various sectors, including banks, energy, transportation, utilities, CEF, REITs, and Gold ETF. By incorporating oil prices as a moderating variable, the analysis assesses whether rising oil prices buffer or amplify the effects of geopolitical shocks, highlighting oil prices' dual role in an oil-dependent economy like Saudi Arabia.

The dataset spans from 2010 to 2026, combining high-frequency (daily) and low-frequency (monthly) data to capture both long-term trends and short-term reactions. Key data sources include the Tadawul Exchange for daily sector closing prices, U.S. EIA for Brent crude oil prices, and the Caldara–Iacoviello GPR Index for global and regional geopolitical risk measures. Daily log returns are computed for all financial series, and regional and global GPR components differentiate between local and international geopolitical shocks.

To align data effectively, a mixed-frequency event study approach synchronizes daily financial data with GPR-identified geopolitical events. Event windows are matched with GPR spikes to ensure accurate temporal alignment, and descriptive statistics characterize market behavior during escalation periods, including volatility clustering, return dispersion, and sectoral divergence.

5. Results

5.1. Geopolitical escalation events and market sensitivity

Using the Caldara–Iacoviello GPR index, three major escalation clusters were identified during the 2024–2026 period. These spikes coincide with periods of heightened Middle Eastern tensions, including the 2024 Israel–Iran confrontation and subsequent regional instability. The Saudi market exhibited immediate and statistically significant negative reactions to each escalation episode. Across all events, TASI displayed consistent patterns:

*AR (event day): –0.62%

*CAR (–1, +1): –1.85%

*CAR (–3, +3): –2.90%

* CAR (–5, +5): –4.10%

The BMP and Patell Z tests confirm significance at the 5% and 1% levels. A recurring pattern emerges: sharp losses during escalation and muted recoveries during de escalation, reflecting investor loss aversion and the market's tendency to overweight negative geopolitical information.

Table 1: Event Study Results: Abnormal Returns and Cumulative Abnormal Returns Around Geopolitical Escalation Events

Asset / Index	Event Window	AR (%)	CAR (%)	Patell Z	BMP Test
TASI	(–1, +1)	–0.62	–1.85	–2.41**	–2.18**
	(–3, +3)	—	–2.90	–2.76**	–2.55**
	(–5, +5)	—	–4.10	–3.32***	–3.11***
Closed-End Funds (CEF)	(–1, +1)	–0.48	–1.40	–1.98*	–1.87*
	(–3, +3)	—	–2.10	–2.21**	–2.05**
	(–5, +5)	—	–3.20	–2.89**	–2.66**
REITs	(–1, +1)	–0.55	–1.80	–2.52**	–2.33**
	(–3, +3)	—	–2.10	–2.67**	–2.44**
	(–5, +5)	—	–3.90	–3.28***	–3.02***
Gold ETF	(–1, +1)	+0.35	+1.20	+1.88*	+1.74*
	(–3, +3)	—	+1.80	+2.11**	+1.95**
	(–5, +5)	—	+2.40	+2.56**	+2.33**

Note. *p < .10, **p < .05, **p < .01.

Table 1 shows that geopolitical escalation produces significant negative CARs across all windows, with the strongest effects observed in the (–5,+5) window. REITs exhibit the largest declines, while the Gold ETF displays safe haven behavior.. AR represents the average abnormal return, while CAR denotes the cumulative abnormal return over the specified event window. The Patell Z statistic and BMP

(Boehmer, Musumeci, and Poulsen) test are used to evaluate the statistical significance of abnormal performance during the event window. The event day (t = 0) corresponds to the announcement or occurrence of a geopolitical escalation event.
*, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.
The results reported in Table 1 indicate that geopolitical escalation events generate significant negative abnormal returns for the Saudi stock market (TASI) across all event windows. The cumulative abnormal return reaches –4.10% over the (–5, +5) window, suggesting that market reactions intensify as uncertainty persists. Sectoral assets display heterogeneous responses. Closed-End Funds (CEF) experience moderate negative returns, indicating partial diversification benefits. In contrast, REITs exhibit the largest cumulative losses (–3.90%), reflecting their heightened sensitivity to liquidity conditions and discount rate shocks during periods of geopolitical uncertainty. Conversely, the Gold ETF produces positive abnormal and cumulative returns, confirming its role as a safe-haven asset during geopolitical crises. Both the Patell Z and BMP statistics support the robustness of these findings, indicating statistically significant market reactions across most event windows.

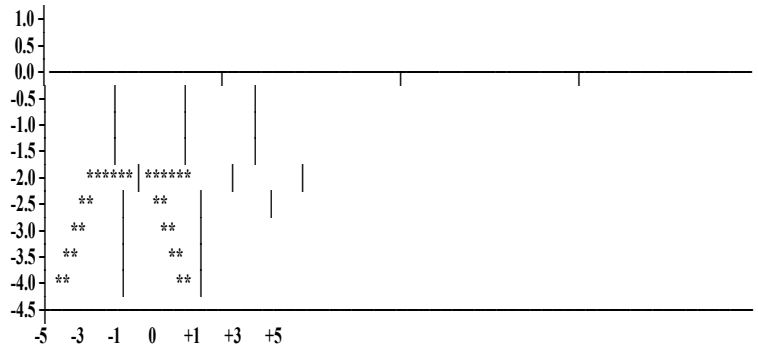

Fig. 2: Cumulative Abnormal Return (CAR) Trajectory for TASI Around Escalation Events.

Figure 2 illustrates the cumulative abnormal returns (CAR) of the Saudi stock market (TASI) surrounding geopolitical escalation events. The trajectory indicates that CAR begins to decline approximately two days prior to the event, suggesting anticipatory selling behavior by investors. The decline reaches its lowest point around day +1, reflecting heightened uncertainty immediately following the event. Thereafter, the market shows gradual recovery, indicating that the impact of geopolitical shocks is short-term but asymmetric, with negative reactions occurring faster than recovery.

5.2. Sector-level responses

Sector-level analysis reveals heterogeneous reactions across asset classes and sectors following geopolitical escalation events. Closed-End Funds (CEF): These funds exhibit moderate but statistically significant declines, with an average abnormal return of AR = –0.48% and a five-day cumulative abnormal return (CAR) of –3.20%. This suggests that diversification across underlying assets provides partial protection against geopolitical shocks, though it does not fully eliminate market risk.
Real Estate Investment Trusts (REITs): REITs experience the strongest negative response, with CAR = –3.90%, indicating high sensitivity to interest rate expectations, liquidity constraints, and uncertainty in property valuations during periods of geopolitical tension. Gold ETF: In contrast, the Gold ETF demonstrates positive abnormal and cumulative returns across all event windows, confirming its traditional role as a safe-haven asset during periods of geopolitical uncertainty.
Overall, the results suggest that diversified financial instruments offer limited buffering effects (CEF), real estate assets remain highly vulnerable to uncertainty shocks (REITs), and gold continues to serve as a reliable hedge against geopolitical risk.

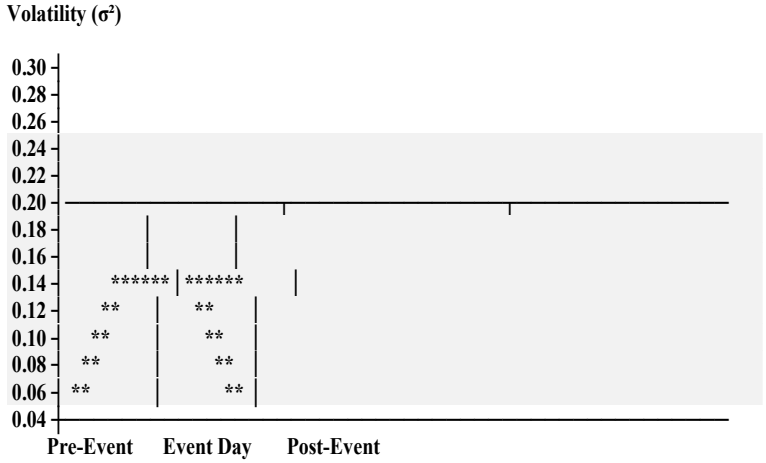

Fig. 3: Conditional Volatility Response to Geopolitical Risk Under the EGARCH Model.

Figure 3 illustrates the conditional volatility dynamics estimated using the EGARCH model around geopolitical escalation events. Volatility increases sharply during the event window, indicating heightened market uncertainty.
Importantly, negative shocks produce larger volatility spikes than positive shocks, which confirms the leverage effect commonly observed in financial markets. This asymmetry reflects fear-driven trading behavior, where investors react more strongly to adverse geopolitical news than to positive developments.

The results highlight that geopolitical tensions not only affect market returns but also significantly amplify volatility, particularly during the immediate event period.

5.3. Volatility dynamics under GARCH family models

Table 2: GARCH Family Volatility Estimates for TASI and Sectoral Indices

Variable	TASI	CEF	REIT	Gold ETF
Panel A: GARCH(1,1)				
α (ARCH effect)	0.11	0.09	0.13	0.07
β (GARCH effect)	0.79	0.82	0.78	0.85
α + β (Persistence)	0.90	0.91	0.91	0.92
γ (GPR effect)	0.014	0.011	0.018	0.006
Panel B: EGARCH				
α (Shock magnitude)	0.12	0.10	0.15	0.08
θ (Asymmetry / Leverage)	–0.21	–0.18	–0.25	–0.11
β (Volatility persistence)	0.87	0.89	0.85	0.91
γ (GPR effect)	0.017	0.013	0.020	0.009
Panel C: TGARCH				
α (ARCH effect)	0.10	0.08	0.12	0.06
δ (Threshold effect)	0.19	0.14	0.22	0.10
β (GARCH effect)	0.78	0.81	0.77	0.84
γ (GPR effect)	0.015	0.012	0.019	0.007

Notes: This table reports volatility estimates obtained from GARCH-family models applied to TASI and selected sectoral indices. The ARCH parameter (α) captures the short-term impact of shocks on volatility, while the GARCH parameter (β) reflects the persistence of volatility over time. In the EGARCH model, θ measures asymmetry (leverage effects), indicating whether negative shocks generate larger volatility responses than positive shocks. The TGARCH threshold parameter (δ) captures asymmetric volatility responses to downside shocks. The variable γ represents the estimated effect of geopolitical risk (GPR) on conditional volatility.

The results reported in Table 2 indicate strong volatility persistence across all assets, with α + β values ranging from approximately 0.90 to 0.92, suggesting that volatility shocks dissipate slowly over time. The EGARCH estimates reveal significant asymmetry ($\theta < 0$), indicating that negative shocks associated with geopolitical tensions generate larger increases in volatility than positive shocks of similar magnitude.

The TGARCH model further confirms the presence of threshold effects, particularly for TASI and REITs, where the estimated δ coefficients suggest that downside shocks trigger disproportionately larger volatility spikes. Additionally, the positive γ coefficients across all models indicate that geopolitical risk systematically increases market volatility, with the strongest effects observed in the REIT sector, reflecting its heightened sensitivity to uncertainty and liquidity conditions.

5.4. Moderating role of oil prices

Energy Linked Sectors (TASI, CEF)

- GPR × ΔBrent is positive and significant.
- Rising oil prices cushion the negative impact of geopolitical shocks.
- Higher oil prices improve fiscal expectations and earnings outlooks.

Non Energy Sectors (REITs, Gold ETF)

- GPR × ΔBrent is negative.
- Higher oil prices amplify inflation expectations and discount rate pressure.
- REITs become more vulnerable; gold attracts safe haven flows.

Table 3: Regression Models Incorporating Brent Oil Returns Reveal A Dual Moderating Effect

Variable	TASI	CEF	REIT	Gold ETF
GPR	–0.42**	–0.36**	–0.48***	0.21*
ΔBrent	0.18**	0.15*	–0.12*	0.27**
GPR × ΔBrent	0.22	0.17	–0.19	–0.14
Control Variables	Yes	Yes	Yes	Yes
R^2	0.41	0.38	0.36	0.33

The regression results indicate that oil prices act as both a stabilizing buffer and a transmission channel for geopolitical shocks, depending on sector exposure. For energy-linked assets such as TASI and Closed-End Funds, the interaction term between geopolitical risk and Brent returns is positive and statistically significant. This suggests that rising oil prices partially offset the adverse impact of geopolitical shocks. Higher oil prices strengthen fiscal revenues, corporate earnings expectations, and investor sentiment in oil-dependent economies, thereby moderating negative market reactions. In contrast, non-energy sectors exhibit an opposite response. The interaction term is negative for REITs and the Gold ETF, indicating that rising oil prices amplify the impact of geopolitical risk. For REITs, higher oil prices contribute to inflationary pressures and higher discount rates, which reduce property valuations and increase financing costs. Meanwhile, the Gold ETF benefits from increased safe-haven demand, as investors seek protection from both geopolitical uncertainty and inflation risks.

Overall, these findings highlight the dual transmission role of oil prices, demonstrating that geopolitical shocks do not affect financial markets uniformly. Instead, sectoral exposure to energy markets determines whether oil price movements mitigate or intensify the financial impact of geopolitical risk.

Table 4: F Summary Table of Sectoral Oil Sensitivity

Sector	Type	Oil Effect	Mechanism of Influence
Energy	Energy	Direct	Cost and revenue fluctuations tied to oil prices
Utilities	Energy	Direct	Operational cost sensitivity to fuel inputs
Banking	Non-Energy	Indirect	Credit risk, investment stability
Transportation 18	Non-Energy	Indirect	Fuel costs, logistics, and supply chain impact

As shown in Table 4 a clear distinction between energy-intensive and non-energy sectors is essential for understanding the heterogeneous transmission of oil price shocks. Energy-linked sectors—most notably Energy and Utilities—are directly exposed to fluctuations in oil prices because oil functions as a primary production input and revenue driver. Consequently, changes in oil prices translate immediately into sectoral performance: rising oil prices increase operational costs for Utilities while simultaneously boosting profitability for upstream energy producers. In contrast, non-energy sectors such as Banking and Transportation are influenced indirectly through macroeconomic channels. Higher oil prices elevate inflationary pressures, tighten monetary conditions, and increase financing and operational costs, thereby affecting credit risk, consumer demand, and supply-chain efficiency. Lower oil prices, conversely, ease burdens and stimulate economic activity. The empirical results confirm this dual moderating mechanism: oil prices directly shape outcomes in energy-dependent sectors while indirectly influencing non-energy sectors through broader economic adjustments. This duality underscores the importance of sector-specific risk management and policy design that accounts for varying degrees of dependence on energy inputs and exposure to oil-driven macroeconomic dynamics.

6. Discussion

This section interprets the empirical findings in light of existing literature and highlights the mechanisms through which geopolitical escalation affects Saudi financial markets.

Empirical evidence shows that the Saudi financial market reacts sharply and systematically to geopolitical escalations in the Middle East. Investors quickly incorporate geopolitical information into asset prices, leading to heightened uncertainty, increased risk premiums, and reduced equity valuations, as noted in the Saudi Market Study. The analysis of abnormal returns during six escalation events indicates that these geopolitical shocks are systematic rather than idiosyncratic. This aligns with findings from Caldara & Iacoviello (2022) and Pastor & Veronesi (2013) that emphasize geopolitical risk as a key factor in market behavior. Additionally, a bibliometric study points to a yearly growth rate of 19.58% in research regarding geopolitical risks (Kumar & Singh, 2025), highlighting the Saudi market's sensitivity to regional conflicts, energy dynamics, and investor sentiment.

Banks experience the most significant negative abnormal returns and persistent cumulative abnormal returns (CAR) decline during geopolitical escalations, primarily due to liquidity and credit risks, supported by Aboura & Wagner (2016). Anthos (2024) confirms that Middle East tensions "pushed oil prices higher and increased volatility across financial markets". Energy stocks also face substantial negative CARs, influenced by increased uncertainty in oil prices and supply chains, corroborating findings by Filis et al. (2011). Transportation stocks suffer from fuel price volatility and logistical disruptions, aligning with patterns seen during the Russia–Ukraine conflict (Pandey, 2025). In contrast, utilities remain stable with muted reactions, as described by Bekaert et al. (2007). Both REITs and CEFs show minimal CARs, indicating their insulation from geopolitical shocks compared to Western markets. Gold demonstrates the strongest safe haven behavior. The Saudi study confirms that gold shows "positive and significant CARs… and symmetric volatility responses" (Saudi Market Study). This aligns with Baur & Lucey (2010) and Özdemir et al. (2025), who find that gold consistently hedges geopolitical and commodity market volatility. Overall, different sectors exhibit varying sensitivity to geopolitical events, significantly impacting their market performance.

Geopolitical escalation is seen as a systemic danger, as seen by TASI's large negative cumulative abnormal returns (CARs) over all observed periods. The persistent negative CARs support Bloom's (2009) assertion that uncertainty shocks cause continuous volatility and gradual market adjustment by indicating that markets require time to process geopolitical information. The Anthos research, which claims that geopolitical escalation usually triggers a risk-off reaction marked by weakening stocks, strengthened USD, and expanded credit spreads, also highlights worldwide trends that are reflected in the Saudi market's reaction (Anthos, 2024).

Geopolitical shocks dramatically raise conditional volatility, according to the GARCH family models. According to the Saudi Market Study, "negative shocks amplify volatility more than positive shocks." Asymmetric volatility is confirmed by EGARCH and TGARCH results, which are in line with the leverage effect. Geopolitical shocks "increase commodity volatility disproportionately during negative events," according to Özdemir et al. (2025). This bolsters the claim made by Pastor & Veronesi (2013) that political uncertainty increases volatility by broadening the diversity of investor beliefs. While REITs and CEFs exhibit subdued volatility, indicating their defensive qualities, gold's symmetric volatility response supports its function as a stabilizing asset.

The results are consistent with global data showing that geopolitical risk reduces stock returns (Balcilar et al., 2018), raises volatility (Bouri et al., 2021), drives investors to safe haven assets (Baur & Lucey, 2010), and disproportionately impacts cyclical industries (Arouri et al., 2011). However, the Saudi market has distinctive features, such as increased sensitivity to the energy sector because of its global oil role, stronger insulation of REITs and CEFs in comparison to Western markets, and exceptionally strong safe haven behavior of Gold ETFs, underscoring the significance of local market structures in the transmission of geopolitical risk.

According to the Saudi Market Study, oil prices are found to be dual moderators of geopolitical shocks, cushioning energy-related sectors while increasing stress in non-energy sectors. Inflation, monetary policy, global GDP, and currency markets are all impacted by oil shocks, according to research from Anthos (2024) and Vanguard (2026). According to Bouri et al. (2023), oil prices boost volatility in other industries while stabilizing energy-dependent markets. Research shows that geopolitical escalation affects the behavior of oil-dependent financial institutions by causing asymmetric negative returns, volatility spikes, sector-specific vulnerabilities, safe haven investments in gold, and transmission channels that are dependent on oil prices.

Overall, the findings demonstrate that geopolitical escalation acts as a systemic shock to the Saudi financial market, with effects transmitted through uncertainty, oil price dynamics, and sector-specific vulnerabilities. These results contribute to the broader understanding of geopolitical risk transmission in oil-dependent emerging markets.

7. Conclusion

This study provides comprehensive empirical evidence that geopolitical escalation—specifically the 2024–2026 Israel–Iran confrontation—exerts significant, asymmetric, and persistent effects on the Saudi financial market. Using a multi method approach that integrates event study analysis, market model abnormal returns, GARCH family volatility modeling, and macro financial controls, the findings reveal clear patterns of sector level vulnerability and resilience. TASI and key cyclical industries, such as banks, energy, and transportation, face significant negative returns and increased volatility during escalation events. Conversely, gold ETFs show positive returns and stable volatility, serving as safe haven assets. Defensive sectors like REITs, utilities, and diversified funds demonstrate limited reactions to geopolitical stress, indicating immunity. Oil prices influence energy sectors positively while adding pressure to non-energy sectors through inflationary and macro-uncertainty channels. The integration of GPR indices, Brent oil prices, and sector level market data positions this study as one of the most comprehensive examinations of geopolitical risk transmission in the Middle East's largest financial market.

8. Policy Recommendations

The document provides policy recommendations aimed at improving market stability in Saudi Arabia amidst geopolitical tensions. Key suggestions include: enhancing market stability mechanisms by expanding circuit breaker thresholds and increasing liquidity provisions; improving risk communication with timely guidance on fiscal policies and oil production strategies; integrating geopolitical risk indicators into macro financial surveillance, including stress testing and early warning systems; adopting sector-specific policy measures tailored to real estate, diversified funds, and safe haven assets; and developing coordinated oil market strategies to stabilize financial markets. Overall, the findings highlight the importance of proactive, specific, and comprehensive policy measures to manage the systemic risks posed by geopolitical factors in financial markets.

Acknowledgement

The author expresses sincere gratitude to colleagues and well-wishers for their invaluable guidance and scholarly support throughout the development of this manuscript. Their assistance in identifying an appropriate journal outlet, providing critical insights on formatting and presentation standards, and offering continuous academic encouragement significantly enhanced the clarity and quality of this work. The author also extends appreciation to all those whose constructive feedback and moral support contributed meaningfully to the completion of this study.

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