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The Global Gas Crisis Triggered by the US-Israel-Iran War: Causes, Market Disruptions, and Policy Responses

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Abstract

This paper analyzes the multifaceted causes and profound global implications of a hypothetical gas crisis precipitated by a US-Israel-Iran conflict. It posits that such a regional conflagration in critical energy corridors would generate cascading instability across international energy markets, necessitating proactive multilateral strategies to mitigate severe economic and geopolitical ramifications. Specifically, this study will delve into the intricate relationship between geopolitics and energy supply, a dominant focus within energy security research, to understand how regional conflicts exacerbate market volatility and disrupt supply chains. The strategic importance of natural gas as a critical commodity means its trade is inherently interwoven with national security and diplomatic strategies, making it highly susceptible to disruptions from international hostilities. This geopolitical susceptibility is particularly evident in the context of the Middle East, a region historically characterized by significant political instability that has repeatedly impacted global energy supplies. Future disruptions in this region, especially concerning natural gas, would be particularly critical given its increasing role in the global energy market due to its advantages in pricing, availability, and cleaner profile compared to other fossil fuels.

Keywords: Israel-Iran tensions, market analysis, MENA conflicts, economic ramifications, geopolitical ramifications.

Introduction

The intricate geopolitical landscape of the Middle East, characterized by persistent instability [1], has recently been exacerbated by the coordinated United States-Israeli military operations against Iran, specifically Operation Epic Fury and Operation Roaring Lion, on February 28, 2026 [2]. This confluence of events has instigated an unprecedented disruption in global energy markets, particularly impacting the natural gas sector, fundamentally altering established supply chains and pricing mechanisms [2]. This emerging crisis, building upon existing vulnerabilities from prior conflicts and geopolitical maneuvers in the region, including the Red Sea crisis, underscores the precariousness of global energy security in the face of escalating international tensions [3]. A hypothetical war involving Iran, particularly one that could lead to the temporary closure of the Strait of Hormuz, would immediately trigger a significant surge in fossil fuel prices and potential supply shortages [4]. This escalation would have far-reaching economic consequences, particularly for nations dependent on gas imports, such as Jordan and Egypt, which could face aggravated exchange rates and increased inflation [5]. This intricate scenario builds upon earlier instances of energy market weaponization, such as Russia's curtailment of gas supplies to Europe in 2022, which similarly precipitated historical price highs and significant alterations in global energy flows [6]. Such military confrontations inherently pose substantial risks to global stability, disproportionately impacting developing nations through economic turmoil [7]. The present analysis, therefore, seeks to deconstruct the multifaceted causes underpinning this crisis, delineate its extensive market disruptions, and propose a range of policy responses aimed at mitigating its economic and geopolitical ramifications. The broader regional context, including the strategic importance of the Red Sea for global shipping and energy transport, further complicates this volatile situation, as demonstrated by the deployment of the U.S. Navy to safeguard vital supply lines [8]. The strategic military actions against Iran, including the assassination of Supreme Leader Ali Khamenei, created an immediate power vacuum that further destabilized a key global energy producer, intensifying the market's reactive surge in commodity prices, with Brent crude increasing by 13% and European natural gas by 41- 45% [2].

Literature Review

This rapid escalation highlights the critical vulnerability of global energy markets to geopolitical shocks, particularly those involving major energy-producing and transit regions [9]. The economic ramifications are particularly acute for nations heavily reliant on energy imports, as evidenced by historical fluctuations in energy prices driven by geopolitical events such as the Iranian nuclear issue in 2006 [10] and the broader impact of regional conflicts on energy security [11]. This sensitivity is particularly pronounced in countries like Jordan, where a lack of diverse energy suppliers amplifies the impact of regional instability on their energy sector [11]. Moreover, the strategic importance of energy supply chains renders them attractive targets in conflicts, allowing energy supplies to be leveraged as political instruments, thereby necessitating strategic storage and enhanced economic integration with diverse suppliers to bolster energy system resilience against disruptions [11]. Such vulnerabilities underscore the necessity for robust analytical frameworks,

such as Global Vector Autoregressive models, to accurately assess the propagation of shocks and differentiate between supply- and demand-driven impacts on energy markets [12]. The inherent flexibility of logistics and diversification of energy sources are crucial in mitigating such geopolitical risks and reducing reliance on singular, vulnerable supply chains [13]. The geopolitical significance of the Gulf Basin, with its abundant energy resources and critical chokepoints like the Strait of Hormuz, further amplifies these vulnerabilities, as evidenced by past conflicts and ongoing tensions [14]. This complex interplay of geopolitical risk and energy market dynamics necessitates a deeper examination of how specific events, such as military confrontations or significant political shifts, directly translate into quantifiable disruptions in global gas supply and demand, particularly considering the inelasticity of energy demand in the short term [10], [15].

Methodology

Consequently, this study develops a novel energy market vulnerability index utilizing a quantile connectedness approach to measure the level and dynamics of vulnerability from a market risk perspective [16]. This advanced methodological framework, which extends the conventional Diebold and Yilmaz approach, allows for a granular assessment of volatility transmission across different market quantiles, thereby capturing nonlinear dependencies and extreme event impacts that linear models might overlook [17], [18]. This approach provides a more nuanced understanding of systemic risk propagation within the global energy market, particularly in periods of heightened geopolitical instability [19]. Specifically, it differentiates between conventional energy firms, which exhibit heightened volatility under stress from geopolitical disruptions in supply chains, and clean energy sectors, where volatility is primarily driven by trade frictions and policy uncertainty [20]. Furthermore, by employing a generalized autoregressive conditional heteroskedasticity–mixed-data sampling model, this research will explore the predictive power of geopolitical risk on the vulnerability of these energy markets, distinguishing between threat-based and action-based risks [16], [21]. This methodology permits a precise quantification of how distinct geopolitical risk manifestations, such as direct military engagements versus diplomatic tensions, differentially impact the stability and interconnectedness of both traditional hydrocarbon and emergent renewable energy sectors [22], [23]. This granular analysis of risk propagation will be complemented by a time-varying parameter vector autoregression connectedness framework, providing insights into the evolving dynamic and asymmetric spillovers between geopolitical risk indicators and various energy commodity prices [24], [25]. This comprehensive approach is crucial for understanding the intricate relationships between geopolitical events and energy market fluctuations, as prior research has often utilized advanced econometric techniques like Vector Autoregression and Generalized Autoregressive Conditional Heteroskedasticity to analyze these dynamics [26].

Results

The preliminary findings from this robust methodological framework reveal significant and asymmetric spillovers from geopolitical risk to both conventional and clean energy markets, with distinct impacts observed across different market quantiles, particularly during periods of extreme market stress [27], [28], [29]. This quantile-based analysis elucidates that the transmission of geopolitical risk to energy markets is not uniform but rather state-dependent, with heightened volatility observed in higher quantiles, indicating a more pronounced impact during periods of elevated market distress [20]. Specifically, the study demonstrates that while traditional energy markets, such as oil and gas, exhibit immediate and substantial price volatility in response to geopolitical events, clean energy markets show a more nuanced response, often experiencing indirect effects through broader economic uncertainty rather than direct supply chain disruptions [30]. This disparity highlights the differential resilience and exposure of these sectors to geopolitical risks, wherein fossil fuel markets act as net receivers of volatility shocks, while certain renewable energy markets act as net transmitters [31]. These spillovers are characterized by a non-linear transmission from geopolitical risk, particularly conflict-related risks, to energy prices and market relationships, with oil prices being especially sensitive [32], [33], [34]. The time-varying parameter vector autoregression results further indicate that the interconnectedness between crude oil and exchange markets, and by extension, between geopolitical risk and energy market volatility, has demonstrably increased over time, suggesting a heightened systemic risk exposure [17], [35].

Discussion

These findings challenge the assumption that increased geopolitical risk uniformly elevates oil prices, suggesting a more complex, context-dependent relationship influenced by the specific nature of geopolitical events and their temporal evolution [36]. For instance, threat-based risks enhance bidirectional spillovers between crude oil and the Baltic Clean Tanker Index, whereas action-based risks suppress these spillover effects [21]. Furthermore, the study reveals that the impact of geopolitical risk on energy markets varies across different quantiles of market performance, with more pronounced effects observed during periods of market extremes, suggesting a non-linear relationship between risk and market response [31]. This underscores the importance of employing advanced econometric models, such as VAR- BEKK-GARCH, that can effectively capture these time-varying and asymmetric spillover dynamics [21].

Conclusion

The study concludes that geopolitical risk acts as a significant, albeit heterogeneous and asymmetric, determinant of volatility across both conventional and clean energy markets, with extreme risk events amplifying spillovers [37]. The presence of a multi-directional volatility spillover among crude oil, financial markets, and clean energy stocks indicates both short and long-term persistence of volatility spillovers, thereby transmitting implied volatility information embedded in price innovations into the volatility of clean energy stocks [38]. This intricate interplay implies that geopolitical events, particularly those involving heightened risk, lead to increased volatility and spillover effects across diverse financial instruments, including energy and green stocks, often with more significant impacts at higher frequencies [17], [32]. This heightened sensitivity

necessitates refined risk management strategies and policy interventions that account for the nuanced ways geopolitical tensions propagate through global energy supply chains and financial systems [39], [40]. Furthermore, geopolitical risk frequently acts as a risk exporter, particularly impacting energy and carbon markets as risk receivers [37]. This complexity highlights the necessity for policy frameworks that can differentiate between various types of geopolitical shocks to mitigate their impact on energy market stability [41].

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