Analyzing financial market reactions to the Palestine-Israel conflict: An event study perspective

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ABSTRACT

We use event study methodology to examine how the Palestine-Israel Conflict affected equities, metals, energy, fiat, and crypto currencies. The findings highlight the susceptibility of the stock markets in Germany, the United Arab Emirates, Bahrain, and Kuwait to geopolitical shocks by demonstrating notable negative abnormal returns on the event day. This observation is more evident in areas which have direct economic connections to the belligerent nations. Conversely, the fiat and cryptocurrency markets, along with metals and oil, exhibit insignificant abnormal returns, with the exception of a strong reaction observed in Ethereum and oil prices. These findings highlight the fluctuating levels of sensitivity across diverse asset classes as markets beyond Palestine's trading partners demonstrate resilience to the war. Overall, our work underscores the significance of assessing contagion risk especially in areas affected by geopolitical instability. It also holds implications for policymakers and investors to contemplate the geopolitical situation while evaluating market risks and portfolio diversification strategies amid political tensions.

1. Introduction

After the seminal work of Fama et al. (1969) on the efficient market hypothesis, event studies have been increasingly used in finance scholarship (Boubaker et al., 2015). Among others, events, including state tensions, terror attacks, and wars, are significant factors that affect financial decisions and serve as a predicament to stable financial markets (Pandey et al., 2023). These events are external shocks that potentially affect asset valuation, investment decisions, and portfolio allocation by directly influencing market risk premia and investor sentiment (e.g., Bialkowski et al., 2012). While not all conflicts have a global economic and financial impact, the recent escalation of the Palestine-Israel conflict is of profound significance.

Lately, while economies around the world were facing the COVID-19 outbreak and a subsequent Russo-Ukraine conflict, a new round of Israel-Palestine conflict emerged in the 3rd quarter of the year 2023. While not all disputes affect the global economies and financial markets, the recent conflict between Palestine and Israel is of notable significance for several reasons. Firstly, the insistent escalation of the Palestine-Israel conflict has driven global crude oil and natural gas prices upwards. On October 9, 2023, it was

Monday, and the impact of the Palestine-Israel conflict can be seen when the Energy Ministry of Israel shut down the production of gas at the Tamar gas field, lessening natural gas export from Israel. As a result, through direct or indirect channels, a reduction in natural gas supply to Europe was observed, leading to a significant rise in European natural gas prices (Cui & Maghyereh, 2024). From a global economic standpoint, the Middle East plays a crucial role in providing oil supplies across the globe. Any instability in this region, like the Palestine-Israel conflict, could trigger speculative price increases due to possible supply interruptions. Following the outbreak of conflict, already elevated oil prices surged by about $5 per barrel. It may adversely affect economic activity, particularly in nations reliant on energy imports, and could have broader implications for the global economy.

Secondly, increasing geopolitical tensions typically impact global risk perception, leading to greater spreads and growing strain on currency markets. The consequent tightening of global financial conditions can pose significant challenges for economies susceptible to external vulnerabilities due to loss of confidence by international investors (Boubaker et al., 2022). Furthermore, leaders from France, Germany, Italy, the UK, and the US issued a joint statement expressing firm support for Israel and absolute denouncement of Hamas (Guardian.com[1]), which indicates that Israel is one of the primary US allies in the Middle East. As it receives regular US support, it is capable of facing off against Palestine or other Arab nations; thus, the risk of global repercussions is high. Next, investors are historically susceptible to turn towards "safe-haven" investments like gold, the US treasury, and the Japanese yen during geopolitical tensions. The recent gold price surge after the Palestine-Israel tension is consistent with these historical notions (Salisu et al., 2021). Since the subprime crisis of 2008, a rise in gold prices has been seen (Triki and Maatoug, 2021). Thus, investors typically reallocate their investments toward safe-haven assets amid heightened geopolitical tensions.

Similarly, equity markets can experience significant volatility due to such conflict, particularly those closely linked to the warring nations. Historical instances such as the Second Intifada (2000–2005), Lebanon War (2006), Gaza War (Operation Cast Lead 2008–2009), Operation Pillar of Defense (2012), and the Israel-Gaza conflict (2012) serve as convincing evidence that geopolitical tensions in this region have far-reaching impacts on financial markets and the global economy (Fielding, 2004; Srivastava, 2023; Zussman et al., 2008).

Following the eruption of the latest phase of the Palestine-Israel conflict on October 7, 2023, the stock markets of Palestine and Israel experienced a significant decline which sparked widespread global panic and economic uncertainty. Thus, a crucial question emerges: To what extent has the recent outbreak of the Palestine-Israel conflict influenced the spread of risk across various financial markets, including oil, natural gas, gold, and equities? In this context, the use of financial market data is particularly valuable in examining the response of global financial markets in the wake of the Israel-Palestine conflict. As financial markets provide insights into investors' perceptions at a specific moment regarding anticipated future events, investors are inclined to scrutinize present and potential developments meticulously. Therefore, investors are unlikely to let their political biases consciously influence their decision-making process. This attribute sets financial market data apart from other data sources, primarily questionnaires, and surveys (Fielding, 2004; Hassouneh et al., 2018; Kollias et al., 2010; Srivastava, 2023).

We examine the impact of the recent episode of Palestine-Israel on global financial markets. By doing so, we contribute to the literature which, in general, studies the impact of geopolitical conflicts and wars on financial markets and that investigates the conflicts in the Middle East (Hassouneh et al., 2018; Kollias et al., 2010) explicitly. We use the event study method to examine the influence of the Palestine-Israel conflict on various financial markets. The influence of geopolitical threats on financial markets has been examined in recent research using an event study approach during the invasion of Russia and Ukraine (Boubaker et al., 2022; Kamal et al., 2023; Yousaf et al., 2022), the COVID-19 pandemic (Heyden & Heyden, 2021; Pandey & Kumari, 2021), credit contagious (Chen et al., 2024), and the collapse of SVB (Aharon et al., 2023; Yousaf et al., 2023a). To the best of our knowledge, there is a lack of empirical evidence that has explored how the recent Palestine-Israel conflict affected the world's financial markets. This research is an effort to bridge this gap. We consider that market returns after the Palestine-Israel conflict significantly impacts risk preferences and investment decisions, contributing to broadening our understanding of investor behaviour beyond traditional financial markets. Additionally, we highlight the spillover effects and interconnectedness of the global financial markets following geopolitical events. Our findings are significant in at least two ways. First, they make it possible for stakeholders to create efficient diversification plans by comprehending the financial effects of the ongoing war condition. Second, this event provides a practical example for analyzing the response of global financial markets, allowing comparison with events of a similar nature in the same or other geographic areas (Hassouneh et al., 2018; Kamal et al., 2023).

Our paper follows the following structure: section 2 reviews the related literature, section 3 presents data and event-study method, section 4 shows results and discussion, and section five concludes.

2. Literature review

Cross-national geopolitical conflicts force both individuals and corporations to make wise decisions, which may result in the severity of recessions as market players are dominated by risk aversion sentiment (Khalidi & Iwidat, 2024). The severity of the ongoing Israel-Palestine strife immediately after the spread of the Russia-Ukraine war has raised concerns about the possible economic consequences on the fragile economic landscape. Such conflicts are specifically relevant for financial markets as they have a complex impact on currency values, stock markets, and commodity prices (Hadi et al., 2023; Abrar et al., 2024). Literature indicates that such geopolitical conflicts result in higher market volatility which results in a reduction in stock prices, while prices of commodities and

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[1] https://www.theguardian.com/world/2023/oct/09/uk-us-and-allies-offer-israel-steadfast-support-in-joint-statement?CMP=share_btn_url.

precious metals rise owing to their safe haven properties (Harjoto & Rossi, 2023; Khatatbeh et al., 2020; Mo et al., 2024; Wang et al., 2021).

It is documented that market dynamics can influence investment strategies and policy decisions, especially during such conflicts. In this regard, Wang et al. (2021) underscore the substantial market reactions to escalating tensions, suggesting investors to shift their investments into safe-haven assets. Similarly, Mo et al. (2024) illustrate that geopolitical conflicts exacerbate market volatility, leading to long-term effects on portfolio allocation and investment strategies. Khatatbeh et al. (2020) argue that the impact of geopolitical events on financial markets leads to long-term instability which is contingent on the duration and severity of the conflict. Harjoto and Rossi (2023) further validate these findings, emphasizing the critical role of investor sentiment in driving market behavior during crisis periods. Thus, asset prices can drop sharply across global markets during financial crises; it cause speculative trading, capital outflows, and market instability, eroding investor confidence (Naveed et al., 2024).

In the context of the COVID-19 pandemic Similarly, Bouri et al. (2021) examined the linkages between bonds, gold, currencies, equities, and crude oil and found that moderate to high connections between these assets with a noticeable increase in volatility during the pandemic period. Further, Antonakakis et al. (2023) studied the dynamic connectedness between oil price implied volatilities (OVX) and fourteen other assets during the pandemic revealing a high level of connectedness between these assets and oil price volatilities. Harjoto and Rossi (2023) used the announcement of COVID-19 data and found that emerging markets were more severely impacted than developed markets.

Akhtaruzzaman et al. (2021) applied dynamic conditional correlations and observed a stronger level of linkages. They also suggested that contagion transmission inflated during the crisis period. Adekoya and Oliyide (2021) use a time-varying vector autoregression (TVP-VAR) approach to explore the interconnections between commodity and financial markets and conclude that the pandemic amplifies risk transmission across markets. Similarly, Ji et al. (2024) employed the TVP-VAR approach to analyze the effects of the pandemic on stock markets. Their analysis indicates that global stock markets reacted negatively due to the pandemic. Using TVP-VAR, Kumar et al. (2023) examined the interlinkages between commodities, cryptocurrencies, and G20 equity markets and found a high correlation between EU markets during the pandemic, especially in Canada, France, Germany, and the UK, and commodities and Bitcoin.

The literature also examines the initial reaction of stock markets to the COVID-19. Khatatbeh et al. (2020) analyzed the initial reaction of stock markets using an event study. They provided evidence of a negative effect on returns due to the rapid spread of the pandemic, which triggered economic deterioration and increased volatility in financial markets. However, Sayed and Eledum (2023) examined the effect of COVID-19 on the Saudi stock market (Tadawul) and found insignificant cumulative abnormal returns (CARs) in various industries on the event day.

During the Russia-Ukraine war, Li et al. (2024) examined the response of commodity and financial markets by analyzing volatility and return spillovers and noted a significant increase in volatility spillovers. Further, Yousaf et al. (2022) used event study methodology to analyze the impact of the Russia-Ukraine war on G20 and other equity markets, revealing a significant negative trend. Umar et al. (2022) extended this approach by examining the effects of the war on metals, conventional, and renewable energy markets and observed a sharp increase in abnormal returns for the renewable energy sector in the post-event time (Naeem et al., 2023). In related research, Kumari et al. (2023) utilized an event study combined with network analysis to explore the effects of the Russian invasion on key EU stock market indices finding a negative event-day impact.

Similarly, Izzeldin et al. (2023) used the TVP-VAR technique to assess the impact of the innovation on Russian, European, and global commodity markets, concluding that the war significantly altered interconnections among these markets at both low- and high-frequency levels. Assaf et al. (2023) conducted a global financial market analysis and discovered that stock indices from 73 countries were highly susceptible to extreme events and related news. Conventional stock markets experienced more fluctuations than Fintech markets. Ahmed et al. (2023) studied the war's impact on European stock markets, observing negative abnormal returns after Russia recognized two Ukrainian regions as autonomous on February 21, 2022. Alam et al. (2022) use the TVP-VAR method to examine the dynamic spillovers between five commodities and G7 and BRIC stock markets, identifying high connectedness during the crisis, with gold, silver, and markets in the US, Canada, China, and Brazil as key receivers of spillovers. Similarly, Wu et al. 2023 found that the conflict initially decreased MSCI stock volatility but led to increased volatility after Russia's invasion. Lastly, Sun et al. (2022) used event study analysis to show how the Russian invasion affected various markets, highlighting that firms in EU countries experienced significant reductions in cumulative abnormal returns, while firms in countries further from the conflict were less affected.

Commodity markets have been widely analyzed for their sensitivity to geopolitical factors. For instance, using quantile approaches, Mo et al. (2024) explored the nonlinear relationship between Geopolitical Risk (GPR) and commodities, discovering a moderate correlation with non-energy sectors but a stronger link to the energy sector. Similarly, Shaikh (2021) examined investor overreactions to the pandemic on crude oil, gold, silver, and the energy sector and revealed that the pandemic increases volatility spikes in commodity markets. Mignon and Saadaoui (2024) shifted their focus to the geopolitical relations between the USA and China by employing the political relationship index (PRI) and geopolitical risk index (GPR) and found that increased global integration with China and heightened geopolitical risks drove up oil prices.

Further, the forex market provides another setting to study contagion effects as it connects national economies through global trade. In this regard, Wang et al. (2021) emphasize the importance of investigating contagion in forex markets. Expanding on this, Ahmed et al. (2023) utilized network analysis to examine the relationships between 18 major currencies from advanced and emerging markets from 2017 to 2023. Their findings revealed that during the COVID-19 crisis, the Euro's network interlinkages with other currencies were particularly dense. However, during the Russia-Ukraine war, countries with lower levels of internationalization became more isolated from the network hub, highlighting increased financial disconnection in times of geopolitical instability.

Given that crisis, periods including COVID-19 and the Russia-Ukraine conflict, capital chases safe-haven assets globally. Based on

this perspective, some researchers, such as Choudhury et al. (2022), proposed that gold served as a relatively poor safe haven during the pandemic, but other studies, like Hassan et al., 2022, posited that even gold and silver did not qualify as safe-haven assets during that period of the crisis. Yet, in cryptocurrencies, the COVID-19 pandemic and the Russia-Ukraine war were covered significantly, gaining much attention from economists, players in the market, and the media. For instance, Bampinas and Panagiotidis (2024) examined the interconnectedness effects of these events between six global stock markets and two large cryptocurrency markets. They noted that cryptocurrencies offer low levels of diversification and safe-haven, which decreased even during the Russian-Ukrainian conflict during the COVID-19 pandemic.

In the context of the Middle East, Abedin et al. (2024) delve into the effects of airstrikes and drone attacks in the Middle East on energy stocks, highlighting that the uncertainty caused regional volatility and supply chain disruptions for energy firms and emphasizing the role of investor sentiment on financial outcomes of energy companies. Similarly, Chowdhury and Khan (2024) investigated the global stock markets in the wake of the Russia-Ukraine war and observed that Middle Eastern countries benefitted from the oil price surge after the war. Fernandez (2007) studied the impact of conflict in the Middle East on global markets and observed that Middle Eastern and Asian stock markets exhibit increased volatility during the turbulent period. Yousaf et al. (2022) examined the impact of the Russia-Ukraine war on G20+ stock markets and observed that Middle Eastern markets, among others, are suitable for investment. Buigut and Kapar (2020) perform a comparative analysis to assess the effects of the Qatar blockade on stock markets in seven GCC countries using event study methodology. They concluded that its stock indices reacted negatively to the crisis during shorter event windows.

As the literature suggests, events like the Russia-Ukraine war and the COVID-19 pandemic result in increased volatility, risk spillovers, and heightened interconnectedness across stocks, commodities, currencies, and energy markets. Also, stock markets in emerging economies face sharp declines, while commodities like gold and energy are considered safe-haven during crises. However, the effects of these events are not uniform, with regional and sectoral differences playing a key role in market response. For instance, countries deeply involved in the conflict or crisis tend to experience more severe financial repercussions. Thus, the literature provides a foundational understanding of how markets respond to geopolitical conflicts, and there is a clear need for further nuanced research that explores the lasting effects on global financial systems, particularly in the context of conflicts like the Israel-Palestine. This study seeks to contribute to this strand of literature by employing an event study to examine the market reactions triggered by the intensification of the Israel-Palestine conflict to assess potential impacts on investor behavior and market dynamics.

3. Data and method

This study uses the event study methodology by using daily data of crypto-currencies, metals, energy, fiat-currencies, and equity markets. Our selection of equity markets is twofold: stock markets in the Middle East region and the major trading partners of Palestine and Israel. All other markets and assets represent the major constituents of each market and asset, respectively (details are mentioned in Appendix A). All the data except cryptocurrencies are obtained from Investing.com, whereas cryptocurrency data is obtained from coinmarketcap.com. We take October 09, 2023, as event day for the Palestine-Israel conflict. Although the official declaration of war came on October 7, 2023, a non-trading day, October 9 is designated as the event day in this study. Recently, the event study methodology has been used to document the market response to other geopolitical events (French et al., 2024; Yousaf et al., 2022), bank failures (Aharon & Ali, 2024; Aharon et al., 2023; Ali et al., 2023; Yousaf et al., 2023a), Yousaf et al., 2023bnd market crashes (Yousaf et al., 2023b). Similarly, we use a 113-day window to estimate expected return, which ranges from t-120 to t-7, corresponding to January 01, 2021, and December 10, 2023, respectively. The event window consists of 11 days, from September 29, 2023, to October 16, 2023 (t-5 to t +5). The -5-day period accounts for any pre-event adjustments, as investors may begin to react to early news or signals about the conflict. The +5-day window captures the post-event market response, allowing initial volatility to stabilize and investors to incorporate new information into their decision-making (Yousaf et al., 2022).

Following Dyckman et al. (1984), we calculate the expected returns by applying the Ordinary Least Squares model as:

$$E(R_{it}) = a_i + \gamma_i R_{mt}. \tag{1}$$

Here, R_{it} and R_{mt} is the returns of individual assets and the market, respectively. Similar to Umar et al. (2022); Yousaf et al., 2023a, Yousaf et al., 2023b), we use the MSCI World Index return as the return on market portfolio. The use of the MSCI World Index as a benchmark in this study provides a global perspective on abnormal return calculations. However, given the region-specific nature of the Palestine-Israel conflict, the index's global weighting, which heavily emphasizes developed economies, may dilute the localized market impacts of the event. We rely on this index as a robust starting point for broader insights. Thus, it is a reasonable benchmark for our study. Next, we compute abnormal returns (AR) using the equation expressed below:

$$AR_{it} = R_{it} - E(R_{it}). \tag{2}$$

We use daily abnormal returns which are effective in capturing immediate market reactions but may occasionally be influenced by noise inherent especially during periods of higher geopolitical tensions and due to the timing of opening and closing of markets. However, this approach remains valuable for analyzing short-term market dynamics. Further, we compute the average abnormal returns (AAR) as well as cumulative average abnormal returns (CAAR) as:

$$AAR_{it} = \frac{1}{N} \sum_{t=1}^{N} AR_{it}. \tag{3}$$

Subsequently, we utilize the mean abnormal returns to calculate the cumulative average abnormal returns (CAAR), which represent the accumulation of mean abnormal returns (AAR) across the event window spanning from t_1 to t_2.

$$CAAR_{i(t1,t2)} = \sum_{t=t1}^{t=t2} AAR_{it}, \tag{4}$$

4. Results and discussion

At the outset, we present the return for each market on event day in Fig. 1 and see that stock markets behave unevenly, while precious markets produce positive and crypto markets produce negative returns. Next, in Table 1, Panel A outlines abnormal returns for equity markets. Germany, UAE, Bahrain, and Kuwait show significant negative abnormal returns on the event day, while the rest of the markets exhibit insignificant returns. This may be due to the weak economic links of war-engaged countries with other Middle Eastern nations or due to a far distance (Boubaker et al., 2022). Moreover, investors in other regions may not consider it a global conflict. Further, literature suggests that the insulated markets from the shocks which are outside the regions involved in the war are recommended for investment (Belanes et al., 2024; Su et al., 2020; Yousaf et al., 2022). Moving to Panel B, abnormal returns for all the cryptocurrencies have negative but insignificant returns except for ETH (−4.29%) on the event day. Similarly, precious metals show insignificant abnormal returns, suggesting a negligible impact of the Palestine-Israel conflict, possibly owing to the safe-haven characteristics of these precious metals (Yousaf et al., 2023a). In Panel D, the energy market shows significant positive abnormal returns for Brent Oil and Crude Oil WTI on the event day, implying a positive impact of the conflict on these energy commodities, which is consistent with the rising trajectory for energy assets at the time of crisis (Sokhanvar & Lee, 2023). Finally, Panel E reveals abnormal returns for fiat currencies, showing that CAD/USD, JPY/USD, and CNY/USD (GBP/USD and EUR/USD) respond positively (negatively) but are insignificant due to the indigenous nature of the conflict unlike Russia-Ukraine conflict (Chortane & Pandey, 2022). More specifically, fiat currencies, including the Japanese Yen (Ranaldo & Söderlind, 2010), are regarded as safe-haven even during high-volatility regimes (Christiansen et al., 2011). Further, some currencies react differently to geopolitical events due to their distinct market drivers. According to Sokhanvar and Bouri (2023), rising commodity prices during wartime typically result in the strengthening of the currencies of commodity-exporting countries, like in the case of CAD. which means CAD is largely influenced by the oil market and commodity-price dynamics, while the JPY benefits from its status as a safe-haven currency during periods of geopolitical instability (Beirne & Sugandi, 2023; Kopyl & Lee, 2016).

Table 2 represents abnormal returns across sample equity markets before (t-5) and after (t+5) the event. First, the Palestine stock market observes a negative abnormal return over post-event days. Moreover, Germany, Netherlands, Israel, UAE, Egypt, and Kuwait stock markets show positive or negative abnormal returns at least two or more days after the event. The rest of the markets, namely the US, UK, France, Jordan, and Saudi Arabia, show abnormal returns on at least one after the event. This finding is in line with the earlier work that finds that geopolitical conflicts result in abnormal returns in the stock markets (Boungou & Yatié, 2022; Lo et al., 2022). Equity markets in countries with stronger economic ties to the Middle East, such as UAE and Kuwait, exhibit heightened sensitivity to geopolitical risks stemming from regional conflicts. This pronounced response to the conflict can be attributed to the proximity of the markets around the conflict zone, which can directly impact the linkages between trade, investment, and energy markets. Additionally, market reaction is further exacerbated as these countries heavily rely on oil exports, a sector often impacted by Middle Eastern tensions. This finding is aligned with the contagion theory in financially interconnected regions, where closer economic linkages amplify the transmission of shocks. The connection between equity markets and oil-export-based economic nature creates a ripple effect on regional economies (Hansen, 2021; Ouyang et al., 2023; Yarovaya et al., 2022).

Table 3 shows the abnormal returns of other markets over the t-5 to t+5 time, including cryptocurrencies, metals, energy, and fiat currencies. Notably, cryptocurrencies are largely unresponsive to the event, especially before it occurs. This major non-response suggests that crypto-assets are designed to shield against geopolitical risk (Su et al., 2020). This muted response of
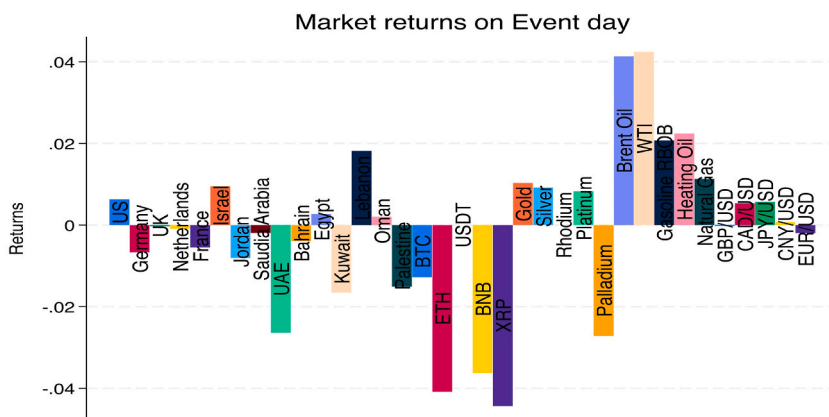

Fig. 1. Market Returns on Event Day. Note: This figure shows the returns of each asset on event day.

Table 1
Abnormal returns on Event Day.

Panel A: Equity Markets		Panel B: Cryptocurrency market		Panel D: Energy Market	
US	0.17%	BITCOIN	−1.46%	Brent Oil	3.75%**
	(0.508)		(0.519)		(0.025)
GERMANY	−0.97%*	ETHEREUM	−4.29%*	Crude Oil WTI	3.85%**
	(0.070)		(0.079)		(0.040)
UK	−0.26%	USDT	0.00%	Gasoline RBOB	1.99%
	(0.621)		(0.941)		(0.374)
NETHERLANDS	−0.39%	BNB	−3.53%	Heating Oil	1.84%
	(0.446)		(0.163)		(0.358)
FRANCE	−0.84%	XRP	−5.37%	Natural Gas	0.35%
	(0.192)		(0.363)		(0.927)
ISRAEL	0.73%	**Panel C: Metals Markets**		**Panel E: Fiat Currency**	
	(0.417)	GOLD	1.00%	GBP/USD	−0.11%
JORDAN	0.00%		(0.146)		(0.787)
	(1.000)	SILVER	0.72%	CAD/USD	0.42%
SA	−0.32%		(0.609)		(0.160)
	(0.572)	RHODIUM	0.60%	JPY/USD	0.68%
UAE	−2.80%***		(0.786)		(0.207)
	(0.001)	PLATINUM	0.63%	CNY/USD	0.07%
BAHRAIN	−0.43%*		(0.655)		(0.798)
	(0.082)	PALLADIUM	−3.02%	EUR/USD	−0.25%
EGYPT	0.02%		(0.151)		(0.520)
	(0.983)				
KUWAIT	−1.72%***				
	(0.009)				
LEBANON	1.89%				
	(0.178)				
OMAN	0.21%				
	(0.575)				
PALESTINE	0.00%				
	(1.000)				

Notes: Table 1 reports the abnormal returns of all the selected markets on the event day. *p*-values in parentheses and *** *p*-value <0.01, ** *p*-value <0.05, * *p*-value <0.1.

cryptocurrencies to the geopolitical event may be associated with their decentralized nature and reduced exposure to centralized financial systems (Belanes et al., 2024). Only Ethereum (at day t), and Bitcoin, and USDT (at t+5) show negative and positive abnormal returns, respectively. This positive response is akin to the finding that Bitcoin has become the preferred choice during wartime (Bouri et al., 2022). Precious metals are either unresponsive or positively respond (especially gold and silver) to the conflict over post-event days. This finding is intuitive as they are considered to be safe haven investments (Salisu et al., 2021). Further, palladium and platinum respond with a varying degree as substantial share of their demand from the automotive sector. Similar to platinum, the price of palladium is largely influenced by economic cycles and manufacturing requirements. As a result, it may not be as sensitive to geopolitical tensions or financial crises as gold or silver, which are more influenced by investment demand. Klein (2017) points out that platinum and palladium are predominantly used for industrial applications, with over 40% of platinum mined in the past decade going toward the automotive industry. As observed, this industrial use has driven demand from major emerging market exporters. In contrast, gold and silver are largely seen as investment assets, which means their market behavior is driven more by investment trends than by industrial needs (Massari & Ruberti, 2013).

Moving forward, energy remains the most affected area due to the Israel-Palestine conflict. The largest abnormal returns are observed for crude and Brent oil WTI (6.05% and 6.14%, respectively), indicating a positive impact of the conflict on these energy commodities. Moreover, negative abnormal returns across energy markets are observed before the event. This reinforces the finding that energy markets are always affected by similar geopolitical conflicts (Costola & Lorusso, 2022). For fiat Currencies, GBP/USD, CAD/USD, and EUR/USD show negative abnormal returns on t-5 (−0.76%, −0.57%, and −0.75%, respectively) and t+3 (−0.99%, −0.58%, and −0.73%, respectively). This result is similar to the finding of Chortane and Pandey (2022), who found that world currencies were negatively affected during other geopolitical conflicts between Russia and Ukraine. Fig. 2 shows CAARs spanning the event window, which permit visual examination of various financial markets, identical to the findings presented in Table 3. We demonstrate that, before and during the conflict, the overall links of the world's financial markets aggravated (He et al., 2023).

Table 4 shows AARs and CAARs based on equations (3) and (4), respectively, for sample markets over the event window. Here, the stock markets of Palestine trading partners show maximum significant abnormal returns over t-1 to t+5 that remain consistently negative. The cryptocurrency market as a whole remains unresponsive, whereas the energy and forex markets show negative abnormal returns before and after the event day. As a whole, these results are consistent with our earlier findings. Next, Table 5 confirms the robustness of our earlier AAR and CAR results by using BHAAR, which is the buy-and-hold-AARs across the sample markets following the Palestine-Israel Conflict. More specifically, Palestine trading partners show maximum significant negative AARs and CAARs based on BBHAARs. For the cryptocurrency sector, CAARs are insignificant showing muted response. Energy market reacts negatively prior

Table 2
Abnormal returns across equity markets.

	t-5	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5
US	0.49%*	0.08%	0.54%**	−0.37%	0.09%	0.17%	−0.59%**	−0.13%	−0.21%	0.35%	0.32%
	(0.065)	(0.773)	(0.042)	(0.159)	(0.746)	(0.508)	(0.028)	(0.632)	(0.435)	(0.193)	(0.234)
GERMANY	−0.52%	0.05%	−0.06%	−0.34%	0.28%	−0.97%*	1.15%**	−0.14%	0.12%	−0.89%*	−0.17%
	(0.333)	(0.921)	(0.904)	(0.523)	(0.598)	(0.070)	(0.034)	(0.795)	(0.817)	(0.097)	(0.744)
UK	−0.99%*	0.31%	−0.90%*	0.42%	−0.01%	−0.26%	1.20%**	−0.39%	0.59%	−0.09%	0.02%
	(0.062)	(0.563)	(0.089)	(0.426)	(0.986)	(0.621)	(0.025)	(0.456)	(0.263)	(0.869)	(0.971)
NETHERLANDS	−0.22%	0.54%	0.01%	−0.01%	−0.10%	−0.39%	0.96%*	−0.52%	0.88%*	−0.34%	−0.31%
	(0.672)	(0.305)	(0.982)	(0.983)	(0.853)	(0.446)	(0.065)	(0.310)	(0.091)	(0.514)	(0.548)
FRANCE	−0.99%	0.63%	−0.15%	−0.11%	0.11%	−0.84%	1.20%*	−0.80%	0.00%	−0.73%	−0.24%
	(0.127)	(0.336)	(0.812)	(0.868)	(0.871)	(0.192)	(0.067)	(0.212)	(0.996)	(0.261)	(0.707)
ISRAEL	0.19%	−0.22%	−1.14%	−0.63%	−7.16%***	0.73%	0.71%	−1.61%*	−0.60%	−3.35%***	2.10%**
	(0.833)	(0.808)	(0.208)	(0.485)	(0.000)	(0.417)	(0.432)	(0.077)	(0.508)	(0.000)	(0.022)
JORDAN	0.00%	0.59%	0.71%	0.96%	0.00%	0.00%	−0.96%	−1.67%**	1.07%	0.00%	0.00%
	(1.000)	(0.392)	(0.290)	(0.156)	(1.000)	(1.000)	(0.161)	(0.015)	(0.115)	(1.000)	(1.000)
Saudi Arabia	−0.16%	−0.04%	−1.10%*	−0.76%	−1.90%***	−0.32%	0.28%	−0.79%	0.26%	−0.15%	0.53%
	(0.783)	(0.944)	(0.057)	(0.185)	(0.001)	(0.572)	(0.625)	(0.168)	(0.648)	(0.798)	(0.355)
UAE	0.00%	0.34%	−0.38%	−1.33%***	0.35%	−2.80%***	−0.29%	0.61%	−0.75%	−2.42%***	−0.71%
	(1.000)	(0.512)	(0.456)	(0.009)	(0.488)	(0.000)	(0.569)	(0.230)	(0.141)	(0.000)	(0.164)
BAHRAIN	−0.20%	0.09%	0.55%**	0.20%	−0.14%	−0.43%*	0.03%	−0.22%	0.32%	−0.13%	−0.02%
	(0.403)	(0.713)	(0.027)	(0.402)	(0.581)	(0.082)	(0.919)	(0.361)	(0.193)	(0.583)	(0.924)
EGYPT	−0.83%	−0.85%	0.63%	0.00%	0.00%	0.02%	1.23%	−0.63%	1.68%*	1.61%	3.12%***
	(0.411)	(0.408)	(0.534)	(1.000)	(1.000)	(0.983)	(0.229)	(0.535)	(0.098)	(0.115)	(0.003)
KUWAIT	−0.27%	−0.26%	−1.68%**	0.00%	−2.25%***	−1.72%***	0.24%	−0.63%	−0.40%	−0.68%	1.43%**
	(0.674)	(0.698)	(0.011)	(0.995)	(0.001)	(0.009)	(0.708)	(0.333)	(0.537)	(0.299)	(0.030)
LEBANON	−0.80%	1.16%	0.52%	0.28%	−0.24%	1.89%	−1.39%	−0.40%	−1.32%	0.36%	−0.62%
	(0.568)	(0.415)	(0.709)	(0.842)	(0.863)	(0.178)	(0.324)	(0.777)	(0.344)	(0.795)	(0.659)
OMAN	0.82%**	0.19%	−0.12%	0.05%	0.12%	0.21%	0.32%	0.21%	0.21%	−0.47%	−0.97%**
	(0.030)	(0.619)	(0.754)	(0.891)	(0.758)	(0.575)	(0.392)	(0.569)	(0.582)	(0.217)	(0.011)
PALESTINE	1.28%***	−0.12%	1.12%***	0.45%*	0.00%	0.00%	−1.48%***	−0.99%***	−0.51%*	−3.19%***	−1.10%***

Notes: Table 2 provides the abnormal returns of the equity market during the entire event window. *p*-values in parentheses and *** *p*-value <0.01, ** *p*-value <0.05, * *p*-value <0.1.

Table 3
Abnormal returns of other markets.

	t-5	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5
Panel A: Cryptocurrency market											
BITCOIN	2.62%	0.79%	1.25%	−1.42%	1.30%	−1.46%	−1.30%	−2.14%	−0.04%	1.05%	5.58%**
	(0.249)	(0.732)	(0.580)	(0.530)	(0.568)	(0.519)	(0.568)	(0.345)	(0.985)	(0.645)	(0.015)
ETHEREUM	0.31%	1.09%	−0.64%	−2.20%	1.33%	−4.29%*	−1.54%	−0.34%	−1.20%	1.72%	2.55%
	(0.900)	(0.659)	(0.791)	(0.364)	(0.585)	(0.079)	(0.528)	(0.889)	(0.620)	(0.480)	(0.296)
USDT	0.02%	−0.02%	0.02%	−0.02%	0.04%	0.00%	−0.04%	−0.02%	0.01%	0.00%	0.05%*
	(0.394)	(0.460)	(0.488)	(0.450)	(0.113)	(0.941)	(0.197)	(0.411)	(0.633)	(0.875)	(0.095)
BNB	0.35%	0.67%	0.07%	−0.96%	1.01%	−3.53%	1.03%	−0.88%	−0.03%	1.18%	4.08%
	(0.889)	(0.794)	(0.979)	(0.703)	(0.689)	(0.163)	(0.684)	(0.728)	(0.990)	(0.642)	(0.108)
XRP	−0.71%	8.33%	−1.70%	−2.33%	−1.84%	−5.37%	−3.62%	−2.67%	−0.25%	2.36%	1.01%
	(0.905)	(0.167)	(0.773)	(0.692)	(0.757)	(0.363)	(0.544)	(0.651)	(0.966)	(0.691)	(0.864)
Panel B: Metals Markets											
GOLD	−0.83%	0.10%	−0.35%	−0.14%	0.55%	1.00%	0.41%	0.58%	−0.06%	3.33%***	−0.47%
	(0.226)	(0.883)	(0.608)	(0.833)	(0.424)	(0.146)	(0.556)	(0.394)	(0.935)	(0.000)	(0.497)
SILVER	−4.22%***	0.97%	−1.15%	−0.65%	2.64%*	0.72%	−0.54%	0.54%	−0.36%	4.91%***	−0.98%
	(0.003)	(0.496)	(0.413)	(0.644)	(0.065)	(0.609)	(0.703)	(0.699)	(0.799)	(0.001)	(0.490)
RHODIUM	0.45%	0.30%	0.57%	0.57%	0.70%	0.60%	0.71%	0.62%	7.54%***	11.18%***	7.56%***
	(0.839)	(0.896)	(0.797)	(0.798)	(0.754)	(0.786)	(0.753)	(0.781)	(0.001)	(0.000)	(0.001)
PLATINUM	−2.72%*	0.42%	−0.67%	−1.38%	1.51%	0.63%	−0.53%	0.04%	−1.48%	1.73%	1.30%
	(0.055)	(0.768)	(0.634)	(0.327)	(0.289)	(0.655)	(0.710)	(0.975)	(0.293)	(0.222)	(0.360)
PALLADIUM	−3.43%	0.53%	−1.88%	−2.43%	0.64%	−3.02%	2.48%	−0.49%	−1.78%	1.74%	−0.99%
	(0.103)	(0.803)	(0.369)	(0.247)	(0.760)	(0.151)	(0.242)	(0.814)	(0.394)	(0.407)	(0.636)
Panel C: Energy Market											
Brent Oil	−4.68%***	1.17%	−6.04%***	−2.28%	−0.21%	3.75%**	−1.40%	−2.56%	0.43%	6.05%***	−1.95%
	(0.005)	(0.488)	(0.000)	(0.168)	(0.899)	(0.025)	(0.401)	(0.123)	(0.794)	(0.000)	(0.240)
Crude Oil WTI	−1.92%	1.43%	−6.04%***	−2.54%	−0.27%	3.85%**	−1.34%	−3.40%*	−0.47%	6.14%***	−1.78%
	(0.301)	(0.449)	(0.001)	(0.172)	(0.885)	(0.040)	(0.473)	(0.069)	(0.800)	(0.001)	(0.338)
Gasoline RBOB	0.85%	−1.43%	−7.12%***	−0.40%	−0.22%	1.99%	0.53%	−2.29%	−1.77%	5.01%**	0.13%
	(0.703)	(0.528)	(0.002)	(0.857)	(0.924)	(0.374)	(0.813)	(0.306)	(0.429)	(0.027)	(0.954)
Heating Oil	−4.16%**	−0.25%	−6.03%***	−5.36%***	0.38%	1.84%	1.04%	−1.17%	1.59%	5.61%***	−2.52%
	(0.039)	(0.902)	(0.003)	(0.008)	(0.851)	(0.358)	(0.605)	(0.557)	(0.427)	(0.006)	(0.210)
Natural Gas	−2.86%	5.05%	−0.14%	6.11%	3.82%	0.35%	−1.31%	−1.04%	−0.82%	−2.66%	−5.09%
	(0.454)	(0.195)	(0.970)	(0.111)	(0.321)	(0.927)	(0.733)	(0.786)	(0.829)	(0.488)	(0.185)
Panel D: Fiat Currency											
GBP/USD	−0.76%*	0.32%	0.40%	0.47%	0.13%	−0.11%	0.13%	0.09%	−0.99%**	−0.01%	0.45%
	(0.060)	(0.427)	(0.323)	(0.236)	(0.741)	(0.787)	(0.739)	(0.816)	(0.015)	(0.979)	(0.264)
CAD/USD	−0.57%*	0.18%	−0.32%	0.22%	0.03%	0.42%	−0.24%	−0.22%	−0.58%*	0.48%	0.18%
	(0.057)	(0.565)	(0.286)	(0.454)	(0.924)	(0.160)	(0.431)	(0.464)	(0.055)	(0.109)	(0.550)
JPY/USD	−0.24%	0.60%	0.05%	0.51%	−0.41%	0.68%	0.00%	−0.19%	−0.34%	0.23%	0.16%
	(0.662)	(0.272)	(0.927)	(0.345)	(0.455)	(0.207)	(0.994)	(0.723)	(0.531)	(0.675)	(0.769)
CNY/USD	0.12%	0.24%	0.02%	0.02%	−0.09%	0.07%	−0.16%	−0.02%	0.04%	0.17%	−0.11%
	(0.660)	(0.368)	(0.941)	(0.931)	(0.745)	(0.798)	(0.545)	(0.947)	(0.891)	(0.538)	(0.668)
EUR/USD	−0.75%*	0.24%	0.35%	0.42%	0.18%	−0.25%	0.17%	0.06%	−0.73%*	0.05%	0.36%
	(0.054)	(0.549)	(0.366)	(0.278)	(0.646)	(0.520)	(0.655)	(0.875)	(0.060)	(0.889)	(0.359)

Notes: Table 3 provides the abnormal returns of cryptocurrencies, metal, energy, and fiat currency markets during the entire event window. p-values in parentheses and *** p-value <0.01, ** p-value <0.05, * p-value <0.1.
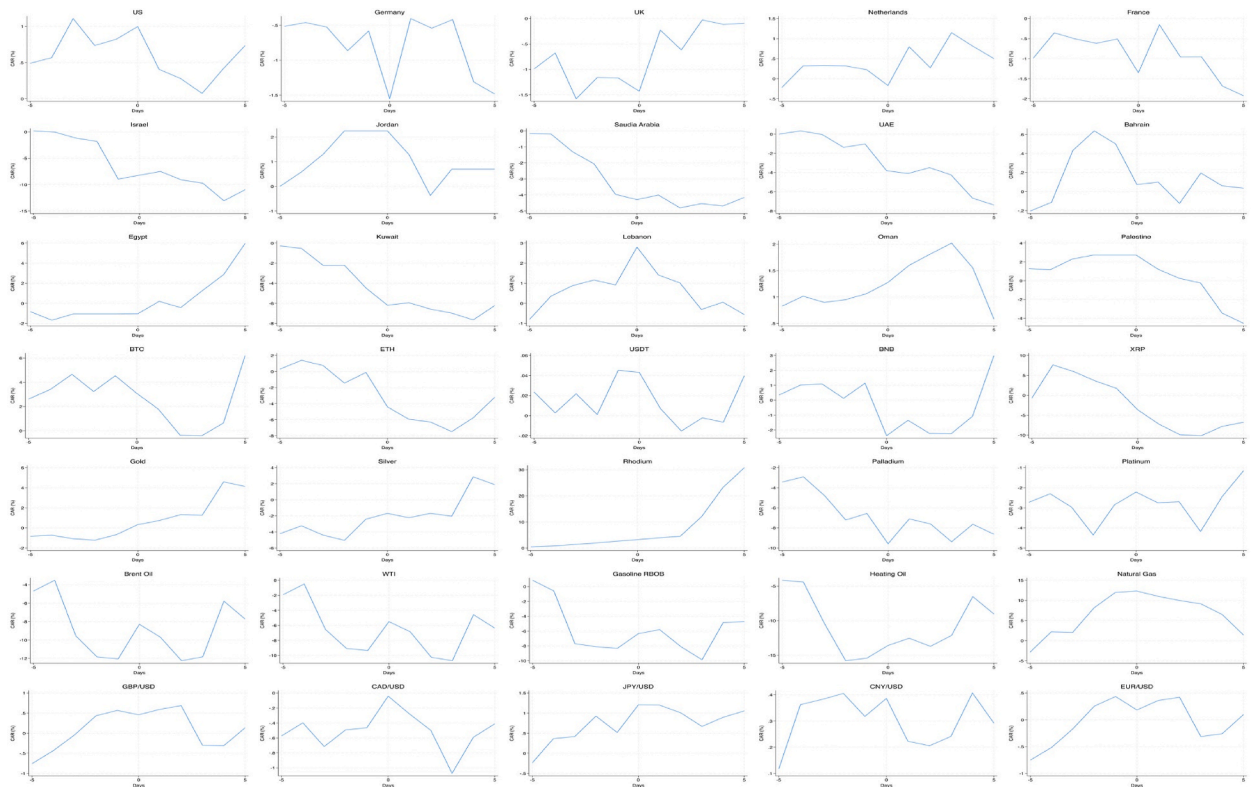
Fig. 2. Cumulative average abnormal returns. Note: This figure show the cumulative abnormal return of each series during the event window.

to the war. By summarizing the robustness checks we can conclude that the effects of event on different markets vary, with some showing short-term fluctuations; Palestine trading partners are the most sensitive to negative impact in post-event. Lastly, Fig. 3 shows the market-wise cumulative abnormal return for visual inspection. Here, the graph indicates that CAR of the sample market falls following the conflict, which is observable for full-sample and for trading partners of Palestine, Middle Eastern regional markets, crypto-currencies, and energy markets, supporting the notion that the geopolitical tensions have ripple effects on financial markets (Zussman et al., 2008). We note differences in abnormal returns across asset classes because the sensitivity of an asset to geopolitical events depends on its exposure to geopolitical risks, the broader market environment, investor behavior, and its inherent character-istics. Assets that serve as hedges during periods of uncertainty like gold or cryptocurrencies (Wu et al., 2023), tend to be less sensitive to geopolitical events in terms of negative price movement, while riskier, more exposed assets such as equities markets in war zones or commodities tied to specific regions are often more sensitive to these shocks (Khan et al., 2024).

5. Conclusion

In this paper, we analyze the impact of the Palestine-Israel conflict on global financial markets, including equities, metals, energy, fiat- and crypto-currencies with a heterogeneous response across asset classes. Our findings underscore the significant role of geopolitical uncertainties in shaping market dynamics. Equity markets, particularly of major trading partners of Palestine, show notable abnormal returns following the conflict, highlighting their susceptibility to geopolitical risks. However, the response in the cryptocurrency markets is largely muted, suggesting their relative insulation from such geopolitical shocks. This finding underscores the potential of cryptocurrencies as a hedge against geopolitical risks, possibly due to their decentralized nature and different investor base.

On on hand, the precious metal markets, particularly gold, demonstrate positive abnormal returns, reaffirming their status as safe-haven assets during uncertain times. The differences observed in abnormal returns across asset classes show the sensitivity of an asset to geopolitical events which depends on exposure to geopolitical risks, broader market environment, and investor behavior. Thus, assets like gold or cryptocurrencies serve as hedges during periods of uncertainty (Wu et al., 2023) as they tend to be less sensitive to geopolitical events. On the other hand, riskier and more exposed assets such as equities markets in war zones or commodities tied to specific regions are often more sensitive to these shocks (Khan et al., 2021; Elsayed & Helmi, 2021). Energy is the most affected market which experiences negative abnormal returns, especially in the pre-conflict period. The contagion effects extend to major foreign exchange markets, which also record negative reactions. Despite these downturns, a post-conflict recovery trend indicates resilience in financial markets. However, the cumulative impact of the conflict remains predominantly negative, particularly in energy and equity

Table 4
Average and commutative abnormal returns.

	t-5	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5
Panel A: Full sample											
AAR	−0.77%	0.69%	−0.88%*	−0.45%	0.02%	−0.20%	−0.11%	−0.69%	0.01%	1.22%**	0.38%
p-value	(0.106)	(0.153)	(0.066)	(0.346)	(0.964)	(0.673)	(0.814)	(0.146)	(0.981)	(0.011)	(0.426)
CAAR	−0.77%	−0.08%	−0.96%	−1.40%	−1.38%	−1.58%	−1.69%	−2.39%*	−2.38%	−1.15%	−0.77%
p-value	(0.106)	(0.908)	(0.253)	(0.147)	(0.201)	(0.183)	(0.189)	(0.086)	(0.107)	(0.458)	(0.636)
Panel B: Israel trading partners											
AAR	−0.43%	0.34%	−0.11%	−0.08%	0.07%	−0.45%	0.78%**	−0.40%	0.29%	−0.33%	−0.08%
p-value	(0.225)	(0.347)	(0.761)	(0.825)	(0.845)	(0.202)	(0.031)	(0.267)	(0.419)	(0.363)	(0.825)
CAAR	−0.43%	−0.09%	−0.20%	−0.28%	−0.21%	−0.66%	0.12%	−0.28%	0.01%	−0.31%	−0.39%
p-value	(0.225)	(0.859)	(0.750)	(0.701)	(0.797)	(0.456)	(0.901)	(0.790)	(0.992)	(0.788)	(0.749)
Panel C: Palestine trading partners											
AAR	−0.09%	0.13%	−0.48%	−0.44%	−2.80%***	−0.76%*	−0.05%	−0.86%*	−0.02%	−1.98%***	0.69%
p-value	(0.843)	(0.764)	(0.278)	(0.314)	(0.000)	(0.088)	(0.911)	(0.053)	(0.970)	(0.000)	(0.121)
CAAR	−0.09%	0.05%	−0.43%	−0.87%	−3.68%***	−4.43%***	−4.48%***	−5.34%***	−5.36%***	−7.35%***	−6.66%***
p-value	(0.843)	(0.941)	(0.578)	(0.329)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Panel D: Middle East equity markets											
AAR	0.00%	0.06%	0.16%	0.15%	−0.70%**	0.00%	−0.20%	−0.46%	0.00%	−0.40%	0.30%
p-value	(0.989)	(0.868)	(0.634)	(0.658)	(0.041)	(0.998)	(0.568)	(0.179)	(0.997)	(0.245)	(0.383)
CAAR	0.00%	0.06%	0.22%	0.37%	−0.33%	−0.33%	−0.53%	−0.99%	−0.98%	−1.38%	−1.08%
p-value	(0.989)	(0.899)	(0.708)	(0.588)	(0.668)	(0.696)	(0.567)	(0.320)	(0.351)	(0.216)	(0.356)
Panel E: Cryptocurrency market											
AAR	0.52%	2.24%	−0.24%	−1.43%	0.29%	−2.97%	−1.18%	−1.27%	−0.31%	1.28%	2.60%
p-value	(0.820)	(0.337)	(0.916)	(0.534)	(0.901)	(0.197)	(0.611)	(0.581)	(0.893)	(0.580)	(0.259)
CAAR	0.52%	2.77%	2.52%	1.10%	1.39%	−1.58%	−2.76%	−4.03%	−4.34%	−3.06%	−0.46%
p-value	(0.820)	(0.404)	(0.532)	(0.814)	(0.790)	(0.782)	(0.657)	(0.546)	(0.542)	(0.684)	(0.954)
Panel F: Metals Market											
AAR	−2.15%**	0.47%	−0.72%	−0.83%	1.17%	−0.03%	0.47%	0.23%	0.82%	4.64%***	1.29%
p-value	(0.040)	(0.654)	(0.486)	(0.423)	(0.263)	(0.974)	(0.653)	(0.826)	(0.430)	(0.000)	(0.216)
CAAR	−2.15%**	−1.67%	−2.40%	−3.23%	−2.05%	−2.09%	−1.62%	−1.39%	−0.57%	4.07%	5.36%
p-value	(0.040)	(0.264)	(0.190)	(0.127)	(0.383)	(0.420)	(0.565)	(0.645)	(0.858)	(0.231)	(0.135)
Panel G: Energy Market											
AAR	−2.55%	1.20%	−5.05%***	−0.83%	0.70%	2.34%	−0.51%	−2.11%	−0.21%	4.07%**	−2.25%
p-value	(0.121)	(0.470)	(0.002)	(0.609)	(0.672)	(0.153)	(0.755)	(0.199)	(0.896)	(0.014)	(0.171)
CAAR	−2.55%	−1.35%	−6.40%**	−7.24%**	−6.54%*	−4.20%	−4.71%	−6.82%	−7.03%	−2.96%	−5.21%
p-value	(0.121)	(0.568)	(0.028)	(0.031)	(0.080)	(0.304)	(0.288)	(0.154)	(0.166)	(0.581)	(0.356)
Panel H: Fiat currencies											
AAR	−0.44%	0.32%	0.10%	0.33%	−0.03%	0.16%	−0.02%	−0.06%	−0.52%*	0.18%	0.21%
p-value	(0.103)	(0.247)	(0.711)	(0.219)	(0.910)	(0.543)	(0.943)	(0.837)	(0.055)	(0.496)	(0.445)
CAAR	−0.44%	−0.12%	−0.02%	0.31%	0.28%	0.44%	0.42%	0.36%	−0.16%	0.03%	0.23%
p-value	(0.103)	(0.751)	(0.960)	(0.574)	(0.651)	(0.513)	(0.564)	(0.641)	(0.852)	(0.974)	(0.800)

Notes: Table 4 provides the before and after the event AARs (Average Abnormal Returns) and CAARs (Cumulative Average Abnormal Returns) of all the markets. p-values in parentheses and *** p-value <0.01, ** p-value <0.05, * p-value <0.1.

Table 5
Robustness analysis.

	t-5	t-4	t-3	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5
Panel A: Full sample											
AAR	−0.75%	0.68%**	−0.86%	−0.43%	0.03%	−0.19%	−0.08%	−0.67%**	0.01%	1.23%	0.40%
p-value	(0.256)	(0.010)	(0.422)	(0.458)	(0.712)	(0.624)	(0.876)	(0.014)	(0.737)	(0.798)	(0.630)
CAAR	−0.75%	−0.08%	−0.94%	−1.36%	−1.34%	−1.52%	−1.60%	−2.27%*	−2.26%*	−1.03%	−0.63%
p-value	(0.256)	(0.891)	(0.577)	(0.481)	(0.491)	(0.438)	(0.290)	(0.086)	(0.094)	(0.264)	(0.376)
Panel B: Israel trading partners											
AAR	−0.44%	0.32%**	−0.11%	−0.08%	0.07%	−0.46%	0.79%	−0.40%***	0.28%	−0.34%	−0.08%
p-value	(0.537)	(0.025)	(0.999)	(0.583)	(0.368)	(0.219)	(0.339)	(0.004)	(0.468)	(0.529)	(0.975)
CAAR	−0.44%	−0.12%	−0.23%	−0.31%	−0.24%	−0.70%	0.09%	−0.31%	−0.03%	−0.37%	−0.44%
p-value	(0.537)	(0.990)	(0.994)	(0.832)	(0.932)	(0.634)	(0.648)	(0.568)	(0.967)	(0.749)	(0.782)
Panel C: Palestine trading partners											
AAR	0.02%	0.17%	−0.47%	−0.44%	−2.85%	−0.79%	−0.06%	−0.86%	0.00%	−1.96%	0.65%
p-value	(0.892)	(0.348)	(0.347)	(0.423)	(0.261)	(0.438)	(0.768)	(0.245)	(0.977)	(0.129)	(0.619)
CAAR	0.02%	0.18%	−0.29%	−0.73%	−3.58%	−4.37%	−4.43%*	−5.29%***	−5.29%**	−7.25%**	−6.61%*
p-value	(0.892)	(0.323)	(0.786)	(0.555)	(0.319)	(0.199)	(0.091)	(0.007)	(0.039)	(0.044)	(0.055)
Panel D: Middle East equity markets											
AAR	0.00%	0.04%	0.17%	0.20%*	−0.62%	0.00%	−0.17%	−0.44%*	0.00%	−0.41%	0.32%
p-value	(0.439)	(0.996)	(0.419)	(0.086)	(0.262)	(0.502)	(0.513)	(0.098)	(0.998)	(0.284)	(0.759)
CAAR	0.00%	0.04%	0.21%	0.41%	−0.21%	−0.21%	−0.38%	−0.83%	−0.83%	−1.23%	−0.92%
p-value	(0.439)	(0.438)	(0.368)	(0.312)	(0.545)	(0.660)	(0.846)	(0.719)	(0.736)	(0.337)	(0.359)
Panel E: Cryptocurrency market											
AAR	0.52%	2.22%	−0.20%	−1.38%***	0.38%	−2.91%	−1.08%	−1.21%*	−0.30%	1.26%	2.67%*
p-value	(0.377)	(0.617)	(0.725)	(0.003)	(0.358)	(0.104)	(0.323)	(0.071)	(0.953)	(0.191)	(0.067)
CAAR	0.52%	2.75%	2.55%	1.17%	1.54%	−1.37%	−2.45%	−3.66%	−3.96%	−2.69%	−0.02%
p-value	(0.377)	(0.148)	(0.139)	(0.653)	(0.279)	(0.946)	(0.579)	(0.175)	(0.285)	(0.384)	(0.713)
Panel F: Metals Market											
AAR	−2.14%*	0.47%*	−0.69%	−0.80%	1.21%*	0.00%	0.51%	0.26%	0.83%	4.64%**	1.34%
p-value	(0.098)	(0.087)	(0.173)	(0.258)	(0.086)	(0.764)	(0.611)	(0.414)	(0.872)	(0.047)	(0.721)
CAAR	−2.14%*	−1.67%	−2.36%	−3.16%	−1.95%	−1.95%	−1.44%	−1.18%	−0.35%	4.29%	5.63%
p-value	(0.098)	(0.116)	(0.122)	(0.129)	(0.288)	(0.549)	(0.630)	(0.775)	(0.916)	(0.548)	(0.553)
Panel G: Energy Market											
AAR	−2.54%	1.22%	−5.04%*	−0.82%	0.71%	2.36%	−0.49%	−2.09%	−0.20%	4.08%	−2.23%
p-value	(0.325)	(0.615)	(0.083)	(0.630)	(0.745)	(0.184)	(0.708)	(0.116)	(0.947)	(0.208)	(0.115)
CAAR	−2.54%	−1.32%	−6.36%	−7.18%	−6.47%	−4.11%	−4.60%	−6.69%	−6.89%	−2.80%	−5.03%
p-value	(0.325)	(0.505)	(0.173)	(0.298)	(0.362)	(0.462)	(0.414)	(0.322)	(0.287)	(0.374)	(0.182)
Panel H: Fiat currencies											
AAR	−0.44%	0.32%***	0.10%	0.33%**	−0.03%	0.16%	−0.02%	−0.05%	−0.52%	0.18%	0.21%
p-value	(0.222)	–	(0.780)	(0.031)	(0.930)	(0.606)	(0.794)	(0.654)	(0.141)	(0.317)	(0.337)
CAAR	−0.44%	−0.12%	−0.02%	0.31%	0.28%	0.44%	0.42%	0.37%	−0.15%	0.03%	0.24%
p-value	(0.222)	(0.754)	(0.909)	(0.567)	(0.551)	(0.185)	(0.365)	(0.538)	(0.715)	(0.973)	(0.667)

Notes: Table 5 provides an additional measure of abnormal returns, known as the Buy and Hold Average Abnormal Returns (BHAARs). This measure is an alternative to the CAARs and provides robustness to the results presented in the study. p-values in parentheses and *** p-value <0.01, ** p-value <0.05, * p-value <0.1.
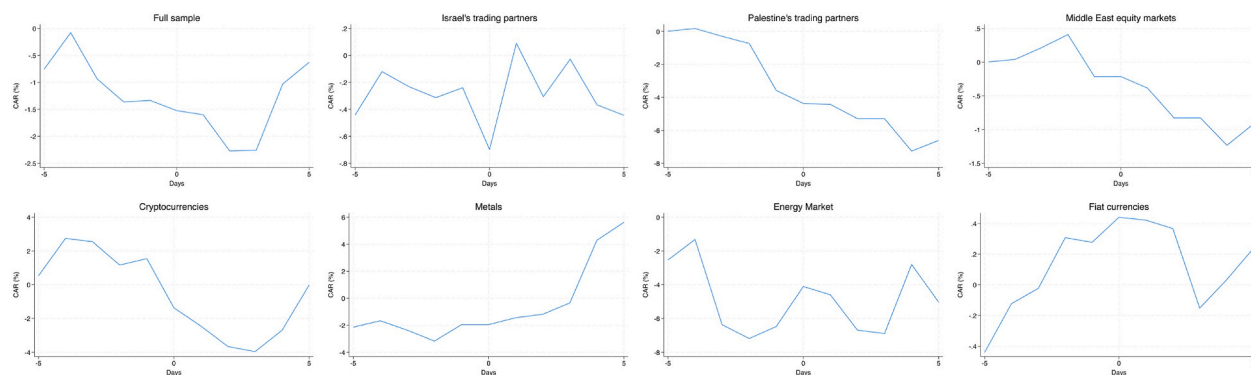
Fig. 3. Market wise cumulative abnormal returns. Note: This figure shows the cumulative abnormal return of each market over the event window.

markets.

The findings of this study provide actionable strategies for investors and policymakers in the wake of geopolitical tensions. For investors, allocating assets to safe-haven investments, such as gold and the Japanese Yen or cryptocurrencies, can mitigate exposure to volatility in affected regions. Additionally, dynamic hedging strategies can help cushion against sudden market shocks. For policymakers, ensuring market stability during geopolitical crises requires a multi-faceted approach. A higher level of resilience can be achieved by enhancing market liquidity through central bank interventions, fostering regional economic cooperation to reduce contagion risks, and encouraging cross-border investments. These strategies are vital for minimizing the broader economic impact of geopolitical conflicts in the affected regions.

These insights contribute to the expanding literature on the interplay between geopolitics and financial markets, with a specific focus on conflicts in the Middle East. For global investors, our study underscores the critical need to consider both the immediate market fluctuations and the subsequent recovery in investor sentiment that often follows such geopolitical crises. The findings underscore the importance of strategic asset allocation during periods of heightened geopolitical risk, particularly for those exposed to energy and equity markets in politically sensitive regions. Such strategic allocation can help mitigate the impact of geopolitical crises on investment portfolios. In this study, the limitation of using a market portfolio, i.e., MSCI World Index is inherent in using a global benchmark for an event with a concentrated regional scope. While it ensures broader comparability and may reduce the influence of regional market anomalies, it may understate region-specific dynamics. Future research could consider supplementing global benchmarks with region-focused indices to capture localized effects more robustly. In order to reduce noise and to improve accuracy, future studies could examine the effect of wars and geopolitical tensions using intraday data to gauge the market reactions to events. It is also crucial to acknowledge that temporal factors may lead to varied reactions over extended periods. Markets may exhibit delayed adjustments as geopolitical tension evolves. Markets with strong ties to the war-waging nations region may experience prolonged volatility. Future research could expand on this by adopting longer event windows, wavelet correlations, and dynamic models to study the magnitude of response to capture temporal response variation over different time horizons for robust risk management.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

APPENDIX A

Markets	Constituents	Data Source	Index	Market Size (in USD)
Trading Partners of Israel[1]	US	Investing.com	S&P 500	40,298 billion
	Germany	Investing.com	DAX	2183 billion
	UK	Investing.com	FTSE 100	3043 billion
	Netherlands	Investing.com	AEX	1772 billion

(*continued*)

Markets	Constituents	Data Source	Index	Market Size (in USD)
Trading Partners of Palestine[1]	France	Investing.com	CAC 40	3497 billion
	Israel	Investing.com	TA35	283 billion
	Jordan	Investing.com	MSCI Jordan	23 billion
	Saudi Arabia	Investing.com	Tadawul All Share	2670 billion
	UAE	Investing.com	DFM General	983 billion
Other Middle East Countries[1]	Bahrain	Investing.com	BAX	20.7 billion
	Egypt	Investing.com	EGX30	45.1 billion
	Iraq	Investing.com	ISX	0.0097 billion
	Kuwait	Investing.com	BKM 50	138 billion
	Lebanon	Investing.com	BLOM STOCK	19.2 billion
	Oman	Investing.com	MSM 30	51.9 billion
	Palestine	Investing.com	AL QUDS	3.91 billion
Precious Metals[2]	Gold	Investing.com	Gold Futures	76.53 billion
	Silver	Investing.com	Silver Futures	8.13 billion
	Platinum	Investing.com	Platinum Futures	40.2 billion* (*platinum group metals)
	Rhodium	Investing.com	Rhodium 99.99%	
	Palladium	Investing.com	Platinum Futures	
Energy[2]	Crude oil	Investing.com	Crude Oil WTI Futures	2998 billion
	Brent oil	Investing.com	Brent Oil Futures	
	Gasoline	Investing.com	Gasoline RBOB Futures	1461 billion
	Natural gas	Investing.com	Natural Gas Futures	1127 billion
	Heating oil	Investing.com	Heating Oil Futures	8.16 billion
Fiat Currencies[3]	Canadian Dollar	Investing.com	CAD/USD	466 billion
	Pound Sterling	Investing.com	GBP/USD	968 billion
	Chinese Yuan	Investing.com	CNY/USD	526 billion
	Euro	Investing.com	EUR/USD	2292 billion
	Japanese Yen	Investing.com	JPY/USD	1253 billion
Cryptocurrency[4]	BTC	Coinmarketcap.com	Bitcoin	1,928,522 billion
	ETH	Coinmarketcap.com	Ethereum	403,872 billion
	USDT	Coinmarketcap.com	Tether	130,197 billion
	BNB	Coinmarketcap.com	BNB	89,894 billion
	XRP	Coinmarketcap.com	XRP	64,216 billion

[1] https://www.ceicdata.com/en/indicator/market-capitalization.
[2] https://www.thebusinessresearchcompany.com/.
[3] https://www.statista.com/statistics/247328/activity-per-trading-day-on-the-global-currency-market/.
[4] https://coinmarketcap.com/.

Data availability

Data will be made available on request.

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