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Capital Market and Macroeconomic Reaction to The Hamas-Israel Conflict 2023

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Abstract

The research examines the capital market and macroeconomic reactions of UN-12 countries before and after the Hamas-Israel conflict 2023. It based on differences in abnormal returns, return variability, trading volume, exchange rates, oil prices, and gold prices before and after the conflict using the event study method (-5, +5). Statistical tests applied paired sample t-test and the Wilcoxon signed-rank test (non-parametric test). The US, China, Saudi Arabia, and Indonesia markets simultaneously have differences in AR, return variability, and trading volume. Dollar value was relatively stable during the conflict. Oil price reaction was dominant in UAE, Saudi Arabia, and Qatar. Gold prices reacted in almost all markets. This research is limited to cross-country level, the results are considered homogeneous across all markets. Future research could investigate specific sectors and isolate external events to validate the results. Empirical results are important for policymakers and investors in decision-making against geopolitical risks. Investors turn to gold as a safe-haven asset during conflicts. This is the first study to examine the Hamas-Israel conflict 2023 on capital markets and macroeconomics across UN member.

JEL Classification: C12, E44, F51, G11, G14, P50
Keywords: Capital Market, macroeconomics, conflict, event study.

Reacción del mercado de capitales y macroeconómica al conflicto Hamás-Israel 2023

Resumen

Este estudio analiza los efectos del conflicto Hamás–Israel 2023 en los mercados de capitales y variables macroeconómicas de los países ONU-12. Utilizando un estudio de eventos (ventana −5, +5), se evalúan rendimientos anormales, volatilidad, volumen de negociación, tipos de cambio y precios del petróleo y el oro. Se aplicaron pruebas t pareadas y de rangos con signo de Wilcoxon. Los mercados de EE. UU., China, Arabia Saudita e Indonesia mostraron reacciones significativas en rentabilidad y volumen. El oro actuó como activo refugio, mientras que el petróleo respondió principalmente en EAU, Arabia Saudita y Catar. El dólar se mantuvo estable. Los resultados ofrecen implicaciones relevantes para inversionistas y responsables de política económica ante riesgos geopolíticos. Este es el primer estudio que aborda este conflicto en todos los países miembros de la ONU.

Clasificación JEL: C12, E44, F51, G11, G14, P50
Palabras clave: Mercado de capitales, macroeconomía, conflicto, estudio de acontecimientos.

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1. Introduction

Tensions in the Middle East flared up again on October 7, 2023, when Hamas attacked Israel as an act of revenge against Israel for oppressing the Palestinian and reclaiming Palestinian land. The weapon attacks and hostage taking were carried out by the two parties involved. The global forum, United Nations (UN), has sought humanitarian and diplomatic assistance from the parties involved and continues to discuss the best way to end the conflict. The UN adopted a ceasefire resolution that was implemented through a vote, the result was 120 votes in favor including the majority of Middle Eastern countries, 14 votes against, including the United States, and 45 abstentions such as the United Kingdom and Canada (United Nations, 2023a, 2023d). The Hamas-Israel conflict 2023 is not only a geopolitical action, but also about humanity, environment, and economic.

War, terrorism, conflict, and other political events can destabilize the economic order of the countries involved. The Hamas-Israel conflict 2023 is feared to impact economic activities such as capital markets and the global macroeconomy (United Nations, 2023c). Domestic and foreign political events, large and small, are risks to the capital market and macroeconomy (Abbassi et al., 2023; Adeosun et al., 2024; Aslam et al., 2022; Ben Ghozzi & Chaibi, 2022; Hilmário De Oliveira Siqueira, 2023; Raza Rabbani et al., 2023).

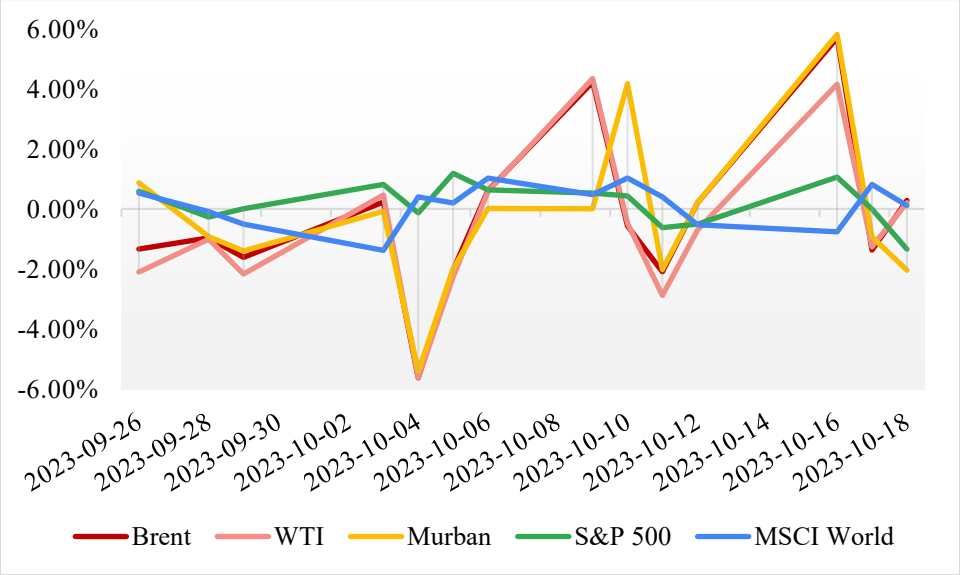

Figure 1. Oil and Index Return
Source: Owner's Processed (2024)

The movement of oil and stock index returns during the Hamas-Israel conflict 2023 is unique (Figure 1). The returns of Brent crude, WTI crude, and Murban crude tended to rise a few days after the conflict. Crude oil surged on speculation of supply and delivery disruption from the Middle East. The returns of the S&P 500 and MSCI indexes began to flatten after the conflict. The S&P 500 and MSCI World indices corrected due to uncertainty and investor sentiment. Investors can distinguish between positive and negative news, but they cannot be sure of the impact on the capital market. Capital markets are more sensitive to negative news or events than to positive news or events, so investors tend to worry more about their investments (Amoro, 2019; Le et al., 2023; Trichilli et al.,

2020; Viale et al., 2020; Zakharov et al., 2019). Investors expect higher returns due to the risk of political events. However, the majority of negative political events result in lower stock returns and increased volatility (Ahmad et al., 2022; Amoro, 2019; Ben Ghozzi & Chaibi, 2022; Clancey-Shang & Fu, 2023; Najaf et al., 2023). Macroeconomic conditions also fluctuate when political events occur (Shabbir et al., 2020; Soni et al., 2023). A volatile economy due to political events has positive and negative impacts on oil and currency exchange rates (Abdulsalam & Onipede, 2023; Akram, 2020; Dagher & Hasanov, 2023). However, the value of gold tends to stabilize when market conditions are volatile (Kangalli Uyar et al., 2022).

Strife in the Middle East has always brought sudden movements to capital markets and macroeconomics. Past acts of terrorism have had an impact on economic growth, stock returns, and oil prices in the Middle East region, which is a major oil producer (Elbargathi, 2019; Rezazadeh et al., 2024). Acts of terror and political turmoil in Pakistan have had both positive and negative responses on Pakistan's capital markets, depending on the type of event and its impact (Audi et al., 2022; Baig et al., 2023; Sulehri & Ali, 2020). When Russia invaded Ukraine in February 2022, the impact spread to other countries. The invasion caused stock prices and returns to fall in Russia, Ukraine, the US, and countries in Europe and Asia (Boubaker et al., 2023; Clancey-Shang & Fu, 2023; Najaf et al., 2023). However, positive abnormal returns were obtained in India (Bhattacharjee et al., 2023). The Russia-Ukraine invasion also affected the volatility of the energy markets of diesel oil, Brent oil, light oil, and natural gas (Aslam et al., 2023; Banerjee, 2023). The Russian Ruble had a strong effect on the devaluation of the Euro (Aliu et al., 2023), while the US Dollar remained strong in the global market (Banerjee, 2023). Political events have significant positive and negative impacts on global markets.

The latest Hamas-Israel conflict 2023, was an unpredictable event, and there were no prior signals or news of threats. This study analyzes the capital market and macroeconomic reactions in UN member that play a role in international relations. It highlights that UN members, such as Western and Middle Eastern countries, responded differently to the Hamas-Israel conflict, and some of them became main players in the global market (United Nations, 2023b). This is the first study to examine the capital market and macroeconomic reactions to the 2023 Hamas-Israel conflict across country level, i.e., UN member. There are UN-12 member tested, i.e., the United States of America (US), United Kingdom (UK), Australia, Canada, China, United Arab Emirates (UAE), Saudi Arabia, Qatar, Brazil, Mexico, Indonesia, and Malaysia.

Previous research examines capital markets, macroeconomics, and political events with correlational or impact tests (Ahmad et al., 2022; Akram, 2020; Amoro, 2019; Asad et al., 2020; Aslam et al., 2022; Audi et al., 2022; Elbargathi, 2019; Rezazadeh et al., 2024; Sulehri & Ali, 2020; Trichilli et al., 2020). The contribution of this study to the development of the capital market reaction literature during the Hamas-Israel conflict 2023 (Yudaruddin, Lesmana, Ekşi, et al., 2024; Yudaruddin, Lesmana, Yudaruddin, et al., 2024). This study extends the test to the difference in capital market reactions and macroeconomics. The indicators tested are abnormal return, return variability, trading volume, exchange rate, oil price, and gold price using the event study method, paired sample t-test, and nonparametric test (Wilcoxon signed rank test).

The findings of this study show that capital markets and macroeconomics have different reactions to the Hamas-Israel conflict 2023. The majority of the capital markets reacted to this conflict and the USD value tended to stabilize. Crude oil prices only reacted in the Middle East region, a neighboring country that is more sensitive to geopolitical crises (Elbargathi, 2019; Rezazadeh et al.,

2024). Gold prices reacted, indicating that investors turn to safe-haven assets during conflicts. The results of this study are in line with signaling theory, indicating that an event is responded to by global markets as information. The implications of this research are given to policymakers and investors who weigh geopolitical risks as decision-making in the global market.

2. Literature Review

2.1. Signaling Theory

A signaling theory built by (Spence, 1973), considers information as a signal that can be used to make decisions. The receiver decides after receiving a signal from the signaler. The development of this theory not only assesses economic information at the firm level, but has developed more broadly to include positive and negative political information. Positive political information is considered to reduce uncertainty and negative political information is considered to increase uncertainty (Yasar et al., 2020). Investors as receiver tend to pay attention to similar information that may occur in the future (Connelly et al., 2011).

At the firm level, a signaling of a dividend payment is positive information for investors. Investors consider this is an overview of the good firm condition (Puspitaningtyas, 2019). Studies on firms in developing countries South Asian, a signaling of corporate governance and sustainability disclosure affect management decision-making in their investment and expenses (Bae et al., 2018). Similarly, consumers in the US automotive industry assess the industry's reputation for environmental, social, and corporate governance conditions conveyed through product advertisements and financial performance (Lee et al., 2022). Global events, the covid-19 pandemic is considered a negative signal for investors in Asia Pacific, so they tend to sell stocks during the pandemic (Yuliana & Muzanni, 2023). Signaling theory has been assessed to a large scope. Considering the evidence, this study adopts the signaling theory in capital markets and macroeconomics to be tested during the Hamas-Israel conflict 2023 at cross-country level.

2.2. Event Study

The basic approach to testing information content is the event study. The information comes from an event or announcement that cannot be predicted in advance. The implication is reflected in the stock price in the capital market. Therefore, event studies often measure abnormal stock prices or stock returns (El Ghoul et al., 2023; McWilliams & Siegel, 1997; Ren & Xiao, 2019). The purpose of the event study method is to investigate market reactions. Furthermore, to determine the difference in stock prices or stock returns before and after an event or announcement. The market reaction is positive if the information is good news, and vice versa (Hartono, 2019; Tandelilin, 2017). This study applies an event study to examine the reaction of capital markets and macroeconomics in UN-12 member to the Hamas-Israel conflict 2023.

2.3. Hypotheses Development

Prior studies have investigated political events such as war, terrorism, and geopolitical crises with the event study method using return or abnormal return variables. The Russia-Ukraine invasion caused negative returns in Russia, Ukraine, the US, and countries in Europe and Asia (Boubaker et al., 2023; Clancey-Shang & Fu, 2023; Najaf et al., 2023). However, caused positive abnormal returns in India (Bhattacharjee et al., 2023). Various political events in Pakistan produced positive and negative

returns (Audi et al., 2022; Baig et al., 2023; Sulehri & Ali, 2020). This study examines the difference in abnormal returns before and after the Hamas-Israel conflict 2023.

H1: There is a difference in abnormal returns before and after the Hamas-Israel conflict.

High returns and low variability are what investors expect. Return variability examines the magnitude of changes in return fluctuations in a specific time. Return variability tends to increase when the capital market receives information from an event or announcement (Admati & Pfleiderer, 1988; Lobo & Mahmoud, 1989; Markowitz, 1952; Setiawan, 2007). Return variability is usually related to short-term market situations and information uncertainty. Testing return variability in the case of financial report announcements and stock splits on the Indonesian stock exchange shows no difference before and after event (Filip, 2017; Hanafi, 1997; Yuniati et al., 2019). There are differences in return variability when the CEO change comes from internal (external) companies. This means that investors assess the company from its leadership candidates (Setiawan, 2007). The gap results in previous research makes the return variability indicator interesting. However, research of return variability is still rarely examined on global events.

H2: There is a difference in return variability before and after the Hamas-Israel conflict.

The development of the event study method also examines the volume of stock trading to an event. There is stock trading volume anomaly due to information from an event or announcement (Admati & Pfleiderer, 1988; Foster & Viswanathan, 1993). Trading volume is one indicator of stock liquidity, which is used to see the ease of buying and selling shares. The study of (Clancey-Shang & Fu, 2023) examined the bid-ask spread variable to see the liquidity of stocks in the US capital market. The result was a high bid-ask spread during the Russian-Ukrainian invasion; in other words, buying and selling stocks was less liquid. There is no difference in trading volume was found in the stock split announcement in the Indonesian Stock Exchange (Yuniati et al., 2019). If the trading volume increases, then the stock liquidity is high, and vice versa. Empirical research has yet to examine trading volume during extreme political events such as war or conflict. To expand the results, this study examines the trading volume around the Hamas-Israel conflict 2023.

H3: There is a difference in trading volume before and after the Hamas-Israel conflict.

This research develops an event study method on macroeconomic conditions, i.e., exchange rates, oil prices, and gold prices. Geopolitical conflicts always disrupt global trade activities, one of which affects exchange rates. When the market experiences shocked due to crises, the exchange rate tends to weaken (Akram, 2020; Aliu et al., 2023; Hilmário De Oliveira Siqueira, 2023). In contrast, during the Russia-Ukraine invasion 2022, the world currency US Dollar strengthened in the global market. The strengthening of the USD has an impact on the economies of developing countries and small countries (Banerjee, 2023). Highlighting the USD as the main currency in the global market, this study examines the differences in currency exchange rates to USD before and after the Hamas-Israel conflict 2023.

H4: There is a difference in exchange rate before and after the Hamas-Israel conflict.

The Middle East region is known as the world's oil producer, but currently, one of its regions is experiencing geopolitical conflicts that are feared to disrupt oil commodity trading activities. Middle Eastern countries have the potential to limit oil supplies related to the uncertainty of the Hamas-Israel conflict. Oil commodities are easily disrupted when the market is impacted by external conflicts (Akram, 2020; Aslam et al., 2022; Boubaker et al., 2023; Rezazadeh et al., 2024). If the Middle

East oil supply is restricted and the global crude oil price benchmarks, Brent and WTI Crude react to the Hamas-Israel conflict 2023, then the price of oil traded in the world could potentially be affected.
H5: There is a difference in oil prices before and after the Hamas-Israel conflict.

Macroeconomics has a world commodity that is considered a safe-haven asset, i.e., gold. Although in the short-term gold prices are affected by uncertainty, the value of gold remains stable in the long-term (Adeosun et al., 2024; Kangalli Uyar et al., 2022) This study examines the reaction of world gold prices during the 2023 Hamas-Israel conflict.
H6: There is a difference in gold prices before and after the 2023 Hamas-Israel conflict.

Hypothesis testing is done to see the significance of the reaction to the event. It means that the significance of the hypothesis cannot be the same as hypothesis 0. Hypothesis testing uses comparative t-test statistics, i.e., paired sample t-test and Wilcoxon signed rank test (non-parametric tests). A comparative test is a test of whether or not there is a difference between two samples (Sugiyono, 2019; Tandelilin, 2017).

3. Test

3.1. Data Collection

The study population is all UN member states. Sample requirements through purposive sampling techniques, i.e., 1) UN members who respond to the ceasefire resolution, either in favor, against, or abstention, 2) UN members who trade stocks and data are available around the observation period, 3) UN members who are world crude oil producers, 4) there is no surprising domestic news or events around the observation period. Then obtained 12 samples, i.e., the United States of America (US), United Kingdom (UK), Australia, Canada, China, United Arab Emirates (UAE), Saudi Arabia, Qatar, Brazil, Mexico, Indonesia, and Malaysia.

The research data includes closing stock price, trading volume, exchange rate (USD), oil price (USD/barrel), and gold price (USD/oz). The secondary data was collected using documentation techniques from the websites finance.yahoo.com, investing.com, oilprice.com, and goldprice.org. The capital market reaction test is based on the stock index of each of the 12 UN member countries, as shown in Table 1.

Table 1. Research data

Countries	Index (Stock Listed)	Oil Fields	Exchange rate (USD)
US	S&P 500 (501 Stocks)	WTI Crude, WTI Midland, Mars US, and ANS West Cost	-
UK	FTSE 250 (250 Stocks)	Brent Crude	USD/GBP
Australia	S&P/ASX 200 (172 Stocks)	Cossack	USD/AUD

Canada	S&P/TSX Composite (217 Stocks)	Central Alberta, Light Sour Blend, Peace Sour, Syncrude Sweet Premium, US High Sweet Clearbook, and Midale	USD/CAD
China	SSE Composite (2155 Stocks)	Daqing, Shengli, and Shouth China Sea	USD/CNY
UAE	DFM (41 Stocks)	Murban Crude, Dubai, Das, Umm Lulu, and Upper Zakum	USD/AED
Saudi Arabia	Tadawul All Share (229 Stocks)	Arab Extra Light, Arab Heavy, and Arab Medium	USD/SAR
Qatar	QE All Shares (50 Stocks)	Marine, Qatar Land, and Al Shaheen	USD/QAR
Brazil	Bovespa (80 Stocks)	Lula	USD/BRL
Mexico	S&P BMV IPC (35 Stocks)	Maya, Isthmus, and Olmeca	USD/MXN
Indonesia	IHSG (734 Stocks)	Cinta, Duri, and Minas	USD/IDR
Malaysia	KLCI (30 Stocks)	Tapis	USD/MYR

Source: Owner's (2024)

3.2. Empirical Methods

Geopolitical crisis studies, such as the Russia-Ukraine invasion impacted on negative AR and increased volatility in the US market (event windows of -1, +1) (Clancey-Shang & Fu, 2023) and affected fluctuations on commodity price in the energy market (event windows of -5, +5, and -10, +10) (Aslam et al., 2022, 2023). Highlighting these results, this study applies the event study method with an event window of 11 days, where the Hamas-Israel conflict started on October 7, 2023, which means -5 days before the event and +5 after the event. The event window is not too long to isolate other possible events that could affect the results (McWilliams & Siegel, 1997; Ren & Xiao, 2019). This study investigates the rapid market reaction to the Hamas-Israel conflict event 2023.

Capital market reaction is based on abnormal return (AR), return variability, and stock trading volume, while macroeconomic reaction is based on exchange rate, oil price, and gold price.

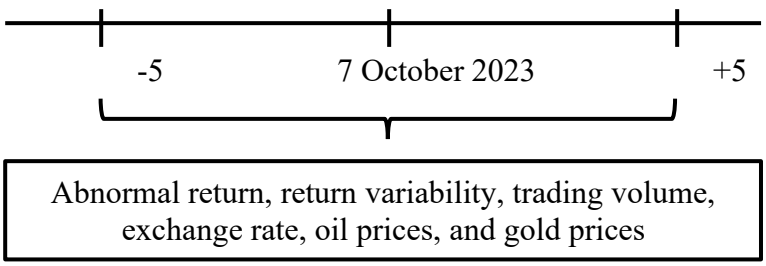

Figure 2. Conceptual Framework
Source: Owner's (2024)

Abnormal return (AR) measurement is part of the basic measurement of stock prices in the event study method. Stock prices and returns are a reflection of capital market performance. Investors need to know how much the return differs from what is expected when the capital market receives information (Fama, 1998; Hartono, 2019). It proved that the return and AR are significant in similar geopolitical events (Bhattacharjee et al., 2023; Boubaker et al., 2023; Clancey-Shang & Fu, 2023; Najaf et al., 2023). Return variability reflects the magnitude of return fluctuations proxied by variance or standard deviation. The magnitude of the change in return is higher to an event. However, the test results of return variability vary significantly and insignificantly in the case at the company level (Filip, 2017; Hanafi, 1997; Markowitz, 1952; Setiawan, 2007; Yuniati et al., 2019). This gap result makes the return variability indicator interesting to test in the case of global events.

Abnormal return (AR) and return variability are calculated for each security in each capital market.

$$ARi,t = Ri,t - E(Rt) \quad (1)$$

$$Ri,t = \frac{(Pi,t - Pi,t_{-1})}{Pi,t_{-1}} \quad (2)$$

$$E(Ri,t) = \frac{(MRi,t - MRi,t_{-1})}{MRi,t_{-1}} \quad (3)$$

$$Retun\ Variability = \frac{ARi,t^2}{Var(AR)} \quad (4)$$

Where abnormal return (ARi,t) is the difference in the actual return of security i in period t from the expected return in period t. The actual return (Ri,t) is calculated from today's stock price subtracted by the previous stock price, then divided by the previous stock price. The market return is estimated with the market-adjusted model. The market-adjusted model assumes the expected return is equal to the market return (index). This model is suitable for short-term event studies and the isolation of general market movements. Return variability is the square of the abnormal return divided by the variance of the abnormal return outside the event (Bodie et al., 2014; Hanafi, 1997; Hartono, 2019).

Statistical tests used SPSS (Statistical Package for the Social Sciences) 25 for normality and comparative tests at a significant value of 0.05. The normality test was applied with Kolmogorov-Smirnov (sample > 50) and Shapiro-Wilk (Sample ≤ 50). If the significant value of the normality test is ≥ 0.05, the data is normal distribution, while if the significant value of the normality test is < 0.05, the data is non-normal distribution.

The comparative tests are carried out in two ways based on data distribution, i.e., the Paired Sample T-test for normal distribution and the Wilcoxon Signed Rank Test (non-parametric test) for non-normal distribution. If the significant value of the comparative test > 0.05, it shows no difference, while if the significant value of the comparative test ≤ 0.05, it shows a difference (Sugiyono, 2019).

4. Test

4.1 Result

4.1.1 Descriptive Statistics

Table 2. Descriptive statistics

Variables	Abnormal Return				Return Variability			
Countries	Mean		Std. Deviation		Mean		Std. Deviation	
	Before	After	Before	After	Before	After	Before	After
US	-0,33%	-0,05%	0,68%	0,76%	1,03	0,96	0,45	0,47
UK	-0,16%	0,11%	0,73%	1,46%	0,87	1,22	0,81	0,83
Australia	-0,47%	0,39%	0,78%	0,66%	0,99	0,94	0,44	0,42
Canada	-0,33%	0,37%	0,78%	13,44%	0,99	0,94	0,39	0,42
China	0,42%	-0,24%	0,93%	1,06%	0,95	1,05	0,48	0,51
UAE	0,43%	-0,58%	0,73%	1,53%	0,88	1,17	0,71	0,68
Saudi Arabia	0,0004%	-0,36%	0,58%	0,69%	0,63	1,34	0,45	0,46
Qatar	-0,18%	-0,08%	0,62%	0,43%	0,76	1,12	0,44	0,49
Brazil	-0,75%	0,37%	0,92%	0,98%	0,97	1,08	0,50	0,40
Mexico	-0,03%	0,10%	0,97%	0,64%	0,94	1,04	0,56	0,59
Indonesia	-0,11%	0,15%	1,94%	1,76%	1,07	0,91	0,57	0,57
Malaysia	-0,27%	0,12%	0,31%	0,33%	0,93	1,02	0,52	0,45
Variables	**Trading Volume**				**Exchange Rate ($)**			
Countries	**Mean**		**Std. Deviation**		**Mean**		**Std. Deviation**	
	Before	**After**	**Before**	**After**	**Before**	**After**	**Before**	**After**
US	4,70M	4,36M	8,97M	8,25M				
UK	1,168M	1,169M	1,73M	1,70M	0,82	0,82	0,0047	0,0048
Australia	2,60M	2,80M	3,54M	4,01M	1,57	1,57	0,0085	0,0158
Canada	0,96M	0,88M	1,77M	1,57M	1,37	1,36	0,0032	0,0048
China	11,10M	11,77M	25,21M	25,98M	7,19	7,30	0,0154	0,0045
UAE	5,07M	4,24M	11,15M	7,97M	3,67	3,67	0,0002	0,0003
Saudi Arabia	8,24M	7,87M	2,55M	1,67M	3,75	3,75	0,0019	0,0003
Qatar	3,57M	3,63M	5,19M	4,46M	3,64	3,64	0,0006	0,0018
Brazil	12,30M	11,64M	16,70M	14,78M	5,14	5,07	0,0045	0,3792
Mexico	6,20M	5,90M	15,68M	14,36M	18,02	18,00	0,2267	0,1361
Indonesia	22,32M	22,27M	98,94M	178,43M	15588	15694	39,6232	20,4328
Malaysia	5,65M	4,22M	7,71M	5,05M	4,72	4,72	0,0077	0,0081
Variables	**Oil ($/barel)**				**Gold ($/oz)**			
Countries	**Mean**		**Std. Deviation**		**Mean**		**Std. Deviation**	
	Before	**After**	**Before**	**After**	**Before**	**After**	**Before**	**After**
US	86,48	86,12	2,73	2,49	1.825,38	1.880,30	4,65	30,13
UK	87,22	87,70	3,34	2,05	1.823,03	1.882,48	13,14	33,80

Australia	90,17	87,99	3,29	1,09	1.824,62	1.869,56	10,47	45,87
Canada	81,92	80,94	4,53	4,35	1.826,87	1.869,49	4,73	25,84
China	86,51	84,74	1,28	1,44	1.827,46	1.877,40	8,01	30,88
UAE	89,72	88,88	0,87	0,69	1.825,87	1.877,28	6,54	30,30
Saudi Arabia	90,20	88,61	0,90	0,98	1.827,45	1.868,03	5,01	18,16
Qatar	89,11	87,38	0,56	0,07	1.827,68	1.868,13	5,03	18,11
Brazil	86,80	86,18	3,00	1,64	1.830,42	1.877,85	15,31	39,77
Mexico	77,23	76,67	3,97	4,73	1.820,96	1.875,70	18,23	34,03
Indonesia	84,02	81,50	9,18	9,25	1.829,12	1.887,32	15,65	30,35
Malaysia	94,03	91,73	3,51	0,73	1.822,67	1.873,00	7,51	31,74

Source: Owner's Processed, SPSS 25 (2024)
Note: M = Million

Research on the reaction of capital markets and macroeconomics to the Hamas-Israel conflict 2023 event has been conducted. The results of descriptive statistics of each variable and each sample are presented in Table 2. The tests show average abnormal returns positive and negative before-after the conflict. The Hamas-Israel conflict 2023 has an impact on negative abnormal returns in the US, China, UAE, Saudi Arabia, and Qatar. The main players in the global market, i.e., the US and China markets, are sensitive to the conflict, then the Middle East is directly affected. Investor sentiment is negative towards conflicts that could have a dominant impact on market. This result is in line with (Boubaker et al., 2023; Clancey-Shang & Fu, 2023; Najaf et al., 2023; Rezazadeh et al., 2024). Positive abnormal returns tend to be obtained outside the conflict area, such as the UK, Australia, Canada, Brazil, Mexico, Indonesia, and Malaysia. This second conditions is similar to (Bhattacharjee et al., 2023). The average return variability increased drastic in the UK, UAE, Saudi Arabia, and Qatar, then increased by about 10% in China, Brazil, Mexico, and Malaysia. The increase in return variability indicates a market response. This means that returns fluctuate more in these countries after receiving information on the Hamas-Israel conflict 2023. This results is consistent with (Admati & Pfleiderer, 1988; Foster & Viswanathan, 1993). While in the US, Australia, Canada, and Indonesia, return variability began to decline, indicating that the returns obtained varied less than before the conflict.

The average trading volume tends to decrease in all sample countries, which means stocks are less liquid in this test. Agreeing with (Clancey-Shang & Fu, 2023), when the US stock market was less liquid during the Russia-Ukraine invasion. Only trading volumes in UK and Qatar increase by about 1%, followed by an increase in return variability. This result is surprising as it rejected (Admati & Pfleiderer, 1988; Foster & Viswanathan, 1993), which states that return variability has a positive correlation with trading volume. The average exchange rate shows that the exchange rates and the USD are relatively stable in the global market during the Hamas-Israel conflict 2023. However, the Chinese Yuan and Indonesian Rupiah weakened against this conflict. Agreeing the results of (Akram, 2020; Aliu et al., 2023; Hilmário De Oliveira Siqueira, 2023). The movement of the US Dollar during global events that affect macro conditions is in line with the results of (Banerjee, 2023). Most of the low standard deviation values indicate little variation in exchange rate data.

The average oil price declined during the event window after the Hamas-Israel conflict 2023, although the oil return rose shortly after the conflict. It assumed that the conflict did not significantly

disrupt oil supply, so the market corrected and the average oil price declined. Except for the UK market, the average price of Brent crude rose slightly from 87.22 $/barrel to 87.70 $/barrel, this value did not reach the high level of 100 $/barrel as during the Russian-Ukrainian invasion 2022 (Aslam et al., 2023).

The average world gold price rose after the Hamas-Israel conflict 2023. Investors choose the value of gold as a long-term investment against the global uncertainty (Adeosun et al., 2024; Kangalli Uyar et al., 2022).

4.1.2 Normality Test

A normality test to determine whether the data distribution is normal or not normal. A significant value of normality test ≥ 0.05 indicates normal distribution, and conversely, a significant value of normality test < 0.05 indicates non-normal distribution. The results of the data normality test for each variable and each sample are shown in Table 3.

Table 3. Normality test results

Variables	**Abnormal Return**		**Return Variability**		**Trading Volume**	
Normality Test	**Kolmogorov-Smirnov**					
	Before (Sig.)	**After (Sig.)**	**Before (Sig.)**	**After (Sig.)**	**Before (Sig.)**	**After (Sig.)**
USA	0,000	0,000	0,049	0,000	0,000	0,000
UK	0,000	0,000	0,000	0,000	0,000	0,000
Australia	0,001	0,042	0,200	0,050	0,000	0,000
Canada	0,000	0,000	0,200	0,052	0,000	0,000
China	0,000	0,000	0,000	0,000	0,000	0,000
Saudi Arabia	0,200	0,200	0,000	0,002	0,000	0,000
Brazil	0,200	0,000	0,200	0,200	0,000	0,000
Indonesia	0,000	0,000	0,004	0,000	0,000	0,000
Normality Test	**Shapiro-Wilk**					
	Before (Sig.)	**After (Sig.)**	**Before (Sig.)**	**After (Sig.)**	**Before (Sig.)**	**After (Sig.)**
UAE	0,232	0,000	0,002	0,506	0,000	0,000
Qatar	0,006	0,178	0,194	0,419	0,000	0,000
Mexico	0,000	0,110	0,055	0,097	0,000	0,000
Malaysia	0,380	0,602	0,238	0,481	0,000	0,000
Variables	**Exchange Rate**		**Oil Price**		**Gold Price**	
Normality Test	**Shapiro-Wilk**					
	Before (Sig.)	**After (Sig.)**	**Before (Sig.)**	**After (Sig.)**	**Before (Sig.)**	**After (Sig.)**
USA			0,741	0,711	0,187	0,024
UK	0,506	0,692	0,103	0,409	0,348	0,263
Australia	0,495	0,129	0,620	0,479	0,759	0,580
Canada	0,835	0,115	0,052	0,070	0,996	0,724
China	0,280	0,506	0,009	0,260	0,673	0,144

UAE	0,000	0,103	0,208	0,362	0,465	0,090
Saudi Arabia	0,000	0,656	0,537	0,097	0,685	0,681
Qatar	0,116	0,232	0,572	0,391	0,703	0,678
Brazil	0,014	0,060	0,467	0,312	0,928	0,278
Mexico	0,640	0,959	0,735	0,622	0,799	0,662
Indonesia	0,375	0,012	0,449	0,668	0,180	0,065
Malaysia	0,833	0,379	0,528	0,672	0,160	0,120

Source: Owner's Processed, SPSS 25 (2024)

Normal distribution data was tested with Paired Sample T-test and non-normal distribution data was tested with Wilcoxon Signed Rank Test (non-parametric test).

4.1.3 Hypothesis Test

The comparative test to examine if there are differences in AR, return variability, trading volume, exchange rate, oil price, and gold price before and after the Hamas-Israel conflict 2023. The results of comparative tests for each variable in each country through the Paired Sample T-test and Wilcoxon Signed Rank Test are shown in Table 4.

Table 4. Hypothesis Test Result

Variables	**Abnormal Return (AR)**			**Return Variability**		
Countries	**T-test (Sig.)**	**Wilcoxon (Sig.)**	**Decision**	**T-test (Sig.)**	**Wilcoxon (Sig.)**	**Decision**
USA		0,000	H0 Rejected		0,017	H0 Rejected
UK		0,000	H0 Rejected		0,000	H0 Rejected
Australia		0,000	H0 Rejected	0,436		H0 Accepted
Canada		0,000	H0 Rejected	0,317		H0 Accepted
China		0,000	H0 Rejected	0,000		H0 Rejected
UAE		0,001	H0 Rejected		0,134	H0 Accepted
Saudi Arabia	0,000		H0 Rejected		0,000	H0 Rejected
Qatar		0,342	H0 Accepted	0,003		H0 Rejected
Brazil		0,000	H0 Rejected	0,218		H0 Accepted
Mexico		0,857	H0 Accepted	0,555		H0 Accepted
Indonesia		0,000	H0 Rejected		0,000	H0 Rejected
Malaysia	0,000		H0 Rejected	0,586		H0 Accepted
Rusia*		0,317	H0 Accepted	0,093		H0 Accepted
Variables	**Trading Volume**			**Exchange Rate**		
Countries	**T-test (Sig.)**	**Wilcoxon (Sig.)**	**Decision**	**T-test (Sig.)**	**Wilcoxon (Sig.)**	**Decision**
USA		0,000	H0 Rejected			
UK		0,879	H0 Accepted	0,221		H0 Accepted
Australia		0,940	H0 Accepted	0,615		H0 Accepted

Canada		0,386	H0 Accepted	0,060		H0 Accepted
China		0,000	H0 Rejected	0,000		H0 Rejected
UAE		0,882	H0 Accepted		0,180	H0 Accepted
Saudi Arabia		0,001	H0 Rejected		0,715	H0 Accepted
Qatar		0,016	H0 Rejected	0,659		H0 Accepted
Brazil		0,666	H0 Accepted		0,138	H0 Accepted
Mexico		0,334	H0 Accepted	0,880		H0 Accepted
Indonesia		0,000	H0 Rejected		0,042	H0 Rejected
Malaysia		0,012	H0 Rejected	0,862		H0 Accepted
Rusia*		0,909	H0 Accepted	0,645		H0 Accepted
Variables	**Oil Price**			**Gold Price**		
Countries	**T-test (Sig.)**	**Wilcoxon (Sig.)**	**Decision**	**T-test (Sig.)**	**Wilcoxon (Sig.)**	**Decision**
USA	0,083		H0 Accepted		0,043	H0 Rejected
UK	0,793		H0 Accepted	0,030		H0 Rejected
Australia	0,190		H0 Accepted	0,141		H0 Accepted
Canada	0,000		H0 Rejected	0,025		H0 Rejected
China		0,109	H0 Accepted	0,026		H0 Rejected
UAE	0,010		H0 Rejected	0,017		H0 Rejected
Saudi Arabia	0,007		H0 Rejected	0,008		H0 Rejected
Qatar	0,034		H0 Rejected	0,008		H0 Rejected
Brazil	0,761		H0 Accepted	0,096		H0 Accepted
Mexico	0,352		H0 Accepted	0,023		H0 Rejected
Indonesia	0,054		H0 Accepted	0,021		H0 Rejected
Malaysia	0,201		H0 Accepted	0,013		H0 Rejected
Rusia*	0,677		H0 Accepted	0,100		H0 Accepted

Source: Owner's Processed, SPSS 25 (2024)

Note: *Comparison sample; T-test is paired sample t-test; Wilcoxon is Wilcoxon signed rank test; H0 accepted means there is no difference in X before and after conflict; H0 rejected means there is difference in X before and after conflict.

The hypothesis test shows the majority of samples experience differences in AR before and after the Hamas-Israel conflict 2023. Except for Qatar and Mexico, which have significant values > 0.05, i.e., 0.342 and 0.857, respectively. Some capital markets show differences in return variability and trading volume. The capital markets of the US, China, Saudi Arabia, and Indonesia simultaneously show differences in AR, return variability, and trading volume before and after the Hamas-Israel conflict 2023.

The difference in exchange rates before and after the Hamas-Israel conflict 2023 only occurs in China and Indonesia, with significant values of 0.000 and 0.042. This result is linear with the movement of USD/CNY and USD/IDR before-after the Hamas-Israel conflict 2023 shown in Table 4.1.1 previously. The difference in oil prices before and after the Hamas-Israel conflict 2023 occurred in Canada and the Middle East region, i.e., the UAE, Saudi Arabia, and Qatar. The significant values are 0.000, 0.010, 0.007, and 0.034, respectively. Almost all samples show differences in gold prices before

and after the Hamas-Israel conflict 2023, except Australia and Brazil with significant values of 0.141 and 0.096.

This study also examines capital market and macroeconomic reactions in Russia as a comparison sample. During the Hamas-Israel conflict 2023, the Russia-Ukraine invasion was still ongoing, so Russia did not suitable in the event study of this conflict. It proved that Russia absolutely did not react to the Hamas-Israel conflict 2023. There is no difference in AR, return variability, trading volume, exchange rate, oil price, and gold price before and after the conflict. All countries tested did not fully react to all capital market and macroeconomic indicators. The comparative test results indicate that there are differences and no differences in some countries. Thus, the hypotheses of this study are accepted and rejected depending on the sample and the indicators.

4.2 Discussion

The results of this study prove that there are differences in capital markets and macroeconomic reactions in 12 countries to the Hamas-Israel conflict 2023. The US, China, Saudi Arabia, and Indonesia capital markets experience differences in AR, return variability, and trading volume before and after the Hamas-Israel conflict 2023. The difference in AR before and after the conflict indicates the reaction of the capital market to new events that enter the capital market. However, the positive and negative AR during the conflict does not automatically indicate that there is a difference in AR before and after the conflict, such as in the Qatar and Mexico markets. Assuming the market does not react strongly and uniformly, certain sectors such as energy and technology may react positively, but other sectors do not, so the statistical test on average is not significant. This research supported (Yudaruddin, Lesmana, Ekşi, et al., 2024; Yudaruddin, Lesmana, Yudaruddin, et al., 2024), finding abnormal return reactions in the US, China, and Middle East market. Similar geopolitical events have impacted on positive and negative AR (Audi et al., 2022; Baig et al., 2023; Bhattacharjee et al., 2023; Boubaker et al., 2023; Clancey-Shang & Fu, 2023; Najaf et al., 2023; Sulehri & Ali, 2020). The magnitude of the change in return variability also varies in the UK and Qatar capital markets. The existence of differences in return variability before and after the conflict is similar to the results of testing return variability at the firm level (Setiawan, 2007).

The results of this study are reinforced by the difference in trading volume in the capital markets of the US, China, Saudi Arabia, Qatar, Indonesia, and Malaysia before and after the Hamas-Israel conflict 2023. Investors consider the conflict as a positive or negative signal for the capital market, so they rush to buy and sell stocks. New information that is relevant to the capital market tends to result in differences in stock trading volume (Admati & Pfleiderer, 1988; Clancey-Shang & Fu, 2023; Foster & Viswanathan, 1993). Stock trading activity occurred after the news of the Hamas-Israel conflict on October 7, 2023. This action is by signaling theory, that investors as receiver make decisions after receiving information from the news (Spence, 1973).

While in the UK, Australia, Canada, UAE, and Brazil capital markets, the differences in AR is not followed by differences in trading volume before and after the Hamas-Israel conflict 2023. This condition can occur when the stock price (return) reflects the capital market during the conflict, but there is no significant stock trading activity. Similar results were obtained in the case of stock splits at the company level (Yuniati et al., 2019).

The results of exchange rate show differences in USD/CNY and USD/IDR before and after the Hamas-Israel conflict 2023. The response of the Chinese Yuan and Indonesian Rupiah weakened in the global market due to this conflict. The global crisis impacted on devaluation (Akram, 2020; Aliu et al., 2023; Hilmário De Oliveira Siqueira, 2023). Other results show no difference in exchange rates before and after conflict. The global currency, the USD, was relatively stable in the global market during the conflict. This result is in line with research (Banerjee, 2023).

There are differences in oil prices in Canada, UAE, Saudi Arabia, and Qatar before and after the Hamas-Israel conflict 2023. The Middle East oil market is reactive to the conflict that taking place in the Middle East region. There was a spontaneous response due to fear of disruption in oil production and delivery. The tension of the conflict resulted in fluctuations in oil prices (Aslam et al., 2023; Boubaker et al., 2023). Then, there is no difference in oil prices before and after conflict other than in these countries, indicating that there is no direct disruption in oil supply, despite the temporary panic after the conflict. There are differences in gold prices before and after the Hamas-Israel conflict 2023 in almost all samples. The Mexican market did not show a capital market reaction, only a gold price reaction. Investors make decisions in the form of choosing gold as a safe-haven asset to reduce the risk of other assets due to conflict uncertainty. Gold is a safe asset for long-term investment (Kangalli Uyar et al., 2022). Except that Australia and Brazil do not show any difference in gold prices before and after the Hamas-Israel conflict 2023. Assumes that investors have no significant gold trading activity in the relevant markets.

The comparison sample, Russia, shows there is no capital market and macroeconomic reaction before and after the Hamas-Israel conflict 2023. Russia, as a member of the UN, was active in the council and in favor of the Hamas-Israel ceasefire resolution. Russia, which is still experiencing internal events with Ukraine, makes the Russian market not respond to the conflict. This assumes that the impact of the conflict can affect other countries (spillover effect), but the internal uncertainty of other countries might be more powerful.

5. Conclusion

The Hamas-Israel conflict 2023 shocked capital markets and macroeconomics in several countries. The conflicts predominately on capital market reactions, mainly based on AR indicators. Abnormal returns reflect the capital market's quick reaction to an event. The macroeconomic reaction of oil prices is more significant in the Middle East region, which is directly affected. Then the gold price reaction is significant in almost all markets. The event study method is applied to test the overall capital market and macroeconomic reactions across countries. Future study can compare each sector, such as energy, technology, transportation, and tourism, to focus the results. The robustness test of this study is limited to a short event window (-5, +5), a market-adjusted model for return estimation, and a comparison sample. Future research can formulate robustness tests or control variables to validate the findings.

Capital market and macroeconomic reactions to the Hamas-Israel conflict 2023 help policymakers and investors make decisions in the global market. A major crude oil producer, OPEC, contributes to the pricing and supply of oil by considering the real and ongoing impact of the conflict. The findings of this study identify gold as a safe-haven asset that investors choose to diversify their portfolio from conflict risk.

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