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ISRAELI-PALESTINIAN CONFLICT, BOYCOTTED PRODUCTS' STOCK SHARES, GEOPOLITICAL RISK, POLICY UNCERTAINTY, AND OIL PRICES NEXUS: EVIDENCE FROM WAVELET-BASED APPROACH

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ABSTRACT

This paper aims to study the media coverage connectedness and correlations between the Israeli-Palestinian Conflict and some boycotted targeted companies. We utilize monthly data from January 2016 to December 2023 using three groups of variables. For the analysis part, we utilize the Wavelet-Based Approach alongside panel data regression and Granger causality to identify significant correlations and patterns. Demonstration, PolCiv Event, PolCiv Fatalities as the indicator for Israel-Palestinian conflict. Wix.Com Ltd (WIX), Yum! Brands Inc (YUM), Restaurant Brands International Inc (QSR), Papa John's International Inc (PZZA), Domino's Pizza Inc (DPZ), and McDonald's Corporation's Stock (MCD) as boycotted targeted companies and Global Price of WTI Crude (WTI), Economic Policy Uncertainty (EPU) and Geopolitical Risk Index (GPR) as global indicators. We found strong correlations among Demonstration, PolCiv Event, and PolCiv Fatalities, indicating their connectedness. However, only a few share prices, like WIX and YUM, exhibit limited significance in reflecting the humanitarian conditions tied to the conflict. Additionally, boycotted-product stock prices show medium to high correlations with media coverage, and global indicators (WTI, EPU, GPR) significantly correlate with selected boycotted-product share prices. Surprisingly, WTI and GPR exhibit a strong correlation, suggesting that geopolitical tensions globally influence oil price fluctuations. However, direct impacts on targeted companies are challenging due to opposing perspectives on the conflict, but a reduction in consumption is observed. We uncover strong correlations among various factors, including Demonstration, PolCiv Event, and PolCiv Fatalities. These connections highlight their interconnectedness and contribute fresh insights to existing

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knowledge. Additionally, the study explores the intriguing relationship between boycotted-product stock prices and media coverage, revealing medium to high correlations. Surprisingly, global indicators like WTI (oil prices) and GPR (geopolitical risk index) demonstrate a strong correlation, suggesting that geopolitical tensions globally influence oil price fluctuations. Overall, this research advances our understanding of the multifaceted effects arising from conflict-related events.

KEYWORDS: ISRAELI-PALESTINIAN CONFLICT, BOYCOTTED PRODUCTS, GEOPOLITICAL RISK, POLICY UNCERTAINTY, WAVELET ANALYSIS

ABSTRAK

Kajian ini bertujuan untuk meneliti keterkaitan dan korelasi antara liputan media mengenai konflik Israel-Palestin dan prestasi saham beberapa syarikat yang menjadi sasaran boikot, menggunakan data bulanan dari Januari 2016 hingga Disember 2023. Analisis dilakukan dengan pendekatan berasaskan gelombang (Wavelet-Based Approach), regresi data panel, dan kausaliti Granger, melibatkan tiga kumpulan pemboleh ubah: indikator konflik (Demonstrasi, Peristiwa Politik-Sivil dan Kematian Politik-Sivil), syarikat boikot (WIX, YUM, QSR, PZZA, DPZ, MCD), serta indikator global (harga minyak WTI, Ketidaktentuan Polisi Ekonomi (EPU) dan Indeks Risiko Geopolitik (GPR)). Dapatan menunjukkan hubungan yang kuat antara ketiga-tiga indikator konflik, mencerminkan keterkaitan yang jelas antara peristiwa politik dan kemanusiaan. Hanya beberapa saham seperti WIX dan YUM menunjukkan signifikan terhad terhadap isu kemanusiaan, manakala saham syarikat boikot secara umum menunjukkan korelasi sederhana hingga tinggi dengan liputan media. Penunjuk global seperti WTI, EPU dan GPR turut mempunyai hubungan signifikan dengan saham-saham syarikat boikot, di mana WTI dan GPR menunjukkan korelasi yang sangat kuat, menandakan ketegangan geopolitik global memberi kesan langsung terhadap turun naik harga minyak. Walaupun kesan terus terhadap prestasi syarikat sukar ditentukan akibat perbezaan persepsi terhadap konflik, penurunan dalam penggunaan produk syarikat boikot dapat dikesan. Secara keseluruhan, kajian ini menyumbang kepada pemahaman yang lebih mendalam terhadap kesan berlapis konflik terhadap pasaran saham, liputan media dan faktor global.

KATA KUNCI: KONFLIK ISRAEL-PALESTIN, PRODUK DIBOIKOT, RISIKO GEOPOLITIK, KETIDAKTENTUAN DASAR, ANALISIS GELOMBANG

1. INTRODUCTION

The Israeli-Palestinian conflict has claimed tens of thousands of lives and displaced many millions of people and has its roots in a colonial act carried out more than a century ago. According to Pressman (2005), the Israeli-Palestinian Conflict began as early as 1881, but major events started on 31 October 1917. This was led by World War I when the British took Palestine from the Ottoman Empire to honour the Balfour Declaration where they wanted to establish a national home for the Jewish people in Palestine (Hajjar & Beinin, 1988). That is when many Jewish migrated to Palestine to flee from Nazism in Europe. The Arab revolt happened from 1936 until 1939 because of the demographic and tension that was sensed by the Palestinians in their homeland while Zionist organizations continued to campaign for a homeland for Jews in Palestine using armed forces and killing many innocent Palestinians until today. Palestinian-Israeli Conflicts have been for decades and most discussions have described them as unable to solve and at a dead end. With the world changing, and the influence of media, people around the world are more educated about the situations happening in Gaza and the devastation of the Palestinians and the mounting death toll has triggered worldwide protests, and now people are trying to show their support for them by boycotting Israeli products or products that are affiliated with them. Media plays an important role as a means of spreading information to the public all over the world, no matter their age as long as they have the means to access them in the form of digital or printed. Multiple media platforms affect our comprehension of global and national events. Consuming the information helps us to stay connected to the real world and allows us to understand the events around us and the experiences of others.

Recently, in late October, there was another big incident that happened in Gaza, many media try to cover all kinds of situations there, whether true or false news. The media travels far and almost all people around the world are aware of it. In light of the brotherhood solidarity, Muslims all over the world have united to boycott products of Israeli and international companies that are complicit in violations of Palestinian rights by following the BDS (Boycott, Divest, and Sanction) movement, to show that we stand with the Palestinians. The BDS movement is more of a strategy than a group. Its goal is to "end international support for Israel's oppression of Palestinians and pressure Israel to comply with international law." Even though this movement started in 2005, people are starting to be aware of it because of the power of social media and digital activism. Boycott can be understood as a way to withhold buying products from certain companies or organisations and it is considered as a form of ethical consumption as followed by (Smith, 1987). One of the examples of how well boycotts worked was during the apartheid rule in South Africa, where they managed to bring down the government (Shiblak, 2013). Nowadays the ongoing boycott of Israeli products has not only put economic pressure on Israel but also put economic pressure on Israel and forced some companies to reconsider their involvement in the Palestinian-occupied territories.

In finance, the media is one of the most important tools for investors to get information about the market to maximise profits and minimize losses. It also helps the investor to know what assets to hold or buy. Thus, with the boycott movement, the profit of the boycotted products will be reduced, making investors stay away from buying the share. Or those that are more sentimental will withdraw from the share as a form of boycott. Some scholars have studied multiple connections between media and asset prices including bonds and share price. Further, Zhang *et al*. (2022) studied emotional reactions to internet news and bond markets in China and have proven that investors have a certain reaction towards certain news on the internet regarding the bond market. Tetlock (2010) in his studies found that public news serves as a crucial factor in providing information to certain investors, while not having the same effect on others. If a specific group of investors possess the ability to anticipate and engage in trading based on forthcoming news, the effect of the news on prices will be diminished. However, it is still unclear whether there is a strong connection between media reports and the share price of the direct target companies. This article focuses on how media plays a role in determining share price trends especially for those that are directly linked with the media reports and covers. Within this background, this study primarily aimed to see the relationship between the Israeli-Palestinian Conflict with the boycotted products' share prices in a certain period. However, the insufficient resources to employ specific web scraping techniques to gather all of the news, articles, or public opinions regarding this conflict is considered this study's limitation. Thus, we examine the data related to demonstration events, political violence events, civilian targeting events, political violence fatalities, as well as civilian targeting fatalities in Palestine to proxy the "rising tension" indicator of the Israeli-Palestinian Conflict throughout a certain period. This proxy is also considered and justified by Gartner and Segura's (1998) research that mainly discussed how to determine models of war, casualties, and public opinion. Furthermore, this study modifies the study from Sharif *et al*. (2020) by replacing COVID-19 from their study with the Israeli-Palestinian Conflict and extending them with the nexus analysis with the Geopolitical Risk Index (GPR) as an addition to other variables such as the stock market, crude oil price, and Economic Policy Uncertainty (EPU).

With the aforementioned justifications, this article contributes by analysing the connectedness and the lead-lag interplay between the Israeli-Palestinian Conflict, Boycotted Products' Stock Shares, Geopolitical Risk, Policy Uncertainty, and Oil Prices from January 2016 to December 2023 based on a frequency-based approach. To accomplish this goal, we employ Wavelet Analysis where we apply the Continuous Wavelet Transform (CWT) and Wavelet Coherence (WC), along with panel data regression and Granger causality to enrich the analysis. The reasons for using Wavelet Analysis are because firstly, it enables time series data to be decomposed into several scales, which might uncover relationships that are not readily apparent in the overall data. Second, it is flexible and doesn't need strong assumptions about how the data is generated as it can effectively depict complex data without having prior knowledge of its underlying functional structure (He & Nguyen, 2015). The structure of the paper is as follows: A review of earlier research on these subjects that supports the choice of

specific factors used in this study can be found in Part 2. The panel data regression strategy, granger causality analysis, wavelet coherence analysis, and other techniques used in this study are explained in Part 3. The main discussion and analysis of fresh empirical data about the relationship between the aforementioned variables are expanded upon in Part 4. In conclusion, this study offers a comprehensive analysis of the findings along with some policy implications and suggestions for further investigation.

2. LITERATURE REVIEW

Theoretical Foundations

In structuring the paper, there is a theory that is being followed. The main inference is to look at how media sentiment has been shown to have an impact on stock return. This hypothesis stems from financial behaviour where researchers realize that media is one of the low-cost information that can help investors overcome their rational ignorance. Based on the "spiral of silence" theory of communication by Elisabeth Noelle-Neumann in 1974, it mainly discussed how the inclination of individuals to convey their opinions was dependent upon their perception of the general public's opinion. In our study, it can be understood how investors react towards media sentiments on the targeted companies. Studies by Jiao and Walther (2016), categorize two types of media, which are traditional news media and social media coverage and both types of media have different impacts on investors. Several studies determine how the public perceives the media whether it is beneficial or not for them including how much ownership of media, whether it is by government or wealthy private institutions (Djankov *et al*., 2003). This is further acknowledged when Thaler (2019), stated that people respond to any information that relates to their interests regarding an asset's price.

Previous Studies

As mentioned before, media reporting can exert a large causal influence on financial markets, and even when there is no causal channel, media content can be a useful window into investors' and managers' beliefs. The media often represents and influences the expectations of investors and managers for companies, impacting the supply and demand for securities, as well as their financial strategies. Media can influence the market by attracting investors' attention to certain things. Behavioural finance theory studies show that the asset's price depends on how people in the market respond concerning new information or information that affects them (Thaler, 2019). Inevitably, investors' responses using their feelings, general knowledge, and experience to information or news may be one of the main influences on their decision regarding purchasing and selling their assets, which results in irrational investment behaviour (Fischer, 2011).

A study by Merton (1987) in which he looked at a model of incomplete information in which some investors don't know about a group of securities and don't include them in their portfolios. The study proves that stock prices are low and expected returns are high for companies with small investor groups leading to understanding that a company's exposure in the media could bring in more investors, which would raise its market value and lower its expected return. (Tetlock *et al*., 2007) conclude three findings in their paper which are that bad media coverage about companies will result in the companies' loss of profit. This is because the news isn't just extra information, but it also shows the basics of companies that would be hard to measure quantitatively. The second finding is that unfavourable information is slightly delayed by the stock market before it is reflected in pricing and lastly, negative media being discussed in news articles is a great way to forecast the profits and returns of certain companies. Nowadays, with the use of various social media, the news about companies is also being traded easily and quickly. What happens in companies in the US can be spread to other countries in the blink of an eye. Several studies (Bollen & Mao, 2011), (Bartov *et al*., 2016) and (Gu & Kurov, 2020) have examined the predictive return on several targeted companies from social media sentiments. It shows that there are sentiments that contain information that can be used to analyse share prices. (Zhang *et al*., 2022), studied sentiments on internet news on China's bond market. Lastly, Jiao and Walther (2016) stated that social media coverage forecasts high volatility while news coverage forecasts low trading volatility.

Research Gaps

Existing literature has looked at various impacts of media on stocks, however to the best of our knowledge, no study has looked into specific media impact on a well-known company's stock, especially those that can be classified as giants in their industry. It is important to also look at whether these companies are affected because of public opinion or not. Table 1 shows the overviews of various research and identifies the existing knowledge gaps that are used to construct this paper.

TABLE 1: OVERVIEW OF VARIOUS RESEARCH AND RESEARCH GAP

ARTICLE	FOCUS	FINDINGS	METHOD	GAP
(Antweiler & Frank, 2001)	The research analyzed 1.5 million interactions on Yahoo! Finance and Raging Bull platforms that specifically discussed 45 firms listed in the Dow Jones Industrial Average and the Dow Jones Internet Index.	The study concludes that Internet stock message boards are related to stock markets.	Naïve Bayes algorithm	In the study, the media used is a direct media that specifically discusses stocks rather than an indirect impact caused by public opinion.
(Jiao & Walther, 2016)	The research shows how investors react differently in news media and social media.	The study has two findings, which are social media coverage predicts high volatility for the next period while news media coverage predicts low volatility.	The study developed a general model of asset pricing and information processing.	The study uses certain buzz for measuring sentiments from the media, while our study uses the sentiments from the public that agreed to do consumer boycott.
(Azar & Lo, 2016),	The research focuses on the content of tweets that can be used to predict future returns of the company and focus on the Federal Open Market Committee (FOMC) announcements.	Tweets do contain information, which can be used to predict returns even after controlling for common market factors.	Polarity Score to Twitter from Natural Language Processing Techniques.	The study examines the informational role of Twitter sentiment-specific events by focusing on FOMC rather than emotional sentiments.
(Zhang et al., 2022)	The study examines how two important bond participants react to financial news on the	Credit rating agencies (CRAs) and bond investors exhibit disparate responses to	Multiple Regression	The study examines how two important bond participants react to financial news on the

	internet. The two bond participants are credit rating agencies (CRAs) and bond investors.	financial news disseminated on the Internet.		internet. The two bond participants are credit rating agencies (CRAs) and bond investors.
(Dong *et al.*, 2022)	The research examines the influence of media sentiment on stock prices in the STAR market via the perspective of behavioural finance.	The influence of media sentiments on the efficiency of IPO pricing is not significant. Favourable media sentiments have positive effects on (IPO) first-day returns. COVID-19 had a more significant influence on IPO first-day performance through media sentiments.	Machine Learning-Based Text Analysis Technique	The study looks at the IPO stock price rather than a stable company that has been listed for more than 5 years.
(Gu & Kurov, 2020)	This study analyzes the informational value of firm-specific sentiment derived from Twitter messages.	Twitter sentiment analysis offers useful insights that can be utilized to forecast future stock returns at the firm level.	Fama-MacBeth Regression	The study looks at Twitter sentiments at firm levels and not at how the public perceives the firm.
Current study	This paper studies the correlation of media on consumer boycotting targeted companies and their stock price.		Wavelet-Based Approach	The study looks at stable companies' stock and whether they are affected by the media.

Source: Table by Authors

Effectiveness of Boycott

Throughout history, consumer boycotts have been used to pressure some companies or the government to take action. They serve to advocate for social, economic, and political equality and to combat injustices they have witnessed. According to Micheletti and Didem Oral (2018), the four categories of political consumption are consumer boycotts, buycotts, discursive acts, and lifestyle adjustments. A consumer boycott is a deliberate strategy to attain certain aims or objectives by abstaining from purchasing or consuming certain products or services. With a great number of audiences, these boycotts are capable of effecting ethical changes in society (Lekakis, 2018).

A study by Koku *et al*. (1997) shows that most of the time, companies that are targeted by boycotts and threats of boycott don't lose any money. Targeted companies, on the other hand, usually get richer when they are being targeted. But these kinds of wins are possible because companies are usually main products like Google, Wix and Intel where the market capitalizations are big and stable, and they are also active in promoting their products. One of the reasons for that company to get richer is also because when the stock price decreases, those who do not boycott the product will buy and support them because of the same reason, which is a stable market. Nevertheless, the study cannot measure the success of negotiating with the targeted companies. Regarding this effect of consumer boycotts, the conflict between Russia and Ukraine serves as an instance of how boycotts have an indirect rather than direct impact. Amidst the early phases of the Russian invasion, some companies like McDonald's, Coca-Cola, and Apple withdrew or temporarily suspended their activities in Russia (Al Jazeera, 2022). While boycotts may not directly endanger the state's economy or a company's sales, they effectively convey dissatisfaction among stakeholders. Investors may perceive this dissatisfaction as a potential risk to a firm's reputation and position.

The same can be seen from our study where there is no correlation between media social coverage of the Israeli-Palestinian Conflict and stock prices of the boycotted companies. Nonetheless, there are plenty of examples where there are indirect effects for the company for example, according to Al Jazeera (2024), Domino's Pizza had a decline of 8.9 per cent in same-store sales during the second half of 2023 mainly by consumers in Muslim-populated country like Malaysia and Domino's Pizza Israel has deleted posts related to supporting the Israel Defense Forces (IDF) and mocking of Palestinian prisoner in response to the termination of its sponsorship by the Trinity College Dublin Students' Union (TCDSU) for the company's UK and Ireland franchise over the posts (Kent, 2024). (BBC, 2024) stated that McDonald's, in almost four years, had its first quarterly revenue decline, primarily due to sluggish development in its foreign business segment. The sales increase globally except in the Middle East, China, and India was 0.7% in the fourth quarter of 2023, far lower than what the market anticipated. On the other hand, McDonald's franchises in Saudi Arabia, Egyptian, Jordanian, and Turkish have all declared that they will donate millions of dollars to help the Palestinians (Blair, 2024). From the examples, we can see that the effect of media in these situations is prone to be rather indirect than directly to the targeted companies.

3. METHODOLOGY

Data, Sample, and Model Development

The study's data set includes monthly observations of demonstration, political violence and civilian targeting events and fatalities in Palestine, the listed boycotted products' stock prices, crude oil price, policy uncertainty index, and geopolitical risk index. The data collection period spans from January 2016 to December 2023, resulting in 96 observations for the study. This research also extracted the data based on monthly due to its availability for the related socio-political variables with the Palestine-Israeli conflict. A detailed explanation of each variable can be seen in the table below.

TABLE 2: DATA AND OPERATIONAL VARIABLES

Variable	Code	Definition	Source of Data
Demonstration Events	Demonstration	The total number of reported demonstration events includes protests and riots except for mob violence.	The Humanitarian Data Exchange, https://data.humdata.org/
Political Violence & Civilian Targeting Event	PolCiv_Event	The total number of reported civilian targeting events and number of reported political violence events	The Humanitarian Data Exchange, https://data.humdata.org/
Political Violence &	PolCiv_Fatalities	The total number of reported civilian targeting fatalities and	The Humanitarian Data Exchange,

Variable	Code	Definition	Source of Data
Civilian Targeting Fatalities		number of reported political violence fatalities	https://data.humdata.org/
Wix.Com Ltd	WIX	Monthly return of WIX share prices	https://www.investing.com/
Yum! Brands Inc	YUM	Monthly return of YUM share prices	https://www.investing.com/
Restaurant Brands International Inc	QSR	Monthly return of QSR share prices	https://www.investing.com/
Papa John's International Inc	PZZA	Monthly return of PZZA share prices	https://www.investing.com/
Domino's Pizza Inc	DPZ	Monthly return of DPZ share prices	https://www.investing.com/
McDonald's Corporation's Stock	MCD	Monthly return of MCD share prices	https://www.investing.com/
Economic Policy Uncertainty	EPU	EPU index reflects the relative frequency of own-country newspaper articles that contain a trio of terms about the economy (E), policy (P) and uncertainty (U)	https://www.policyuncertainty.com/
Geopolitical Risk Index	GPR	A new index of undesirable geopolitical events based on the number of media stories on geopolitical tensions is examined, together with its historical development and economic implications since 1900.	https://www.policyuncertainty.com/
Global Price of WTI Crude	WTI	Global price of WTI crude in U.S. Dollars per Barrel	International Monetary Fund Data

Source: Table by Authors

Generally, the research methods employed in this study follow the way how Sharif *et al.* (2020) did in their study on *"COVID-19 pandemic, oil prices, stock market, geopolitical risk and policy uncertainty nexus in the US economy: Fresh evidence from the wavelet-based approach"*. This study justifies the significant causality of two variables based on Granger causality before the correlation between those two variables is examined through biwavelet coherence analysis. Furthermore, the panel data regression is added to the discussion to enrich the dynamic of change in the social phenomena as mentioned in Baltagi (2008).

FIGURE 1: LIST OF BOYCOTTED PRODUCTS

Source: bdsmovement.net

First, in choosing the boycotted-products stock price, we specify certain products from the BDS movement website that are recommended from the organic boycott targets. According to BDS website, this category means that these products are boycotted by the grassroots organic movements not initiated by the BDS movement. BDS backs these boycott efforts because these businesses, or their Israeli affiliates or branches, have publicly backed apartheid Israel and/or generously donated in kind to the Israeli military amid the ongoing massacre. If these grassroots initiatives aren't already naturally occurring in your community, we advise concentrating your efforts on the aforementioned strategic campaigns. Recently in January 2024, a Malaysian McDonald's franchisee launched a Strategic Lawsuit Against Public Participation (SLAPP) action alleging slander against campaigners for solidarity. Rather than confronting the Israel franchisee for its sponsorship of genocide, the BDS movement is now seeing corporate intimidation of activists. Therefore, the movements are urging an intensified boycott of McDonald's until the parent firm acts and breaks the brand's complicity for these two reasons.

Based on the above discussion, this research selects six stock prices which are MCD, DPZ, PZZA, QSR (Burger King holding company), WIX, and YUM (which holds the Pizza Hut company). Then, this study tries to enrich the analysis by adding the EPU variable as recommended by Baker *et al.* (2016), GPR as designed by Caldara and Iacovellio (2018), as well as the WTI which is also examined by Sharif *et al.* (2020). For the EPU variable, we utilize the global-scale data (GEPU) which is a GDP-weighted average of 16 countries' national EPU indices. These 16 countries account for two-thirds of the world's output (Davis, 2016). An excellent worldwide EPU index that can capture the uncertainty of economic policy from a global standpoint is the GEPU Index. One important metric in economic studies that can be used to forecast a recession is Global Economic Policy Uncertainty or GEPU. Business owners lower their investments when uncertainty is high, which prolongs the post-recession recovery (Kaveh-Yazdy & Zarivzadeh, 2021).

One textual indicator of geopolitical risk is the GPR index. The amount of stories in significant English-language newspapers that highlight potentially dangerous geopolitical events and issues is how it is determined. The amount of articles that address growing geopolitical threats is tallied each month and divided by the total number of articles that are published (Caldara & Iacovellio, 2018). Greater likelihood of disasters, more substantial downside risks, decreased investment, and decreased employment are all correlated with higher geopolitical risk. Additionally, it may result in increased loan costs, stricter non-price terms, and higher loan prices for bank loans (Caldara & Iacoviello, 2022).

Panel Data Regression

Panel techniques provide for a more thorough and in-depth analysis when examining intricate social phenomena with several dimensions related to time, context, and the intricacy of interdependent variables (Gil-García and Puron-Cid, 2015). Comparing panel data models with standard OLS regression yields several advantages: more information can be obtained, larger sample size can be obtained, variability in cross-section units and time dimensions can be captured, and the dynamics of change within social phenomena can be more accurately described (Baltagi, 2008). These then serve as the explanations for how the panel data improves the model formulation and estimations. Therefore, this study has 3 models for panel data regression with different dependent variables according to the Israeli-Palestinian Conflict data as mentioned earlier, which are described as follows:

These three equations have the same independent variables to be observed but have different dependent variables. The first equation stands for the demonstration events as the explained variables, while the political and civilian targeting events are for the clarity in the second equation, and the fatalities numbers for political and civilian targeting are posited as the output variables in the third equation. To distinguish between fixed and random effects and identify the best model, this study then applied the Hausman test, following Gujarati and Porter (2012) and Wooldridge *et al*. (2016). The Hausman test is then used to determine which of the fixed-effects and random-effects models is the best fit. According to Hausman (1978), the Hausman test can assist you in selecting between a fixed effects model and a random effects model while conducting panel data analysis, which is the analysis of data over some time. The alternative hypothesis is that the model is fixed effects, while the null hypothesis is that the preferred model is random effects.

The panel data method also has a classic assumption test. In theory, the classical assumption test in Ordinary Least Square (OLS) consists of linearity, autocorrelation, heteroscedasticity, multicollinearity, and normality tests (Gujarati & Porter, 2012). However, in the panel data method, the classical assumption test is only performed to test heteroscedasticity. Regarding the problem of multicollinearity, Hanushek (1977) in his book states that multicollinearity will not affect the bias of the resulting estimated coefficients. Multicollinearity will only increase the standard error of a variable so that it will increase the p-value and decrease the statistical significance value. Thus, this study will not take into account the multicollinearity effect if after testing the model the resulting variance inflation factor (VIF) value exceeds 10. Meanwhile, the linearity test is also not carried out in this panel data method because the assumption that the panel model is linear has been fulfilled. Next, the autocorrelation test is also not carried out because the panel data has a different time dimension than the time-series data model. The normality test is also not practised in the panel data method because it is not a general requirement of BLUE (Best Linear Unbiased Estimator). Within that notion and some limitations in the panel data regressions, this study only utilizes the panel regression to know the significant correlation of each independent variable in those 3 models. Hence, the significant variable can be further analyzed with Granger causality before the wavelet coherence analysis is conducted.

EQUATION 1: PANEL DATA REGRESSION

$$Demonstration = \alpha + \beta_1 WIX + \beta_2 YUM + \beta_3 QSR + \beta_4 PZZA + \beta_5 DPZ + \beta_6 MCD + \beta_7 EPU + \beta_8 GPR + \beta_9 WTI + \varepsilon_{it} \quad (1)$$

$$PolCiv\_Event = \alpha + \beta_1 WIX + \beta_2 YUM + \beta_3 QSR + \beta_4 PZZA + \beta_5 DPZ + \beta_6 MCD + \beta_7 EPU + \beta_8 GPR + \beta_9 WTI + \varepsilon_{it} \quad (2)$$

$$PolCiv\_Fatalities = \alpha + \beta_1 WIX + \beta_2 YUM + \beta_3 QSR + \beta_4 PZZA + \beta_5 DPZ + \beta_6 MCD + \beta_7 EPU + \beta_8 GPR + \beta_9 WTI + \varepsilon_{it} \quad (3)$$

Granger Causality

The Granger test is based on a typical bivariate dynamic structural framework, which can be described as follows, according to Thornton & Batten (1985):

EQUATION 2: THORNTON & BATTEN

$$y_t + \alpha x_t = L(\beta)^H y_{t-1} + L(\delta)^K x_{t-1} + \varepsilon_{1t} \quad (4)$$
$$x_t + \delta y_t = L(\lambda)^l x_{t-1} + L(\mu)^N y_{t-1} + \varepsilon_{2t} \quad (5)$$

x and y are jointly determined endogenous variables in the maintained structure, with $iid(0, \sigma_i^2), i = 1,2$ being assumed to be ε_1 and ε_2. To keep things simple, let $E(\varepsilon_{1t}\varepsilon_{2t'}) = 0$ for all t and t', and let $L(.)^J$ stands for the polynomial lag operator of order J, for instance, $L(\beta)^J y_{t-1} = \beta_1 y_{t-1} + \beta_2 y_{t-2} + \ldots + \beta_j y_{t-j}$. The reduced form of the model is

EQUATION 3: THORNTON & BATTEN REDUCED FORM

$$y_t = L(\pi_{11})^G y_{t-1} + L(\pi_{12})^P x_{t-1} + \mu_{1t} \quad (6)$$
$$x_t = L(\pi_{21})^G y_{t-1} + L(\pi_{22})^P x_{t-1} + \mu_{2t} \quad (7)$$

where πs are nonlinear functions of the structural parameters in (4&5), and G and P are the greater of H or N and K or l, respectively. Meanwhile, the usual formulas for the Granger version of the causality test are found in equations (6&7).

The following theories are investigated in order to look into Granger causality between x and y: $L(\pi_{12})^P = 0$ and $L(\pi_{21})^G = 0$ and B. X and y are independent series if they are both incapable of being rejected. The rejection of both indicates "feedback" between x and y. Unidirectional causation from x to y exists if the former hypothesis is rejected but the latter is not; conversely, if the latter is rejected and the former is not, the opposite is true.

The typical model selection criteria, according to Thornton & Batten (1985), trade off the inefficiency linked to overparameterization against the bias associated with a parsimonious parameterization. Different criteria can choose substantially different lag structures because they assign varying weights to the trade-off between bias and efficiency. In general, the estimates will be impartial but ineffective if P, G, or both are excessively large. Therefore, there are two criteria for deciding lag-length selection which consist of the Akaike Information Criterion (AIC) and the Bayesian Estimation Criterion (BEC).

Moreover, AIC was suggested by Hsiao (1981) and included in Akaike's (1970) final prediction error (FPE). It selects lags that are too lengthy on average in big samples, making it asymptotically inefficient. However, it places a substantially higher value on unbiasedness than efficiency. The second is the estimating criterion for Bayesian processes (BEC), proposed by Geweke & Meese (1981). It is asymptotically efficient because it typically chooses the appropriate latency. However, because of its significant benefit as described in Kery & Royle (2020), this study will solely use the analysis based on the magnitude of AIC. When calculating the marginal likelihood, AIC offers the benefit of automatic model selection. It also generates weights that are immediately applicable for model-averaging predictions or parameters with a unified interpretation across models.

The Continuous Wavelet Transforms (CWT)

By taking into account the widely used methodology, i.e., wavelet coherence, regardless of the time series, the relationship between the Israel-Palestine conflict, boycotted products stock price, geopolitical risk index (GPR), Economic policy uncertainty (EPU), and crude oil prices can be

examined through periods. From a practical standpoint, the cross wavelet transform (CWT) and cross wavelet power are defined initially. According to Torrence and Compo (1998), two-time sequence a(t) and b(t) can provide clarification on the cross-wavelet transform as follows:

EQUATION 4: CROSS WAVELET

$$N_{ab}(p.q) = N_{\alpha}(p.q)N_b^*(p,q) \tag{8}$$

where two continuous transforms of a (t) and b (t) are represented by $N_{\alpha}(p.q)$ and $N_b^*(p,q)$, respectively; p and q indicate the location index and measure, and (*) represents the composite conjugate. Wavelet power by $|N_{\alpha}(p.q)|$ can be computed using the cross-wavelet transform. The cross-wavelet power spectra divide the region in the time-frequency domain associated with the time series under investigation where a strong energy concentration (cumulus of the constrained variance) is perceived.

The wavelet coherence technique (WCT) can identify the precise zones in the time-frequency domain where significant and unforeseen changes occur in the co-movement patterns of the observed time series. According to Torrence and Webster (1998), the coefficient of adjusted wavelet coherence has the following equation:

EQUATION 5: ADJUSTED WAVELET COHERENCE

$$W^2(p.q) = \frac{\left|M\left(M^{-1}N_{\alpha b}(p,q)\right)\right|^2}{M(M^{-1}|N_{\alpha}(p,q)|^2)M(M^{-1}|N_b(p,q)|^2)} \tag{9}$$

The smoothing mechanism is denoted by M. The squared wavelet coherence coefficient's range is displayed by $0 \leq W^2(p,q) \leq 1$. A high correlation is indicated by proximity to unity, whereas the absence of correlation is indicated by proximity to zero. The Monte Carlo technique is applied to investigate the theoretical distribution of wavelet coherence.

4. RESULTS AND DISCUSSIONS

In this section, the analysis results based on panel regression, granger causality, and wavelet coherence are elaborated in a sequence manner.

Panel Regression Result

According to Table 3, the Hausman test result shows that two models will be analyzed in the random-effect model, while one model will be examined through the fixed-effect model. The first and third model, which posit Demonstration and PolCiv, Fatalities as their dependent variables, have chi-squared values for more than the alpha value of 5%. Hence, those two models' hypotheses do not reject their null hypothesis. On the other hand, the second model in which PolCiv_Event as its dependent explanatory has chi-squared for less than 5% and resulted in its null hypothesis rejection.

TABLE 3: HAUSMAN TEST RESULT

Model	x^2	Decision	Results
1st Model (Demonstration)	0.098	Do not reject the null hypothesis	Random-Effect Model is preferred
2nd Model (PolCiv_Event)	0.000	Do reject the null hypothesis	Fixed-Effect Model is preferred
3rd Model (PolCiv_Fatalities)	0.580	Do not reject the null hypothesis	Random-Effect Model is preferred

Source: Table by Authors

The panel data regression result is presented in Table 4 below. Based on the first model, there are two variables which significantly correlate with the Demonstration as the dependent variable. YUM has a significant level of 5% while WTI has a 1% level of significance in the first model. In addition, the geopolitical risk index (GPR) shows a significance level of 1% for both the second and third models. Therefore, the relation between those significant variables which are Demonstration-YUM, Demonstration-WTI, PolCiv_Event-GPR, and PolCiv_Fatalities-GPR will further be examined for their correlations in the wavelet analysis.

TABLE 4: PANEL REGRESSION RESULTS

Independent variables	Dependent Variables		
	Demonstration	PolCiv Event	PolCiv Fatalities
WIX	-31.90721	4.063015	759.0086
YUM	-161.4606**	-489.9247	-4429.378
QSR	35.37755	-26.97113	702.0885
PZZA	-4.745995	-29.55683	1088.713
DPZ	8.156142	244.3844	898.7388
MCD	192.4924	1064.863	5256.887
EPU	-.0664357	-.2727229	-.4815271
GPR	-.0751505	3.964574***	21.1857***
WTI	1.600275***	-2.266559	-.9364126
Cons	3.710217	128.0493	-1737.655
R-Squared within	0.0616	0.1090	0.1315
R-Squared Between	0.6375	0.0444	0.1370
R-Squared Overall	0.2288	0.0840	0.1282

*Note: *** significant at 1%, ** significant at 5%, * significant at 10%*

Source: Table by Authors

Granger Causality Result

Granger causality measures the degree of effective connectivity, which refers to the causal interactions between elements. It quantifies the extent to which the signal in one variable can predict the signal in another variable (Geweke, 1982; Granger, 1969). Due to the significance of this stage in Granger causality testing, the lag length selection is typically determined by objective criteria. The Akaike information criterion is commonly employed for selecting the appropriate lag length (Akaike, 1974). The lag length selection in this study is determined by the minimum value of the Akaike information criteria (11,11998), resulting in a lag length of 1. Table 5 shows the outcome of the Granger causality.

TABLE 5: GRANGER CAUSALITY RESULTS

DV	**IVs**											
	Demon-sration	PolCiv Event	PolCiv Fatalities	WIX	YUM	QSR	PZZA	DPZ	MCD	WTI	EPU	GPR
Demonstration	-	2.887*	0.678	0.0013	1.9753	1.3853	0.5149	2.3748	0.1929	0.0103	1.0121	0.0344
PolCiv Event	1.802	-	0.248	2.6415	0.0089	0.5672	0.3901	1.9293	1.0027	0.0016	0.3220	0.0698
PolCiv Fatalities	3.980**	0.136	-	3.8933*	0.2782	1.4783	0.7182	2.2658	2.4551	0.4927	0.0925	0.0014
WIX	0.122	1.528	0.774	-	0.1352	1.8489	0.0198	0.1944	0.4128	1.5592	2.3523	2.7144
YUM	1.165	0.545	0.579	0.1623	-	4.0488**	0.2101	0.1380	0.2611	6.1677**	4.5270**	1.0566
QSR	1.235	0.671	0.547	0.3030	0.8812	-	1.1836	8.7080***	1.4325	1.9666	2.6005	2.8E-07
PZZA	0.049	1.259	1.080	2.0036	0.0475	0.4292	-	0.0346	0.0937	3.4908*	3.1243*	2.6574
DPZ	0.698	2.485	0.544	0.0350	1.932	0.7860	6.1E-0	-	3.8322*	0.9112	0.6565	0.6768
MCD	0.018	3.614*	2.613	0.5833	0.0024	1.5975	1.8588	0.1174	-	0.4026	2.2659	1.8653
WTI	10.09	6.490	2.232	7.3224	2.5496	1.9243	5.9827	1.5449	0.1238	-	0.6174	7.1790

	***	**		***			**					***
EPU	0.0005	0.202	0.036	0.39158	0.4633	1.6279	0.5296	2.1011	0.6134	0.0434	-	0.69763
GPR	0.041	1.028	0.001	0.66687	1.05666	0.32121	4.05573 **	0.56852	0.00372	0.5941	0.2612	-

*Note: *** significant at 1%, ** significant at 5%, * significant at 10%, DV = dependent variable, IVs=Independent variables*

Source: Table by Authors

The Granger causality results provide insight into the complex causal connections between variables, specifically concerning the Israeli-Palestinian Conflict and its possible influence on some equities that are being boycotted owing to the perceived endorsement of Israel. There is a noteworthy association between Political Violence and Civilian Targeting (PolCiv) Fatalities and Demonstrations, where PolCiv Fatalities substantially influence Demonstrations at a 5% significance level according to the Granger causality test. This suggests that the presence of deaths in the conflict affects future protests and establishes a possible link between the intensity of events and public responses (Weiss *et al*., 2023). Moreover, rallies, like the one led by Granger, resulted in political violence and incidents of targeting civilians. This suggests a connection in time between public protests and subsequent political events throughout the conflict (Asali *et al*., 2024).

The Israeli-Palestinian Conflict has a low influence on the chosen stocks within the financial industry. Bröckerhoff & Qassoum (2021) argue that the conflict environment also shapes and limits the decision-making and actions of political consumers so that the interests of participation in boycotts do not have a greater impact. There is a clear correlation between the number of fatalities in the political and civil sector and the company Wix.com Ltd (WIX), with a significance level of 10%. Causal links exert a greater influence on other stock assets. For example, the stock prices of Yum Brands (YUM) about Restaurant Brands International Inc (QSR), the stock prices of QSR of Domino's Pizza Inc (DPZ), and the stock prices of DPZ concerning McDonald's Corp (MCD). These stocks are subject to multiple factors that expose them to possible vulnerabilities arising from the ongoing conflict (Jha & Shayo, 2019). YUM's stock price is notably affected by the stock of Wix.com Ltd (WIX) at a statistically significant level of 5%. This highlights the susceptibility of YUM's stock to external factors like internet sentiment and web development trends. However, although consumers have the power to boycott, they always fear taking serious, timely steps in buycotting (Buheji & Ahmed, 2023).

Moreover, it has been observed that the price of Crude Oil (WTI) is affected by both WIX and PZZA. Geopolitical risk (GPR) is considered a significant factor affecting the PZZA, indicating that geopolitical events, potentially linked to conflicts, and oil price variations could affect this company's performance. The Granger causality study reveals that there is a significant influence of Crude Oil Price (WTI) on Geopolitical Risk (GPR) at a 5% significance level. This highlights the interconnection between geopolitical uncertainties and global economic situations associated with conflicts (Jha & Shayo, 2019).

The Continuous Wavelet Transforms (CWT)

Wavelet analysis is carried out on variables that have a significance of at least 10% in panel regression analysis and Granger causality. Before examining the wavelet outcome, it is imperative to comprehend the principles of wavelet analysis to make an informed assessment. The horizontal axis represents time, we use the number of observations from January 2016 to December 2023. January 2016-August 2017 (Obs 1-20), September 2017-April 2019 (Obs 21-40), May 2019-December 2020 (Obs 41-60), January 2021-August 2022 (Obs 61-80), and September 2022-December 2023 (Obs 81-96). Meanwhile, the vertical axis represents frequency with larger scales indicating lower frequencies. The wavelet coherence is used to identify the specific areas in time-frequency space where the two times series exhibit a mutual correlation. Warm area (Red) indicates regions with substantial connection, whilst blue indicates weaker dependency between the series. The cold regions (blue) outside the important sections exhibit time and frequencies that are completely independent of the series (Thaker & Mand, 2021).

The arrow in the wavelet coherence plots indicates the temporal correlation (lead or lag) between the analyzed series. A zero-phase difference indicates that the two-time series exhibit synchronous movement on a specific scale. Arrows indicate rightward (→) or leftward (←) direction when the time series are in-phase or in anti-phase (opposition). When the two series are in phase, it signifies that they are moving in the same direction, whereas anti-phase shows that they are moving in the other way. Arrows pointing diagonally to the right-down (↘) or left-up (↖) indicate that the first variable is in a leading position, while arrows going diagonally to the right-up (↗) or left-down (↙) show that the second variable is in a leading position. The table below summarizes the wavelet coherence results that focus on Israeli-Palestinian conflict variables.

TABLE 6: SUMMARY OF TIME-FREQUENCY ANALYSIS-CWA FOR THE ISRAELI-PALESTINIAN CONFLICT

Pairs	Frequency		
	Jan16-Apr19 Colour Dominance: Relationship: Phase:	Apr19-Dec20 Colour Dominance: Relationship: Phase:	Dec20-Dec23 Colour Dominance: Relationship: Phase:
Demonstrations vs PolCiv Events	Red Colour Strong Relationship In-Phase	Red Colour Strong Relationship In-Phase	Red Colour Strong Relationship In-Phase
Demonstrations vs PolCiv Fatalities	Blue Colour Weak Relationship In-Phase	Blue Colour Weak Relationship In-Phase	Red Colour Strong Relationship In-Phase
Demonstrations vs WTI	Mixed Colour Moderatec Relationship In-Phase	Mixed Colour Moderatec Relationship No-Phase	Blue Colour Moderatec Relationship In-Phase
Demonstrations vs YUM	Blue Colour Weak Relationship In-Phase	Blue Colour Moderatec Relationship In-Phase	Blue Colour Weak Relationship In-Phase
PolCiv Events vs MCD	Blue Colour Weak Relationship No-Phase	Blue Colour Weak Relationship No-Phase	Blue Colour Weak Relationship No-Phase
PolCiv Events vs WTI	Blue Colour Weak Relationship In-Phase	Blue Colour Weak Relationship No-Phase	Blue Colour Weak Relationship No-Phase
PolCiv Events vs GPR	Blue Colour Weak Relationship In-Phase	Blue Colour Weak Relationship No-Phase	Blue Colour Weak Relationship No-Phase
PolCiv Fatalities vs WIX	Blue Colour Weak Relationship No-Phase	Blue Colour Weak Relationship No-Phase	Blue Colour Weak Relationship No-Phas
PolCiv Fatalities vs GPR	Blue Colour Weak Relationship	Blue Colour Weak Relationship	Blue Colour Weak Relationship

	No-Phase	No-Phase	In-Phase

Source: Table by Authors

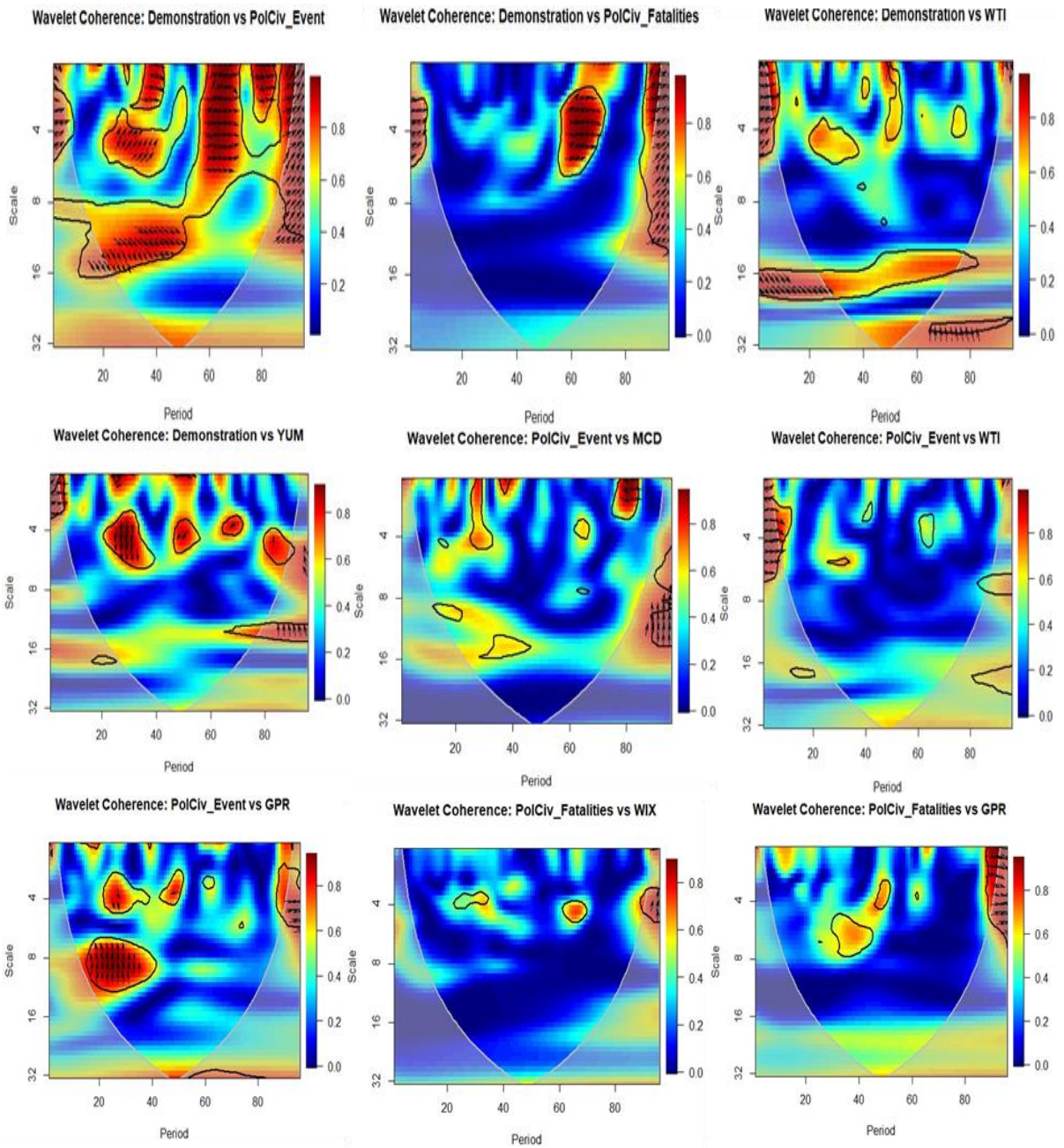

FIGURE 2. WAVELET RESULT FOR ISRAELI-PALESTINIAN CONFLICT

Source: Figure by Authors

The study shows the wavelet results in Figure 2, which focuses more on variables representing the Israeli-Palestinian Conflict. This variable concerns the demonstration variable, Political Violence and Civilian Targeting (PolCiv) Events, and Political Violence and Civilian Targeting (PolCiv) Fatalities. The Demonstrations and PolCiv Events have a strong correlation with dominant warm (red) areas. This result was supported by Weiss *et al*., (2023) that people more participated in political movements during the conflict. The direction of the arrow is shown to the right (→) and right-down (↘), which means this correlation is in the in phase, and the demonstration is leading the PolCiv Event. In contrast, PolCiv Fatalities seem to lead to the Demonstration variable. This can be seen from the limited direction of the arrow. Furthermore, the area is mostly dominated by cold area

(blue colour) indicating a weaker correlation. Product boycotts can have dire consequences for multinational companies and their brands (Knudsenet *et al*., 2011). This is due to the role moral emotions (empathy and anger) play in consumer buying intention regarding pro-Israeli products (Hino, 2023). Another indicator in the issue of boycotting products seems to only affect YUM, MCD, and WIX stocks. The dependency correlation is weak with a dominant of blue. Only demonstration and YUM show high dependency with varied dark arrow directions. Next, we analyze how conflict-related variables influence global indicators such as crude oil prices (WTI) and geopolitical risk (GPR). Demonstrations and PolCiv Events seem to have a connection with WTI but not very strong. This can be seen from the dominant blue colour on the cones. Apart from that, there is no arrow indicating the direction of correlation. This result is supported by Zhang & Guo (2024) that uncertainty because of conflict can influence the price of WTI. Furthermore, PolCiv Events and PolCiv Fatalities appear to have a dependent relationship with Geopolitical risk but on a low scale. This shows that the conflict in Israel affects global geopolitical risks (Asali *et al*., 2024). Table 7 below shows the wavelet result that is more focused on boycotted stock and general variables.

TABLE 7: SUMMARY OF TIME-FREQUENCY ANALYSIS-CWA

Pairs	Frequency		
	Jan16-Apr19 Colour Dominance: Relationship: Phase:	Apr19-Dec20 Colour Dominance: Relationship: Phase:	Dec20-Dec23 Colour Dominance: Relationship: Phase:
WTI vs WIX	Blue Colour Weak Relationship No-Phase	Mixed Colour Moderatec Relationship In-Phase	Mixed Colour Moderatec Relationship In-Phase
YUM vs QSR	Blue Colour Weak Relationship In-Phase	Red Colour Strong Relationship In-Phase	Red Colour Strong Relationship In-Phase
YUM vs WTI	Blue Colour Weak Relationship No-Phase	Mixed Colour Weak Relationship No-Phase	Mixed Colour Weak Relationship No-Phase
YUM vs EPU	Blue Colour Weak Relationship In-Phase	Mixed Colour Weak Relationship In-Phase	Mixed Colour Weak Relationship In-Phase
QSR vs DPZ	Blue Colour Weak Relationship In-Phase	Blue Colour Weak Relationship In-Phase	Blue Colour Weak Relationship In-Phase
WTI vs PZZA	Blue Colour Weak Relationship No-Phase	Mixed Colour Weak Relationship In-Phase	Mixed Colour Weak Relationship In-Phase
PZZA vs EPU	Mixed Colour Weak Relationship In-Phase	Mixed Colour Weak Relationship In-Phase	Blue Colour Weak Relationship No-Phase
GPR vs PZZA	Blue Colour Weak Relationship In-Phase	Mixed Colour Weak Relationship In-Phase	Mixed Colour Weak Relationship In-Phase

DPZ vs MCD	Mixed Colour Weak Relationship In-Phase	Mixed Colour Weak Relationship In-Phase	Mixed Colour Weak Relationship In-Phase
WTI vs GPR	Blue Colour Weak Relationship No-Phase	Mixed Colour Weak Relationship No-Phase	Mixed Colour Weak Relationship In-Phase

Source: Table by Authors

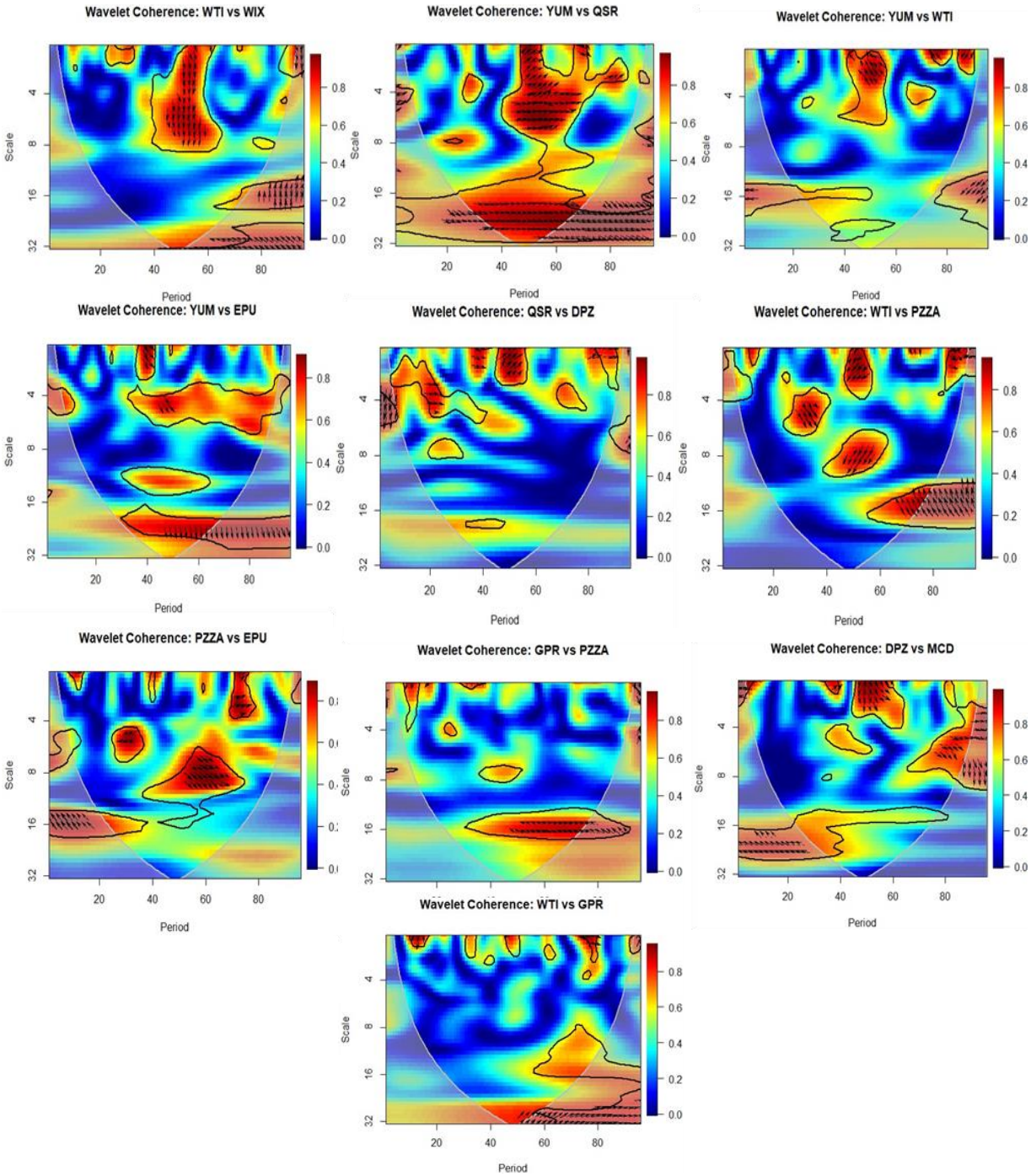

FIGURE 3. GENERAL WAVELET RESULT

Source: Figure by Authors

In Figure 3, a comprehensive analysis of general Wavelet results unveils noteworthy dependencies among various shares, particularly those falling under the Boycott, Divest, and Sanction (BDS) category. Notably, YUM and QSR exhibit a pronounced dependency correlation, indicated by a dominant warm area (red colour) and dark arrow pointing towards the right-down, with YUM taking the lead in this correlation. Further dependencies are observed, such as the correlation between QSR and DPZ, and also DPZ and MCD, with the latter exhibiting a relatively lower dependency. Additionally, WTI demonstrates significant relationships with multiple stock assets, including WIX, YUM, and PZZA. The correlation with WIX is particularly emphasized in warm areas on an intermediate scale, while associations with YUM and PZZA exhibit a lower dependency, characterized by the dominance of the blue area.

Remarkably, WTI also demonstrates a less prominent correlation with geopolitical risk (GPR), marked by a low level of dependency. The Economic Policy Uncertainty Index (EPU) is influenced by YUM and PZZA shares with a low level of significance, suggesting that financial markets play a role in contributing to economic uncertainty (Buheji and Ahmed, 2023). Moreover, WTI exhibits a dependency on GPR, although the influence is lower, as indicated by the dominant blue area in the cone with no arrow direction. This intricate network of dependencies underscores the connectedness of various stocks, including WIX, YUM, QSR, PZZA, DPZ, and MCD, along with commodities such as WTI, and economic indicators like EPU and GPR. It reinforces the idea that financial markets, geopolitical events, and economic policy uncertainties collectively contribute to the complex economic dynamics and uncertainty landscape (Jha & Shayo, 2019).

5. CONCLUSION AND RECOMMENDATIONS

This paper examines the relationships and lead-lag dynamics between the Israeli-Palestinian Conflict, Boycotted Products' Stock Shares, Geopolitical Risk, Policy Uncertainty, and Oil Prices from January 2016 to December 2023. We use Wavelet Analysis to achieve this goal, applying the Wavelet Coherence (WC) and Continuous Wavelet Transform (CWT) in addition to panel data regression and Granger causality to enhance the analysis. As of October 2023, there are many negative media coverages in regards to the Israeli-Palestinian Conflict which leads to consumer boycotts of some companies to pressure them to take action such as to stop sending money to fund Israel or to not support them. Our paper has several findings that can be used as a benchmark. First, Demonstration, PolCiv Event, and PolCiv Fatalities are strongly correlated with those three variables. This is because these three variables are happening in the same place and are related to each other. Second, only a few share prices signify the actual humanitarian condition related to the Israeli-Palestinian Conflict (only WIX and YUM) but with a low significance level. It implies that the awareness of the worldwide population related to the boycotted products is still relatively low when there is rising tension in the Israeli-Palestinian Conflict. Third, boycotted-product stock prices also experience some medium to high correlations with media coverage. Fourth, other global indicator variables such as (WTI, EPU, and GPR) also significantly correlate with the selected boycotted-product share price. Lastly, WTI and GPR surprisingly have a strong correlation magnitude which indicates that the oil price fluctuation is also influenced by the geopolitical tension worldwide.

Overall, we can say that in real life, boycotts towards targeted companies are not able to directly affect the companies as there are two sides of a coin, those who support Palestine and those who support Israel. Because of the nature of the targeted companies which have large market capitalization and are stable, it is hard to boycott them in a place where there is profit, but indirectly, we can see that there is a reduction in the consumption of the targeted companies. In the context of recommendations, we have highlighted several critical points for consideration. Firstly, the importance of Muslims taking a more earnest stance on boycotting products linked to countries that support warfare is emphasized, aiming to mitigate the negative impact of escalating conflicts that could potentially lead to war. This shift in behaviour is advocated to begin at the individual level, with the hope that such actions will signal to the world the necessity to prevent future conflicts and wars for the betterment of humanity. Additionally, it's suggested that future studies should extend their scope to more

comprehensively capture the nuances of the Israeli-Palestinian conflict, including the analysis of public sentiment and the examination of relevant news and articles. Moreover, future research is encouraged to delve deeper into this field by incorporating the use of a time-varying parameter vector autoregression (TVP-VAR) model with stochastic volatility, as proposed by Primiceri in 2005, to explore the interconnectivity between these variables, thereby enriching the research avenues in this area.

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