

DO GEOPOLITICAL SHOCKS SHAPE SECTORAL STOCK PERFORMANCE? EVIDENCE FROM INDONESIA'S EMERGING MARKET

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Abstract:

Background: Geopolitical shocks have emerged as a significant determinant of market volatility and abnormal returns, particularly in emerging markets such as Indonesia. Sectoral indices in the Indonesia Stock Exchange (IDX) respond differently to domestic and global political events, reflecting varying levels of exposure and resilience.

Purpose: This study aims to examine how major geopolitical events affect sectoral stock performance in Indonesia, providing empirical insights for understanding market sensitivity and formulating central bank policy responses.

Design/methodology/approach: Using the event study methodology and the Market Adjusted Model (MAM), this research analyzes abnormal returns (AR) and cumulative abnormal returns (CAR) for ten sectoral indices on the IDX from 2018 to 2025. Seven geopolitical events are observed, including Indonesia's presidential election, the U.S. presidential inauguration, and bilateral trade negotiations between Indonesia and the U.S. A 120-day estimation window and three event windows (± 2 , ± 5 , and ± 10 days) are applied to capture short-term market reactions.

Findings/Result: The findings reveal that the finance, healthcare, and basic materials sectors experienced statistically significant abnormal returns, particularly within the ± 10 -day window, indicating higher exposure to policy-related uncertainty and global sentiment shifts. The technology sector showed notable fluctuations but lacked statistical significance. In contrast, non-cyclical and cyclical sectors demonstrated muted responses, suggesting their defensive market nature.

Conclusion: The results highlight that sectoral responses to geopolitical shocks are asymmetric across industries. These variations underscore the importance of developing more granular and sector-specific financial stability measures. Central bank communication, stress testing with geopolitical risk parameters, and coordination with fiscal authorities are essential to mitigating systemic risks.

Originality/value (State of the art): This study extends the limited literature on geopolitical-financial linkages in Southeast Asian emerging markets by offering a sectoral perspective. It provides actionable policy insights for central banks in managing financial stability under rising geopolitical uncertainty.

Keywords: abnormal return, behavioral finance, emerging markets, event study, geopolitical risk

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INTRODUCTION

The increasing frequency and intensity of geopolitical events ranging from armed conflicts and trade wars to leadership transitions have made political shocks an important source of market volatility. These shocks are particularly influential in emerging markets such as Indonesia, where financial systems are increasingly integrated into the global economy. Over the past two decades, Indonesia has made significant strides in its financial sector, positioning itself among the top ten stock markets in Asia by market capitalization (OECD, 2023; IDX, 2023). The Indonesia Stock Exchange (IDX) has become a key platform for capital formation and portfolio diversification, supporting both corporate expansion and macroeconomic development. However, financial globalization has also introduced vulnerabilities. As barriers to capital flows have declined, shocks in one country can rapidly transmit to others via investor sentiment, cross-border investment, and exchange rate movements (dePaula, 2025; Kaltenbrunner 2015; Gudmundsson, 2017). This increased interdependence has made capital markets in open economies more susceptible to external uncertainty.

Geopolitical risks, such as national elections, international conflicts, and strategic policy shifts can alter investor perceptions and trigger abnormal price movements across asset classes. These risks are not merely theoretical. Studies have shown that markets tend to reprice assets quickly in response to political shocks, often producing abnormal returns, especially when events are unexpected (Xu et al., 2023; Xiao et al., 2023; Lamine 2024). Market reactions, however, are rarely uniform. Sectors tied to commodities, energy, and defense may benefit from certain geopolitical shocks due to speculative inflows or supply disruptions, while sectors such as infrastructure and consumer goods often face demand-side risks (Yudaruddin 2024; Fossung 2021; Abid 2023). In emerging markets like Indonesia, these asymmetric effects are amplified by institutional fragility, currency volatility, and reliance on foreign capital (Frankel 2010; Kuncoro&Fafurida 2023; Beirne 2024). Against this backdrop, the event study methodology has gained prominence as a rigorous tool for analyzing how markets respond to discrete political or macroeconomic events (Afego 2023; Prasetyaningtyas&Irwanto 2020; Ramiah 2017). By measuring abnormal returns before and after major geopolitical events, market can be evaluated on how

efficiently they incorporate new information, and which sectors are most exposed to external shocks. Amid these dynamics, the ability of central banks to anticipate, absorb, and respond to political risk becomes crucial for maintaining financial stability (Klomp, 2009; Nguyen, 2022; Friedrich, 2019; Beutel 2021).

Indonesia, as the largest economy in Southeast Asia, presents a compelling case for such analysis. Its capital market has responded to a wide range of political developments in recent years, including tensions in the South China Sea, the Russia–Ukraine conflict, and multiple national elections (Hudzaifa 2024; Yoshimatsu 2022; Tanjung 2022). The Jakarta Composite Index (IHSG), composed of various sectoral indices such as finance, energy, technology, and infrastructure, offers a rich dataset to evaluate sector-specific sensitivities. Despite this, few empirical studies have investigated how different sectors in Indonesia’s stock market react to geopolitical shocks. Most research focuses on the aggregate index level, overlooking the heterogeneous responses across sectors. This study addresses that gap.

Using an event study methodology anchored in the efficient market hypothesis (Fama, 1970; Lo 2022), we analyze abnormal returns across ten major sectoral indices on the IDX. The selected geopolitical events span from 2018 to 2025 and include both domestic and international developments, such as the Indonesian presidential election, fiscal reforms, and the inauguration of the U.S. President.

The aim is to identify which sectors are most resilient and which are most vulnerable to geopolitical shocks, and to examine the speed and intensity of market responses. In doing so, this research contributes to three key areas: (1) To analyze the impact of geopolitical events and macroeconomic policy shifts on the performance of Indonesia’s sectoral stock indices; (2) To examine the asymmetric and time-dependent nature of sectoral responses to geopolitical risk; and (3) To provide policy implications in managing geopolitical risk transmission to the domestic financial system.

METHODS

This study applies the event study methodology to investigate the short-term impact of selected geopolitical events on the performance of sectoral stock indices in Indonesia. The methodology allows for the

identification of market anomalies through the detection of abnormal returns around specific event dates, based on the assumption of efficient market behavior. The approach adopted in this research follows the classic framework of Campbell et al. (1997), which includes: (1) identifying event dates, (2) defining estimation and event windows, (3) calculating actual and expected returns, (4) estimating abnormal returns (AR), (5) calculating cumulative abnormal returns (CAR), and (6) testing for statistical significance.

The data employed in this study comprises daily closing prices of ten sectoral indices on the Indonesia Stock Exchange (IDX) and the Jakarta Composite Index (IHSG) serving as the market benchmark. The ten sectors include: Finance, Energy, Technology, Healthcare, Basic Materials, Industrials, Infrastructure, Transportation, Consumer Non-Cyclicals, and Consumer Cyclicals. These indices are selected to capture a broad representation of the Indonesian economy and to identify sector-specific reactions to geopolitical events. The dataset spans a multi-year period from 2018 to 2025 and was retrieved from Investing.com and the IDX official database.

Geopolitical events included in this study were selected based on their potential macroeconomic impact and their prominence in national and international financial discourse. The seven events are stated on Table 1. Each event was assumed to represent a distinct and potentially market-moving geopolitical development, and thus suitable for event study analysis.

To estimate the effect of each event, a 120-day estimation window from T-120 to T-11 is used to compute the expected return. The event windows analyzed are symmetric around the event day (T0), capturing both

immediate and short-term market responses: Event Window 1: [-2, +2]; Event Window 2: [-5, +5]; Event Window 3: [-10, +10].

These windows enable the identification of abnormal returns that may occur slightly before or after the official announcement, accounting for information leakage or delayed.

Daily returns for each sectoral index and the market index were calculated using the standard log return formula:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}}$$

Where: R_{it} (return of sector i on day t); P_{it} (closing price of the index). This method is chosen over simple percentage change due to its additive time-series properties and suitability for volatility analysis.

The Market Adjusted Model (MAM) is used to estimate the abnormal return which subtracts the return of the market index (IHSG) from the actual return of the sectoral index on the same day:

$$AR_{it} = R_{it} - R_{mt}$$

Where: R_{mt} (market return (IHSG) on day t)

To assess the aggregate effect of the event over the event window, Cumulative Abnormal Return (CAR) was calculated as the sum of AR_{it} within selected windows:

$$CAR = \sum_{t=t_1}^{t_2} AR_{it}$$

CAR was calculated for multiple intervals: CAR[-2, +2], CAR[-5, +5], and CAR[-10, +10]

Table 1. Geopolitical events

Date	Geopolitical Event
April 1, 2022	Implementation of the 11% VAT policy in Indonesia
October 21, 2022	U.K Prime Minister resignation
February 14, 2024	Indonesian Presidential Election
March 28, 2024	Indonesia signed a deal to purchase Scorpène Evolved submarines from France as part of its military modernization efforts in response to growing maritime security concerns
October 21, 2024	Inauguration of Indonesia President Prabowo Subianto
January 20, 2025	Inauguration of U.S. President Donald Trump
April 25, 2025	Bilateral tariff arrangement between Indonesia and the U.S.

Statistical significance of AR and CAR was tested using one-sample t-tests to evaluate whether the observed returns significantly differed from zero at 1%, 5%, and 10% confidence levels. This helped determine whether the events had a meaningful economic impact on sectoral stock returns. The null hypothesis (H_0) states that the CAR is equal to zero, implying no significant market reaction to the geopolitical event. Rejection of H_0 indicates the presence of statistically significant abnormal returns.

This methodology enables a structured analysis of market behavior during periods of political uncertainty and allows for sector-specific insights into vulnerability and resilience within an emerging market context. All computations were performed using Microsoft Excel. The results were summarized in tables and graphs to illustrate the sectoral reaction patterns around each event, allowing for a comparative assessment of which sectors were most vulnerable or resilient to geopolitical disruptions.

The conceptual framework on Figure 1 illustrates how geopolitical shocks act as the initial trigger affecting Indonesia's capital market. When major domestic or international geopolitical events occur such as elections, fiscal policy shifts, defense procurement, or trade negotiations they introduce uncertainty that is rapidly transmitted to sectoral stock performance in Indonesia. This transmission occurs through three analytical components central to the event study approach such as geopolitical events, sectoral indices, and abnormal returns.

Geopolitical events serve as external shocks that generate new information for the market; sectoral

indices represent the heterogeneous economic structures and varying levels of exposure across industries; and abnormal returns (AR and CAR) capture the market's immediate and cumulative reaction to these shocks. Together, these elements reveal how different sectors react asymmetrically depending on their sensitivity to policy expectations, global linkages, and investor sentiment. The final component of the framework, managerial implications, demonstrates how the patterns of abnormal returns observed across sectors provide actionable insights to design targeted communication strategies, strengthen macroprudential tools, and incorporate geopolitical risk parameters into financial stability surveillance. Thus, the framework positions geopolitical shocks as the upstream driver of sectoral vulnerabilities, while abnormal market reactions serve as diagnostic signals that inform risk management and policy responses in safeguarding Indonesia's financial system

RESULTS

Descriptive Analysis of Sectoral Returns

Understanding sectoral return behavior is crucial for assessing financial market resilience, particularly in an emerging market like Indonesia where different industries may respond differently to geopolitical, fiscal, and monetary shocks. Sectoral indices reflect not only firm-level fundamentals but also macroeconomic sensitivity, policy exposure, and investor sentiment dynamics. By analyzing sectoral returns across sectors, one can infer which industries are more prone to systemic risks, speculative pressures, or defensive stability during turbulent periods.

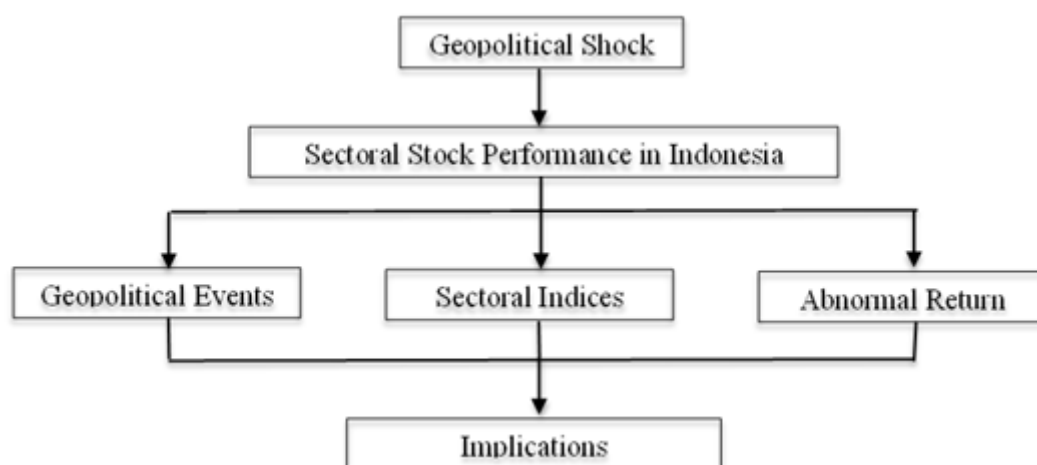


Figure 1. Framework

Table 2 provides summary descriptive statistics for daily sectoral returns of ten sectoral indices in the Indonesia Stock Exchange from 2018 to early 2025. While the average (mean) of returns across all sectors is approximately zero consistent with the expectations of an efficient market the dispersion, asymmetry, and tail behavior of returns vary substantially across sectors, offering valuable insight for both investors and policymakers.

The Technology sector emerges as the most volatile, with the highest standard deviation (0.0209), extreme kurtosis (10.17), and pronounced positive skewness (1.62). This indicates a heavy-tailed distribution with frequent spikes in positive returns, suggesting episodic price surges tied to speculative sentiment or sensitivity to news such as regulatory developments or geopolitical tensions.

Similarly, Healthcare and Infrastructure sectors exhibit high kurtosis values of 8.19 and 9.47, respectively, pointing to infrequent but large shocks. These often stem from health policy changes, pandemic-related announcements, or infrastructure investment decisions, especially those linked to international cooperation or state budget reallocation. The fat-tailed nature of their return distributions signals systemic importance, particularly in times of policy uncertainty, and implies the need for heightened macroprudential surveillance.

Finance, Non-Cyclicals, and Cyclicals show relatively low standard deviations (ranging from 0.0052 to 0.0077) and near-zero skewness, suggesting more stable and symmetric return distributions. These sectors appear to be structurally more insulated from short-term volatility, possibly due to their defensive nature or institutional resilience. Their stability is especially relevant for central bank as it seeks to anchor investor expectations during geopolitical or economic shocks. The Energy sector, meanwhile, shows the widest return range (0.1157), indicating susceptibility to global commodity price movements and supply chain shocks. This finding aligns with previous research emphasizing the strong transmission of global energy shocks into emerging markets (Abbas&Lan, 2020; De Santis 2024), and highlights the importance of energy monitoring in financial stability assessments.

Event Study Analysis and Sectoral Cumulative Abnormal Returns

This study investigates the presence of cumulative abnormal returns (CAR) in response to seven major geopolitical events using three event windows: ± 2 , ± 5 , and ± 10 days. The results of window ± 2 presented in Table 3 demonstrate how sectors in the Indonesian stock market reacted asymmetrically to external shocks.

Tabel 2. Statistical analysis of sectoral returns

	Finance	Energy	Technol- ogy	Health- care	Basic Materials	Industri- als	Infra- structure	Transpor- tation	Non Cy- clicals	Cyclicals
Mean	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Standard Error	0.0002	0.0003	0.0006	0.0003	0.0003	0.0002	0.0003	0.0004	0.0002	0.0002
Median	0.0001	-0.0010	-0.0010	0.0000	0.0003	0.0001	-0.0003	-0.0002	0.0001	0.0001
Mode	0.0001	-0.0010	-0.0009	0.0000	0.0003	0.0001	-0.0003	-0.0002	0.0001	0.0001
Standard Deviation	0.0052	0.0108	0.0209	0.0091	0.0092	0.0079	0.0091	0.0120	0.0062	0.0077
Sample Variance	0.0000	0.0001	0.0004	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000	0.0001
Kurtosis	1.3800	3.0929	10.1727	8.1908	1.7240	2.0447	9.4657	2.3528	1.9766	1.8880
Skewness	0.2430	0.3366	1.6177	0.9519	0.0801	0.1523	1.3052	0.7302	0.2445	0.2040
Range	0.0459	0.1157	0.2580	0.1211	0.0833	0.0697	0.1170	0.0942	0.0550	0.0663
Minimum	-0.0215	-0.0478	-0.1154	-0.0351	-0.0404	-0.0307	-0.0494	-0.0399	-0.0242	-0.0360
Maximum	0.0244	0.0679	0.1426	0.0860	0.0430	0.0390	0.0676	0.0543	0.0308	0.0303
Count	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107

Table 3. Impact of geopolitic events on the sectoral indices (-2,+2)

Sectoral		CAR (2)						
		4/1/22	10/21/22	2/14/24	3/28/24	10/21/24	1/20/25	4/25/25
Finance	CAR	-0.019	0.029	0.002	-0.008	0.006	0.000	0.009
	t-test	-1.613	2.452	0.138	-0.656	0.525	0.014	0.778
	p-value	0.182	0.070*	0.897	0.548	0.628	0.990	0.480
Energy	CAR	0.029	-0.014	-0.008	0.006	0.000	0.000	-0.010
	t-test	1.177	-0.586	-0.343	0.251	0.016	-0.002	-0.432
	p-value	0.304	0.590	0.749	0.814	0.988	0.998	0.688
Technology	CAR	0.042	-0.036	-0.039	0.013	0.026	0.010	-0.009
	t-test	0.891	-0.763	-0.837	0.285	0.559	0.209	-0.188
	p-value	0.423	0.488	0.449	0.789	0.606	0.845	0.860
Healthcare	CAR	0.016	0.014	-0.006	-0.021	-0.033	-0.027	0.044
	t-test	0.785	0.713	-0.292	-1.030	-1.645	-1.326	2.166
	p-value	0.476	0.515	0.785	0.361	0.175	0.256	0.096
Basic Materials	CAR	0.020	-0.024	-0.009	0.020	0.018	-0.018	-0.020
	t-test	0.971	-1.162	-0.436	0.969	0.860	-0.866	-0.992
	p-value	0.386	0.310	0.685	0.387	0.438	0.435	0.377
Industrials	CAR	0.025	0.003	-0.004	-0.006	0.023	-0.021	-0.002
	t-test	1.380	0.194	-0.234	-0.320	1.292	-1.174	-0.090
	p-value	0.240	0.856	0.826	0.765	0.266	0.306	0.933
Infrastructure	CAR	-0.025	-0.009	-0.002	0.004	-0.022	0.013	0.014
	t-test	-1.236	-0.453	-0.103	0.202	-1.084	0.660	0.680
	p-value	0.284	0.674	0.923	0.850	0.339	0.545	0.534
Transportation	CAR	0.028	-0.014	-0.011	-0.085	0.010	-0.022	0.020
	t-test	1.049	-0.534	-0.397	-3.171	0.364	-0.803	0.756
	p-value	0.353	0.622	0.711	0.034**	0.735	0.467	0.492
Non-Cyclicals	CAR	0.021	0.015	-0.004	0.006	0.009	-0.008	0.043
	t-test	1.544	1.056	-0.299	0.447	0.679	-0.588	3.120
	p-value	0.197	0.350	0.780	0.678	0.535	0.588	0.036**
Cyclicals	CAR	-0.018	-0.001	-0.017	0.003	-0.008	-0.002	0.018
	t-test	-1.044	-0.059	-1.011	0.147	-0.468	-0.113	1.068
	p-value	0.355	0.956	0.369	0.890	0.664	0.916	0.346

This study investigates the short-term sectoral responses in Indonesia's stock market to geopolitical events, using a ± 2 -day event window to capture immediate abnormal returns (CAR). Based on Table CAR(2), the Finance sector shows a statistically significant positive abnormal return on October 21st, 2022, with p-value of 0.070, indicating a significance at the 10% level. This date coincides with the resignation of UK Prime Minister Liz Truss, which brought temporary relief to global financial markets by reducing political uncertainty in one of the world's major economies, possibly influencing investor sentiment in emerging markets such as Indonesia. This finding is aligned with previous studies (Lu, 2020) who stated that financial sectors in emerging markets tend to respond positively

to reduced geopolitical ambiguity due to their exposure to foreign capital and regulation-sensitive operations. The Transportation sector exhibits a strong negative reaction on March 28th, 2024, with p-value of 0.034, showing significance at the 5% level. This date aligns with Indonesia's announcement of its purchase of submarines from France, which may have triggered market concerns about increasing military expenditure, potential regional tensions in Natuna waters, or reallocation of public funds away from transport infrastructure.

Furthermore, Non-Cyclicals on April 25th, 2025, record a highly significant positive abnormal return with p-value of 0.036. This market optimism may be

linked to the announcement of Indonesia–U.S. trade tariff negotiations, which potentially signal improved trade stability and consumer goods flow, favorable conditions for non-cyclical sectors such as food, household products, and healthcare suggesting investor preference for defensive stocks during turbulent periods. This supports the findings of Imran (2024) who show that non-cyclical or consumer staple sectors act as safe havens during geopolitical uncertainty, often reflecting more stable earnings expectations. Healthcare and Technology sectors do not show significant abnormal returns throughout the events, despite being perceived as growth or defensive sectors. This result diverges from the literature which often shows healthcare to outperform during uncertainty (Nguyen, 2022). Possible reasons include domestic sector-specific limitations or lagged market reactions. These findings emphasize the heterogeneity of sectoral responses to geopolitical shocks, reinforcing previous work by Chung&Lim (2024); Yudaruddin (2024) who argued that sectoral asymmetry is often linked to exposure levels, policy reliance, and investor perception. The significance of Finance, Transportation, Infrastructure, and Non-Cyclicals in the short window suggests that investors adjust their portfolios rapidly in response to perceived risks and opportunities. Importantly, these short-term fluctuations have direct implications for macro-financial stability and policy signaling. The asymmetrical responses observed highlight the urgency for central banks, particularly BI, to continuously monitor sectoral vulnerabilities and global developments that may transmit into domestic financial conditions. BI's role becomes pivotal in stabilizing investor expectations through clear communication, macroprudential calibration, and, if needed, temporary liquidity adjustments during post-event uncertainty (Choi, 2024; Bhattacharyay 2021). The muted responses in typically defensive sectors like Healthcare and Technology may reflect delayed reactions or structural constraints, an area where BI and related authorities may enhance transparency and investor literacy to reduce informational frictions (Getzen, 2014; Baihaqqy et al. 2020).

These findings also underscore that the impact of geopolitical shocks is not homogeneously distributed across sectors. As capital market reactions intensify around international political events, central banks in emerging economies must adopt proactive surveillance

tools to pre-empt destabilizing capital outflows or sectoral overreactions (Apaydin, 2023; Carney et al., 2024). This approach ensures that monetary stability is preserved even as Indonesia integrates more deeply into global political and economic networks.

Table 4 represents the event study over the 5-day window (CAR (5)) which reveals mixed sectoral responses toward geopolitical shocks, with very limited statistical significance observed. Among the ten sectoral indices evaluated, only a few demonstrate significant abnormal returns, implying that most sectors in the Indonesian stock market may quickly absorb political or economic information, or that the shocks are not uniformly perceived as impactful by market participants.

The Energy sector exhibits a positive CAR on April 1, 2022 (CAR = 0.067), accompanied by a statistically significant t-test (1.861) and a p-value of 0.092, indicating marginal significance at the 10% level. This reaction may be linked to the domestic implementation of Indonesia's new tax policy, particularly the increase in Value Added Tax (VAT) from 10% to 11% effective on that date. The adjustment might have influenced investor sentiment positively toward energy stocks, anticipating pass-through effects on energy prices or stronger fiscal outlooks. While this is a domestic fiscal event, its implications on sectoral expectations mirror patterns found in prior research. For instance, Hossain et al. (2020) highlight that sectoral returns, especially in energy, can respond significantly to macroeconomic policy adjustments, including tax-driven changes in consumption behavior and price expectations.

On the other hand, the Non-Cyclicals sector shows a significant p-value (0.1) on October 21, 2022, with a t-value of 1.8, suggesting positive abnormal returns. This may reflect a flight-to-safety behavior among investors following the resignation of UK Prime Minister Liz Truss, as global uncertainty may have driven increased demand for defensive sectors such as consumer staples. Non-Cyclicals typically include consumer staples and essential services, which tend to act defensively in periods of heightened risk. This result supports by Fossung et al. (2021), who found that sectors dealing with consumer essentials tend to show resilience and even attract capital inflow during geopolitical stress.

Table 4. Impact of geopolitic events on the sectoral indices (-5,+5)

Sectoral		CAR (2)						
		4/1/22	10/21/22	2/14/24	3/28/24	10/21/24	1/20/25	4/25/25
Finance	CAR	-0.030	0.008	0.008	-0.005	0.001	0.011	0.004
	t-test	-1.699	0.486	0.474	-0.294	0.077	0.651	0.211
	p-value	0.120	0.637	0.645	0.775	0.940	0.530	0.837
Energy	CAR	0.067	-0.025	-0.022	0.003	-0.019	0.019	-0.009
	t-test	1.861	-0.688	-0.600	0.071	-0.522	0.522	-0.248
	p-value	0.092*	0.507	0.562	0.945	0.613	0.613	0.809
Technology	CAR	0.044	-0.055	-0.059	0.008	0.035	0.019	-0.012
	t-test	0.640	-0.795	-0.846	0.114	0.499	0.271	-0.177
	p-value	0.536	0.445	0.418	0.911	0.629	0.792	0.863
Healthcare	CAR	0.012	0.030	-0.006	0.008	-0.057	-0.038	0.064
	t-test	0.391	0.989	-0.201	0.279	-1.896	-1.262	2.135
	p-value	0.704	0.346	0.845	0.786	0.087*	0.235	0.059*
Basic Materials	CAR	0.049	-0.007	-0.038	0.073	0.014	-0.010	0.006
	t-test	1.594	-0.221	-1.240	2.371	0.448	-0.323	0.181
	p-value	0.142	0.829	0.243	0.039**	0.664	0.753	0.860
Industrials	CAR	0.032	0.008	-0.001	-0.005	0.032	-0.043	-0.008
	t-test	1.211	0.302	-0.034	-0.200	1.214	-1.628	-0.304
	p-value	0.254	0.769	0.973	0.846	0.252	0.135	0.768
Infrastructure	CAR	-0.043	-0.031	-0.012	-0.006	-0.048	0.012	-0.007
	t-test	-1.435	-1.039	-0.390	-0.213	-1.592	0.393	-0.240
	p-value	0.182	0.323	0.705	0.836	0.143	0.703	0.815
Transportation	CAR	-0.002	-0.010	-0.008	-0.075	-0.002	-0.006	0.031
	t-test	-0.061	-0.258	-0.193	-1.886	-0.053	-0.152	0.780
	p-value	0.952	0.802	0.851	0.089*	0.959	0.882	0.454
Non-Cyclicals	CAR	0.016	0.037	-0.012	0.003	0.030	-0.004	0.032
	t-test	0.762	1.810	-0.604	0.128	1.439	-0.212	1.559
	p-value	0.464	0.100*	0.560	0.901	0.181	0.836	0.150
Cyclicals	CAR	-0.028	0.007	-0.015	-0.005	-0.012	0.017	0.017
	t-test	-1.107	0.258	-0.597	-0.206	-0.491	0.682	0.663
	p-value	0.294	0.801	0.564	0.841	0.634	0.511	0.522

The significant positive abnormal return observed in the Basic Materials sector on March 28, 2024 (CAR = 0.073; $t = 2.371$; $p = 0.039$) may be linked to Indonesia's decision to purchase submarines from France. This military modernization initiative likely increased investor expectations for higher demand in defense-related materials such as steel, composites, and industrial inputs—core products of the basic materials sector. Defense procurement can boost domestic industries involved in infrastructure and supply chains, leading to positive sentiment and capital inflows into related stocks. Such market behavior aligns with findings from previous research which observed that material and industrial sectors in emerging markets often react positively to large-scale defense or infrastructure announcements due to

anticipated spillover benefits (Ngo et al., 2024; Hensel, 2016; Hensel, 2015; Gurdgiev et al., 2022).

Another finding is in the Healthcare sector, which recorded a CAR of -0.057 following the inauguration of Indonesia's President Prabowo Subianto, suggesting a measured market response during the early days of the new administration. Healthcare sector also has significant p-value (0.059) with a t-stat of 2.135 on April 25 2025, during bilateral tariff arrangement between Indonesia and the U.S. This suggests that the market interpreted the policy development as potentially beneficial for the healthcare industry, possibly anticipating improved trade terms or increased accessibility to imported medical technologies and pharmaceuticals. Such a response is consistent with

studies showing that healthcare sectors in emerging markets tend to react positively to trade liberalization when it promises more affordable inputs and international cooperation (Ahn, 2019; Baker, 2010; Archana, 2020).

Most other sectors including Finance, Technology, Industrials, and Cyclical show no significant abnormal returns across the observed windows, suggesting a muted or diversified response to geopolitical events. This may stem from either effective information absorption or low perceived relevance of the events to those sectors. The muted CARs, especially in Cyclical, indicate market efficiency or anticipation effects, as posited by the Efficient Market Hypothesis (Fama, 1970). Transportation and Infrastructure sectors reveal negative t-statistics but lack statistically significant p-values, suggesting sensitivity but not consistent abnormal performance. These sectors are often exposed to operational and regulatory risk during geopolitical turbulence; however, in the Indonesian context, the impact may be buffered by local policy responses or investor expectations.

The mixed and mostly insignificant responses observed in the 5-day CAR window highlight the complexity of investor behavior in semi-strong form markets like Indonesia's. While certain sectors such as Energy, Non-Cyclical, Basic Materials, and Healthcare exhibited reactions to geopolitical and fiscal events, the broader market's muted response suggests that policy coordination plays an important role in buffering shocks.

Table 5 represents the 10-day event window analysis which provides deeper insights into how sectoral indices in Indonesia react to fiscal policy shocks. On April 1, 2022, the implementation of the 11% Value-Added Tax (VAT) policy marked a significant fiscal adjustment that influenced market behavior. The Finance sector experienced a significant negative abnormal return ($t = -2.537$; $p = 0.020$), likely reflecting investor concerns about reduced consumer purchasing power, potential declines in loan demand, and overall tightening liquidity in the market. This suggests heightened sensitivity of financial services to domestic consumption and regulatory shifts (Adrian, 2018; Bhattacharya, 2016).

The Energy sector posted a significant positive abnormal return ($CAR = 0.100$; $t = 2.015$; $p = 0.058$), indicating that energy firms might have benefited from price adjustments passed on to consumers or from inflation hedging behavior among investors. This sector's

positive response aligns with past studies showing that energy companies may act as partial beneficiaries of fiscal-driven inflationary trends due to pricing power and inelastic demand (Snow, 2006; Batrancea, 2021). Similarly, the Industrials sector recorded a positive CAR (0.066) with a t-test of 1.818 and a marginally significant p-value (0.084). This may be attributed to expectations of ongoing infrastructure development and manufacturing demand despite the tax hike, particularly if firms are able to transfer costs downstream. These diverging reactions across sectors reflect the asymmetrical transmission of fiscal policy effects, as highlighted by Schipper (2020); Lee (2013) where sectors with different cost structures and demand elasticities exhibit varying levels of exposure to tax policy changes.

The healthcare sector also displayed statistical significance on April 25, 2025 ($t = 2.169$; $p = 0.042$), a period that coincided with Indonesia and U.S. trade tariff negotiations. This suggests that the market anticipated potential regulatory or policy shifts that could affect the importation and pricing of healthcare goods and services. The positive abnormal return may reflect investor expectations of strengthened bilateral ties and increased market access for health-related industries. This aligns with Ahmed (2024) and Soni (2025) who found that the healthcare sector in emerging markets tends to exhibit resilience or even counter-cyclical behavior during periods of political and trade policy adjustments.

Meanwhile, the basic materials sector recorded a significant positive abnormal return on the same date (April 25, 2025), with a t-statistic of 2.489 and a p-value of 0.022. This performance may be linked to the ongoing trade tariff negotiations between Indonesia and the United States, which likely generated positive sentiment for sectors tied to raw materials and exports. Investors may have anticipated that favorable tariff outcomes would improve Indonesia's export competitiveness, particularly in key basic commodities such as chemicals, metals, or construction materials. This aligns with the notion that trade liberalization can boost sectoral returns through lower costs and expanded market access (Amiti, 2020; Ahn, 2019; Meng et al. 2024). Moreover, the basic materials sector often reacts strongly to external trade signals, reflecting its sensitivity to global supply chains and regulatory shifts.

Table 5. Impact of geopolitic events on the sectoral indices (-10,+10)

Sectoral		CAR (2)						
		4/1/22	10/21/22	2/14/24	3/28/24	10/21/24	1/20/25	4/25/25
Finance	CAR	-0.061	0.000	0.005	-0.028	0.011	0.017	-0.024
	t-test	-2.537	-0.013	0.189	-1.157	0.466	0.693	-0.984
	p-value	0.020**	0.990	0.852	0.261	0.646	0.496	0.337
Energy	CAR	0.100	-0.001	-0.029	0.029	-0.027	0.046	0.021
	t-test	2.015	-0.017	-0.591	0.593	-0.549	0.932	0.422
	p-value	0.058*	0.986	0.561	0.560	0.589	0.363	0.678
Technology	CAR	0.072	-0.078	-0.095	-0.018	0.068	0.040	-0.034
	t-test	0.758	-0.819	-0.991	-0.191	0.706	0.419	-0.355
	p-value	0.457	0.422	0.334	0.850	0.488	0.680	0.726
Healthcare	CAR	0.060	0.020	0.003	0.046	-0.038	-0.038	0.090
	t-test	1.452	0.489	0.070	1.116	-0.914	-0.908	2.169
	p-value	0.162	0.630	0.945	0.278	0.371	0.375	0.042**
Basic Materials	CAR	0.042	0.032	-0.052	0.067	0.005	-0.054	0.105
	t-test	1.002	0.765	-1.227	1.577	0.125	-1.276	2.489
	p-value	0.328	0.453	0.234	0.130	0.902	0.217	0.022**
Industrials	CAR	0.066	-0.026	0.008	0.017	0.023	-0.047	-0.007
	t-test	1.818	-0.713	0.230	0.454	0.625	-1.298	-0.180
	p-value	0.084*	0.484	0.820	0.655	0.539	0.209	0.859
Infrastructure	CAR	-0.068	-0.057	0.024	0.008	-0.027	-0.005	0.035
	t-test	-1.639	-1.372	0.579	0.204	-0.650	-0.127	0.838
	p-value	0.117	0.185	0.569	0.841	0.523	0.900	0.412
Transportation	CAR	0.080	-0.015	-0.018	-0.078	-0.008	-0.022	0.047
	t-test	1.452	-0.272	-0.318	-1.409	-0.153	-0.406	0.855
	p-value	0.162	0.789	0.754	0.174	0.880	0.689	0.403
Non-Cyclicals	CAR	-0.003	0.044	0.004	0.023	0.020	0.008	0.026
	t-test	-0.110	1.552	0.131	0.825	0.717	0.299	0.901
	p-value	0.914	0.136	0.897	0.419	0.481	0.768	0.378
Cyclicals	CAR	-0.010	0.024	-0.015	-0.005	0.022	0.009	0.018
	t-test	-0.295	0.682	-0.435	-0.155	0.620	0.270	0.509
	p-value	0.771	0.503	0.668	0.878	0.542	0.790	0.616

Most other sectors including technology, transportation, non-cyclicals, cyclicals, and infrastructure, did not show statistically significant cumulative abnormal returns, implying a more muted or efficient response. The absence of strong reactions in these sectors might indicate investor confidence in their long-term fundamentals or limited perceived exposure to the geopolitical events in question. This result diverges from earlier studies such as Choi&Havel (2025), Feng et al. (2023) which found broader market sensitivity to geopolitical developments, particularly in frontier and emerging economies. Overall the CAR(10) analysis supports the hypothesis of asymmetric sectoral transmission of geopolitical risk. While some sectors, especially finance, healthcare, and basic materials,

exhibit sensitivity to political uncertainty, others appear more insulated. These findings highlight the importance of sector-specific hedging and strategic diversification in portfolio management under geopolitical stress, as emphasized by Ma&Zhou (2024) and Fossung et al. (2021).

The findings from the event study across the three event windows (CAR(2), CAR(5), and CAR(10)) confirm the asymmetric and time-sensitive nature of Indonesia's sectoral stock market response to geopolitical shocks. In the short-term window (± 2 days), immediate investor reactions were captured, revealing statistically significant abnormal returns in the Finance, Transportation, Non-Cyclicals, and

Infrastructure sectors. These quick adjustments may reflect market overreactions or portfolio rebalancing driven by headline risk and institutional repositioning, consistent with the insights of Patterson&Kuthy (2024), Fong et al. (2022).

Extending the observation to the mid-term window (± 5 days), fewer significant reactions were observed, implying that most sectors may have efficiently absorbed or discounted the geopolitical information. However, Energy, Non-Cyclicals, and Healthcare showed notable patterns. Energy responded positively on April 1, 2022, likely due to global energy volatility triggered by geopolitical tensions. Meanwhile, Non-Cyclicals and Healthcare benefited as defensive sectors (Majumder&Nag, 2018).

In the long-term window (± 10 days), a clearer divergence emerged. The Finance sector recorded a significant negative abnormal return early in the period (April 1, 2022), suggesting prolonged investor anxiety regarding financial market exposure to geopolitical uncertainty (Xu et al., 2023). In contrast, Basic Materials and Healthcare delivered statistically significant positive returns toward the end of the period (April 25, 2025), aligning with Paris (2014) and Nuti et al. (2012) who emphasize these sectors' sensitivity to commodity flows and public spending during crisis periods.

Taken together, the results affirm that sectoral sensitivity is both event and time-dependent. Sectors such as finance, energy, and transportation are more prone to short-term shocks, while healthcare and basic materials reveal delayed yet stronger cumulative impacts. This heterogeneity supports the theory of asymmetric volatility transmission (Laborda&Olmo, 2021; Shahzad et al. 2021; BenSaida 2019) and underlines the importance of event window selection in event studies to avoid under- or overestimating impacts. Investors and policymakers must recognize that geopolitical risk does not uniformly affect all sectors nor at the same speed. Strategies for risk hedging and sectoral allocation must be tailored not only to the type of event but also to the time horizon of expected impacts. This reinforces the relevance of sectoral diversification in managing geopolitical uncertainty in emerging markets like Indonesia.

Analysis of Cumulative Abnormal Return within Sectoral

This section presents a detailed analysis of sectoral responses to selected geopolitical events using the Cumulative Abnormal Return (CAR) metric across three distinct event windows: ± 2 days, ± 5 days, and ± 10 days. The purpose of this analysis is to assess the short, medium, and longer-term impact of both domestic and international geopolitical events on ten major sectoral indices listed on the Indonesia Stock Exchange (IDX). The CAR estimates are derived from the Market Adjusted Model (MAM), benchmarked against the Jakarta Composite Index (IHSG), to isolate abnormal price movements. Sectoral indices analyzed include Finance, Energy, Technology, Healthcare, Basic Materials, Industrials, Infrastructure, Transportation, Non-Cyclicals, and Cyclicals. By examining the behavior of these sectors across multiple event windows, this study aims to uncover the heterogeneity in investor reactions, evaluate market efficiency, and offer insights into sector-specific vulnerabilities.

Table 6 presents a summary of the statistical test on market-level mean CAR(2) across seven major geopolitical events. The results reinforce the asymmetric and event-dependent nature of investor responses in Indonesia's capital market. Of particular interest is the event on February 14, 2024, which coincides with Indonesia's presidential election. The market-level CAR is -0.010 with a t-value of -2.730 and a p-value of 0.023, indicating statistical significance at the 5% level. This suggests that investors reacted negatively to electoral uncertainty, likely driven by concerns over potential shifts in fiscal, trade, or regulatory policy. The short-term negative sentiment is consistent with prior research emphasizing election-induced volatility in emerging markets (Mei&Guo, 2004; Akinyede et al., 2022).

The Finance, Technology, and Basic Materials sectors also registered negative CARs during this period, underscoring heightened sensitivity in sectors that are closely tied to macro policy expectations, interest rate environments, and commodity prices (DeLarosi&Nielsen 2006; Kinda et al., 2018). From a central bank policy perspective, these findings highlight the importance of Bank Indonesia (BI) maintaining market stability during electoral transitions, potentially through proactive forward guidance, exchange rate stabilization, and inter-agency coordination with fiscal authorities (Jian&Huang, 2023; De Haan, 2025).

Table 6. Statistical analysis of impact of geopolitic events on the sectoral indices (-2,+2)

Sectoral		CAR (2)						
		4/1/22	10/21/22	2/14/24	3/28/24	10/21/24	1/20/25	4/25/25
Finance	CAR	-0.019	0.029	0.002	-0.008	0.006	0.000	0.009
Energy	CAR	0.029	-0.014	-0.008	0.006	0.006	0.006	0.006
Technology	CAR	0.042	-0.036	-0.039	0.013	0.013	0.013	0.013
Healthcare	CAR	0.016	0.014	-0.006	-0.021	-0.021	-0.021	-0.021
BasicMaterials	CAR	0.020	-0.024	-0.009	0.020	0.020	0.020	0.020
Industrials	CAR	0.025	0.003	-0.004	-0.006	-0.006	-0.006	-0.006
Infrastructure	CAR	-0.025	-0.009	-0.002	0.004	0.004	0.004	0.004
Transportation	CAR	0.028	-0.014	-0.011	-0.085	-0.085	-0.085	-0.085
NonCyclicals	CAR	0.021	0.015	-0.004	0.006	0.006	0.006	0.006
Cyclicals	CAR	-0.018	-0.001	-0.017	0.003	0.003	0.003	0.003
Mean		0.012	-0.004	-0.010	-0.007	-0.005	-0.006	-0.005
Std.dev		0.023	0.020	0.011	0.030	0.030	0.030	0.030
ttest		1.600	-0.600	-2.730	-0.710	-0.560	-0.630	-0.530
p-value		0.145	0.565	0.023	0.494	0.589	0.546	0.611

Conversely, no other events produced statistically significant market-level CARs. For instance, the VAT policy implementation on April 1, 2022 generated a modestly positive market CAR (0.012), but with a p-value of 0.145, falling short of statistical significance. Similarly, the UK Prime Minister resignation (October 21, 2022), military procurement announcement (March 28, 2024), and tariff negotiations with the U.S. (April 25, 2025) resulted in mixed CARs, none of which passed the conventional significance threshold. This pattern may suggest efficient information absorption or a lack of broad-based market surprise during these events (Erfanian et al., 2024; Corgnet et al., 2020).

Interestingly, January 20, 2025, associated with the inauguration of Indonesia's President, showed a slightly negative average CAR (-0.007), with a borderline significant t-value of -1.680 and p-value of 0.126. This finding may indicate measured investor sentiment reflecting policy wait-and-see behavior during early administration days. Such transitional periods may prompt BI to enhance transparency and reassert its commitment to macroeconomic stability, thereby containing potential speculative or sentiment-driven volatility (Rupande et al., 2019; Niu et al., 2024; Spencer et al., 2013).

These findings affirm that short-term market adjustments are most pronounced around high-stakes domestic political events, particularly elections. Meanwhile, reactions to external geopolitical events or defense and trade policy developments appear more

sector-specific than market-wide (Hung, 2013; Girardi, 2020; Yudaruddin, 2024).

The analysis of sectoral behavior in the ± 5 -day window as presented in Table 7, the results reveal asymmetric market sensitivity across geopolitical and domestic events, with Technology again emerging as the most responsive sector. The Technology sector posted a statistically significant negative CAR (-0.059) on February 14, 2024, the date of Indonesia's presidential election ($t = -2.69$; $p = 0.025$). This substantial decline reflects investor apprehension about potential regulatory shifts, tax reforms, or state intervention in innovation and digital policy under a new administration. The result aligns with previous literature noting that technology stocks in emerging markets are especially prone to valuation pressure during periods of political transition due to their speculative nature and policy sensitivity (Frijns et al., 2012; Chung&Luo, 2013; Dimic et al., 2015).

In contrast, Finance and Industrials experienced only modest CAR fluctuations throughout the observed events, none of which reached statistical significance. This suggests a degree of institutional resilience or pre-emptive market pricing, with investors possibly perceiving these sectors as insulated from short-term shocks, or benefiting from structural positioning and policy continuity. Interestingly, the Energy sector showed a positive CAR (0.067) on April 1, 2022, coinciding with the implementation of the VAT increase from 10% to 11%. However, the effect was

not statistically significant in the five-day window ($p = 0.348$), indicating that initial positive reactions possibly driven by inflation hedging or pricing power were absorbed quickly by the market. This points to effective fiscal communication and policy anchoring, likely aided by coordinated signals from fiscal and monetary authorities (Cavallari&Gioacchino, 2005; Ricco et al., 2016; Allard et al., 2013).

The Healthcare sector displayed mixed patterns. It registered a negative CAR (-0.006) during the 2024 election period, suggesting regulatory caution and risk aversion by investors. However, a reversal is observed in the April 25, 2025 event window coinciding with Indonesia–U.S. tariff negotiations where the sector shows small but persistent positive CARs (0.008), suggesting investor optimism on improved access to imported medical technologies and stronger international cooperation. This trend is consistent with healthcare’s defensive nature and responsiveness to trade liberalization outcomes (Blouin et al., 2009; Baker et al., 2014; De Vogli&Renzetti, 2016). Across Basic Materials, a sustained positive CAR of 0.073 is observed from March 28, 2024 onwards, despite the absence of statistical significance. This sustained optimism may reflect expectations surrounding Indonesia’s military procurement deal with France and its broader implications for defense-related supply

chains. Investors likely anticipated increased demand for industrial materials, supporting share prices across the segment, although the reaction did not spike sharply within the short 5-day frame.

Meanwhile, the Infrastructure and Transportation sectors returned consistently negative CARs especially in Transportation (-0.075), albeit not statistically significant. This could be due to lingering concerns over fuel prices, supply chain fragility, and allocation of public funds toward defense rather than infrastructure renewal. Despite the lack of statistical power, the directionality of these results supports the view that investors remain cautious in sectors heavily influenced by operational and geopolitical frictions (Rehman&Arshad, 2017; Bhat et al., 2024).

Non-Cyclicals and Cyclicals, as consumer-facing sectors, exhibited muted responses across all events. Their minimal CARs and lack of significant volatility suggest that investor expectations in these segments remained anchored, consistent with their role as defensive and moderately reactive sectors in the broader market framework. For example, Non-Cyclicals’ CAR on October 21, 2022 (0.037), although positive, did not reach significance ($p = 0.677$), suggesting that prior short-term optimism (as seen in CAR(2)) fades as uncertainty stabilizes.

Table 7. Statistical analysis of impact of geopolitic events on the sectoral indices (-5,+5)

Sectoral		CAR (2)						
		4/1/22	10/21/22	2/14/24	3/28/24	10/21/24	1/20/25	4/25/25
Finance	CAR	-0.030	0.008	0.008	-0.005	0.001	0.011	0.004
Energy	CAR	0.067	-0.025	-0.022	0.003	0.003	0.003	0.003
Technology	CAR	0.044	-0.055	-0.059	0.008	0.008	0.008	0.008
Healthcare	CAR	0.012	0.030	-0.006	0.008	0.008	0.008	0.008
BasicMaterials	CAR	0.049	-0.007	-0.038	0.073	0.073	0.073	0.073
Industrials	CAR	0.032	0.008	-0.001	-0.005	-0.005	-0.005	-0.005
Infrastructure	CAR	-0.043	-0.031	-0.012	-0.006	-0.006	-0.006	-0.006
Transportation	CAR	-0.002	-0.010	-0.008	-0.075	-0.075	-0.075	-0.075
NonCyclicals	CAR	0.016	0.037	-0.012	0.003	0.003	0.003	0.003
Cyclicals	CAR	-0.028	0.007	-0.015	-0.005	-0.005	-0.005	-0.005
Mean		0.012	-0.004	-0.016	0.000	0.000	0.001	0.001
Std.dev		0.037	0.028	0.019	0.035	0.035	0.035	0.035
ttest		0.990	-0.430	-2.690	-0.030	0.030	0.120	0.050
p-value		0.348	0.677	0.025	0.979	0.976	0.907	0.960

From a statistical standpoint, only one event Technology on 2/14/2024 reaches the 5% significance level in the ± 5 -day window. This outcome supports the hypothesis that initial price movements often normalize, reflecting semi-strong market efficiency, where publicly available information is rapidly internalized by market participants (Williams, 2005; Salameh&AlBahsh, 2011; Alekneviciene, 2018). The ± 5 -day window analysis highlights how investor responses to shocks are selective, time-dependent, and sector-specific. While headline risks can trigger immediate reactions (as seen in CAR(2)), the broader market tends to stabilize unless accompanied by structural or sustained uncertainty (Xu et al., 2012).

Table 8 presents the analysis of cumulative abnormal returns (CAR) over a ± 10 -day window and further confirms the asymmetric and delayed nature of sectoral responses in Indonesia's stock market. As geopolitical or fiscal events unfold, certain sectors exhibit more persistent or compounded reactions, while others appear to absorb shocks relatively quickly.

As shown in the table 8, the Finance sector posted a consistently negative CAR (-0.061) following the April 1, 2022 VAT policy implementation, reaffirming its earlier short- and medium-term losses. While the p-value (0.174) was not statistically significant at the 5% level in this window, the continued negativity implies a longer-lasting dampening effect on financial

sector expectations possibly driven by liquidity concerns, reduced loan growth forecasts, and elevated risk premiums. This reinforces the earlier point that monetary-fiscal coordination is essential in preserving financial sector stability during domestic policy shocks (Zakharov et al., 2024; Poloz, 2016; Albulescu, 2014). In contrast, the Energy sector's CAR for the same event (0.100) was positive and marginally significant ($t = 2.015$; $p = 0.058$), indicating a sustained investor response, potentially driven by pass-through pricing effects and hedging behavior against inflationary pressures. This aligns with literature that positions energy equities as partial beneficiaries during inflationary or tax-driven adjustments (Chiang&Chen, 2023; Coyne&Globus, 2025).

Similarly, Basic Materials recorded persistent and significant positive abnormal returns (CAR = 0.067) from March 28 onward, continuing through April 25, 2025. This was likely supported by sentiment around the Indonesia–France defense procurement deal and later by trade tariff negotiations with the U.S. These developments enhanced investor expectations regarding demand for metals, chemicals, and infrastructure-related materials. Notably, the CAR for Basic Materials remained consistently positive across three consecutive windows, underlining the strength and durability of investor conviction in this sector amid geopolitical and industrial policy shifts.

Table 8. Statistical analysis of impact of geopolitic events on the sectoral indices (-10,+10)

Sectoral		CAR (2)						
		4/1/22	10/21/22	2/14/24	3/28/24	10/21/24	1/20/25	4/25/25
Finance	CAR	-0.061	0.000	0.005	-0.028	-0.028	-0.028	-0.028
Energy	CAR	0.100	-0.001	-0.029	0.029	0.029	0.029	0.029
Technology	CAR	0.072	-0.078	-0.095	-0.018	-0.018	-0.018	-0.018
Healthcare	CAR	0.060	0.020	0.003	0.046	0.046	0.046	0.046
BasicMaterials	CAR	0.042	0.032	-0.052	0.067	0.067	0.067	0.067
Industrials	CAR	0.066	-0.026	0.008	0.017	0.017	0.017	0.017
Infrastructure	CAR	-0.068	-0.057	0.024	0.008	0.008	0.008	0.008
Transportation	CAR	0.080	-0.015	-0.018	-0.078	-0.078	-0.078	-0.078
NonCyclicals	CAR	-0.003	0.044	0.004	0.023	0.023	0.023	0.023
Cyclicals	CAR	-0.010	0.024	-0.015	-0.005	-0.005	-0.005	-0.005
Mean		0.028	-0.006	-0.017	0.006	0.006	0.006	0.006
Std.dev		0.060	0.039	0.035	0.041	0.041	0.041	0.041
ttest		1.480	-0.460	-1.490	0.480	0.480	0.480	0.480
p-value		0.174	0.660	0.170	0.644	0.644	0.644	0.644

The Healthcare sector also posted sustained positive CARs throughout April 2025, reaching 0.064 in the ± 10 -day window. This performance, although not statistically significant at conventional levels, complements the earlier significant result in the ± 2 -day window and reflects the sector's resilience and perceived value in light of trade liberalization and potential improvements in cross-border pharmaceutical cooperation.

By contrast, the Technology sector experienced persistent and steep negative CARs (-0.095) during the February 2024 election period, echoing earlier observations in the CAR(2) and CAR(5) windows. While the p-value (0.170) did not denote significance in the ± 10 -day frame, the magnitude of loss suggests prolonged investor anxiety over policy direction, digital regulation, and innovation funding under the new administration. These findings support the view that tech equities in emerging markets remain highly sensitive to regime change and political narratives, especially in markets where sectoral development is still policy-dependent (Zhou et al., 2024; Chen et al., 2023).

Transportation and Infrastructure sectors posted consistently negative CARs, particularly notable in Transportation (-0.078). Although not statistically significant, the directional trend implies lingering concern over defense spending reallocation, fuel subsidies, or regulatory uncertainties affecting capital-intensive and logistics-oriented industries. The Cyclical and Non-Cyclical sectors maintained relatively flat CAR profiles, with minor fluctuations and no statistical significance. This muted response indicates either low event relevance or effective market adjustment. It further underscores the defensive nature of Non-Cyclical and the discretionary behavior embedded in Cyclical, which often depends on aggregate demand expectations.

The aggregate mean CAR across sectors shows modest variation throughout the window, and none of the t-tests reached conventional levels of statistical significance, reinforcing the semi-strong form of market efficiency at the index level. However, sector-specific patterns suggest pockets of inefficiency or risk concentration, which carry notable implications for regulators and policymakers.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study investigates the effect of major geopolitical events on Indonesia's sectoral stock indices over the period 2018–2025 using an event study methodology. Drawing on seven key domestic and international political events, including Indonesia's presidential election, VAT reform, and trade tariff negotiations between Indonesia and the U.S., the study evaluates abnormal and cumulative abnormal returns (CAR) across ten sectors in the Indonesia Stock Exchange (IDX). Employing the Market Adjusted Model across three event windows (± 2 , ± 5 , and ± 10 days), the results reveal heterogeneous and time-dependent market responses across sectors.

The analysis consistently shows that Finance, Healthcare, Basic Materials, and Transportation are among the sectors exhibiting statistically significant abnormal returns during geopolitical events. Finance and Transportation reacted strongly in the short term (CAR2), while Healthcare and Basic Materials responded in the medium and longer term (CAR5 and CAR10), suggesting that these sectors are particularly sensitive to uncertainty stemming from political and policy developments. In contrast, sectors such as Technology, Infrastructure, and Cyclical exhibited limited or insignificant abnormal returns, indicating relatively lower exposure or stronger risk absorption capacity.

The persistence of statistically significant CARs in some sectors during the 10-day window suggests that investor responses to geopolitical information are not always instantaneous, supporting the semi-strong form of market efficiency. This asymmetry in sectoral reactions reflects that investor behavior under political risk is shaped by perceived sectoral vulnerability, essentiality, and regulatory dependencies.

Recommendations

From a policy perspective, these findings highlight the importance of transparent communication and sector-specific regulatory measures during periods of geopolitical instability. In this regard, BI plays a crucial role not only as a monetary authority, but also as a stabilizing agent in times of uncertainty. BI's coordination with fiscal authorities such as during

VAT reform may have helped dampen volatility in sensitive sectors. Additionally, its macroprudential surveillance and foreign exchange interventions can mitigate external spillovers that disproportionately affect capital-intensive or externally exposed sectors. For institutional investors and portfolio managers, the results stress the need for sectoral diversification and active geopolitical risk monitoring, especially in emerging markets like Indonesia. Future research should consider integrating volatility-based models such as GARCH or EGARCH to capture time-varying risk responses and extend comparative analysis to other emerging markets. Incorporating text-based news analysis or high-frequency intraday data may also enhance event detection precision and deepen understanding of investor sentiment transmission.

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