

Article Type: Research Paper

Eleven sectors' reaction to the political event 2023: evidence from Indonesia Stock Exchange

Ainun Rochimah* and Indah Yuliana



AFFILIATION:

Department of Management,
Faculty of Economics, Universitas
Islam Negeri Maulana Malik
Ibrahim Malang, East Java,
Indonesia

*CORRESPONDENCE:

200501110258@student.uin-
malang.ac.id

DOI: 10.18196/jai.v25i2.21000

CITATION:

Rochimah, A., & Yuliana, I. (2024).
Eleven sectors' reaction to the political
event 2023: evidence from Indonesia
Stock Exchange. *Journal of Accounting
and Investment*, 25(2), 526-550.

ARTICLE HISTORY

Received:

25 Dec 2023

Revised:

18 Mar 2024

05 Apr 2024

Accepted:

06 May 2024



This work is licensed under a Creative
Commons Attribution-Non-Commercial-
No Derivatives 4.0 International License

JAI Website:



Abstract

Research aims: This study analyzes the differences in market reaction towards eleven sectors in the Indonesia Stock Exchange (IDX) during the political event, i.e., the announcement of the Indonesian presidential and vice-presidential nominees in 2023.

Design/Methodology/Approach: This study applied the event study method with indicators of abnormal return, trading volume activity, security return variability, and bid-ask spread. The hypothesis test was a non-parametric test by Wilcoxon Signed Rank Test with a window period of seven days of observation (-3, 0, +3).

Research findings: The Wilcoxon Signed Rank Test results revealed a mixed reaction by eleven sectors in IDX to this political event, in which there was a difference and no difference in the reactions.

Theoretical contribution/Originality: This study contributes to providing insight into the reaction of eleven different sectors in the IDX to the different announcements of the Indonesian presidential and vice-presidential nominees in 2023. Previous research usually focused on stock indices or only testing one particular sector. Hence, this study investigated eleven sectors in the capital market to compare the different reactions and to expand the results.

Practitioner/Policy implication: Research on capital market reactions to political events provides important information for investors to make investment decisions based on investor sentiment that assesses the electability of prospective heads of state to advance the Indonesian economy.

Research limitation/Implication: The scope of this study is the announcement of the Indonesian presidential and vice-presidential nominees in 2023; future researchers can continue research on capital market reactions to the Indonesian presidential election 2024 events and add relevant variables, such as foreign sales and foreign buys.

Keywords: Eleven Sectors; Event Study; Market Reaction; Political Event

Introduction

Stable stock prices, balanced supply and demand, normal stock returns, and manageable risks are manifestations of the capital market performing its functions well. However, the capital market is highly sensitive to an event or announcement. In other words, an event or announcement will cause a capital market reaction. These events include internal events within the capital market, such as earnings and dividend announcements, mergers and acquisitions, or about financial reports, and external events

outside the capital market, i.e., non-economic news such as political and social, disasters or pandemics, wars, and global conditions (Jogiyanto, 2019; McWilliams & Siegel, 1997). Capital markets can react to political events and provoke varying responses. On top of that, relatively small political events can have an impact on capital market conditions (Kirikkaleli, 2020). The research on more extreme political events led to capital market reactions, such as the Russian-Ukrainian war that was responded negatively to by the European Stock Exchange (Ahmed et al., 2023) and the Australian Stock Exchange (Kamal et al., 2023). Later, the emergence of political uncertainty in Pakistan affected the response of the Pakistan Stock Exchange, both positive and negative (Audi et al., 2022; Nazir et al., 2014). In 2012, the US presidential election affected the return flow on the New York Stock Exchange (Obradović & Tomić, 2017). The African presidential election from 1999 to 2019 also caused increased stock volatility on the sub-Saharan African stock exchange (Musah et al., 2023). In addition, the Egyptian stock market return rose following the presidential election in 2012 (Ahmed, 2017). In this case, corporations that have ties with the government are more responsive to political events (Trinugroho et al., 2016; Wong & Hooy, 2020).

In comparison, in Indonesia, capital market reaction research on the presidential election was conducted by testing abnormal return (AR), trading volume activity (TVA), and security return variability (SRV). There was no difference between AR and TVA during the Indonesian presidential election in 2009 (Luhur, 2010). The Indonesian presidential election in 2014 was responded to by the market with the difference between AR and TVA (Kirana & Sembel, 2019; Saragih et al., 2019). However, there was no difference between SRV (Saragih et al., 2019). Later, the Indonesian presidential elections in 2019 did not show a difference in AR (Kirana & Sembel, 2019; Ruven et al., 2019). Nevertheless, the markets reacted when the Indonesian presidential and vice-presidential appointments in 2019 exhibited a difference in AR, although there were no differences between TVA and SRV (Kemuning et al., 2021). The establishment of policy events by the government of Indonesia did not cause the differences in AR and TVA, meaning the market did not respond to such events (Bandiyono & Amalia, 2021; Perwitasari & Gunarsih, 2017; Wibowo & Darmanto, 2017).

In 2023, a political event took place in Indonesia, i.e., the announcement of president and vice-president nominees for the Indonesian presidential election in 2024. The announcement includes (1) Anies Baswedan and Muhaimin Iskandar on 31 August 2023, (2) Ganjar Pranowo and Mahfud MD on 18 October 2023, and (3) Prabowo Subianto and Gibran Rakabuming Raka on 25 October 2023. These three announcements sparked a variety of reactions in the capital markets. The announcement raised public and investor sentiment as to whether the president and vice-president pair could provide good developments to the country, including the capital market (CNBCIndonesia, 2023a). The announcement also triggered other political events, such as campaigns, democratic parties, political dynamics, and even more sensitive issues for the public, i.e., the political dynasty (Tempo, 2023).

The movement of the Index Harga Saham Gabungan (IHSG) on the announcement of the president and vice-president nominees of Indonesia from August to October 2023 continued to fluctuate. The IHSG fluctuation remained stable at the announcement period of Anies-Muhaimin at the end of August 2023. However, the announcement period of Ganjar-Mahfud and Prabowo-Gibran in October 2023 caused the IHSG movement to tend to decline (see **Figure 1.**). The IHSG fluctuation is the overview of the capital market when an event or announcement occurs (Binder, 1998). In general, IHSG will move in a positive direction if there are presidential nominees and vice presidents considered to be market favorites. As in Jogiyanto (2019), during the presidential election in 2014, the couple Joko Widodo and Jusuf Kalla can be said to be the market favorites, evidenced by the fact that IHSG tended to move up on the event. Looking at the IHSG fluctuation in **Figure 1.**, it is hard to be sure that no couple of Indonesian presidential and vice-presidential nominees in 2023 are the market favorites. However, what is certain is that the IHSG fluctuation reflects how the market responds to this event. The nature of five-year political events, such as the announcement of the president and vice-president nominees of Indonesia in 2023, is interesting to study further the reaction of the capital market.

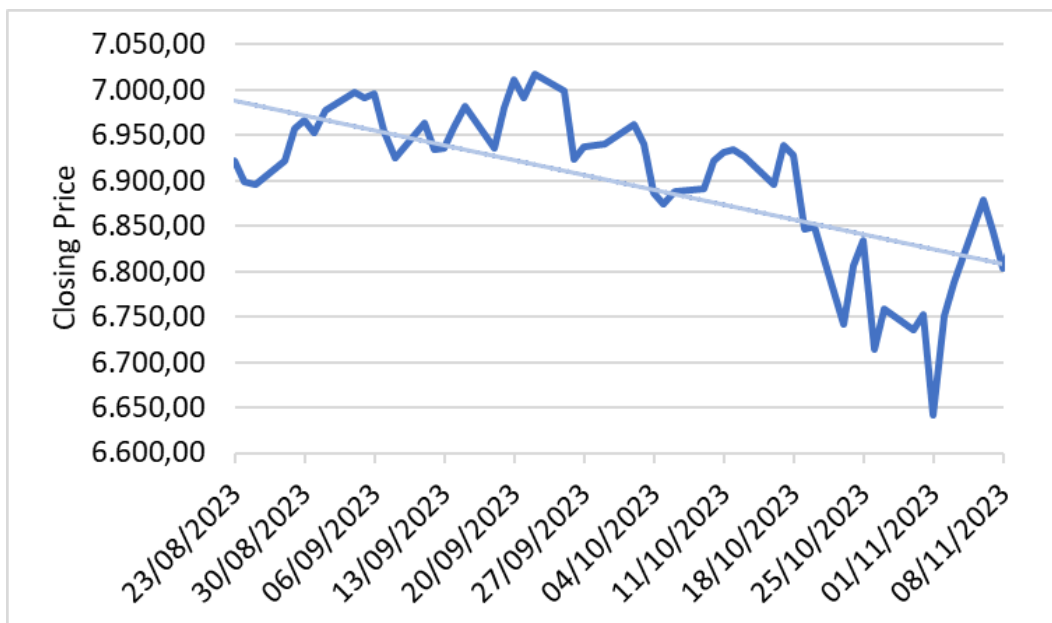


Figure 1 IHSG Fluctuation

Unlike previous studies that focused on presidential election events without distinguishing presidential and vice-presidential pairs (Kirana & Sembel, 2019; Luhur, 2010; Ruven et al., 2019; Saragih et al., 2019), this study used the announcement of three Indonesian presidential and vice-presidential nominees in 2023, namely Anies-Muhaimin, Ganjar-Mahfud, and Prabowo-Gibran, to see a comparison of capital market reactions. The study employed variables of abnormal return (AR), trading volume activity (TVA), security return variability (SRV), and bid-ask spreads to expand the results. Market reaction studies that examine SRV and bid-ask spreads in response to political occurrences are still exceedingly uncommon. Previous research also focused on stock indices or only testing one particular sector (Kirana & Sembel, 2019; Listyaningsih et al., 2020; Luhur,

2010; Mansur & Jumaili, 2014). For that reason, this study examines the 11 sectors' reactions in the Indonesian Stock Exchange (IDX) simultaneously. Specifically, they are the energy, basic materials, industrials, consumer non-cyclical, consumer cyclical, healthcare, financials, properties and real estate, technology, infrastructures, and transportation and logistics.

Thus, the research aims to investigate the 11 sectors' reaction in the Indonesia Stock Exchange (IDX) by looking at the differential of abnormal returns (AR), trading volume activity (TVA), security return variability (SRV), and bid-ask spreads around the announcement of the Indonesian presidential and vice-presidential nominees in 2023. The nominees for the Indonesian head of state position are crucial in recognizing how they will bring change to Indonesia in the future. Through this study, the findings contribute to increased insight related to capital market reactions to external events, i.e., political events through AR, TVA, SRV, and bid-ask spread indicators. Investors will consider making their investment decisions when a political event enters the capital market. In particular, political events involving nominees for the head of state who are expected to advance the Indonesian economy in the future are highly considered.

Literature Review and Hypotheses Development

In economic and financial studies, information received by the capital market will be shown in the new trend of stock price movement (Binder, 1998). For example, the announcement of the Indonesian presidential and vice-presidential nominees in 2023 caused a downward trend in stock price movements on the Indonesia Stock Exchange (see Figure 1.). This announcement made public sentiment towards the backgrounds and parties of the nominees. The position of parties in Indonesia has always been a public concern during the general election period. This is because many people display positive sentiments towards big and well-known parties rather than small parties.

First, Anies is an independent Indonesian presidential nominee, not a member of a party but supported by several parties. Before becoming a presidential nominee, Anies served as governor of the Indonesian capital, Jakarta. Vice-presidential nominee Muhaimin is the leader of the National Awakening Party and Deputy Speaker of the Indonesian House of Representatives 2019-2024. Second, presidential nominee Ganjar is a member of a major party in Indonesia, the Indonesian Democratic Party of Struggle, and former Governor of Central Java. Vice-presidential nominee Mahfud MD is an independent, not a party member. Mahfud MD is also the Coordinator Minister for Political, Law and Security Affairs in Indonesia. Third, presidential nominee Prabowo is a military official and leader of the Great Indonesia Movement Party. Vice-presidential nominee Gibran is the son of the Indonesian President of 2019-2024, Joko Widodo, who was the mayor of Solo and a member of the Indonesian Democratic Party of Struggle (CNBCIndonesia, 2024). The backgrounds of the presidential and vice-presidential nominees were reinforced by their vision, mission, and branding style (political marketing) to gain people's votes. All this announced information became a signal to be assessed by the public.

In signaling theory, information is responded to by the public as a signal to make a decision (Spence, 1973). Information as a signal affects public perception of the quality of individual or organizational aspects (Connelly et al., 2011). In studies related to the theory of signaling conducted by Sen (2017), information about political phenomena affects public perception of potential political figures. Political signals are crucial in figuring out whether a candidate has the potential and eligibility to enter politics (Sen, 2017). Signals from political events contain information that can be responded to by capital markets, although the political events are relatively small (Kirikkaleli, 2020). Testing information containing a signal could be done using the event study method. Fama, Fisher, Jensen, and Roll (FFJR) (1969) investigated the stock price that responds to information or events by conducting an event study (Fama, 1998). In general, event studies have the basic approach of calculating the presence of abnormal returns around events (McWilliams & Siegel, 1997).

Based on the facts of political event and literature review, this study develops a research framework to formulate hypotheses in order to achieve the research aims, i.e., to find out if there are difference in eleven sectors reaction between two period around the announcement of the Indonesian presidential and vice-presidential nominees in 2023 (see Figure 2).

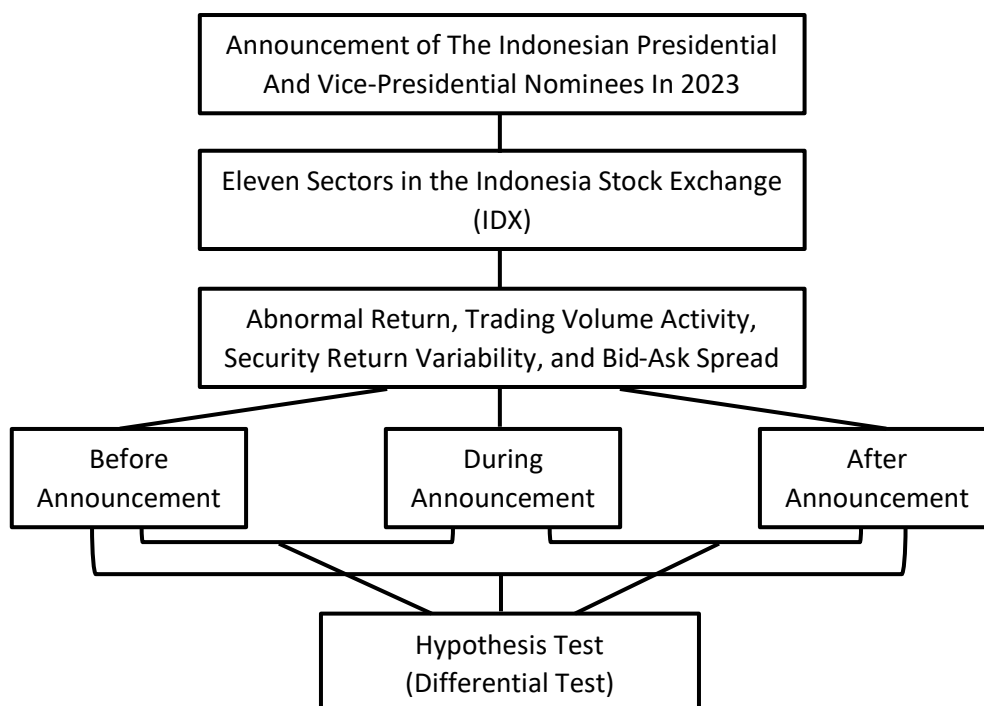


Figure 2 Research Framework

Some empirical studies have used an event study of political events that are considered to influence the market. Political events in countries outside Asia responded with positive and negative stock price fluctuations depending on the type of political events that occurred (Ahmed, 2017; Musah et al., 2023; Obradović & Tomić, 2017). Political events,

like geopolitical crises, tend to be responded to by markets with abnormal return (AR) negative (Audi et al., 2022; Kamal et al., 2023; Yudaruddin & Lesmana, 2023). In Indonesia, the most tested political event is the presidential election. The majority of market reactions to the Indonesian presidential election resulted in a mixed market reaction, shown by the difference and no difference in abnormal return (AR) around the period (Kirana & Sembel, 2019; Luhur, 2010; Ruven et al., 2019; Saragih et al., 2019).

H_{1a}: There is a difference in AR in sector-i before and during the announcement of Indonesian presidential and vice-presidential nominees in 2023.

H_{1b}: There is a difference in AR in sector-i before and after the announcement of Indonesian presidential and vice-presidential nominees in 2023.

H_{1c}: There is a difference in AR in sector-i during and after the announcement of Indonesian presidential and vice-presidential nominees in 2023.

In addition to abnormal returns, the event study approach has also been developed by measuring trading volume activity (TVA) and security return variability (SRV) (Admati & Pfleiderer, 1988; Foster & Viswanathan, 1993; Hanafi, 1997). Trading volumes and return variability tend to increase as new information enters the capital market (Admati & Pfleiderer, 1988). Investors are inclined to change their trades when there are strong public information signals (Foster & Viswanathan, 1993). Political events in Indonesia that tested TVA and SRV also resulted in a mixed market reaction to the difference and no difference around the period (Kemuning et al., 2021; Kirana & Sembel, 2019; Saragih et al., 2019; Wibowo & Darmanto, 2017; Zulfikar & Mayvita, 2017).

H_{2a}: There is a difference in TVA in sector-i before and during the announcement of Indonesian presidential and vice-presidential nominees in 2023.

H_{2b}: There is a difference in TVA in sector-i before and after the announcement of Indonesian presidential and vice-presidential nominees in 2023.

H_{2c}: There is a difference in TVA in sector-i during and after the announcement of Indonesian presidential and vice-presidential nominees in 2023.

H_{3a}: There is a difference in SRV in sector-i before and during the announcement of Indonesian presidential and vice-presidential nominees in 2023.

H_{3b}: There is a difference in SRV in sector-i before and after the announcement of Indonesian presidential and vice-presidential nominees in 2023.

H_{3c}: There is a difference in SRV in sector-i during and after the announcement of Indonesian presidential and vice-presidential nominees in 2023.

Additionally, several studies (Affleck-Graves et al., 2000; Foster & Viswanathan, 1993; Zulfikar & Mayvita, 2017) recommended bid-ask spreads to see capital market reactions. The bid-ask will move randomly toward the new bid-ask average value when the market receives information from an event or announcement (Roll, 1984). The research also measured bid-ask spreads to develop an event study of political events. Brexit political events were studied by Wei (2021) to measure stock liquidity at a time when Brexit's political events used bid-ask spreads. It indicates that the bid-ask spread moves upwards, which means the market is less liquid on the event. The Indonesian presidential and legislative election in 2019 led to a positive bid-ask spread on the Jakarta Islamic Index (JII) stock (Listyaningsih et al., 2020). Contrarily, the 2014 Indonesian presidential election did not cause the bid-ask spread (Mansur & Jumaili, 2014).

H_{4a}: There is a difference in bid-ask spread in sector-i before and during the announcement of Indonesian presidential and vice-presidential nominees in 2023.

H_{4b}: There is a difference in bid-ask spread in sector-i before and after the announcement of Indonesian presidential and vice-presidential nominees in 2023.

H_{4c}: There is a difference in bid-ask spread in sector-i during and after the announcement of Indonesian presidential and vice-presidential nominees in 2023.

Research Method

The research population was the entire corporations spread across 11 sectors listed on the Indonesian Stock Exchange, i.e., energy (ENERGY), basic materials (BASIC), industrials (INDUST), consumer non-cyclical (NONCYC), consumers cyclical (CYCLIC), healthcare (HEALTH), financials (FINANCE), properties and real estate (PROPERT), technology (TECHNO), infrastructures (INFRA), and transportation and logistic (TRANS). Sampling techniques in this study used purposive sampling, i.e., setting certain criteria to obtain samples (Sugiyono, 2019). The established criteria are that companies should not be subjected to suspension during the investigation period (**See Table 1**).

Table 1 Populations and Samples of Research

No	Announcement Date of Indonesian Presidential and Vice-Presidential Nominees	Population	Suspension	Sample
1	Anies-Muhaimin on 31 August 2023	891	(70)	821
2	Ganjar-Mahfud on 18 October 2023	900	(70)	830
3	Prabowo-Gibran on 25 October 2023	900	(70)	830

Data were collected through documentation of secondary data, such as closing stock prices, trade volumes, and bid-ask acquired from the official website www.idx.co.id (IDX, 2023). A basic method to investigate the reaction of 11 sectors in the capital markets to the announcement of Indonesian presidential and vice-presidential nominees in 2023 was an event study. The event study period used in this study was only window periods. In

order to avoid bias in the results due to other events, this study did not use a window period that is too long. The prescribed window period is seven days of observation (see **Figure 3**), i.e., three days before the announcement, one day at the time of announcement, and three days after the announcement (McWilliams & Siegel, 1997).

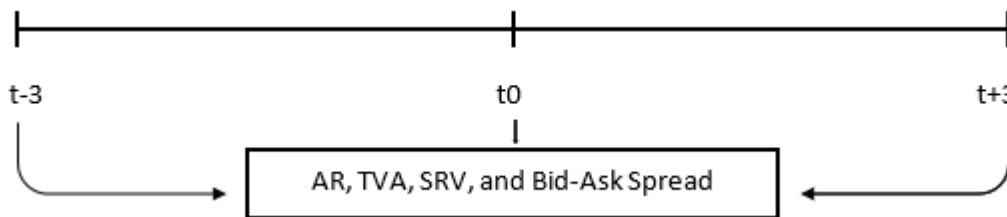


Figure 3 Conceptual Framework

Abnormal return (AR) is the actual return that is different from the expected return (Jogiyanto, 2019).

$$AR = R_{i,t} - E(R_{i,t}) \dots\dots\dots (1)$$

$$R_{i,t} = \frac{(P_{i,t} - P_{i,t-1})}{P_{i,t-1}} \dots\dots\dots (2)$$

$$E(R_{i,t}) = \frac{(IM_{i,t} - IM_{i,t-1})}{IM_{i,t-1}} \dots\dots\dots (3)$$

AR is the abnormal return of the first securities-i at the t event period. $R_{i,t}$ is the actual return, the difference between the current stock price and the previous period's stock price. $E[R_{i,t}]$ is expected securities return-i for the event period-t. $E[R_{i,t}]$ is proxied with the market-adjusted model, which estimates the return of security with the return index of the market (return of IHSG).

Trading volume activity (TVA) is a measure of the volume of a stock traded, indicating the ease of trading the stock (Jogiyanto, 2019). TVA can be measured by dividing the amount of tradeable stocks and listed stocks (Wei, 2021).

$$TVA = \frac{\text{Tradeable Stocks } i,t}{\text{Listed Stocks } i,t} \dots\dots\dots (4)$$

Security return variability (SRV) indicates a market reaction to an announcement, whether informative or not, that can yield a positive return value (Wardhani et al., 2022). $VAR_{i,t}$ is variants of abnormal return outside at the time of announcement.

$$SRV = \frac{(AR_{i,t})^2}{VAR_{i,t}} \dots\dots\dots (5)$$

The bid-ask spread is an indicator of how liquid transactions are in the capital market, meaning that sellers and buyers can trade securities quickly (Jogiyanto, 2019). Simply, the

bid-ask spread measures the difference between the offer (ask) stock price and the bid stock price (Affleck-Graves et al., 2000).

$$\text{Bid ask spread} = \text{ask } i, t - \text{bid } i, t \dots\dots\dots (6)$$

Following that, the analytical tool used in this study was Statistical Product and Service Solutions (SPSS) Version 25. Through SPSS 25, normality testing and hypothesis testing were performed. The normality test is used to determine whether the data is normal or has an abnormal distribution. The normality test was performed using the Kolmogorov-Smirnov test. The data is said to be normally distributed if the Sig. (2-tailed) value is greater than 0.05. On the contrary, the data is said to be not normally distributed if the Sig. (2-tailed) value is less than 0.05. By looking at the normality test result, it can figure out how to conduct the hypothesis test. A discrimination test was carried out to test the hypothesis by comparing two periods, i.e., the period before and during, before and after, and during and after the announcement. If the data have a normal distribution, the hypothesis test applies the parametric test by Paired Sample T-test. Meanwhile, if the data are not a normal distribution, the hypothetical test applies the non-parametric test by Wilcoxon Signed Rank Test. If the significant value less than or equal to 0.05, it means that the two comparisons are stated, so there is a difference. Nevertheless, if the significant value greater than 0.05, it indicates that the two comparisons are stated, so there is no difference (Sugiyono, 2019).

Result and Discussion

Result

The results of descriptive statistics are exhibited by all sectors simultaneously, showing different values at each announcement and each variable (see Table 2). The announcement of the three nominees for president and vice-president of Indonesia 2023 caused positive and negative abnormal returns on the Indonesia Stock Exchange, as indicated by the minimum and maximum AR values in each period. The average negative AR occurred before, during, and after the announcement of Anies-Muhaimin, i.e., -0.00009, -0.00475, and -0.00251, respectively. This negative abnormal return denotes a negative investor sentiment regarding the announcement of Anies-Muhaimin. Then, before and during the announcement of Ganjar-Mahfud, there was an average positive AR, i.e. 0.11577 and 0.000534, respectively. However, after the announcement of Ganjar-Mahfud, the average AR became negative, i.e., -0.00210. This change in AR signifies that investor sentiment changed after finding out about the announcement of Ganjar-Mahfud. Only before, during, and after the announcement of Prabowo-Gibran gave averages positive AR, i.e., 0.00137, 0.00278, and 0.00271, respectively. It turns out that investors had a more positive sentiment on the announcement of Prabowo-Gibran. Positive and negative AR results occur in similar political events (Audi et al., 2022; Nazir et al., 2014).

Table 2 Descriptive Statistic

Variable	Descriptive Statistic	Announcement of Anies-Muhaimin			Announcement of Ganjar-Mahfud			Announcement of Prabowo-Gibran		
		Before	During	After	Before	During	After	Before	During	After
AR	Min	-0.148	-0.151	-0.191	-0.336	-0.215	-0.384	-0.336	-0.234	-0.103
	Max	0.181	0.272	0.163	44.161	2.361	0.235	0.171	0.352	3.121
	Mean	-0.00009	-0.00475	-0.00251	0.11577	0.00534	-0.00210	0.00137	0.00278	0.00271
	SD	0.019266	0.035557	0.020232	1.773517	0.090716	0.026772	0.023885	0.038721	0.110434
TVA	Min	0.088	0.088	0.088	0.094	0.094	0.094	0.094	0.094	0.094
	Max	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	Mean	0.93848	0.94166	0.94291	0.94115	0.94241	0.94277	0.94343	0.94439	0.94472
	SD	0.205503	0.201157	0.198752	0.197256	0.199650	0.198461	0.196893	0.196084	0.195080
SRV	Min	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
	Max	9.821	94.010	6.692	8.610	69.508	9.141	10.462	11766.155	10.000
	Mean	1.10351	2.20419	1.11787	1.10984	1.163902	1.10046	1.03463	18.27246	1.06739
	SD	0.900803	5.782318	0.910049	0.871680	4.659318	0.967749	0.889983	433.782982	0.885770
Bid-Ask Spread	Min	-1063.333	-625.000	-1816.667	-33016.667	-725	-33500	-33333	-2840	-16516
	Max	27225	28100	30200	16325	16325	15341.667	10391.67	16325	10883
	Mean	161.440	135.490	138.168	9.948	56.248	7.819	4.256	43.659	30.643
	SD	1419.780	1245.881	1267.330	1296.189	630.587	1301.489	1234.499	596.479	722.593

Note: All Sector Simultaneously

The average TVA on the announcement of the three nominees for president and vice-president of Indonesia 2023 increased from before, during, and after the announcement (see Table 2). Investors were quite active in trading their stocks around the announcement. Then, the average SRV increased only during the announcement of Anies-Muhaimin, Ganjar-Mahfud, and Prabowo-Gibran, i.e., 2.20419, 1.163902, and 18.27246, respectively. The increase in average TVA and SRV on political events or announcements agrees with the results of Admati and Pfleiderer (1988).

The values of minimum, maximum, and average bid-ask spread that occurred around the announcement of the three nominees for president and vice president of Indonesia 2023 moved randomly (see Table 2). The average bid-ask spread before, during, and after the announcement of Anies-Muhaimin was 161.440, 135.490, and 138.168, respectively. The average bid-ask spread before, during, and after the announcement of Ganjar-Mahfud was 9.948, 56.248, and 7.819, respectively. The average bid-ask spread before, during, and after the announcement of Prabowo-Gibran was 4.256, 43.659, and 30.643, respectively. The wide difference in bid-ask spread around the announcement suggests a change in demand and supply in the capital market compared to the usual day. The random movement of bid-ask spread during a political event or announcement agrees with the results (Roll, 1984).

In addition, normality test results revealed that the majority of the data did not have a normal distribution. This result is shown with a Sig. (2-tailed) less than 0.05 (Appendix 1, Appendix 2, and Appendix 3). Thus, the hypothesis was tested using the Wilcoxon Signed Rank Test. Through the significant value results of the Wilcoxon Signed Rank Test, it can be seen whether there is a sectoral reaction by looking at the difference in AR, TVA, SRV, and bid-ask spread in two periods, before and during, before and after, and during and after the announcement. If the significant value less than or equal to 0.05, it means the two comparisons are stated, so there is a difference. Nevertheless, if the significant value

greater than 0.05, it indicates that the two comparisons are stated, so there is no difference.

Wilcoxon Signed Rank Test results uncovered a mixed reaction in 11 sectors of the Indonesia Stock Exchange. Some sectors exhibited differences and no differences, depending on the announcement of the appointed named as president and vice-president nominees of Indonesia in 2023 and depending on the comparison period. The two comparisons stated a difference, shown by the significant value less than or equal to 0.05. Then, the two comparisons stated no difference, proven by the significant value greater than 0.05 (Appendix 4, Appendix 5, and Appendix 6).

Discussion

The first announcement of the Indonesian presidential and vice-presidential nominees in 2023 was the Anies-Muhaimin couple on 31 August 2023. The announcement of Anies-Muhaimin was responded to by 11 sectors in the Indonesian Stock Exchange through the difference in AR around the announcement than TVA, SRV, and bid-ask spread. However, the announcement of Anies-Muhaimin nominees also showed no difference in market reaction.

Anies's decision to appoint Muhaimin as his vice president was shocking news for the public, including investors. The public had doubts about Anies's character because Anies had promised another political figure, not Muhaimin (CNBCIndonesia, 2023b). Investors were assessing whether Muhaimin's eligibility could compete with Anies Baswedan to win the Indonesian presidential election in 2024, as well as the prospects of both nominees for the economy and business. On the other hand, investors had a negative sentiment towards Anies's background as an independent, not a party member. The positions of major parties in Indonesia are considered capable of bringing competent presidential nominees. Thus, investors tended to doubt Anies's presidential nominee, who was not a member of major parties. This investor sentiment caused some of them to sell or buy their stocks, causing 11 sectors to react differently, mainly on the AR indicator. Other investors were still holding their stocks and preferring to wait for the announcement of the next president and vice-president nominees, so this also led to no differences in 11 sector reactions.

The second announcement of the Indonesian presidential and vice-presidential nominees in 2023 was Ganjar-Mahfud couple on 18 October 2023. A series of reaction tests in 11 sectors surrounding the announcement of Ganjar-Mahfud nominees displayed differences in AR, SRV, and bid-ask spreads. However, there was no difference in TVA around the announcement. Nonetheless, it can be said that 11 sectors responded to the announcement of Ganjar-Mahfud nominees, which were deemed to contain information. In that case, investors were questioning the eligibility of the Ganjar-Mahfud couple and whether the achievements of Ganjar Pranowo as Governor of Central Java and Mahfud MD as Coordinator Minister for Political, Law and Security Affairs of Indonesia could bring progress to the country in the future. Although Ganjar is a member of a major party and Mahfud is an independent, investor sentiment was even more sensitive to the eligibility

of the party supporting Ganjar-Mahfud. This is because public trust in the party has started to decline (CNNIndonesia, 2023). It is not so much different from the announcement of the president and vice-president nominees previously. Some investors responded to the announcement by selling or buying stocks, causing a difference in reaction in 11 sectors of the capital market, and some others remained strong with a wait-and-see action that did not cause a difference in 11 sectors' reaction in the Indonesia Stock Exchange.

The last announcement of the Indonesian presidential and vice-presidential nominees in 2023 was the Prabowo-Gibran couple on 25 October 2023. The announcement of Prabowo-Gibran responded more sensitively by 11 sectors through the AR, SRV, and bid-ask spread differences, although it did not show any TVA differences. Public opinion was positive about Prabowo's eligibility as a party leader to be Indonesia's presidential nominee in 2024. However, Prabowo's decision to be with Gibran turned out to have both pros and cons. Especially before the official announcement on 16 October 2023, the Constitutional Court announced the age change of Indonesian presidential and vice-presidential nominees. This decision of the Constitutional Court brought a remarkable response to the public as it is thought to have deliberately opened the way for Gibran to become a vice-president nominee who was previously blocked due to the age requirement (MKRI, 2023).

In such a circumstance, there were signals ahead of the official announcement of Prabowo-Gibran nominees, resulting in capital markets responding faster to the announcement and sparking differences in capital market reactions. Some other investors were not in a hurry to sell or buy their stocks, so they did not cause a difference in market reaction. Some of these investors considered the announcement of the president and vice-president nominees of Indonesia in 2023 to be an early stage in the Indonesian presidential election in 2024, so investors tended to hold their stocks and took wait-and-see actions to make investment decisions.

All announcements of the president and vice-president nominees of Indonesia in 2023 showed a mixed market reaction; i.e., there were differences, and there were no differences, in AR, TVA, SRV, and bid-ask spreads (see Appendix 4, Appendix 5, and Appendix 6). This announcement exerted an impact on investor sentiment, manifesting in changes in stock prices, which in turn resulted in abnormal returns from the usual return. The reaction of 11 sectors based on the AR stated in H_1 (H_{1a} , H_{1b} , H_{1c}) was rejected and accepted in this study. Accepting H_1 means that there were differences in AR that investors could utilize to gain profits around the announcement of three nominees for president and vice president of Indonesia 2023. The acceptance of H_1 was supported by research stating that political events caused a mixed market reaction that was considered an anomaly (Eldomiaty et al., 2020) and arouse positive or negative returns (Ahmed, 2017; Audi et al., 2022; Nazir et al., 2014; Obradović & Tomić, 2017). Then, in line with research (Hatmanti & Sudibyo, 2017; Ruven et al., 2019), there are differences in AR around political events that are relevant to the phenomenon of this study. The rejection of H_1 was supported by a study (Kirana & Sembel, 2019; Luhur, 2010), showing no differences in AR around political events. Although abnormal returns appear around political events, it is

possible that the abnormal return only lasts for a short time, so it does not cause any difference in abnormal returns.

The reaction of 11 sectors based on the TVA stated in H_2 (H_{2a} , H_{2b} , H_{2c}) was rejected and accepted in this study. Some investors perceived the announcement of the three nominees for president and vice-president of Indonesia 2023 as important information for the capital market, so they traded to sell or buy stocks. This trading activity caused differences in TVA around the announcement. In this study, H_2 was accepted and supported by research (Kirana & Sembel, 2019). On the other hand, some investors still did not rush to trade their stocks based on this announcement, so there was no difference in TVA around the announcement. The rejection of H_2 is supported by research (Kemuning et al., 2021).

The reaction of 11 sectors based on the SRV stated in H_3 (H_{3a} , H_{3b} , H_{3c}) was rejected and accepted in this study. Security return variability assumes that an event or announcement is only positive for the capital market. Based on the announcement of three presidential and vice-presidential nominees of Indonesia 2023, the announcement of Ganjar-Mahfud and Prabowo-Gibran was positive for the capital market, causing a difference in SRV. This means that H_3 was accepted and in line with research (Saragih et al., 2019). Meanwhile, around the announcement of Anies-Muhaimin, it rejected H_3 , i.e., there was no difference in SRV. The rejection of H_3 is consistent with research (Bandiyono & Amalia, 2021; Kemuning et al., 2021).

Furthermore, stock liquidity on the announcement of three nominees for president and vice-president of Indonesia 2023 was seen from the bid-ask spread. The reaction of 11 sectors based on the bid-ask spread stated in H_4 (H_{4a} , H_{4b} , H_{4c}) was rejected and accepted in this study. This announcement caused supply and demand in the capital market to be less balanced than usual, meaning that stocks were less liquid around the announcement. Only a few sectors showed differences in bid-ask spread around the announcement. The acceptance of H_4 is supported by research (Listyaningsih et al., 2020; Wei, 2021). In comparison, the majority of sectors did not show any difference in bid-ask spread around the announcement, which means that stocks are still liquid in these sectors. This second statement rejected H_4 , which is consistent with a study carried out by Mansur and Jumaili (2014).

Conclusion

Based on all the results, the market reaction mixed considerably to the announcement of the Indonesian presidential and vice-presidential nominees in 2023, exhibiting a difference and no difference reactions in AR, TVA, SRV, and bid-ask spread in 11 sectors in the Indonesia Stock Exchange. Investors responded to the announcements of Anies-Muhaimin, Ganjar-Mahfud, and Prabowo-Gibran differently. The names of the president and vice-president nominees, their backgrounds, and their achievements were the valuation for investors. Hence, some investors responded to the announcement by making an investment decision to sell and buy stocks. At the same time, some other

investors tended to hold their stocks or do a wait-and-see action until there was political certainty, i.e., the Indonesian presidential election in 2024. In addition to investors, regulators will find out the capital market's reaction to this announcement and will consider formulating more effective policies for the capital market if the capital market receives similar political events or announcements in the future.

This study was limited by testing of capital market reactions to the announcement of three nominees for president and vice president of Indonesia 2023 by measuring the variables AR, TVA, SRV, and bid-ask spread. As such, future researchers can continue to research capital market reactions to political events, i.e., the Indonesian presidential election in 2024. Future research can also develop current variables with other proxies or add relevant variables, such as foreign sales and foreign buys. A foreign investor also looks at prospective Indonesian heads of state and their impact on the development of Indonesian capital markets so that they can make investment decisions.

Appendix

Appendix 1 Normality Test Results Before Annoucement

Variable	Decision	Announcement of Anies-Muhaimin	Announcement of Ganjar-Mahfud	Announcement of Prabowo-Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
AR	Not Normal	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.000)	ENERGY (0.000)	ENERGY (0.000)
		BASIC (0.000)	BASIC (0.000)	BASIC (0.000)
		INDUST (0.000)	INDUST (0.014)	INDUST (0.000)
		NONCYC (0.000)	NONCYC (0.000)	NONCYC (0.000)
		CYCLIC (0.000)	CYCLIC (0.000)	CYCLIC (0.000)
		HEALTH (0.004)	HEALTH (0.004)	HEALTH (0.004)
		FINANCE (0.000)	FINANCE (0.001)	FINANCE (0.000)
		PROPERT (0.000)	PROPERT (0.000)	PROPERT (0.000)
		TECHNO (0.000)	TECHNO (0.000)	TECHNO (0.005)
		INFRA (0.000)	INFRA (0.000)	INFRA (0.000)
		TRANS (0.002)	TRANS (0.000)	TRANS (0.000)
	Normal	-	-	-
TVA	Not Normal	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.000)	ENERGY (0.000)	ENERGY (0.000)
		BASIC (0.000)	BASIC (0.000)	BASIC (0.000)
		INDUST (0.000)	INDUST (0.000)	INDUST (0.000)
		NONCYC (0.000)	NONCYC (0.000)	NONCYC (0.000)
		CYCLIC (0.000)	CYCLIC (0.000)	CYCLIC (0.000)
		HEALTH (0.000)	HEALTH (0.000)	HEALTH (0.000)
		FINANCE (0.000)	FINANCE (0.000)	FINANCE (0.000)
		PROPERT (0.000)	PROPERT (0.000)	PROPERT (0.000)

Appendix 1 Normality Test Results Before Annoucement (Cont.)

Variable	Decision	Announcement of Anies-Muhaimin	Announcement of Ganjar-Mahfud	Announcement of Prabowo-Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
SRV	Normal	TECHNO (0.000)	TECHNO (0.000)	TECHNO (0.000)
		INFRA (0.000)	INFRA (0.000)	INFRA (0.000)
		TRANS (0.000)	TRANS (0.000)	TRANS (0.000)
	Not Normal	-	-	-
		All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.006)	BASIC (0.000)	BASIC (0.002)
		NONCYC (0.000)	INDUST (0.001)	NONCYC (0.000)
		CYCLIC (0.006)	CYCLIC (0.000)	FINANCE (0.003)
		FINANCE (0.003)	HEALTH (0.006)	PROPERT (0.000)
		PROPERT (0.011)	FINANCE (0.000)	TRANS (0.028)
		TRANS (0.028)		
		BASIC (0.058)	ENERGY (0.200)	ENERGY (0.072)
		INDUST (0.200)	NONCYC (0.100)	INDUST (0.200)
		HEALTH (0.181)	PROPERT (0.053)	CYCLIC (0.200)
		TECHNO (0.178)	TECHNO (0.200)	HEALTH (0.181)
		INFRA (0.091)	INFRA (0.167)	TECHNO (0.200)
			TRANS (0.099)	INFRA (0.200)
Bid-Ask Spread	Not Normal	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.000)	ENERGY (0.000)	ENERGY (0.000)
		BASIC (0.000)	BASIC (0.000)	BASIC (0.000)
		INDUST (0.000)	INDUST (0.000)	INDUST (0.000)
		NONCYC (0.000)	NONCYC (0.000)	NONCYC (0.000)
		CYCLIC (0.000)	CYCLIC (0.000)	CYCLIC (0.000)
		HEALTH (0.000)	HEALTH (0.000)	HEALTH (0.000)
		FINANCE (0.000)	FINANCE (0.000)	FINANCE (0.000)
		PROPERT (0.000)	PROPERT (0.000)	PROPERT (0.000)
		TECHNO (0.000)	TECHNO (0.000)	TECHNO (0.000)
		INFRA (0.000)	INFRA (0.000)	INFRA (0.000)
		TRANS (0.000)	TRANS (0.000)	TRANS (0.000)
	Normal	-	-	-

Notes: AR: Abnormal Return; TVA: Trading Volume Activity; SRV: Security Return Variability

Appendix 2 Normality Test Results During Annoucement

Variable	Decision	Announcement of Anies-Muhaimin	Announcement of Ganjar-Mahfud	Announcement of Prabowo-Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
AR	Not Normal	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.000)	ENERGY (0.000)	ENERGY (0.000)
		BASIC (0.000)	BASIC (0.000)	BASIC (0.000)
		INDUST (0.000)	INDUST (0.000)	INDUST (0.000)
		NONCYC (0.000)	NONCYC (0.000)	NONCYC (0.000)
		CYCLIC (0.000)	CYCLIC (0.000)	CYCLIC (0.000)
		HEALTH (0.024)	HEALTH (0.024)	HEALTH (0.024)
		FINANCE (0.000)	FINANCE (0.000)	FINANCE (0.000)

Appendix 2 Normality Test Results During Annoucement (Cont.)

Variable	Decision	Announcement of Anies- Muhaimin	Announcement of Ganjar- Mahfud	Announcement of Prabowo- Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
TVA		PROPERT (0.000)	PROPERT (0.000)	PROPERT (0.000)
		TECHNO (0.000)	TECHNO (0.000)	TECHNO (0.001)
		INFRA (0.000)	INFRA (0.000)	INFRA (0.000)
		TRANS (0.000)	TRANS (0.000)	TRANS (0.000)
	Normal	-	-	-
	Not Normal	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.000)	ENERGY (0.000)	ENERGY (0.000)
		BASIC (0.000)	BASIC (0.000)	BASIC (0.000)
		INDUST (0.000)	INDUST (0.000)	INDUST (0.000)
		NONCYC (0.000)	NONCYC (0.000)	NONCYC (0.000)
		CYCLIC (0.000)	CYCLIC (0.000)	CYCLIC (0.000)
		HEALTH (0.000)	HEALTH (0.000)	HEALTH (0.000)
		FINANCE (0.000)	FINANCE (0.000)	FINANCE (0.000)
		PROPERT (0.000)	PROPERT (0.000)	PROPERT (0.000)
		TECHNO (0.000)	TECHNO (0.000)	TECHNO (0.000)
		INFRA (0.000)	INFRA (0.000)	INFRA (0.000)
		TRANS (0.000)	TRANS (0.000)	TRANS (0.000)
	Normal	-	-	-
SRV	Not Normal	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.000)	ENERGY (0.000)	ENERGY (0.000)
		BASIC (0.000)	BASIC (0.000)	BASIC (0.000)
		INDUST (0.000)	INDUST (0.000)	INDUST (0.000)
		NONCYC (0.000)	NONCYC (0.000)	NONCYC (0.000)
		CYCLIC (0.000)	CYCLIC (0.000)	CYCLIC (0.000)
		HEALTH (0.000)	HEALTH (0.000)	HEALTH (0.000)
		FINANCE (0.000)	FINANCE (0.000)	FINANCE (0.000)
		PROPERT (0.000)	PROPERT (0.000)	PROPERT (0.000)
		TECHNO (0.000)	TECHNO (0.000)	TECHNO (0.000)
		INFRA (0.000)	INFRA (0.000)	INFRA (0.000)
		TRANS (0.000)	TRANS (0.000)	TRANS (0.000)
	Normal	-	-	-
		-	-	-
		-	-	-
		-	-	-
Bid-Ask Spread	Not Normal	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.000)	ENERGY (0.000)	ENERGY (0.000)
		BASIC (0.000)	BASIC (0.000)	BASIC (0.000)
		INDUST (0.000)	INDUST (0.000)	INDUST (0.000)
		NONCYC (0.000)	NONCYC (0.000)	NONCYC (0.000)
		CYCLIC (0.000)	CYCLIC (0.000)	CYCLIC (0.000)
		HEALTH (0.000)	HEALTH (0.000)	HEALTH (0.000)
		FINANCE (0.000)	FINANCE (0.000)	FINANCE (0.000)
		PROPERT (0.000)	PROPERT (0.000)	PROPERT (0.000)
		TECHNO (0.000)	TECHNO (0.000)	TECHNO (0.000)
		INFRA (0.000)	INFRA (0.000)	INFRA (0.000)
		TRANS (0.000)	TRANS (0.000)	TRANS (0.000)
	Normal	-	-	-
		-	-	-
		-	-	-
		-	-	-

Notes: AR: Abnormal Return; TVA: Trading Volume Activity; SRV: Security Return Variability

Appendix 3 Normality Test Result After Annoucement

Variable	Decision	Announcement of Anies- Muhaimin	Announcement of Ganjar- Mahfud	Announcement of Prabowo- Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
AR	Not Normal	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.012)	ENERGY (0.000)	ENERGY (0.012)
		BASIC (0.000)	BASIC (0.000)	BASIC (0.000)
		INDUST (0.000)	INDUST (0.000)	INDUST (0.000)
		NONCYC (0.000)	NONCYC (0.000)	NONCYC (0.000)
		CYCLIC (0.000)	CYCLIC (0.000)	CYCLIC (0.000)
		FINANCE (0.000)	HEALTH (0.000)	FINANCE (0.000)
		PROPERT (0.000)	FINANCE (0.000)	PROPERT (0.000)
		TECHNO (0.000)	PROPERT (0.000)	TECHNO (0.000)
		INFRA (0.000)	TECHNO (0.000)	INFRA (0.009)
		TRANS (0.000)	INFRA (0.000)	TRANS (0.002)
			TRANS (0.000)	
	Normal	HEALTH (0.200)	-	HEALTH (0.200)
TVA	Not Normal	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.000)	ENERGY (0.000)	ENERGY (0.000)
		BASIC (0.000)	BASIC (0.000)	BASIC (0.000)
		INDUST (0.000)	INDUST (0.000)	INDUST (0.000)
		NONCYC (0.000)	NONCYC (0.000)	NONCYC (0.000)
		CYCLIC (0.000)	CYCLIC (0.000)	CYCLIC (0.000)
		HEALTH (0.000)	HEALTH (0.000)	HEALTH (0.000)
		FINANCE (0.000)	FINANCE (0.000)	FINANCE (0.000)
		PROPERT (0.000)	PROPERT (0.000)	PROPERT (0.000)
		TECHNO (0.000)	TECHNO (0.000)	TECHNO (0.000)
		INFRA (0.000)	INFRA (0.000)	INFRA (0.000)
		TRANS (0.000)	TRANS (0.000)	TRANS (0.000)
	Normal	-	-	-
SRV	Not Normal	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		BASIC (0.000)	BASIC (0.000)	NONCYC (0.000)
		NONCYC (0.000)	CYCLIC (0.000)	CYCLIC (0.013)
		CYCLIC (0.013)	HEALTH (0.005)	FINANCE (0.000)
		FINANCE (0.000)	FINANCE (0.000)	
		PROPERT (0.019)	PROPERT (0.000)	
		TECHNO (0.043)	TECHNO (0.020)	
		INFRA (0.047)	TRANS (0.003)	
	Normal	ENERGY (0.200)	ENERGY (0.200)	ENERGY (0.172)
		INDUST (0.170)	INDUST (0.058)	BASIC (0.082)
		HEALTH (0.090)	NONCYC (0.123)	INDUST (0.054)
		TRANS (0.200)	INFRA (0.084)	HEALTH (0.090)
Bid-Ask Spread	Not Normal	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.000)	ENERGY (0.000)	ENERGY (0.000)
		BASIC (0.000)	BASIC (0.000)	BASIC (0.000)
		INDUST (0.000)	INDUST (0.000)	INDUST (0.000)
		NONCYC (0.000)	NONCYC (0.000)	NONCYC (0.000)
		CYCLIC (0.000)	CYCLIC (0.000)	CYCLIC (0.000)

Appendix 3 Normality Test Result After Annoucement (Cont.)

Variable	Decision	Announcement of Anies-Muhaimin	Announcement of Ganjar-Mahfud	Announcement of Prabowo-Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
		HEALTH (0.000)	HEALTH (0.000)	HEALTH (0.000)
		FINANCE (0.000)	FINANCE (0.000)	FINANCE (0.000)
		PROPERT (0.000)	PROPERT (0.000)	PROPERT (0.000)
		TECHNO (0.000)	TECHNO (0.000)	TECHNO (0.000)
		INFRA (0.000)	INFRA (0.000)	INFRA (0.000)
		TRANS (0.000)	TRANS (0.000)	TRANS (0.000)
	Normal	-	-	-

Notes: AR: Abnormal Return; TVA: Trading Volume Activity; SRV: Security Return Variability

Appendix 4 Wilcoxon Signed Rank Test Results Before-During Annoucement

Variable	Decision	Announcement of Anies-Muhaimin	Announcement of Ganjar-Mahfud	Announcement of Prabowo-Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
AR	Difference	All Sectors (0.000)		All Sectors (0.038)
		ENERGY (0.001)		
		BASIC (0.037)		
		CYCLIC (0.002)		
		INFRA (0.002)		
	No Difference	INDUST (0.094)	All Sectors (0.542)	ENERGY (0.408)
		NONCYC (0.864)	ENERGY (0.576)	BASIC (0.784)
		HEALTH (0.295)	BASIC (0.200)	INDUST (0.403)
		FINANCE (0.060)	INDUST (0.170)	NONCYC (0.449)
		PROPERT (0.117)	NONCYC (0.548)	CYCLIC (0.526)
		TECHNO (0.499)	CYCLIC (0.347)	HEALTH (0.510)
		TRANS (0.938)	HEALTH (0.614)	FINANCE (0.116)
			FINANCE (0.410)	PROPERT (0.899)
			PROPERT (0.953)	TECHNO (0.318)
			TECHNO (0.677)	INFRA (0.335)
			INFRA (0.176)	TRANS (0.061)
			TRANS (0.635)	
TVA	Difference	All Sectors (0.007)	-	-
	No Difference	ENERGY (0.655)	All Sectors (0.680)	All Sectors (0.634)
		BASIC (0.655)	ENERGY (0.655)	ENERGY (0.655)
		INDUST (0.665)	BASIC (0.964)	BASIC (0.317)
		NONCYC (0.713)	INDUST (0.767)	INDUST (0.594)
		CYCLIC (0.115)	NONCYC (0.093)	NONCYC (0.093)
		HEALTH (0.655)	CYCLIC (0.104)	CYCLIC (0.197)
		FINANCE (1.000)	HEALTH (0.180)	HEALTH (0.180)
		PROPERT (0.285)	FINANCE (0.317)	FINANCE (0.317)
		TECHNO (0.104)	PROPERT (0.655)	PROPERT (0.655)
		INFRA (0.317)	TECHNO (0.564)	TECHNO (0.564)
		TRANS (0.285)	INFRA (0.854)	INFRA (0.180)
			TRANS (0.854)	TRANS (0.285)

Appendix 4 Wilcoxon Signed Rank Test Results Before-During Announcement (Cont.)

Variable	Decision	Announcement of Anies-Muhaimin	Announcement of Ganjar-Mahfud	Announcement of Prabowo-Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
SRV	Difference	-	All Sectors (0.000)	All Sectors (0.000)
			BASIC (0.002)	BASIC (0.023)
			PROPERT (0.011)	CYCLIC (0.000)
			TECHNO (0.005)	PROPERT (0.000)
				TECHNO (0.013)
	No Difference	All Sectors (0.429)	ENERGY (0.970)	ENERGY (0.460)
		ENERGY (0.302)	INDUST (0.163)	INDUST (0.099)
		BASIC (0.493)	NONCYC (0.416)	NONCYC (0.163)
		INDUST (0.442)	CYCLIC (0.140)	HEALTH (0.567)
		NONCYC (0.149)	HEALTH (0.139)	FINANCE (0.684)
		CYCLIC (0.608)	FINANCE (0.217)	INFRA (0.343)
		HEALTH (0.482)	INFRA (0.127)	TRANS (0.313)
		FINANCE (0.888)	TRANS (0.201)	
		PROPERT (0.556)		
		TECHNO (0.789)		
		INFRA (0.097)		
		TRANS (1.000)		
Bid-Ask Spread	Difference	PROPERT (0.049)		BASIC (0.030)
	No Difference	All Sectors (0.240)	All Sectors (0.544)	All Sectors (0.153)
		ENERGY (0.233)	ENERGY (0.287)	ENERGY (0.383)
		BASIC (0.068)	BASIC (0.116)	INDUST (0.631)
		INDUST (0.497)	INDUST (0.469)	NONCYC (0.939)
		NONCYC (0.468)	NONCYC (0.089)	CYCLIC (0.396)
		CYCLIC (0.464)	CYCLIC (0.499)	HEALTH (0.056)
		HEALTH (0.913)	HEALTH (1.000)	FINANCE (0.929)
		FINANCE (0.172)	FINANCE (0.639)	PROPERT (0.658)
		TECHNO (0.896)	PROPERT (0.442)	TECHNO (0.465)
		INFRA (0.119)	TECHNO (0.070)	INFRA (0.640)
		TRANS (0.588)	INFRA (0.158)	TRANS (0.805)
			TRANS (0.896)	

Notes: AR: Abnormal Return; TVA: Trading Volume Activity; SRV: Security Return Variability

Appendix 5 Wilcoxon Signed Rank Test Results Before-After Announcement

Variable	Decision	Announcement of Anies-Muhaimin	Announcement of Ganjar-Mahfud	Announcement of Prabowo-Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
AR	Difference	All Sectors (0.009)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.046)	ENERGY (0.000)	INDUST (0.003)
		HEALTH (0.050)	BASIC (0.049)	NONCYC (0.035)
		INFRA (0.024)	NONCYC (0.023)	
			FINANCE (0.000)	
	No Difference		TRANS (0.002)	
		BASIC (0.635)	INDUST (0.147)	ENERGY (0.337)
		INDUST (0.149)	CYCLIC (0.101)	BASIC (0.483)
		NONCYC (0.072)	HEALTH (0.147)	CYCLIC (0.761)

Appendix 5 Wilcoxon Signed Rank Test Results Before-After Announcement (Cont.)

Variable	Decision	Announcement of Anies- Muhaimin	Announcement of Ganjar- Mahfud	Announcement of Prabowo- Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
TVA		CYCLIC (0.081)	PROPERT (0.289)	HEALTH (0.158)
		FINANCE (0.186)	TECHNO (0.417)	FINANCE (0.142)
		PROPERT (0.081)	INFRA (0.401)	PROPERT (0.075)
		TECHNO (0.888)		TECHNO (0.604)
		TRANS (0.510)		INFRA (0.248)
				TRANS (0.894)
	Difference	All Sectors (0.002)	-	-
	No Difference	ENERGY (0.593)	All Sectors (0.820)	All Sectors (0.912)
		BASIC (0.866)	ENERGY (0.345)	ENERGY (0.715)
		INDUST (0.345)	BASIC (0.950)	BASIC (0.779)
SRV		NONCYC (0.600)	INDUST (0.779)	INDUST (0.575)
		CYCLIC (0.110)	NONCYC (0.086)	NONCYC (0.086)
		HEALTH (0.115)	CYCLIC (0.463)	CYCLIC (0.754)
		FINANCE (0.317)	HEALTH (0.398)	HEALTH (0.398)
		PROPERT (0.515)	FINANCE (0.655)	FINANCE (0.655)
		TECHNO (0.110)	PROPERT (0.176)	PROPERT (0.499)
		INFRA (0.465)	TECHNO (0.093)	TECHNO (0.066)
		TRANS (0.144)	INFRA (0.612)	INFRA (0.735)
			TRANS (0.635)	TRANS (0.866)
	Difference	PROPERT (0.029)	BASIC (0.004)	HEALTH (0.027)
Bid-Ask Spread	No Difference	All Sectors (0.789)	All Sectors (0.658)	All Sectors (0.520)
		ENERGY (0.172)	ENERGY (0.382)	ENERGY (0.590)
		BASIC (0.490)	INDUST (0.116)	BASIC (0.422)
		INDUST (0.660)	NONCYC (0.764)	INDUST (0.828)
		NONCYC (0.833)	CYCLIC (0.126)	NONCYC (0.911)
		CYCLIC (0.657)	HEALTH (0.133)	CYCLIC (0.376)
		HEALTH (0.991)	FINANCE (0.213)	FINANCE (0.950)
		FINANCE (0.596)	PROPERT (0.735)	PROPERT (0.587)
		TECHNO (0.489)	TECHNO (0.116)	TECHNO (0.912)
		INFRA (0.962)	INFRA (0.782)	INFRA (0.684)
Bid-Ask Spread		TRANS (0.183)	TRANS (0.437)	TRANS (0.331)
	Difference	PROPERT (0.045)	FINANCE (0.029)	CYCLIC (0.013)
	No Difference	All Sectors (0.962)	All Sectors (0.432)	All Sectors (0.080)
		ENERGY (0.678)	ENERGY (0.475)	ENERGY (0.844)
		BASIC (0.221)	BASIC (0.859)	BASIC (0.330)
		INDUST (0.590)	INDUST (0.370)	INDUST (0.075)
		NONCYC (0.783)	NONCYC (0.590)	NONCYC (0.794)
		CYCLIC (0.133)	CYCLIC (0.241)	HEALTH (0.673)
		HEALTH (0.210)	HEALTH (0.400)	FINANCE (0.417)
		FINANCE (0.852)	PROPERT (0.735)	PROPERT (0.812)
Bid-Ask Spread		TECHNO (0.829)	TECHNO (0.116)	TECHNO (0.493)
		INFRA (0.782)	INFRA (0.191)	INFRA (0.963)
		TRANS (0.834)	TRANS (0.675)	TRANS (0.627)

Notes: AR: Abnormal Return; TVA: Trading Volume Activity; SRV: Security Return Variability

Appendix 6 Wilcoxon Signed Rank Test Results During-After Announcement

Variable	Decision	Announcement of Anies-Muhaimin	Announcement of Ganjar-Mahfud	Announcement of Prabowo-Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
AR	Difference	All Sectors (0.000)	All Sectors (0.000)	All Sectors (0.000)
		ENERGY (0.000)	ENERGY (0.006)	INDUST (0.021)
		CYCLIC (0.001)	FINANCE (0.002)	FINANCE (0.014)
		INFRA (0.013)		
	No Difference	BASIC (0.078)	BASIC (0.788)	ENERGY (0.056)
		INDUST (0.447)	INDUST (0.538)	BASIC (0.514)
		NONCYC (0.154)	NONCYC (0.514)	NONCYC (0.125)
		HEALTH (0.837)	CYCLIC (0.080)	CYCLIC (0.476)
		FINANCE (0.349)	HEALTH (0.139)	HEALTH (0.350)
		PROPERT (0.683)	PROPERT (0.167)	PROPERT (0.247)
		TECHNO (0.857)	TECHNO (0.591)	TECHNO (0.623)
		TRANS (0.505)	INFRA (0.485)	INFRA (0.300)
			TRANS (0.154)	TRANS (0.326)
TVA	Difference	All Sectors (0.010)	-	-
	No Difference	ENERGY (1.000)	All Sectors (0.379)	All Sectors (0.897)
		BASIC (0.889)	ENERGY (0.686)	ENERGY (0.715)
		INDUST (0.310)	BASIC (0.964)	BASIC (0.779)
		NONCYC (0.865)	INDUST (0.066)	INDUST (0.066)
		CYCLIC (0.182)	NONCYC (0.705)	NONCYC (0.705)
		HEALTH (0.115)	CYCLIC (0.701)	CYCLIC (0.701)
		FINANCE (0.317)	HEALTH (0.398)	HEALTH (0.398)
		PROPERT (0.959)	FINANCE (0.655)	FINANCE (0.655)
		TECHNO (0.114)	PROPERT (0.263)	PROPERT (0.575)
		INFRA (0.465)	TECHNO (0.086)	TECHNO (0.059)
		TRANS (0.138)	INFRA (0.398)	INFRA (0.735)
			TRANS (0.779)	TRANS (0.484)
SRV	Difference	-	All Sectors (0.000)	All Sectors (0.000)
			CYCLIC (0.010)	BASIC (0.002)
			FINANCE (0.030)	CYCLIC (0.026)
			PROPERT (0.004)	PROPERT (0.008)
			TECHNO (0.000)	TECHNO (0.015)
	No Difference	All Sectors (0.611)	ENERGY (0.772)	ENERGY (0.252)
		ENERGY 0.832)	BASIC (0.618)	INDUST (0.372)
		BASIC (0.628)	INDUST (0.993)	NONCYC (0.318)
		INDUST (0.138)	NONCYC (0.488)	HEALTH (0.439)
		NONCYC (0.224)	HEALTH (0.792)	FINANCE (0.574)
		CYCLIC (0.509)	INFRA (0.304)	INFRA (0.367)
		HEALTH (0.581)	TRANS (0.881)	TRANS (0.116)
		FINANCE (0.268)		
		PROPERT (0.524)		
		TECHNO (0.481)		
		INFRA (0.328)		
		TRANS (0.272)		

Appendix 6 Wilcoxon Signed Rank Test Results During-After Announcement (Cont.)

Variable	Decision	Announcement of Anies- Muhaimin	Announcement of Ganjar- Mahfud	Announcement of Prabowo- Gibran
		Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))	Sector (Sig. (2-tailed))
Bid-Ask Spread	Difference	BASIC (0.017)	-	All Sectors (0.003)
				BASIC (0.006)
	No Difference	All Sectors (0.978)	All Sectors (0.987)	ENERGY (0.302)
		ENERGY (0.134)	ENERGY (0.160)	INDUST (0.410)
		INDUST (0.810)	BASIC (0.201)	NONCYC (0.640)
		NONCYC (0.606)	INDUST (0.757)	CYCLIC (0.077)
		CYCLIC (0.584)	NONCYC (0.070)	HEALTH (0.126)
		HEALTH (0.485)	CYCLIC (0.899)	FINANCE (0.623)
		FINANCE (0.182)	HEALTH (0.948)	PROPERT (0.635)
		PROPERT (0.059)	FINANCE (0.199)	TECHNO (0.142)
		TECHNO (0.263)	PROPERT (0.113)	INFRA (0.569)
		INFRA (0.819)	TECHNO (0.837)	TRANS (0.975)
		TRANS (0.311)	INFRA (0.613)	
			TRANS (1.000)	

Notes: AR: Abnormal Return; TVA: Trading Volume Activity; SRV: Security Return Variability

References

- Admati, A. R., & Pfleiderer, P. (1988). A Theory of Intraday Patterns: Volume and Price Variability. *The Review of Financial Studies*, 1(1), 3–40. <https://doi.org/10.1093/rfs/1.1.3>
- Affleck-Graves, J., Callahan, C. M., & Ramanan, R. (2000). Detecting Abnormal Bid-Ask Spread: A Comparison of Event Study Methods. *Review of Quantitative Finance and Accounting*, 14, 45–65. <https://doi.org/10.1023/A:1008328107489>
- Ahmed, S., Hasan, M. M., & Kamal, M. R. (2023). Russia–Ukraine crisis: The effects on the European stock market. *European Financial Management*, 29(4), 1078–1118. <https://doi.org/10.1111/eufm.12386>
- Ahmed, W. M. A. (2017). The impact of political regime changes on stock prices: The case of Egypt. *International Journal of Emerging Markets*, 12(3), 508–531. <https://doi.org/10.1108/IJoEM-12-2015-0258>
- Audi, M., Sulehri, F. A., Ali, A., & Al-Masri, R. (2022). An Event Based Analysis of Stock Return and Political Uncertainty in Pakistan: Revisited. *International Journal of Economics and Financial Issues*, 12(5), 39–56. <https://doi.org/10.32479/ijefi.13239>
- Bandiyono, A., & Amalia, P. (2021). The Effect of State Budget Ratification and Expenditure on The Indonesian Capital Market: An Empirical Study on The LQ 45 Index Shares. *Jurnal Keuangan Dan Perbankan*, 25(2), 379–399. <https://doi.org/10.26905/jkdp.v25i2.5134>
- Binder, J. J. (1998). The Event Study Methodology Since 1969. *Review of Quantitative Finance and Accounting*, 11, 111–137. <https://doi.org/10.1023/A:1008295500105>
- CNBCIndonesia. (2023a, Oktober). Beda dengan Jokowi, Pasar Sambut Dingin Capres-Cawapres 2024. *CNBC Indonesia*. <https://www.cnbcindonesia.com/research/20231023112422-128-482811/beda-dengan-jokowi-pasar-sambut-dingin-capres-cawapres-2024>
- CNBCIndonesia. (2023b, September 4). Intrik Di Balik Duet Anies-Cak Imin & Kecewanya Demokrat!. *CNBC Indonesia*.

- <https://www.cnbcindonesia.com/news/20230904093205-8-468786/intrik-di-balik-duet-anies-cak-imin-kecewanya-demokrat>
- CNBCIndonesia. (2024, January 30). Lengkap! Profil Anies-Cak Imin-Prabowo-Gibran-Ganjar-Mahfud. *CNBC Indonesia*.
<https://www.cnbcindonesia.com/research/20240128172721-128-509658/lengkap-profil-anies-cak-imin-prabowo-gibran-ganjar-mahfud>
- CNNIndonesia. (2023, November 22). Apa Faktor Penyebab Elektabilitas Ganjar-Mahfud Merosot?. *CNNIndonesia*. <https://www.cnnindonesia.com/nasional/20231122102936-617-1027425/apa-faktor-penyebab-elektabilitas-ganjar-mahfud-merosot>
- Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling Theory: A Review and Assessment. *Journal of Management*, 37(1), 39–67.
<https://doi.org/10.1177/0149206310388419>
- Eldomiaty, T. I., Anwar, M., Magdy, N., & Hakam, M. N. (2020). Robust examination of political structural breaks and abnormal stock returns in Egypt. *Future Business Journal*, 6(1), 22. <https://doi.org/10.1186/s43093-020-00014-z>
- Fama, E. F. (1998). Market Efficiency, Long-Term Return, and Behavioral Finance. *Journal of Financial Economics*, 49(3), 283–306. [https://doi.org/10.1016/S0304-405X\(98\)00026-9](https://doi.org/10.1016/S0304-405X(98)00026-9)
- Foster, F. D., & Viswanathan, S. (1993). Variations in Trading Volume, Return Volatility, and Trading Costs: Evidence on Recent Price Information Models. *The Journal of Finance*, 48(1), 187–211. <https://doi.org/10.1111/j.1540-6261.1993.tb04706.x>
- Hanafi, M. (1997). Informasi Laporan Keuangan: Studi Kasus Pada Emiten BEJ. *KELOLA Gadjah Mada University Business Review*, 1(16), 74–87.
- Hatmanti, A., & Sudibyo, B. (2017). Pengaruh pelantikan kabinet kerja hasil reshuffle jilid ii terhadap harga saham LQ-45. *Jurnal Economia*, 13(1), 1.
<https://doi.org/10.21831/economia.v13i1.11797>
- IDX. (2023). *Ringkasan Saham*. Indonesian Stock Exchange. <https://www.idx.co.id/id/data-pasar/ringkasan-perdagangan/ringkasan-saham/>
- Jogiyanto. (2019). *Teori Portofolio dan Analisis Investasi* (11th ed.). BPFE-Yogyakarta.
- Kamal, M. R., Ahmed, S., & Hasan, M. M. (2023). The impact of the Russia-Ukraine crisis on the stock market: Evidence from Australia. *Pacific-Basin Finance Journal*, 79, 102036.
<https://doi.org/10.1016/j.pacfin.2023.102036>
- Kemuning, N. L. D., Prianthara, I. B. T., & Wistawan, I. M. A. P. (2021). Reaksi Pasar terhadap Peristiwa Politik 2019 di Indonesia. *E-Jurnal Akuntansi*, 31(7), 1746.
<https://doi.org/10.24843/EJA.2021.v31.i07.p11>
- Kirana, N., & Sembel, R. (2019). The effect of political event on the Indonesian Stock Market: an event study of presidential election on LQ45 Index Stocks. *International Journal of Business, Economics and Law*, 19(1), 40–49.
- Kirikkaleli, D. (2020). The effect of domestic and foreign risks on an emerging stock market: A time series analysis. *The North American Journal of Economics and Finance*, 51, 100876.
<https://doi.org/10.1016/j.najef.2018.11.005>
- Listyaningsih, E., Sariningsih, E., & Mudrikah, R. (2020). Stock Market Reaction to Indonesia Presidential and Legislative Election. *Binus Business Review*, 11(2), 91–96.
<https://doi.org/10.21512/bbr.v11i2.6302>
- Luhur, S. (2010). Reaksi Pasar Modal Indonesia Seputar Pemilihan Umum 8 Juli 2008 Pada Saham LQ-45. *Jurnal Keuangan Dan Perbankan*, 14(2), 249–262.
<https://doi.org/10.26905/jkdp.v14i2.971>
- Mansur, F., & Jumaili, S. (2014). Reaksi pasar modal terhadap peristiwa pemilihan umum tahun 2014 pada perusahaan terdaftar di Bursa Efek Indonesia. *Jurnal penelitian Universitas Jambi: seri humaniora*, 16(2), 43448.

- McWilliams, A., & Siegel, D. (1997). Event studies in management research: Theoretical and empirical issues. *Academy of management journal*, 40(3), 626-657.
<https://doi.org/10.5465/257056>
- MKRI. (2023, Oktober). Batas Usia Capres-Cawapres 40 Tahun Atau Menduduki Jabatan yang Dipilih dari Pemilu/Pilkada. *Mahkamah Konstitusi Republik Indonesia*.
<https://www.mkri.id/index.php?page=web.Berita&id=19660&menu=2>
- Musah, G., Domeher, D., & Musah, A. (2023). Presidential elections and stock return volatility: Evidence from selected sub-Saharan African stock markets. *Journal of Financial Economic Policy*, 15(3), 248–262. <https://doi.org/10.1108/JFEP-02-2023-0033>
- Nazir, M. S., Younus, H., Kaleem, A., & Anwar, Z. (2014). Impact of political events on stock market returns: Empirical evidence from Pakistan. *Journal of Economic and Administrative Sciences*, 30(1), 60–78. <https://doi.org/10.1108/JEAS-03-2013-0011>
- Obradović, S., & Tomić, N. (2017). The effect of presidential election in the USA on stock return flow – a study of a political event. *Economic Research-Ekonomska istraživanja*, 30(1), 112–124. <https://doi.org/10.1080/1331677X.2017.1305802>
- Perwitasari, A. W., & Gunarsih, T. (2017). TVA, Abnormal Return, and Investor Perception on Changing of Tick Size 2 May 2016. *Jurnal Keuangan Dan Perbankan*, 21(3), 366–375. <https://doi.org/10.26905/jkdp.v21i3.1316>
- Roll, R. (1984). A Simple Implicit Measure of The Effective Bid-Ask Spread in an Efficient Market. *The Journal of Finance*, 4, 1127–1139. <https://doi.org/10.1111/j.1540-6261.1984.tb03897.x>
- Ruven, R., Azam, A. N., & Ferry, S. (2019). Impact of presidential election on Indonesian capital market: an event study analysis. *Russian Journal of Agricultural and Socio-Economic Sciences*, 7(91), 177–185. <https://doi.org/10.18551/rjoas.2019-07.18>
- Saragih, E. M., Sadalia, I., & Silalahi, A. S. (2019). The Impact of Presidential Election on Abnormal Return, Trading Volume Activity, Security Return Variability in Banking Industries Listed on the Indonesia Stock Exchange. *International Journal of Research & Review*, 6(5), 246-261.
- Sen, M. (2017). How Political Signals Affect Public Support for Judicial Nominations: Evidence from a Conjoint Experiment. *Political Research Quarterly*, 70(2), 374–393. <https://doi.org/10.1177/1065912917695229>
- Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics*, 87(3), 355. <https://doi.org/10.2307/1882010>
- Sugiyono. (2019). *Metode Penelitian Kuantitatif Kualitatif dan R&D* (2nd ed.). Penerbit Alfabeta.
- Tempo. (2023, Oktober). *Respons Tudingan Politik Dinasti, Gibran Rakabuming: Biar Warga yang Menilai*. Tempo. <https://pemilu.tempo.co/read/1787034/respons-tudingan-politik-dinasti-gibran-rakabuming-biar-warga-yang-menilai>
- Trinugroho, I., Fajrin, A., & Sutaryo, S. (2016). Is the effect of a political event more pronounced for government controlled firms? *Journal of Economics, Business & Accountancy Ventura*, 19(2), 173. <https://doi.org/10.14414/jebav.v19i2.629>
- Wardhani, R. S., Vehtasvili, Aprilian, R. I., Yanto, Suhdi, Yunita, A., & Agustina, D. (2022). *Mengenal Saham*. Penerbit K-Media.
- Wei, J. (2021). Geopolitical Factor Impact of Brexit-related Events on Stocks. *Proceeding. 5th International conference on education, management and social science (EMSS 2021)*, 239–252.
- Wibowo, A., & Darmanto, S. (2017). Reaction of Indonesian Capital Market Investors to the Implementation of Tax Amnesty. *Jurnal Keuangan Dan Perbankan*, 21(4), 597–608. <https://doi.org/10.26905/jkdp.v21i4.1607>
- Wong, W.-Y., & Hooy, C.-W. (2020). Market response towards different types of politically connected firms during political events: Evidence from Malaysia. *International Journal of Managerial Finance*, 17(1), 49–71. <https://doi.org/10.1108/IJMF-09-2019-0331>

Rochimah & Yuliana

Eleven sectors' reaction to the political event 2023: ...

Yudaruddin, R., & Lesmana, D. (2023). Banking sector's reaction during the Russian invasion of Ukraine: Who reacted the most? *Journal of Economic Studies*.

<https://doi.org/10.1108/JES-04-2023-0206>

Zulfikar, R., & Mayvita, P. A. (2017). The effects of political events against abnormal return and total volume sharia shares activity that listed in jakarta islamic index (JII). *JEMA: Jurnal Ilmiah Bidang Akuntansi Dan Manajemen*, 14(02), 157.

<https://doi.org/10.31106/jema.v14i02.511>

About the Authors

Ainun Rochimah (A.R.) is a student of Management Study Program, Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia. Email address: 200501110258@student.uin-malang.ac.id

Indah Yuliana (I.Y.) is a lecturer at Department of Economics, Universitas Islam Negeri Maulana Malik Ibrahim Malang, Indonesia. Email address: indahoty@manajemen.uin-malang.ac.id

Author Contributions

Conceptualisation, A.R. and I.Y.; Methodology, A.R and I.Y.; Investigation, A.R and I.Y.; Analysis, A.R and I.Y.; Original draft preparation, A.R.; Review and editing, A.R and I.Y.; Visualization, A.R.; Supervision, I.Y.

Conflicts of Interest

The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.



© 2024 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC-BY-NC-ND 4.0) license (<http://creativecommons.org/licenses/by/4.0/>).