

The Impact of The 2022 Russian Invasion of Ukraine On The Indonesian Capital Market

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Abstract: This study aims to analyze the impact of the Russian invasion of Ukraine on February 24, 2022, on the Indonesian capital market, particularly on the stocks listed in the LQ45 index, as well as on exchange rates and cryptocurrency trading volumes. The research employs a quantitative approach using an event study method, focusing on a 15-day observation window—comprising 7 days before, the day of, and 7 days after the invasion event. The variables analyzed include abnormal return (AR), trading volume activity (TVA), exchange rates, and cryptocurrency transaction volume. The research sample consists of issuers listed in the LQ45 index and the three largest cryptocurrencies by market capitalization—Bitcoin, Ethereum, and Tether (USDT)—selected through purposive sampling. The findings indicate that the Russian invasion of Ukraine had a significant impact on abnormal returns and trading volume activity of LQ45 stocks, as well as on exchange rates and cryptocurrency trading volumes. This geopolitical event emerged as an external factor contributing to market uncertainty, prompting investors to adjust their investment strategies in both stock markets and digital assets. These findings confirm that global conflicts are closely linked to the dynamics of domestic financial markets.

Keywords: abnormal return, capital market, cryptocurrency, event study, LQ45, Russian invasion, Ukraine.

1. Introduction

A country's economic development cannot be separated from investment activities, as investments play a vital role in supporting business growth, generating employment, and increasing national income. One of the main indicators reflecting a country's investment climate is the capital market. In Indonesia, the capital market serves as a meeting point between parties with capital and those in need of funding through the trading of various financial instruments such as stocks, bonds, and mutual funds. The Indonesia Composite Index (IHSG) serves as the primary indicator of stock market performance, along with other indices such as LQ45, IDX30, and JII (Evrina, Rozi, Mariana, and Budianto, 2023).

The capital market fulfills two essential functions: it provides funding for companies (issuers) and offers investment opportunities for the public. However, the market is highly sensitive to global events, including international conflicts. One major event that created global uncertainty was the Russian invasion of Ukraine in 2022. Historically, wars and conflicts have often triggered economic turmoil, either directly or indirectly. Although certain parties may benefit from such events, the overall negative impact—particularly on the stability of financial markets—tends to outweigh the benefits (Mekel, Saerang, and Maramis, 2023).

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Events like the Russian invasion of Ukraine influence investor decisions due to the critical information they convey, which affects risk and return expectations. In the capital market, reactions to such events can be measured using abnormal returns and trading volume activity (TVA). When an event generates abnormal returns, it indicates that the market perceives the information as significant. Investors, therefore, adjust their investment strategies based on the development of such events, as their decisions are heavily influenced by the information available in the market (Nerlinger and Utz, 2022).

Amid global uncertainty, the public has also started turning to alternative investment instruments like cryptocurrencies, which are considered more flexible and easily accessible. According to data from BAPPETI, the number of cryptocurrency investors in Indonesia surged from 11.2 million in 2021 to 16.1 million in 2022. This increase was driven by growing digital financial literacy and clearer regulations. Nevertheless, traditional capital markets remain a vital part of Indonesia's financial system, one that remains sensitive to global dynamics, including the impact of the Russia–Ukraine conflict (Susilowardhani et al., 2022).

The Russian invasion of Ukraine on February 24, 2022, stands as one of the largest military conflicts in Europe since World War II, triggering global anxiety, surging energy and food prices, and shocks in the global financial markets. The impact extended to Indonesia, considering that both Ukraine and Russia are major suppliers of commodities such as wheat and energy. Export disruptions caused by the war also affected Indonesia's economic sectors, including its capital market. Several studies have concluded that the invasion had a significantly negative effect on global stock markets, including in Indonesia, reflecting the market's sensitivity to international geopolitical conflicts (Behera and Chinmaya, 2023).

2. METHODS

This research adopts a quantitative approach using an event study method to observe market reactions to the Russian invasion of Ukraine on February 24, 2022. The study focuses on changes in Abnormal Return and Trading Volume Activity (TVA) in stocks listed in the LQ45 index, as well as exchange rates and cryptocurrency trading volumes. The observation period spans 15 working days, consisting of 7 days before, the day of, and 7 days after the event. The observation window for LQ45 is from February 15 to March 9, 2022, while for cryptocurrencies it runs from February 17 to March 3, 2022, adjusted to the characteristics of each market. The independent variable in this study is the invasion event, while the dependent variables include Abnormal Return, TVA, exchange rates, and cryptocurrency trading volumes. Each variable is measured using specific formulas and indicators based on relevant theories and data characteristics.

The population of this study includes all issuers listed in the LQ45 index on the Indonesia Stock Exchange and the top three cryptocurrencies by market capitalization—Bitcoin, Ethereum, and Tether (USDT). The sample was selected through purposive sampling based on the following criteria: companies listed in LQ45 between February and July 2022, companies that did not conduct major corporate actions such as stock splits, dividends, or mergers during the observation period, and stocks that were actively traded. For cryptocurrencies, those with the highest market capitalization during the observation period

were selected. This study aims to examine whether significant changes occurred in market indicators in response to the global geopolitical event.

3. RESULTS AND DISCUSSION

Descriptive Analysis

*Abnormal Return*LQ45 Stocks

Table 1. Summary Statistics of Abnormal Return (AR) for LQ45 Shares

Condition	N	Minimum	Maximum	Mean
<i>Abnormal return</i> LQ45 Stocks Before Invasion	315	-15,539	36,132	3.69
<i>Abnormal return</i> LQ45 Stocks After Invasion	315	-16,798	38,516	2.32

Source: Research Results, SPSS

Based on table 1, the difference in the abnormal return (AR) value of LQ45 stocks between before and after the Russian Invasion event can be seen. Abnormal return (AR) itself, can be simply interpreted as a reflection of how far the stock performance deviates from the expected return based on ideal market conditions. Before the invasion, the average abnormal return (AR) of LQ45 stocks was 3.69 with a maximum value of 36.132 and a minimum value of 15.539. These figures show that before the invasion, although there were some stocks that experienced a greater decline than expected, there were also stocks that experienced a significant spike in returns.—

After the invasion, the average abnormal return (AR) decreased slightly to 2.32. This shows that the performance conditions have weakened slightly compared to what was expected. The minimum abnormal return value also decreased to -16.798, which means that some stocks experienced a greater negative deviation from the return that should have occurred under normal conditions. Conversely, the maximum value increased to 38.516. This shows that even though the market experienced pressure from the invasion that occurred, there were still stocks that provided returns far above market expectations. The difference in impact experienced by several stocks indicates that the effects of this invasion were uneven, some stocks experienced pressure, but some stocks were able to produce higher returns than their ideal conditions. In other words, the geopolitical event (invasion) that occurred could create higher return volatility which ultimately led to more extreme return deviations in the market.

*Trading Volume*LQ45 Stock Activity

Table 2. Summary Statistics for TVA LQ45 Shares

Condition	N	Minimum	Maximum	Mean
TVA (%) Pre-Invasion Shares	315	0.009	1,718	0.181
TVA (%) Shares After Invasion	315	0.011	5,846	0.377

Source: Research Results, SPSS

TVA reflects how much stock trading activity there is in a certain period, which can be used as an indicator of liquidity and investor response to market conditions. Based on the table2, there is a change in the trading volume activity (TVA) of LQ45 stocks before and after the invasion. Before the Russian Invasion, the average TVA was 0.181% with a maximum value of 1.718% and a minimum of 0.009%. This shows that under normal conditions before

the invasion, there was variation in the level of stock trading activity, where some stocks experienced a high volume spike, while other stocks had very low transaction volumes.

After the invasion, the average TVA increased relatively to 0.377%, which means that stock trading activity generally increased after the event. The minimum TVA value increased only slightly to 0.011%, which means that even stocks with the lowest level of trading activity experienced an increase. Similar to the minimum value, the maximum value also increased. The maximum value increased quite drastically to 5.846%, indicating that there was a large spike in trading volume in certain stocks, possibly due to the market's reaction to the uncertainty created after the invasion.

Cryptocurrency Exchange Rates

Table 3. Summary Statistics Cryptocurrency Exchange Rates (USD)

Exchange Rate Conditions	N	Bitcoin			Ether			Tether		
		Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
Before the Invasion	7	37,059.98	40,562.99	38,873.25	2,574.51	2,881.61	2,698.39	0.999	1.002	1.001
After the Invasion	7	37,803.59	44,459.59	41,091.37	2,599,934	2,977,276	2,809.18	0.999	1.003	1.001

Source: Research Results, SPSS

Table 3 shows that there are differences in several statistical values of the exchange rates of three types of cryptocurrency between before and after the Russian Invasion. Table 4.3 shows that there was an increase in the minimum, maximum, and average values of the Bitcoin exchange rate of 2.01, 9.61 and 5.71 percent. This shows that there is a significant fluctuation even though it does not show an extreme increase. The increase in the Bitcoin exchange rate after the invasion can be influenced by external factors that arise as a result of the Russian Invasion.

The increase in the exchange rate after the Russian Invasion also occurred in Ether. The minimum, maximum, and average values of the Ether exchange rate increased by 0.92, 3.32, and 4.11 percent, respectively.

On the other hand, Tether is generally more stable than Bitcoin and Ether as indicated by the stagnant or unchanged minimum and average values between before and after the invasion. Although there was an increase in the maximum exchange rate, the value was still very small compared to the increase in the other two types of cryptocurrencies. The high stability of Tether shows that this type of cryptocurrency was able to maintain a stable exchange rate during the Russian Invasion.

Transaction Volume Cryptocurrency

Table 4. Summary Statistics Transaction Volume Cryptocurrency (USD)

Statistics	Conditions Before Invasion	Conditions After Invasion
Bitcoin		
Min	19,195,482,145.52	25,934,649,801.12

Max	25,174,914,104.16	40,839,699,480.89
Mean	11,735,183,838.18	14,568,201,294.75
Ether		
Min	14,808,874,701.65	19,129,578,942.19
Max	19,206,327,576.15	30,992,409,365.84
Mean	9,956,229,564.57	11,984,293,384.91
Tether		
Min	40,938,835,236.79	55,129,308,288.42
Max	51,529,444,154.03	82,085,176,750.29
Mean	28,774,290,103.61	36,450,975,757.51

Ssource: Research Results, SPSS

Based on the statistical measures in table 4, it shows that there are differences in several statistical values on the exchange rates of three types of cryptocurrency between before and after the Russian Invasion event. The increase occurred in the minimum, maximum, and average values. Transaction Volume cryptocurrencies Bitcoin, Ether, and Tether. This shows that there is an increase volume transactions after the Russian Invasion. The increase volume The transaction shows the greater interest of investors and traders in the cryptocurrency after the Russian Invasion. In addition to investor interest, Transaction Volume which also shows that the higher the trading volume, the easier it is for investors to buy/sell cryptocurrency without influence prices significantly. High trading volumes are an indication of a liquid market and large transactions can be influence price.

Based on the previous explanation, it is seen that some conditions, for example, AR on stocks have different values between before and after the invasion where there is an increase if viewed descriptively. Therefore, to ensure that there is a specific average difference between these two periods, a further stage is needed in the form of an average difference test.

Inferential Analysis

Normality Testing

Table 5. Normality Test of Abnormal Return (AR) and Trading Volume Activity (TVA) of LQ45 Shares

<i>One-Sample Kolmogorov-Smirnov Test</i>			
		<i>Abnormal return</i> Share	TVA Stocks
N		630	630
<i>Normal Parameters</i>	<i>Mean</i>	3.01	0.279
	<i>Std. Dev.</i>	9,494	0.418

<i>Most Extreme Differences</i>	<i>Absolute</i>	0.106	0.259
	<i>Positive</i>	0.106	0.220
	<i>Negative</i>	-0.057	-0.259
<i>Test Statistics</i>		0.106	0.259
<i>Asymp. Sig. (2-tailed)/p-value</i>		.000	.000

Source: Research Results, SPSS

Wilcoxon Signed Rank Test

Table 7. Wilcoxon Signed Rank Abnormal Return (AR) Test for LQ45 Stocks

<i>Test Statistics</i>	
	AR_Shares_After – AR_Stock_Before
<i>Z</i>	-3,160
<i>Asymp. Sig. (2-tailed)/p-value</i>	0.002

Source: Research Results, SPSS

The first test was conducted to ensure that there was a difference in the abnormal return (AR) of LQ45 shares before and after the Russian Invasion. Based on Table 7 of the Wilcoxon Signed Rank Abnormal Return (AR) Test of LQ45 Shares, it is known that the results of the test show a p-value of 0.002 ($0.002 < 0.005$), the asymp sig. value (2-tailed) is smaller than 0.05, which means that there is a difference in abnormal return(AR) in the event of the Russian invasion of Ukraine in 2022.

The following Table 8 presents the Wilcoxon Signed Rank Trading Volume Activity test for LQ45 shares.

Table 8. Wilcoxon Signed Rank Trading TestVolumeActivities(TVA) LQ45 Stocks.

<i>Test Statistics</i>	
	TVA_Stock_After – TVA_Stock_Before
<i>Z</i>	-11,187
<i>Asymp. Sig. (2-tailed)/p-value</i>	0,000

Source: Research Results, SPSS

Based on table 8 Wilcoxon Signed Rank Trading TestVolumeActivities(TVA) LQ45 shares produce an asymp sig. (2-tailed) value of 0.000 ($0.000 < 0.05$). The asymp sig. (2-tailed) value is 0.000. This means that there is a difference between before and after the Russian invasion of Ukraine in 2022.Trading Volume Activity(TVA) LQ45 shares.

Table 9. Wilcoxon Signed Rank Test of Cryptocurrency Exchange Rates

<i>Test Statistics</i>	
	Crypto_Exchange_Rates_After – Crypto_Exchange_Rates_Before
<i>Z</i>	-3,319
<i>Asymp. Sig. (2-tailed)/p-value</i>	<0.001

Source: Research Results, SPSS

In addition to testing on LQ45 stocks, the Wilcoxon Signed Rank Test is also used for cryptocurrency. In Table 9, the Wilcoxon Signed Rank Test of cryptocurrency exchange rates is used to see if there is a difference between cryptocurrency exchange rates before and after the Russian Invasion event. Based on the table, the resulting asymp sig. (2-tailed) value is 0.001 ($0.000 < 0.05$). The asymp sig. (2-tailed) value is 0.001. This means that there is a difference

between before and after the Russian invasion event in the cryptocurrency exchange rates studied, namely Bitcoin, Ether, and Tether.

Table 10. Wilcoxon Signed Rank Test Transaction Volume Cryptocurrencies

<i>Test Statistics</i>	
	Transaction Volume_After – Transaction Volume_Before
Z	-3,493
Asymp. Sig. (2-tailed)/p-value	<0.001

Source: Research Results, SPSS

Based on Table 10 of the Wilcoxon Signed Rank Test of the Cryptocurrency Transaction Volume above, it is known that the p-value is less than 0.001, which is smaller than the significance level used, which is 5% or 0.05. This means that the cryptocurrency Transaction Volume studied has a different value between before and after the Russian Invasion event.

Discussion

1) *Abnormal Return (AR) LQ45 Stocks Before and After the Russian Invasion of Ukraine in 2022.*

Jaya et al. (2024) explained that an event can provide information that can trigger a reaction in a capital market, depending on the level of efficiency of the market. This reaction can be reflected by the emergence of abnormal returns (AR) on stocks, which can ultimately affect overall market movements and influence how investors will make decisions. In the event raised in this study, namely the Russian Invasion of Ukraine, it had a significant impact on the abnormal return (AR) on the LQ45 Index on the Indonesia Stock Exchange (IDX). The decision was made based on the asymp sig.(2-tailed) significance value of 0.002, which is lower than the significance level used, which is 0.05. Therefore, it can be concluded that the geopolitical event contains information that is strong enough to cause significant changes in the abnormal return (AR) before and after the event for the 45 sample companies included in the LQ45 index.

As a result, investors responded to this event by actively transacting stocks. One factor that can explain this phenomenon is investor concerns about the uncertainty caused by the conflict on the world's economic conditions, including the Indonesian capital market. Not only that, increasing geopolitical uncertainty has the potential to affect the fundamentals of companies included in the LQ45 index, thus encouraging investors to adjust their investment strategies to anticipate potential greater risks.

2) *Trading Volume Activity (TVA) LQ45 Stocks Before and After the Russian Invasion of Ukraine in 2022.*

Hypothesis testing of condition *trading volume activity* (TVA) of LQ45 stocks before and after the Russian Invasion of Ukraine was conducted using a mean difference test with a non-parametric approach, namely the Wilcoxon Signed Rank Test. In this study, it was found that the Russian Invasion of Ukraine had an influence on the trading volume activity (TVA) of LQ45 stocks both before and after the event. This decision is marked by the asymp sig. (2-tailed) value in table 8 which is 0.000, which is below the threshold used, namely 0.05.

The Russian invasion of Ukraine has an impact on the trading volume activity (TVA) of shares of companies included in the LQ45 index on the Indonesia Stock

Exchange. This impact is reflected in the emergence of market reactions marked by significant changes in the level of stock trading activity. This market turmoil indicates a striking difference in trading volume activity (TVA) during the observation period studied, namely D-7 and D+7 after the invasion occurred. Thus, it can be concluded that the Russian invasion of Ukraine has an impact on the level of stock trading activity of companies listed in the LQ45 index.

3) Cryptocurrency Exchange Rates Before and After the Russian Invasion of Ukraine in 2022.

W Testing Ilcoxon Signed Rank shows that there is a difference in exchange rates *cryptocurrency* between before and after the Russian invasion of Ukraine. This decision is marked by the asymp sig. (2-tailed) value in table 4.9 which is less than 0.001, which is below the threshold used, namely 0.05.

Therefore, the results of this study state that H1 is accepted. This result is in accordance with the research conducted by Agustina, Barus (2023) and Khalfaoui, et al. (2023) where there was a difference in exchange rates between before and after the Russian Invasion of Ukraine. However, in this study, the Russian Invasion did not have a negative effect on the exchange rate *cryptocurrency*. In other words, the Russian Invasion did not result in a decline in the exchange rate *cryptocurrency*, but rather an increase. This may be due to differences in the research time period. This study focuses on a short-term period, so the effects obtained may differ from long-term research, such as in research by Agustina, Barus (2023) and Khalfaoui, et al. (2023).

4) Cryptocurrency Transaction Volume Before and After the Russian Invasion of Ukraine in 2022.

In this study, the results showed that the Russian Invasion of Ukraine had an effect on the Volume of Cryptocurrency Transactions between before and after the event. The asymp sig. (2-tailed) value in table 10 which is less than 0.001, or which is below the threshold used, namely 0.05, indicates that H1 is accepted.

This result is in line with research by Kreuzer et. al (2024) where there was a significant difference in the Transaction Volume value before and after the Russian Invasion. However, the positive or negative impact can differ between one type of cryptocurrency and another. For less stable types of cryptocurrency such as Bitcoin, the impact that occurs is positive on the day the event occurs. This is in accordance with the results of descriptive and inferential analysis where there is an increase in trading volume in the Bitcoin type.

4. CONCLUSION

- a) The Russian invasion of Ukraine on February 24, 2022, had an impact on the abnormal return (AR) of LQ45 stocks. This geopolitical event conveyed sufficiently strong information to trigger significant changes in abnormal returns both before and after the invasion for LQ45 stocks. The rising geopolitical uncertainty potentially affected the fundamentals of companies listed in the LQ45 index, prompting investors to adjust their investment strategies in anticipation of greater risks.

- b) The Russian invasion of Ukraine influenced the trading volume activity (TVA) of LQ45 stocks, both before and after the event. The TVA of LQ45 stocks tended to increase following the invasion. This rise was driven by a surge of investor interest in stocks of companies perceived to have strong future prospects, as well as by sell-offs of stocks considered to have weaker outlooks.
- c) There was a difference in exchange rates before and after the Russian invasion of Ukraine. In the short term, the invasion had a positive effect on cryptocurrency exchange rates. In other words, the invasion resulted in an increase in cryptocurrency values.
- d) The volume of cryptocurrency transactions differed before and after the Russian invasion of Ukraine. The positive or negative impact varied across different types of cryptocurrencies, depending on the specific cryptocurrency being used.

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