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MARKET REACTION TO THE PUBLICATION OF THE LQ45 LOW CARBON LEADERS INDEX ON THE INDONESIA STOCK EXCHANGE

ABSTRACT

This study aims to analyze the market's reaction to the publication of the LQ45 Low Carbon Leaders Index on the Indonesia Stock Exchange in the 2022-2024 period by measuring the difference between abnormal return (AAR) and trading volume activity (TVA). Using the event study method, the results of the One Sample T-Test showed that there was no significant difference in the AAR, indicating that the market had anticipated the information before it was announced. In addition, the Wilcoxon Signed Rank Test on TVA also showed no significant difference except for the 2024 Major 1, which reflects a slight change in trading activity. The study concluded that the publication of the LQ45 Low Carbon Leaders Index did not significantly affect the market, which is in line with the semi-strong market efficiency theory. These findings provide insights for investors and regulators in managing market expectations for sustainability information.

Keywords: Abnormal Return, Trading Volume Activity, Market Efficiency, LQ45 Low Carbon Leaders, Indonesia Stock Exchange

INTRODUCTION

In an era that increasingly prioritizes sustainability and corporate social responsibility (CSR) issues (Samaibekova et al., 2021; Xiao et al., 2024), the market's reaction to the publication of the LQ45 Low Carbon Leaders index on the Indonesia Stock Exchange has become a very relevant topic to be researched. The index is designed to measure the performance of stocks of companies that are committed to low-carbon and sustainable business practices. As the global shift towards a low-carbon economy comes into play, attention to these kinds of indices not only reflects environmental responsibility, but also has implications for the market value of listed companies (Hang, 2024). The announcement of the LQ45 Low Carbon Leaders Index in 2022 aims to identify companies that prioritize sustainability by considering reducing carbon emissions in their operations (Mehdiyev, 2024).

Several previous studies have revealed the influence of sustainability performance on a company's stock returns. Research shows that effective

sustainability reporting can provide positive short-term gains in the performance of stocks in emerging markets, while other research indicates that sustainability disclosures can negatively affect market performance if companies do not meet market expectations regarding their sustainability practices (Chen et al., 2021; Liou et al., 2023). Previous research has also shown that ESG performance-related disclosures can generate significant market reactions, but the impact is not always permanent (Law et al., 2020). In the Indonesian context, assessments of indices that focus on low carbon emissions, such as the LQ45 Low Carbon Leaders Index, are still very limited. Therefore, this study is expected to fill the gap by providing a clearer picture of the impact of the publication of this index on the market reaction on the Indonesia Stock Exchange.

This research is particularly relevant in examining how the signals provided by the publication of the LQ45 Low Carbon Leaders Index can influence investment decisions in the Indonesian capital market. Based on the findings of

previous research, it can be assumed that the companies listed in this index, which prioritize sustainable business practices and carbon emission reduction, have the potential to experience a positive response from the market (Yang, 2023). In addition, the study leads to the hypothesis that there is a significant difference in abnormal returns and trading volume activity after the publication of this index. An index that prioritizes reducing carbon emissions is expected to attract investors who are concerned about sustainability, which in turn could influence the dynamics of Indonesia's capital market. As such, this research is crucial to understand how the market responds to changes related to sustainability in Indonesia, particularly in the low-carbon emission sector.

The purpose of this study is to analyze the difference in abnormal returns and trading volume activity in the publication of the LQ45 Low Carbon Leaders Index on the Indonesia Stock Exchange during the 2022-2024 period, in addition to providing deeper insights into the market's reaction to sustainability-related information,

especially related to carbon emission reduction. The theoretical benefit of this study is to enrich the literature related to the relationship between ESG performance and capital market behavior in emerging markets, particularly in Indonesia (Kassapa & Ayu Darmayanti, 2024). On the other hand, the practical benefit of this research is that it provides useful information for investors and market participants in investment decision-making, as well as for regulators who want to understand more about the impact of sustainability policies on capital markets. Thus, this research is expected to contribute to the development of investment theories that consider sustainability aspects and provide guidance for companies in designing better strategies in the face of global trends that are increasingly leading to a low-carbon economy.

RESEARCH METHODOLOGY

This study uses an explanatory design with a quantitative approach, aiming to test hypotheses related to the market reaction to the publication of the

LQ45 Low Carbon Leaders Index on the Indonesia Stock Exchange. Quantitative methods are applied to analyze abnormal returns and trading volume activity. The estimation window is determined for 57 days before the event window to calculate the normal returns of the company and the market, while the event window includes 21 days, namely 10 days before, the day of the event, and 10 days after the publication event (Hartono, 2022). The selection of this timeframe helps to minimize the effects of irrelevant volatility (Lubis et al., 2023).

This research was carried out on the Indonesia Stock Exchange (IDX) with a focus on companies that are members Return (R):

The return of a stock on a given day is calculated as the percentage

Expected Return (ER):
$$R_t = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$$

The expected return is typically estimated using a market model, such as

Abnormal Return (AR):
$$ER_{it} = \alpha_i + \beta_i \cdot R_{mt}$$

Abnormal return (AR) is calculated as the difference between the

of the LQ45 Low Carbon Leaders Index for the 2022-2024 period. The data used includes closing stock prices and stock trading volumes available through the IDX website (www.idx.co.id). The exogenous variable in this study is the publication of the LQ45 Low Carbon Leaders Index which reflects companies with low carbon emissions. The endogenous variables measured were abnormal return and trading volume activity. Abnormal returns are measured by the difference between actual returns and expected returns calculated using market models, while trading volume activity is used to measure investor interest in stocks listed in the index (Nisa et al., 2023; Shanti & Putri, 2025).

change in the stock price from one day to the next.

the Capital Asset Pricing Model (CAPM). The expected return for stock is given by:

$$ER_{it} = \alpha_i + \beta_i \cdot R_{mt}$$

actual return of a stock and its expected return based on a market model.

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

Average Abnormal Return (AAR):

The Average Abnormal Return (AAR) is the average of abnormal returns across all stocks on a given day during the event window:

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{it}$$

Trading Volume Activity (TVA):

Trading volume activity is used to measure investor interest in stocks. The TVA can be calculated as the difference in trading volumes before and after the event:

$$TVA_t = \frac{V_t - V_{t-1}}{V_{t-1}} \times 100$$

The data used is secondary data obtained from the Indonesia Stock Exchange and other sources such as investing.com and finance.yahoo.com. The method used was non-participant observation, focusing on historical analysis of stock price and trading volume data before and after the publication of the LQ45 Low Carbon Leaders Index. Data analysis uses descriptive statistics to describe the data, as well as a normality test with Shapiro-Wilk to examine the distribution of the data. Hypothesis testing is carried out using parametric statistical techniques such as the Paired Sample t-test or non-parametric such as the Wilcoxon Signed Rank Test, depending on the data

distribution. The analysis was conducted using SPSS and Microsoft Excel to test whether there was a significant difference in abnormal returns and trading volume activity before and after the publication of the LQ45 Low Carbon Leaders Index (Rochaety et al., 2019).

The population in this study is all companies listed in the LQ45 Low Carbon Leaders Index between 2022 and 2024. The sample used was the companies listed in the major evaluation of the LQ45 Low Carbon Leaders Index, which totaled 145 companies. This study uses the census method to test the entire population. The data used in this study is secondary data obtained from the issuer's financial statements, the

Indonesia Stock Exchange website, and information related to the publication of the LQ45 Low Carbon Leaders Index. The data collected includes closing stock prices, trading volumes, and information related to changes in the index.

Data collection was carried out by non-participant observation, namely by analyzing available historical data without direct interaction with the research subject. The data collected

includes daily closing stock prices, trading volumes, and information related to the announcement of the publication of the LQ45 Low Carbon Leaders Index. Hypothesis testing is carried out using parametric statistical tests such as the One Sample T-Test and Paired Sample T-Test for normally distributed data, or the Wilcoxon Signed Rank Test for data that is not normally distributed (Hardani et al., 2020).

RESULT AND DISCUSSION

Average Abnormal Return Calculation Results

Table 1: AAR Calculation Results of the LQ45 LCL Index for 2022-2024

Event Period	Average Abnormal Return				
Day	2022	2023M1	2023M2	2024M1	2024M2
t-10	0,008375	0,002043	-0,002863	0,009463	-0,006312
t-9	0,006596	0,002321	-0,001473	0,000217	0,008664
t-8	-0,002108	-0,000411	-0,004037	0,001810	0,016142
t-7	0,000908	0,002807	0,002340	-0,005117	-0,010106
t-6	-0,006083	0,001586	-0,001083	0,006207	-0,002545
t-5	0,005871	0,004389	-0,005810	-0,002893	0,000445
t-4	-0,001388	-0,003279	-0,001667	-0,005757	0,003252
t-3	0,002221	0,006654	-0,004027	-0,005877	-0,002297
t-2	0,000504	0,001079	-0,003747	0,004337	-0,003842
t-1	-0,000642	0,001768	-0,001850	0,002070	0,000082
t	0,001350	-0,000939	-0,003087	0,002203	-0,003067
t+1	-0,002525	-0,002779	0,002173	-0,004500	0,005970
t+2	0,002083	-0,001393	-0,001610	0,004727	0,008730
t+3	0,001450	0,004107	-0,004760	0,005337	-0,003727
t+4	0,001863	0,002132	0,001387	-0,003633	-0,003764
t+5	-0,004608	0,000586	-0,000237	-0,003927	-0,000145
t+6	-0,004183	-0,000704	-0,000827	-0,004023	0,002652
t+7	-0,004263	0,000296	0,001077	-0,000860	-0,000033
t+8	0,000875	0,002554	-0,002597	0,004837	0,000391
t+9	0,000079	-0,007668	-0,000657	0,011027	0,000642
t+10	-0,001654	0,004586	0,002447	0,002873	0,002752
Min	-0,006083	-0,007668	-0,005810	-0,005877	-0,010106
Max	0,008375	0,006654	0,002447	0,011027	0,016142
Mean	0,000225	0,000940	-0,001472	0,000882	0,000661

Based on Table 1. The findings show the results of the calculation of the Average Abnormal Return (AAR) of the LQ45 LCL Index during the period of 2022 to 2024, by covering daily data from 10 days before (t-10) to 10 days after the event (t+10). From the table, it can be seen that the AAR fluctuates from year to

year, with the 2024 period showing a tendency for more negative fluctuations compared to 2022 and 2023. The highest average AAR was recorded in 2024 M2 with a positive value (0.000661), while in 2023 M2 experienced the highest negative AAR at -0.001472.

Trading Volume Activity Calculation Results

Table 2: Results of TVA Calculation of the LQ45 LCL Index for 2022-2023

Trading Volume Activity Calculation Results 2022-2023						
Early 2022 Publication			2023 Mayor 1		2023 Mayor 2	
No	Stock Code	Difference	Stock Code	Difference	Stock Code	Difference
1	ANTM	0,0017	AKRA	0,0006	AKRA	0,0018
2	ASII	0,0007	ANTM	-0,0025	AMRT	0,0002
3	BBCA	0,0000	ASII	-0,0019	ANTM	0,0009
4	BBNI	0,0000	BBCA	0,0001	ASII	-0,0037
5	BBRI	0,0000	BBNI	0,0001	BBCA	0,0000
6	BBTN	-0,0004	BBRI	0,0003	BBNI	0,0001
7	BMRI	0,0000	BBTN	-0,0004	BBRI	0,0000
8	BRPT	-0,0002	BMRI	0,0001	BBTN	-0,0022
9	EMTK	0,0017	BRPT	0,0000	BMRI	0,0000
10	EXCL	0,0000	EMTK	0,0617	BRIS	-0,0039
11	GOTO	0,2295	EXCL	0,0000	BRPT	0,0001
12	HMSP	-0,0083	GOTO	-1,3379	CPIN	0,0001
13	ICBP	-0,0004	ICBP	0,0000	EMTK	-0,2534
14	INDF	-0,0003	INCO	0,0000	ESSA	-0,0005
15	JPFA	-0,0008	INDF	0,0001	EXCL	0,0013
16	KLBF	-0,0015	INTP	0,0008	GOTO	0,1794
17	MEDC	-0,0005	JPFA	0,0003	ICBP	-0,0003
18	PGAS	-0,0060	KLBF	0,0011	INCO	-0,0001
19	TBIG	0,0001	MEDC	0,0006	INDF	-0,0002
20	TINS	0,0020	PGAS	0,0019	KLBF	0,0008
21	TLKM	-0,0001	SCMA	0,0004	MEDC	-0,0005
22	TOWR	-0,0016	TBIG	0,0000	PGAS	-0,0015
23	TPIA	0,0000	TINS	-0,0003	SCMA	0,0002
24	UNTR	0,0001	TLKM	-0,0001	SIDO	0,0002
25			TOWR	0,0012	TBIG	0,0000
26			TPIA	0,0000	TLKM	0,0005
27			UNTR	0,0004	TOWR	0,0000
28			UNVR	0,0004	TPIA	0,0000
29					UNTR	0,0003
30					UNVR	-0,0001

Based on Table 2. The findings show the results of the calculation of Trading Volume Activity (TVA) for the LQ45 LCL Index in 2022 and 2023, including the movement of TVA based on the stocks listed in each year (2022, 2023 Major 1, and 2023 Major 2). The TVA measures changes in stock trading activity by comparing the trading volume during the event with the previous average trading volume. Some stocks showed significant changes in

TVA, such as GOTO in 2022 with a TVA difference of 0.2295, and in 2023 Major 1, GOTO experienced a very sharp decline to -1.3379. Other stocks such as AKRA and EMTK showed more moderate fluctuations in TVA. In 2023 Major 2, stocks such as AMRT and BRIS saw positive changes in TVA, while stocks such as ICBP and INCO showed relatively small or negative changes in TVA.

Table 3: TVA Calculation Results of the LQ45 LCL Index in 2024

Trading Volume Activity Calculation Results 2024				
2024 Mayor 1			2024 Mayor 2	
No	Stock Code	Difference	Stock Code	Difference
1	AKRA	-0,0001	AKRA	0,0004
2	AMRT	-0,0001	AMRT	0,0001
3	ANTM	0,0000	ANTM	-0,0004
4	BBCA	0,0002	ARTO	0,0001
5	BBNI	0,0006	ASII	0,0029
6	BBRI	0,0004	BBCA	0,0000
7	BBTN	0,0003	BBNI	-0,0002
8	BMRI	0,0006	BBRI	-0,0003
9	BRIS	0,0053	BBTN	-0,0005
10	BRPT	-0,0008	BMRI	0,0002
11	CPIN	0,0008	BRIS	0,0115
12	EMTK	0,4160	BUKA	0,0013
13	ESSA	0,0009	CPIN	0,0005
14	EXCL	-0,0005	ESSA	-0,0002
15	GOTO	1,3289	EXCL	0,0001
16	ICBP	0,0001	GOTO	-1,0655
17	INCO	0,0011	ICBP	0,0001
18	INDF	0,0002	INCO	0,0000
19	KLBF	0,0002	INDF	0,0002
20	MAPI	-0,0005	ISAT	0,0000
21	MBMA	-0,0002	JSMR	0,0000
22	MEDC	0,0000	KLBF	0,0002
23	MTEL	0,0000	MAPI	0,0008
24	PGAS	0,0012	MBMA	-0,0002
25	PGEO	-0,0003	MEDC	-0,0001
26	SIDO	-0,0002	MTEL	-0,0001
27	TLKM	0,0002	PGAS	0,0004
28	TOWR	0,0015	PGEO	0,0001
29	UNTR	-0,0006	SIDO	-0,0002
30	UNVR	0,0004	TLKM	0,0001
31			TOWR	0,0027
32			UNTR	0,0003
33			UNVR	-0,0002

Based on Table 3. The findings show the results of the calculation of Trading Volume Activity (TVA) for the LQ45 LCL Index in 2024, which covers two periods (2024 Major 1 and 2024 Major 2). The TVA measures the difference in stock trading activity in each period, and this change in the value of the TVA can indicate a market reaction to certain events affecting the stock. Some stocks experienced significant

changes in TVA, such as GOTO which showed a large TVA difference in 2024 Major 1 with a value of 1.3289, although it experienced a sharp decline in 2024 Major 2 to -1.0655. EMTK also showed a large change in TVA in 2024 Major 1 (0.4160), which signifies a significant increase in trading volume. Meanwhile, stocks such as AKRA, AMRT, and BRPT showed smaller fluctuations in VAT.

AAR Descriptive Statistics Results

Table 4: AAR Descriptive Statistics Results

	N	Minimum	Maximum	Mean	Std Deviation.
2022 M1	21	-0,0061	0,0084	0,000233	0,0037223
2023 M1	21	-0,0077	0,0067	0,000943	0,0031682
2023 M2	21	-0,0058	0,0024	-0,001476	0,0023889
2024 M1	21	-0,0059	0,0110	0,000876	0,0050711
2024 M2	21	-0,0101	0,0161	0,000671	0,0057847
Valid N (listwise)	21				

Based on Table 4. The findings show the results of descriptive statistics for the Average Abnormal Return (AAR) on the LQ45 LCL Index from 2022 to 2024, which include the minimum, maximum, mean, and standard deviations for each period. In 2022 M1, the AAR has a very small average (0.000233) with a standard deviation of 0.0037223, indicating relatively small fluctuations. In 2023 M1, the average AAR was slightly higher (0.000943) with a lower standard deviation (0.0031682), reflecting more stable volatility.

However, in 2023 M2, AAR is likely to be negative with an average of -0.001476 and a smaller standard deviation (0.0023889), indicating a more stable decline. In 2024 M1, the AAR is back positive (0.000876) but with a larger standard deviation (0.0050711), indicating increased market fluctuations. Meanwhile, at 2024 M2, the AAR was slightly lower (0.000671) with the highest standard deviation (0.0057847), reflecting higher volatility, signaling greater market uncertainty in the period.

Results of TVA Descriptive Statistics

Table 5: TVA Descriptive Statistics Results

	N	Minimum	Maximum	Mean	Std Deviation.
2022 M1	24	-0,0083	0,2295	0,008988	0,0470213
2023 M1	28	-1,3380	0,0620	-0,045500	0,2535776
2023 M2	30	-0,2534	0,1794	-0,002683	0,0576025
2024 M1	30	-0,0008	1,3289	0,058520	0,2516381
2024 M2	33	-1,0655	0,0115	-0,031694	0,1855981
Valid N (listwise)	24				

Based on Table 5. The findings show descriptive statistics for the Trading Volume Activity (TVA) of the LQ45 LCL Index for the period 2022 to 2024. The average TVA for 2022 M1 was 0.008988 with a standard deviation of 0.0470213, reflecting lower fluctuations in trading activity. However, in 2023 M1, the TVA showed enormous fluctuations with an average value of -0.045500 and a standard deviation of 0.2535776, signaling extreme volatility. The 2023 period M2 has a slightly negative

average TVA (-0.002683) with a smaller standard deviation (0.0576025), indicating a more stable but still fairly volatile decline. By 2024 M1, the average TVA increased to 0.058520 with a very large standard deviation (0.2516381), indicating a significant spike in trading activity. In 2024 M2, although the average TVA is slightly negative (-0.031694), the standard deviation is still high (0.1855981), indicating considerable volatility in the period.

AAR Normality Test for the Publication Event Period of the LQ45 LCL Index 2022-2024

Table 6: Results of the AAR Normality Test for the Publication Period

Variable	Quantity (n)	Sig.	Criteria	Information
AAR 2022 M1	21	0,533	0,05	Normally Distributed
AAR 2023 M1	21	0,469	0,05	Normally Distributed
AAR 2023 M2	21	0,547	0,05	Normally Distributed
AAR 2024 M1	21	0,203	0,05	Normally Distributed
AAR 2024 M2	21	0,258	0,05	Normally Distributed

Based on Table 6. The findings show the results of the normality test for AAR in the publication period of the 2022-2024 LQ45 LCL Index. All aar periods, from 2022 M1 to 2024 M2, show a sig value. greater than 0.05, which

means that AAR data for all of those periods is normally distributed. This suggests that the AAR distribution tends to follow a normal pattern, which allows the use of parametric statistical analysis in this study.

TVA Normality Test for the Publication Event Period of the LQ45 LCL Index 2022-2024

Table 7: Results of the TVA Normality Test for the Publication Period

Variable	Quantity (n)	Sig.	Criteria	Information
TVA 2022	24	0,000	0,05	Not Normally Distributed
TVA 2023 M1	28	0,000	0,05	Not Normally Distributed
TVA 2023 M2	30	0,000	0,05	Not Normally Distributed
TVA 2024 M1	30	0,000	0,05	Not Normally Distributed
TVA 2024 M2	33	0,000	0,05	Not Normally Distributed

Based on Table 7. These findings show the results of the normality test for TVA in the publication period of the 2022-2024 LQ45 LCL Index. The test results showed a value of sig. which are very small (all less than 0.05) for each

period, which means that the TVA data is not normally distributed. This suggests that the distribution of TVA over all these periods is abnormal, so subsequent testing may require a non-parametric statistical approach.

Test One Sample T-Test Average Abnormal Return LQ45 Low Carbon Leaders Index Publication Event for the 2022-2024 Period

Table 8: Test Results of One Sample T-Test Average Abnormal Return Publication Events of the LQ45 Low Carbon Leaders Index for the 2022-2024 Period

<i>Test Value = 0,000006057692307692</i>						
2022 M1	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
	0,213	20	0,834	0,0001728	-0,001522	0,001867
<i>Test Value = 0,00025260989010989</i>						
2023 M1	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
	0,998	20	0,330	0,0006902	-0,00752	0,002132
<i>Test Value = -0,000395983</i>						
2023 M2	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
	-2,972	20	0,051	-0,0010802	-0,002168	0,000007
<i>Test Value = 0,000238205</i>						
2024 M1	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
	0,577	20	0,571	0,0006380	-0,001670	0,002946
<i>Test Value = 0,000177933</i>						
2024 M2	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
	0,391	20	0,700	0,0004935	-0,002140	0,003127

Based on Table 8. These findings show the results of the One Sample T-Test for Average Abnormal Return (AAR) in the publication period of the LQ45 Low Carbon Leaders Index from 2022 to 2024. The test results showed that in all periods (2022 M1, 2023 M1, 2023 M2, 2024 M1, and 2024 M2), the significance value (Sig.) was greater than

0.05, which means that there was no significant difference between the average AAR and the expected test value (0). Thus, the zero hypothesis cannot be rejected, which suggests that such publication events did not cause significant abnormal movements in the stock price during the period under test. The average difference between AAR

and expected test scores was very small, and the confidence interval showed that the difference was not statistically significant.

Wilcoxon Signed Rank Test Test Trading Volume Activity LQ45 Low Carbon Leaders Index Publication Event for the 2022-2024 Period

Table 9: Wilcoxon Signed Rank Test Test Trading Volume Activity Test Publication Event of the LQ45 Low Carbon Leaders Index for the 2022-2024 Period

	2022 (<i>after</i>) - (<i>before</i>)	2023 M1 (<i>after</i>) - (<i>before</i>)	2023 M2 (<i>after</i>) - (<i>before</i>)	2024 M1 (<i>after</i>) - (<i>before</i>)	2024 M2 (<i>after</i>)- (<i>before</i>)
Z	-0,502	-1,409	-1,168	-2,407	-1,435
Asymp. Sig. (2-tailed)	0,616	0,159	0,867	0,016	0,151
Criteria	0,05	0,05	0,05	0,05	0,05
Conclusion	Rejected	Rejected	Rejected	Accepted	Rejected

Based on Table 9. These findings show the results of the Wilcoxon Signed Rank test for TVA in the 2022-2024 publication period. The test results showed that in 2022, 2023 M1, 2023 M2, and 2024 M2, the sig value. greater than 0.05, which means there is no significant difference in trading activity before and after the publication event. However, in 2024 M1, the value of sig. smaller than 0.05, which indicates the existence of a significant difference in trading activity, so that an alternative hypothesis is accepted and the difference in TVA in that period can be considered significant.

Abnormal Return Difference in LQ45 Low Carbon Leaders Index Publication Event

This study aims to determine the reaction of the capital market to the publication of the LQ45 Low Carbon Leaders Index during the 2022-2024 period, using the event study method. The results of the One Sample T-Test showed that there was no significant difference in abnormal mean return (AAR) in the period of the publication event, so the research hypothesis was rejected. This indicates that information related to the publication of the LQ45 Low Carbon Leaders Index has been predicted by investors before, so it does not affect the capital market significantly. This phenomenon is in line with the semi-strong market efficiency theory, which states that stock prices

already reflect all public information, including index publications, before they are announced (Gayatri et al., 2024). Research also shows that the announcement of a decline in company profitability during the COVID-19 pandemic does not produce significant abnormal returns because the information is already reflected in the stock price (Sari, 2024).

Some other factors that can explain this result are the speed at which information about the publication of the Index is spread through the internet, so that the public has accessed it and there is no longer information asymmetry. This is in line with research found that the announcement of the 2019-2024 Advanced Indonesia Cabinet did not affect abnormal returns, because the market did not consider the event important (Sari, 2024). In addition, research regarding the announcement of the first Omicron variant in Indonesia also showed that there was no significant difference in abnormal returns, possibly because the information was already known to the market beforehand (Melisa & Johan Putra, 2020). This condition

shows that the Indonesian capital market tends to be wait-and-see and not in a hurry to respond to events that are considered irrelevant or do not contain important new information.

The results of this study are consistent with various previous studies, such as those conducted by (Nida et al., 2020; Widyatmoko et al., 2022), which showed that the publication event of the LQ45 Low Carbon Leaders Index did not cause significant changes in the AAR. Research on the influence of the announcement of the Russia-Ukraine war also showed that there was no significant abnormal return on both events (Apriyadi et al., 2022). In this context, external factors such as global economic conditions and government policies may influence market reactions to a greater extent than specific events (Hermawan & Huda, 2024). According to signal theory, if the information published does not contain significant value, then the information will not have an impact on the capital market (Sunardi et al., 2021). Other factors such as inflation, dividend policies, and other company performance can also affect

stock prices, leading to the inability of the publication event of the LQ45 Low Carbon Leaders Index to trigger significant changes in stock prices (Simajuntak & Sutandijo, 2022).

Differences in Trading Volume Activity at the Publication Event of the LQ45 Low Carbon Leaders Index

This study aims to test the market's reaction to the publication of the LQ45 Low Carbon Leaders Index in 2022-2024 using the Wilcoxon Signed Rank Test on Trading Volume Activity (TVA). The test results showed that there was no significant difference in TVA at the publication event, with a significance value greater than 0.05. Therefore, the second hypothesis (H2) is rejected. This conclusion indicates that the market has not experienced a significant change in stock trading volume, and the information provided in the announcement is not strong enough to affect market liquidity. This is in line with the theory of conservatism which states that investors tend to be cautious and reduce the risk of losses when facing uncertainty (Tarighi et al., 2024).

This study also supports the findings of previous research which showed that the publication of information related to the LQ45 Low Carbon Leaders Index did not significantly affect TVA. Research by (Jumady & Halim, 2020; Octaviani & Harianti, 2021; Tanoyo, 2020) also found that there was no significant difference in TVA when publishing similar information. However, there are indications of a significant difference in 2024 Major 1, considering that the Indonesian capital market is still classified as a thin market with a relatively small trading volume (Hartono, 2022). In a market like this, the market's reaction to events is best viewed through the TVA, as small price fluctuations often do not reflect significant changes.

The results of this study are in line with research which found that trading volume activities do not have a significant effect on stock returns in the Indonesian market (Risma Julkismayana & Ni Made Adi Erawati, 2024). Research also shows that trading volume in the Saudi Arabian stock market has no

causal relationship with market returns (Alhussayen, 2022). Another finding in meta-analysis of 44 studies concluded that the relationship between trading volume and stock returns varies greatly, depending on market characteristics and the methodology used (Bajzik, 2021). In addition, market reactions are often influenced by external factors such as macroeconomic conditions, investor sentiment, or government policies, which may be more dominant than reactions to specific publication events (Agrivina & Komara, 2022). This research supports the signal theory, which states that published information only has an impact if it is considered relevant by investors in decision-making (Juli, 2020).

Research Implications

This research provides important implications for investors, regulators, and companies in the Indonesian capital market. For investors, the results of this study show that the information related to the publication of the LQ45 Low Carbon Leaders Index does not have a significant impact on abnormal returns or stock trading volumes, indicating that the market has anticipated such

information in advance. This emphasizes the importance of utilizing more relevant and different information for investment decision-making. For regulators, this research can serve as a basis for designing policies that support transparency and sustainability, as well as increase market awareness of companies committed to low-carbon practices. Companies can also use these findings to design more effective communication strategies to draw investors' attention to their sustainability.

Research Limitations

The study has several limitations, including the limited study period that only covers the period 2022-2024, so these findings may not fully describe the market's reaction in the long term. In addition, the study only includes companies listed in the LQ45 Low Carbon Leaders Index, which limits the generalization of results to the entire Indonesian capital market. Another limitation is the use of data that only includes Index publication events, without taking into account external factors that may affect the market, such

as changes in the global economy or government policies.

CONCLUSION

This study concludes that the publication of the LQ45 Low Carbon Leaders Index does not cause a significant difference in abnormal returns or trading volume activity in the Indonesian capital market during the 2022-2024 period. This indicates that the market was already anticipating information related to the index before it was announced, and that the information was not strong enough to influence investor behavior or market dynamics. These findings support the semi-strong market efficiency theory, which states that stock prices reflect previously published information. Based on the findings of the study, it is recommended for investors to focus more on information that is more relevant and can directly influence investment decisions, such as economic factors or macro policies. In addition, for companies listed in the LQ45 Low Carbon Leaders Index, it is important to improve communication strategies and

transparency regarding their sustainability practices to attract the attention of investors who care about environmental issues.

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