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THE IMPACT OF IDXCARBON LAUNCH ON ABNORMAL RETURNS AND TRADING VOLUME ACTIVITY OF STOCKS IN THE SRI-KEHATI IN 2025

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ABSTRACT
The capital market can be influenced by any event that occurs, especially if it contains information that triggers movement in the capital market. One such event is the international carbon trading through IDXCarbon in Indonesia on January 20, 2025. This research explores the market's response to this event, focusing on companies in the SRI-KEHATI Index, which emphasizes principles of sustainability, social responsibility, and corporate governance (ESG). Using an event study approach, this research assesses the impact on abnormal returns (AR) and abnormal trading volume (TVA) for 25 selected companies through purposive sampling. Processed using Microsoft Excel and SPSS version 27. In this research, the Kolmogorov-Smirnov technique is used for normality testing, One Sample Kolmogorov-Smirnov for the signed rank test, and Wilcoxon signed-rank to compare the pre- and post-event periods. The results of this study show a difference in abnormal returns (AR) on day H+2. However, despite this difference, it does not indicate that the announcement of international carbon trading on IDXCarbon directly influenced investors' decisions. Meanwhile, TVA shows overall stability with averages between 0.0008 and 0.0012, although there is a temporary spike at D+2. The Wilcoxon test results indicate that there is no significant change in general, with a p-value of 1.000. The results of this research show that the information about the launch of international carbon trading through IDXCarbon is not highly responded to by investors.

Key words: Event study, Abnormal returns, Trading volume activity, IDXCarbon, SRI-KEHATI Index.

INTRODUCTION

Various events influence capital markets, particularly those involving information capable of driving market fluctuations. Both positive and negative events are important to investment decisions, so it is important for investors to identify and analyze relevant information. Environmental issues have received attention in capital markets because of their significant impact on long-term economic stability despite short-term consequences (Gunawan et al., 2024). The Intergovernmental Panel on Climate Change (IPCC, 2023) report highlights that the world has only a narrow window to curb greenhouse gas emissions and prevent global temperatures from surpassing a 1.5-degree Celsius rise. In this context, carbon trading is considered to be an important mechanism for effective and measurable emission reduction through market-based strategies.

Indonesia confronted climate change by initiating its first international carbon trading via the Indonesia Carbon Exchange (IDXCarbon) on January 20, 2025. The event, overseen by key figures including the Minister of Environment Hanif Faisal Nurfik, the Minister of Forestry Raja Juli Antony, the Otoritas Jasa Keuangan (OJK), and Bursa Efek Indonesia (BEI), underscores Indonesia's resolve to enact Article 6 of the Paris Agreement following COP209 and expedite its greenhouse gas reduction goals under the second Nationally Determined Contribution (NDC) program (Bursa Efek Indonesia, 2025). This trading involved the official exchange 0f 1,780,000 tonnes of CO_2e from international energy projects. According to Hadipuro (Hadipuro, 2020: 163), Carbon trading functions as a system for exchanging emissions allowances among countries or companies, providing a more efficient and adaptable approach to meeting global greenhouse gas reduction targets. Those that exceed their emission limits can transfer the surplus to entities struggling to comply. To support this, the Indonesian government has developed a comprehensive carbon trading infrastructure by enhancing the National Registration System (SRN), Measurement and Verification Mechanism (MRV), addressing issues like duplicate submissions, and bolstering the IDXCarbon system, which combines the emission quota and carbon credit markets. This effort illustrates Indonesia's preparedness to issue carbon certificates for global markets, promote international climate collaboration, and foster economic expansion through sustainable practices(Bursa Efek Indonesia, 2025).

In the capital market, the introduction of international carbon trading qualifies as a noteworthy event, as it may alter investors' views of firms with strong environmental pledges, as exemplified by the SRE-KEHATI Index, which features companies dedicated to sustainability, social responsibility, and sound governance. This event can trigger a market reaction, especially for those stocks in the SRI-KEHATI index that are most closely linked to climate issues. A study by Aldira Zulfa Gunawan and Prikawitra M. Sambiring (Gunawan et al., 2024) on the launch of the carbon trading market in Indonesia on 26 September 2023 found a large abnormal return (AR) on

the day of the event and significant changes in market value before and after it. The study, using an event research approach, focused on companies in the energy sector that are directly linked to carbon issues. These results suggest that environmental policies such as carbon trading can significantly stimulate investor responses in the capital market and increase the importance of environmental factors in investment strategies. In addition, a study by Diana Hakim and Nur Idi Arifa Tara (Hakim et al., 2025) regarding the IDX ESG Leaders Index launch revealed significant variations in Abnormal Returns (AR) over the five days surrounding the announcement and considerable fluctuations in trading volume during a 20-day window. This points to investors' interest in not only financial metrics but also strategic sustainability efforts. Both studies affirm that the Indonesian capital market is highly responsive to ESG-related events, especially those concerning the environment. As a result, the launch of international carbon trading merits in-depth analysis, considering its close ties to environmental policy trends and its potential effects on investor attitudes and actions, particularly for stocks in the SRI-KEHATI Index.

The event study approach is well-suited for assessing the effects of launching the international carbon market via IDXCarbon on the stock market, particularly by examining Abnormal Returns (AR) and Trading Volume Activity (TVA) for stocks in the SRI-KEHATI Index. AR represents the discrepancy between actual and expected returns, thereby capturing the market's response to new information (Elton et al., 2014). In contrast, TVA serves to evaluate the market's reaction to events or news by tracking variations in trading volume (Choriliyah et al., 2019, in Chesa & Prasetyo, 2024). These indicators play a crucial role in determining whether an event delivers meaningful signals for investors. Drawing from the study by Chelsea Yulane Talumewo, Paulina Van Rate, and Victoria N. Untu (Yulane Talumewo et al., 2021), which analyzed the New Normal policy announcement, significant differences were observed in abnormal returns ($p = 0{,}002$) and trading volume ($p = 0{,}000$) before and after the event, using the event study method on Indonesian listed companies over a 21-day trading window. This suggests that the capital market reacts strongly to public policies with wide-reaching effects, as investors incorporate new information into their decisions. Conversely, research by Eristo Chesa and Andrian Budi Prasetyo (Chesa & Prasetyo, 2024) on the food price increase announcement on September 3, 2022, revealed no significant differences in abnormal returns or trading volume before and after the event, based on an analysis 54 companies in the transportation and food sectors. This result suggests that not all policy measures have a direct impact on the markets, but rather depend on investors' assessment of their importance for a company's future prospects. Comparing these studies suggests that abnormal returns and trading volumes are important indicators of the strength of market reactions to events. Therefore, an event-based approach to emissions trading can provide important insights into how national and international environmental policies influence investor behavior and financial market trends, particularly for SRI-KEHATI index components related to sustainability and climate change issues.

METHOD

This study applies a quantitative approach through a purposive sampling technique, selecting 25 companies listed in the SRI-KEHATI index as the main sample. The observation period lasted for 11 days, covering 5 days before and 5 days after the inauguration of international carbon trading through IDXCarbon on January 20, 2025. Processed using Microsoft Excel and SPSS version 27. This study uses the Kolmogorov-Smirnov technique for normality testing, One Sample Kolmogorov-Smirnov for signed rank testing, and Wilcoxon signed-rank to compare pre- and post-event periods.

RESULTS AND DISCUSSION

1. Abnormal Returns (AR)

Table 1.1 Results of the Kolmogorov-Smirnov Abnormal Return Normality Test

Variables	ASYMP.SIG (2-TAILED)	Testing	
		α	Description
AAR Before Event	0,003	0,005	Not normally distributed
AAR After Event	0,001	0,005	Not normally distributed

(Source: SPSS 27 output results, processed data)

The results of the Kolmogorov–Smirnov normality test on the abnormal return data before and after the launch of carbon trading on IDXCarbon 2025 show an Asymp. Sig. (2-tailed) value of 0.003 for the period before the event and 0.001 for the period after the event. Since both numbers are smaller than the limit of $\alpha = 0.05$, it can be concluded that the AR distribution for both periods does not meet the normality assumption.

Table 1.2 One-Sample Kolmogorov–Smirnov Test Results for Abnormal Returns

Day	AAR	P-Value	Testing	
			α	Description
-5	-0.2697	0,330	0,005	Insignificant
-4	0.0111	0,130	0,005	Insignificant
-3	-0.0158	0,006	0,005	Insignificant
-2	-0.0069	0,098	0,005	Insignificant
-1	-0.0018	0,702	0,005	Insignificant
0	-0.0022	-0,485	0,005	Insignificant
1	0.2758	0,326	0,005	Insignificant
2	-0.0106	0,002	0,005	**Significant**
3	-0.0004	0,893	0,005	Insignificant
4	0.0074	0,261	0,005	Insignificant
5	0.0086	0,388	0,005	Insignificant

(Source: SPSS 27 output results, processed data)

The event study of the IDXCarbon 2025 carbon trading program launch was analyzed using the One Sample Kolmogorov–Smirnov test on the Average Abnormal Return (AAR) value. Most observation days showed p-values above 0.005, indicating that the AAR was not significantly different from zero. But on the second day after the event (D+2), the p-value dropped to 0.002, pointing to a notable market reaction that day. The other days, including the announcement day (D0), had p-values over 0.005, meaning the average aberrant returns weren't statistically significant and the market response wasn't strong enough to trigger those returns. This points to a significant reaction only on the second market day (D+2).Given the non-normal distribution of the AAR, the use of the Kolmogorov-Smirnov test – a non-parametric method – allowed us to ensure the validity of the analysis without relying on the assumption of moderation. This method accurately captures the moments when investors actually reacted to the information and highlights the different patterns of market reactions around the start of emissions trading.

Table 1.3 Wilcoxon Signed Difference Test Abnormal Return Results

Observation Period	P-Value	Testing	
		α	Description
D-5 and D+5 of the inauguration of the 2025 IDXCarbon carbon trading	0,223	0,005	Insignificant

(Source: SPSS 27 output results, processed data)

Wilcoxon signed rank test returns five days before the launch of the IDXCarbon carbon market in 2025 five days before the launch showed a p value of 0.223. Because these percentages are higher than the significance threshold of 0.005, no statistical evidence for a difference in abnormal returns before and after the event was found. Overall, the market did not exhibit a consistent or strong response over the 11 days of the study. The results of the analysis show no significant difference in the Abnormal Returns (AR) of SRI-KEHATI index stocks before and after IDXCarbon introduced international carbon trading, thus rejecting the alternative hypothesis (Ha_1). Although there was a significant reaction on day D+2 (January 22, 2025) with a p-value of 0.002, this does not indicate that the announcement of IDXCarbon's international expansion directly influenced investors' decisions. The reaction on that day was likely driven more by the official launch of the ESG reporting framework by the Indonesia Stock Exchange (IDX) (Bursa Efek Indonesia, 2025). Considering that the SRI-KEHATI index consists of companies focused on sustainability, the ESG announcement sent a positive signal (good news) that may have temporarily boosted trading activity. One plausible explanation is that the market had already anticipated the policy since the initial launch of the Indonesia Carbon Exchange (IDXCarbon) on September 26, 2023 (OJK, 2023). Previous research by Gunawan & Sembiring (Gunawan et al., 2024) also found that the launch of the Indonesian Carbon Exchange on September 26, 2023, generated significant abnormal returns around the event date. This was also followed by an official government announcement on January 9, 2025 (DJPPI, 2025). This means that a strong market reaction had already occurred at the time of the initial launch, so the international announcement on January 20, 2025, no longer presented a surprise effect for investors. Furthermore, according to Renewable Matter (Marino, 2025), the opening of the international carbon market to foreign investors through IDXCarbon still faces several

structural challenges. Most traded carbon credits continue to originate from fossil-fuel-based power plants, which are less attractive to large institutional buyers who favor renewable energy projects.

2. Trading Volume Activity

Table 2.1 Kolmogorov-Smirnov Trading Volume Activity Normality Test Results

Variables	ASYMP.SIG (2-TAILED)	Testing	
		α	Description
AAR Before Event	0,200	0,005	Normally distributed
AAR After Event	0,001	0,005	Not normally distributed

(Source: SPSS 27 output results, processed data)

The Kolmogorov–Smirnov normality test for Trading Volume Activity (TVA) in the IDXCarbon 2025 carbon trading launch event study, with a threshold of α = 0.005, showed a significance of 0.200 before the event—indicating a normal distribution—and 0.001 after the event—indicating a non-normal distribution. This suggests that prior to the launch, market shares were evenly distributed and the market was stable enough not to experience any fluctuations. Eventually, TV distribution became more balanced, as evidenced by the uneven distribution of sales across many segments. The results suggest that the carbon market adjustment created a heterogeneous market response, with some issuers increasing trading volumes and others maintaining trading levels.

Table 2.2 Wilcoxon Signed Difference Test Trading Volume Activity Results

Observation Period	P-Value	Testing	
		α	Description
D-5 and D+5 of the inauguration of the 2025 IDXCarbon carbon trading	1,000	0,005	Insignificant

(Source: SPSS 27 output results, processed data)

The Wilcoxon Signed-Rank test of the trading volume (TVA) from D-5 to D+5 since the start of carbon trading with IDXCarbon 2025 yielded a p-value above the threshold of 0.005. This means that there was no significant difference in stock volume between the periods before and after the event, although a large increase was observed on D+2. This lack of significance suggests that the temporary increase was not large enough to affect the overall short-term trading pattern. A non-parametric test method was chosen because the distribution of TVA after the event was not normal. The results of the analysis show no significant difference in the trading volume (TVA) of SRI-KEHATI index stocks before and after IDXCarbon introduced global carbon trading, thus rejecting the alternative hypothesis (Ha_2). The results confirm that carbon trading did not cause statistically significant buying or selling activity. According to a press release from the BEI (Bursa Efek Indonesia, 2025), the authorized carbon transaction volume of 1,780,000 tons of CO_2e compared to the overall stock market capitalization is still relatively small, thus not driving significant stock price movements. Furthermore, investor characteristics also vary, with short-term investors tending to seek quick capital gains and not yet viewing the inauguration as a promising momentum, while long-term investors are awaiting certainty regarding the implementation of carbon trading before making decisions. Uncertainty regarding international standardization and the certainty of carbon prices also makes investors tend to react cautiously. Therefore, it is not surprising that the total value of abnormal returns (TVA) before and after the inauguration did not show a significant difference as the market is still awaiting further developments.

CONCLUSION

An event study on the launch of the IDXCarbon 2025 carbon trading program assessed two metrics: abnormal return (AR) and trading volume activity (TVA). Results showed that AR differed at D+2. However, this difference does not suggest that the announcement of international carbon trading on IDXCarbon directly influenced investors' decisions. A Wilcoxon test (p = 0.223) confirmed no significant difference in total AR. Trading volume is relatively stable with small deviations, averaging between 0.0008 and 0.0012, except for a brief increase at D+2 (average 0.0037, σ = 0.0131). Despite the accelerated trading volume, a Wilcoxon test (p = 1.000) showed no significant change in QST between the periods before and after the event. This suggests that the increase in trading volume is temporary and not due to stable market trends.

While the SRI-KEHATI index includes factors for sustainable business and environmental issues, corporate formation has no significant impact on the profitability or magnitude of these factors. The Indonesian stock market has only begun to absorb global carbon pricing through IDXCarbon, with limited response due to regulatory expectations. Based on the results of this study, several recommendations for further research are made.

First, it is recommended to use a longer observation period to accurately assess the impact of global carbon trade policies. Second, researchers can use additional variables such as CAR or price volatility to analyze market dynamics in more depth.

REFERENCES

Bursa Efek Indonesia. (2025). *Peresmian Perdagangan Karbon Luar Negeri*. https://www.idx.co.id/id/berita/siaran-pers/2304

Bursa Efek Indonesia. (2025). Perkuat Transparansi Data ESG, BEI Luncurkan ESG Reporting untuk Perusahaan Tercatat. https://www.idx.co.id/id/berita/siaran-pers/2306

Chesa, E., & Prasetyo, A. B. (2024). ANALISIS PERBEDAAN REAKSI PASAR SAHAM SEBELUM DAN SESUDAH PENGUMUMAN KENAIKAN HARGA BBM DI BURSA EFEK INDONESIA. *DIPONEGORO JOURNAL OF ACCOUNTING*, *13*(2). http://ejournal-s1.undip.ac.id/index.php/accounting

DJPPI. (2025). *Indonesia Segera Luncurkan Perdagangan Karbon Luar Negeri Perdana di Bursa Karbon Indonesia*. https://ditjenppi.menlhk.go.id/berita/4007-indonesia-segera-luncurkan-perdagangan-karbon-luar-negeri-perdana-di-bursa-karbon-indonesia

Elton, E. J., Gruber, M. J., Brown, S. J., & Goetzmann, W. N. (2014). *MODERN PORTFOLIO THEORY AND INVESTMENT ANALYSIS NINTH EDITION*.

Gunawan, A. Z., Sembiring, F. M., Jenderal, U., & Yani, A. (2024). *Oikos: Jurnal Kajian Pendidikan Ekonomi dan Ilmu Ekonomi REAKSI PASAR MODAL INDONESIA TERHADAP PELUNCURAN BURSA KARBON INDONESIA PADA 26 SEPTEMBER 2023*. *Volume 09 Nomor 01*.

Hadipuro, W. (2020). *Manajemen lingkungan hidup untuk bisnis: Teori dan aplikasi*. ANDI.

Hakim, D., Aida, N., & Tara, A. (2025). *ANALISIS REAKSI INVESTOR TERHADAP PENGUMUMAN PELUNCURAN INDEKS IDX ESG LEADERS OLEH BURSA EFEK INDONESIA*. www.idx.co.id,

IPCC. (2023). *Urgent climate action can secure a liveable future for all*. www.ipcc.ch

Marino, G. (2025). *Climate, Indonesia launches its international carbon trading*. https://www.renewablematter.eu/en/climate-indonesia-launches-its-international-carbon-trading?

OJK. (2023). *Siaran Pers: Presiden Resmikan Bursa Karbon Indonesia*. https://ojk.go.id/id/berita-dan-kegiatan/siaran-pers/Pages/Presiden-Resmikan-Bursa-Karbon-Indonesia.aspx

Yulane Talumewo, C., Van Rate, P., Untu, V. N., Ekonomi Dan Bisnis, F., & Manajemen Universitas Sam Ratulangi, J. (2021). REAKSI PASAR MODAL INDONESIA SEBELUM DAN SESUDAH PENGUMUMAN PEMBERLAKUAN NEW NORMAL (EVENT STUDY PADA PERUSAHAAN BUMN YANG TERDAFTAR DI BURSA EFEK INDONESIA) INDONESIAN CAPITAL MARKET REACTION BEFORE AND AFTER THE ANNOUNCEMENT OF IMPLEMENTATION NEW NORMAL IN STATED-OWN COMPANIES IN THAT LISTED ON INDONESIAN STOCK EXCHANGE. *Jurnal EMBA*, *9*(4), 1466–1475.