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MARKET REACTION TO THE ANNOUNCEMENT OF THE LAUNCH OF INTERNATIONAL CARBON TRADING IN COMPANIES INDEXED BY IDXESG LEADERS ON THE INDONESIA STOCK EXCHANGE

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Abstract

This study aims to identify the market reaction triggered by the information contained in the event of the launch of international carbon trading by IDXCarbon, particularly for companies listed in the IDXESG Leaders index on the Indonesia Stock Exchange. The data used in this study are secondary data obtained through the documentation method of individual historical stock prices. The sample consists of 30 companies indexed in IDXESG Leaders. The method used is an event study with abnormal return analysis, followed by a paired sample t-test and Wilcoxon signed rank test using SPSS 25. Based on the result, the paired sample t-test shows that the launch of international carbon trading by IDXCarbon does not indicate a significant difference in abnormal return before and after the event. However, the Wilcoxon signed rank test shows a dominance of positive reactions, indicating that the event carries favorable information (good news).

Keywords: Market Reaction, Event Study, International Carbon Trading

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INTRODUCTION

Climate change can be defined as a natural phenomenon caused by global warming, which continues to increase continuously every year, raising concerns that it could slowly affect human civilization (Azzahra & Nawawi, 2025). This condition will continuously erode and affect human life, including the financial ecosystem. Based on this, all elements are required to contribute to addressing this issue, including the ongoing movement in the capital market that continues to facilitate the use of green investments, so that it is hoped that the negative impacts of climate change can be slowly reduced.

Based on this, as a concrete step in reducing global carbon emissions, Indonesia has increased its emission reduction target by 31.89%, which is part of the national target to achieve net zero emissions by 2030 (NDC of Indonesia, 2022).

As part of its implementation, the government officially launched a carbon trading scheme through the Indonesian Carbon Exchange Operator at the end of September 2023. As a form of implementation, the government officially launched a carbon trading scheme through the Indonesian Carbon Exchange at the end of September 2023. The carbon trading scheme by the Financial Services Authority (OJK) through the Carbon Exchange tends to require companies to contribute to environmental sustainability. In this scheme, carbon emissions are considered a new commodity to be traded, but cannot be compared to other exchange products. Through this consideration, what is traded here is the shortage or absence of emissions when compared to the emission allocation required by the company. This means that emitters that produce low carbon emissions in their production processes will make these minimal emissions into something that can be sold on the carbon exchange. Conversely, if emitters produce more emissions than their predetermined carbon allocation estimates, then the excess carbon emissions become a liability that must be paid for by purchasing emission allowances. The information contained in the carbon trading scheme regulation means that its existence in the carbon market by companies is considered to affect the value of the company and the competitiveness of the products produced due to the internalization of costs that the company should not have incurred.

In the context of reducing domestic greenhouse gas emissions, it should be the responsibility of many parties, one of which is adaptation to the Indonesian capital market. In response to this, the Indonesia Stock Exchange has segmented companies based on their level of contribution to the environment. On December 14, 2022, the IDX launched the environment-based IDX

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Environmental, Social, and Governance Index, labeled IDXESG leaders. This index is a stock segment that measures the performance of stocks that have environmental, social, and corporate governance ratings, and these three points are subsequently implemented in managerial policies. Companies included in this index are able to maintain a stable position and are oriented towards environmental impact, thereby including a sustainability report as their accountability to the nationally determined contribution (NDC).

In line with the launch of IDXESG leaders, on January 20, 2025, the Indonesian Carbon Exchange officially announced the launch of its first international carbon trading. International carbon trading, initiated by the Financial Services Authority (OJK), the Ministry of Environment and Forestry (KLHK), and the Indonesia Stock Exchange is a form of Indonesia's commitment to reducing greenhouse gas (GHG) emissions and accelerating the achievement of its nationally determined contribution (NDC) targets. Through this inaugural international carbon trading, Indonesia authorized 1,780,000 tons of CO2e carbon units, which represent the accumulated carbon units from the energy sector (Indonesia Stock Exchange, 2025).

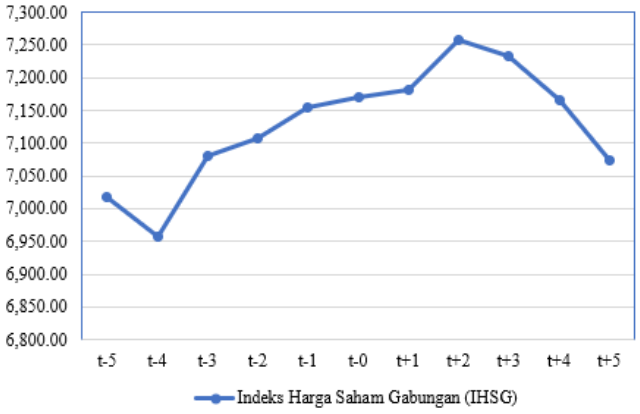

Figure 1.
Composite Stock Price Index (IHSG) Around the Day of The Announcement of International Carbon Trading

Based on the data shown in Figure 1, it can be seen that the composite stock price index (IHSG) fluctuated around the time of the carbon trading announcement. When viewed from the five days prior to the event, the IHSG on January 14, 2025 was at its lowest point at Rp. 6,956.67 and experienced a steady increase until it reached its highest point at Rp. 7,250 on January 22, 2025, or two days after the event, which then declined until the fifth day after the announcement to a position of Rp. 7,073.48 on January 30, 2025.

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The data shown in Figure 1 summarizes that the capital market as a whole experienced fluctuations when international carbon trading was announced to the public. Simply put, the market's sensitivity to new information received can be immediately reflected in existing stock prices. For this reason, the inaugural international carbon trading event by the Carbon Exchange On January 20, 2025, can be said to contain information that prompted the market to react, as seen in the movement of the IHSG chart where information about carbon trading shows positive sentiment in the stock market.

Previous literature proves that the launch of carbon trading has an impact on the stock market through abnormal return differences before and after the announcement of the Carbon Exchange (Rohmah & Ariyani, 2024). This finding is in line with research conducted by (Birindelli & Chiappini, 2021), which states that environmental policies have a greater negative impact on abnormal returns for stocks that are not committed to the environment on the day of the announcement, but will provide positive sentiment for companies that contribute to environmental sustainability. However, research conducted by Fu et al. (2020) states that environmental regulations issued by the government tend to be ineffective and merely an illusion, or what they call a "win-win solution" illusion. This opinion is parallel to research conducted by Zhang et al. (2017), which states that carbon trading events do not statistically show any significant differences in abnormal return values. This opinion is parallel to research conducted by (Zhang et al., 2017) that carbon trading events statistically do not show any significant difference in abnormal return values.

LITERATURE REVIEW

Efficient Market Hypothesis

Since it was first published by Fama (1970), studies on market efficiency have continued to develop. Fama argues that capital markets can be said to be efficient if relevant and available information is fast and accurate and can be fully reflected in the prices of traded stocks. This opinion summarizes that the parameters used as measures in this study are the relationship between stock prices and available information.

According to Birindelli & Chiappini (2021), a market is said to be efficient if the stock market reacts immediately to available public information, which is reflected in stock prices. However, the market can anticipate announcements, causing an excessive or insufficient reaction to the announcement, so that there is a relationship between the price of securities and the information received by investors in the form of announcements. Information in this case can be past

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information, current information, and any information that is potentially circulating and affecting the stock market (Gabrielle & Shofwan, 2022; Fatkhurrozi, 2024).

Signaling Theory

Signaling Theory is an action taken by company management to provide clues to investors about how management views the company's prospects (Rochman & Andayani, 2023). Essentially, this theory focuses on ways to reduce information asymmetry between company management and external parties. In this research, signaling theory is used as a supporting theory because it is in line with the research objective, which is to analyze how the enactment of environmental laws affects the stock prices of companies in the IDXESG Leaders that listed on the Indonesia Stock Exchange.

Signaling theory is a theory that discusses the fluctuations in stock prices, bonds, and others in the market, which will influence investor decisions. Signaling theory is related to information used as a signal for investors. An event that contains information can be a signal for investors to determine their investment decisions in the capital market. The response of investors in the capital market to positive and negative signals will greatly affect market conditions. Investors will react in various ways to these signals, such as buying and selling shares, or perhaps not reacting at all.

Event Study

In every market reaction study, the most appropriate method for estimating this situation is an event study. Research using event studies can explain the effect of information in the form of announcements or regulations on the capital market through an approach using various financial indicators, and can explain the direction of investor reactions to this information (Fama et al., 1991). From the above views, we can accept that the purpose of conducting an event study in this research is to test and estimate the information content in an announcement published by the government through the market reaction it causes (Jogiyanto, 2010). Meanwhile, this opinion is in line with MacKinlay's (1997) view that the use of the event study method in testing market reactions is the standard method for measuring the stock price effect of certain economic events in economic, financial, and accounting research.

RESEARCH METHOD

This study uses quantitative research. Meanwhile, the data source used is historical stock price data around the day of the announcement of the launch of carbon trading. Through an event study approach, the historical stock price data

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was segmented at the time of the event study, namely an estimation period of 60 days and a window period of 11 days covering 5 days before (t-5), the day of publication (t0), and 5 days after (t+5), which was then completed using abnormal return analysis.

Meanwhile, the sample used in this study was obtained using purposive sampling, which is a technique for determining samples with specific criteria in the selection process (Sugiyono, 2020). Based on this, 30 companies indexed in the IDXESG Leaders on the Indonesia Stock Exchange were found.

RESULTS AND DISCUSSION

Explicitly, testing the information content in market reaction studies can be reviewed through various measurement parameters, which in this study were measured using abnormal returns. Based on this, the results of the abnormal return analysis can be seen through the average abnormal return values before and after the event was announced, as shown in Figure 2 below.

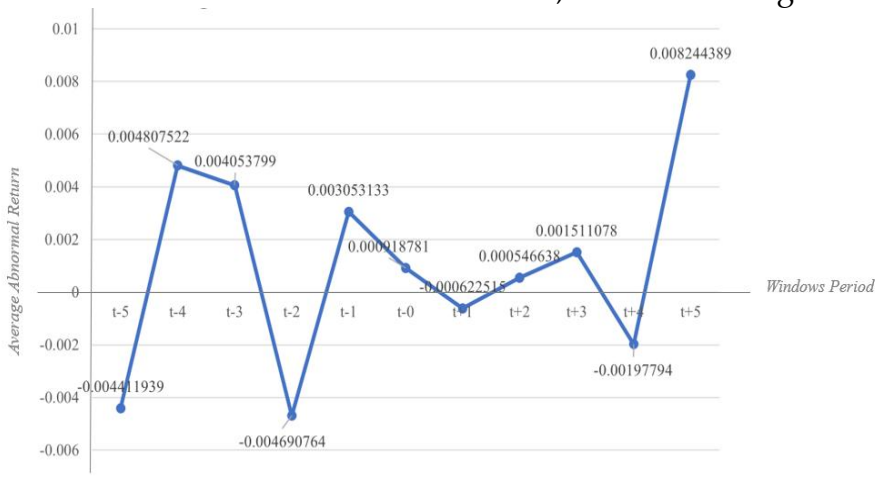

Figure 2.
Average Abnormal Return Around the Day of the Announcement of the Launch of Carbon Trading

Based on the results of observations of the cumulative average abnormal return on IDXESG Leaders indexed stocks, it was found that CAR data moved to positive figures after the launch of this inaugural international carbon trading event. This indicates that the market sees economic benefits in this event. Specifically, the economic benefits in question will cause investors' views on the impact of the launch of international carbon trading to place all IDXESG Leaders-indexed stocks at the same valuation in the eyes of investors (pooling equilibrium).

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Descriptive Statistical Test

Tabel 1.
Descriptive Analysis Result

	Mean	Median	Minimum	Maximum	Std. Deviation
AAR_BEFORE	0.00056234	0.00266476	-0.16795	0.011474	0.00640945
AAR_AFTER	0.00154033	0.00098066	-0.15576	0.018845	0.00783466

Source: Processed Data (2025)

Based on the table above, it can be seen that the average abnormal return data for companies indexed in IDXESG Leaders shows varying figures in the range from positive to negative. The average abnormal return before shows a mean value in a positive position of 0.00056234, constantly moving up to 0.001540333 after the announcement of the international carbon trading launch event. Furthermore, the distribution of the average is clarified by the minimum values before and after the event were published, which were -0.16795 and -0.15576, respectively, and the maximum values before and after the event, which were 0.011474 and 0.018845, respectively.

Normality Test

Table 2.
Normality Test Result

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
AAR_BEFORE	.158	30	.056	.942	30	.105
AAR_AFTER	.069	30	.200*	.990	30	.990

Source: Processed Data (2025)

Based on the data shown in Table 2, it can be seen that the sig. Value is > 0.05, so the residual distribution of the data is declared to be normally distributed. Based on these estimates, hypothesis testing in this study was carried out using a parametric paired sample t-test because the requirements for parametric testing were met.

Difference Test

Table 3.
Paired Sample t-test Result

	AAR_Before – AAR_After	Conclusion
Mean	-0.00097798	**There is no significant difference**
Std. Deviation	0.01133594	

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df	29
Sig. (2-tailed)	0.640

Source: Processed Data (2025)

Based on the results of the paired sample t-test in Table 3, the average abnormal return data of IDXESG Leaders indexed companies shows a Sig. (2-tailed) of 0.640 > 0.05. Based on these estimation results, the Sig. (2-tailed) value summarizes that there is no difference in the average abnormal return before and after the announcement of the launch of international carbon trading was published.

Wilcoxon Ranking Analysis

This mean rank test was conducted to observe the movement tendency of the two sample data sets before and after. The results of this test can summarize the movement of the samples before and after the announcement in three reaction rankings, namely negative reaction, positive reaction, or no reaction.

Table 4.
Wilcoxon Ranking Analysis

	Statistic	N	Mean Rank	Sum of Rank
AAR_Before-AAR_After	Negative Rank	14	15.71	220.00
	Positive Rank	16	15.31	245.00
	Ties	0		
	Total	30		

Source: Processed Data (2025)

Based on the data shown in Table 4, it can be seen that 16 samples reacted positively to the announcement of the launch of international carbon trading, representing 53.3% of the total samples studied. Meanwhile, 14 other samples showed a negative reaction after the launch of Carbon trading was published.

Based on the mean rank analysis results, the overall average abnormal return data of IDXESG Leaders-indexed stocks tended to respond to the launch of international carbon trading implemented by the Indonesia Carbon Exchange with a positive reaction after investors received

Synthesis of Main Topic

The results of the tests conducted show that the launch of international carbon trading did not show any significant differences before and after the event, which means that there was no market reaction when the event was announced.

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The absence of a difference in the average abnormal return value of these stocks means that investors consider this information to lack sufficient content to change their investment decisions. This condition can be understood through the market efficiency approach, which describes the reflection of stock prices on information, so that this can be caused by several internal and external factors that can be an impulse for investors to invest. Internal factors that can have a positive influence on this information.

For example, on January 14 and 15, 2025, Bank Indonesia held a Bank Indonesia Board of Governors Meeting. At the BI Board of Governors' Meeting, it was decided that Indonesia's benchmark interest rate (BI Rate) would be 5.75%, a decrease of 25 basis points. The decline in benchmark interest rates has led investors to choose investment instruments that provide stable returns, namely companies with strong fundamentals, one of which is the IDXESG Leaders index, which is considered more stable. In addition, this event had already been implemented by the Indonesian government on a domestic scale at the end of September 2023, so the benefits of this event had already been felt previously.

On the other hand, external factors that tend to influence investment decisions include global economic uncertainty due to the tariff policies imposed by Donald Trump, which has triggered a long-term anticipatory attitude among investors to secure their assets in stable investments. Based on this, this change in investor preferences has made more stable stocks the preferred choice, one of which is IDXESG Leaders. This choice highlights the relevance between investor preferences and the basis for the creation of IDXESG Leaders by the Indonesia Stock Exchange as stocks that have stable long-term prospects, are not involved in controversy, and have good financial performance according to Sustainalytics analysis. However, this has made investors reluctant to rush into investment decisions and adopt a wait-and-see approach around the announcement date. Based on this, the launch event This international carbon trading is not something that causes the market to react and does not affect abnormal return differences.

Through a technical analysis approach to abnormal return chart movements, Selvi (2023) explains that historical stock data in the form of charts can be used to predict future investment potential. The movement of IDXESG Leaders shares in response to the information contained in the launch of international carbon trading appears to show positive sentiment and indicates a positive reaction to the returns. The movement of IDXESG Leaders stocks in response to the information contained in the launch of international carbon

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trading appears to show positive sentiment and indicates a positive reaction to returns. This condition proves that international carbon trading as part of green investment has good prospects in the future and can be an investment option for investors.

This study proves that market conditions are in a state of Semi-strong form efficiency in terms of information and are relevant to market efficiency theory. This can be explained by stock price fluctuations that occurred around the day of the announcement of the launch of international carbon trading, even though this did not affect or change investor's views on selling and buying. The investment decisions made by these investors occurred because all stocks indexed in the IDXESG Leaders are linear with all forms of climate resilience programs, including carbon trading. Investors believe that IDXESG Leaders-indexed stocks will not face pressure in executing carbon trading schemes; on the contrary, investors will have a positive assessment and consider that all stocks will benefit economically from the launch of international carbon trading.

The results of this study are further supported by research conducted by Pipiyanti (2024) and Kumaat and Tulung (2022), which explains that there is no difference in abnormal returns before and after information is announced. Meanwhile, in the context of market efficiency, this research is supported by the findings of Amali (2023), which explain that market conditions that quickly absorb the information contained in an event after publication can be defined as semi-strong form, where this can be seen in the variation or fluctuation around the event window.

CONCLUSION

As information with economic implications, investors are expected to continue considering investment decisions in stocks with good environmental performance. The relevance between international carbon trading information and IDXESG Leaders indexed stocks makes them reflect a constant reaction, just like when domestic carbon trading was released by the Indonesia Stock Exchange. However, investors are expected to be more cautious in responding to international carbon trading by analyzing the tightening of regulations by the government, which tends to bind companies and thus have an impact on their liquidity in the stock market.

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