

## **CAPITAL MARKET REACTION TO GOVERNMENT REGULATION NO.19 OF 2025: EVIDENCE FROM NICKEL COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGE**

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### **ABSTRACT**

This study analyses the capital market's response to the publication of Government Regulation No. 19 of 2025 concerning non-tax state revenues and royalty rates in Indonesia's mineral sector. It specifically evaluates whether the regulation resulted in abnormal returns and changes in return volatility for nickel companies listed on the Indonesia Stock Exchange. The research adopts an event study approach, utilising a sample of nine nickel companies selected through saturated sampling. The event window encompasses eleven trading days ( $t-5$  to  $t+5$ ), and a 100-day estimation window is used to estimate expected returns via the Market Model. Return volatility is measured over the 35-day periods preceding and following the event. Data analysis involves descriptive statistics and a one-sample t-test. A Wilcoxon signed-rank test is employed to assess changes in return volatility. The results indicate that average abnormal returns were negative during the event window, and no significant changes occurred in either abnormal returns or volatility returns following the policy announcement. These findings suggest that the regulation did not provide sufficient information to alter investor expectations.

**Keywords:** market reaction; event study; abnormal return; volatility return.

### **INTRODUCTION**

Capital markets are essential for raising capital and facilitating the asset pricing mechanism. Investors rely on market information to assess a company's prospects and risks, taking into account macroeconomic conditions, government policies, and industry trends. Stock prices reflect changes in investors' expectations regarding a company's value; therefore, the introduction of new information can prompt price adjustments in the market. Investor reactions to such information are typically observed through changes in stock returns and volatility levels around the announcement date of an event, which forms the basis for studies on capital market reactions in financial literature.

Nickel occupies a strategic position in Indonesia's economy. Indonesia possesses the world's largest nickel reserves, estimated at approximately 55 million metric tons, representing about 42% of global reserves. Nickel plays a vital role in the global supply

chain for critical minerals. The increasing global demand for electric vehicle batteries has further established nickel as a key commodity in the clean energy transition. Consequently, nickel is highly sensitive to changes in government policies related to mineral management, royalty rates, and government revenue. Such policies can directly affect the cost structure, cash flow, profitability, and business prospects of nickel companies. As a result, investors consider policy changes significant information in their investment decision-making process.

The Indonesian government has enacted Government Regulation No. 19 of 2025, which specifies the types and rates of Non-Tax State Revenues (PNBP) applicable to the energy and mineral resources sector. This regulation revises royalty rates and PNBP provisions for various mineral commodities, including nickel in both ore and processed forms. These adjustments have the potential to increase operating costs and affect the profitability and business prospects of nickel companies listed on the Indonesia Stock Exchange. As the policy is officially announced and accessible to all market participants, its publication constitutes substantive public information. Investors may respond to this information through changes in stock prices and risk levels. Nickel companies listed on the Indonesia Stock Exchange are particularly relevant for analysis, as their performance and valuation are highly dependent on regulatory certainty in the mineral and mining sectors. Therefore, any changes to PNBP regulations or royalty rates can influence investors' perceptions of these companies' long-term prospects.

The Efficient Market Hypothesis (EMH) posits that stock prices reflect all information available in the market at a given time (Fama, 1970). Fama (1970) categorises market efficiency into three forms: weak-form efficiency, where stock prices reflect historical information; semi-strong-form efficiency, where stock prices reflect all public information, including government policy announcements; and strong-form efficiency, where stock prices reflect all public and private information. This study focuses on semi-strong-form efficiency, as it examines the market's reaction to Government Regulation No. 19 of 2025, which is widely announced public information. In a semi-strong-form efficient market, such information is immediately incorporated into stock prices, preventing investors from consistently earning abnormal returns based on already published information. However, if the market has anticipated this information before the official announcement, the policy's publication may not result in a significant reaction.

Changes in stock prices in response to an event can be analysed using the event study method. An event study is an empirical approach used to assess the information content of an event by examining changes in stock prices around the event date (MacKinlay, 1997). This method is commonly employed to test the concept of semi-strong-form efficiency in the Efficient Market Hypothesis. This study utilises two primary indicators to measure market reactions: abnormal returns and volatility returns. Abnormal returns represent the difference between actual and expected returns,

indicating the impact of information on stock performance (MacKinlay, 1997). Volatility returns capture changes in uncertainty and investors' risk perceptions in response to new information (Wu, 2025). Expected returns are estimated using the Market Model, which accounts for the relationship between individual stock returns and market returns. Abnormal return values for each company during the event window are aggregated into the Average Abnormal Return (AAR) to illustrate the overall trend of investor response to the publication of Government Regulation No. 19 of 2025 across the nickel sector (MacKinlay, 1997). Employing both indicators provides a more comprehensive understanding of the market's response, encompassing changes in return levels and stock risk around the policy's publication date.

Previous research has shown that various events can influence capital market reaction through changes in abnormal returns and volatility. Ariani et al. (2024) found that the market reacts to political events, as reflected in stock price volatility. Wu (2025) identified changes in abnormal returns and volatility resulting from cross-country regulatory changes. Khairunnisa et al. (2023) demonstrated that market anomalies also influence investor reactions to an event. These three findings reinforce the argument that public information, including government policies, can influence investor behaviour through changes in stock returns and risk. Studies that specifically analyse market reactions in nickel company stocks to the publication of non-tax revenue policies in the mineral sector—such as Government Regulation No. 19 of 2025—remain limited. Most previous studies have focused on market reactions to political events, cross-border regulations, or general market anomalies, and have not extensively highlighted strategic commodity sectors such as nickel, which are sensitive to domestic mineral policies. This research gap forms the basis for this study to enrich the empirical evidence regarding the Indonesian capital market's reaction in the context of non-tax revenue policies in the strategic mineral sector.

Based on the preceding discussion, the research question addressed in this study is whether the publication of Government Regulation No. 19 of 2025 triggered a significant market reaction in the stocks of nickel companies listed on the Indonesia Stock Exchange, as reflected by abnormal returns during the event window or by differences in volatility returns before and after the publication date. Accordingly, the study aims to analyse the capital market's reaction to the publication of Government Regulation No. 19 of 2025 on the shares of nickel companies listed on the Indonesia Stock Exchange by testing for significant differences in abnormal returns during the event window and in volatility returns before and after the policy's publication date. The analysis employs an event study approach consistent with the semi-strong form of the Efficient Market Hypothesis. The results are expected to provide empirical evidence regarding the speed and informational content of the Indonesian capital market in responding to public policies in the strategic minerals sector, while also serving as a basis for consideration by investors, nickel companies, and capital market regulators.

## RESEARCH METHODOLOGY

This study utilises quantitative data and the event study method to examine the capital market's reaction to the publication of Government Regulation No. 19 of 2025 on the stocks of nickel-sector companies listed on the Indonesia Stock Exchange (IDX). Market reaction is measured through changes in abnormal returns during the event window and changes in return volatility in the periods before and after the event. The publication of the policy on April 11, 2025, is designated as the event date for determining the estimation window and the study's event period. The study population comprises all nickel companies listed on the IDX. The sample consists of all nine companies in the population, selected using total sampling and considering criteria such as trading activity and the completeness of stock price data during the observation period.

The study utilises quantitative data in the form of daily closing prices for each company in the sample and data from the Composite Stock Price Index (IHSG) to represent market returns. Data were obtained from secondary sources, specifically from the Indonesia Stock Exchange's official website, [www.idx.co.id](http://www.idx.co.id). Data collection employed documentation and literature review methods. The documentation method generated secondary data through the recording, grouping, and tabulation of stock price data and the IHSG from the IDX's official source. The data collection stages included identifying nickel companies that met the sample criteria and setting the event date as the reference point for the observation period.

The reference point for the observation period was established, followed by the collection of closing price data for all sample companies during the estimation and event periods, as well as IHSG data for the same periods to calculate market returns. Actual returns for each stock were calculated based on changes in closing prices between periods, while expected returns were estimated using the Market Model approach, with the IHSG's market return as the reference variable. The difference between actual and expected returns yields the abnormal return (AR), which is then averaged over each observation day to produce the Average Abnormal Return (AAR), revealing market reaction patterns around the event date. Return volatility was calculated using the standard deviation of stock returns in the periods before and after the event to measure changes in risk and uncertainty perceived by investors. The literature review method was used to strengthen the theoretical foundation and conceptual framework of the study through analysis of relevant books, scientific journals, and academic references.

Data analysis was conducted in three stages. Descriptive statistical analysis described the characteristics of the research data, including the mean, minimum, maximum, and standard deviation of the abnormal return and volatility return variables before and after the event. Next, normality tests were performed using the One-Sample Kolmogorov-Smirnov Test and the Shapiro-Wilk Test to determine the distribution of abnormal return data during the event window, serving as the basis for selecting the appropriate hypothesis testing method, with a significance level ( $\alpha$ ) of 0.05. Hypothesis

testing was conducted to determine the significance of the market reaction; the average abnormal return was tested using the One-Sample Test, while the volatility return was tested using the Paired-Sample t-Test for normally distributed data or the nonparametric Wilcoxon Signed-Rank Test for non-normally distributed data. Data were processed and analysed using IBM SPSS Statistics for Windows and Microsoft Excel. Decision criteria were established by comparing the t-significance value against the significance level of 0.05 (5%). A t-significance value greater than 0.05 led to the rejection of H1 and H2, indicating that the tested variables did not show significant differences related to the publication of Government Regulation No. 19 of 2025. This result indicates that the market did not exhibit a sufficiently strong abnormal reaction during the event window period. T-values smaller than 0.05 led to the acceptance of H1 and H2, meaning the tested variables showed significant differences during and after the event. These findings indicate the presence of a significant market reaction, whether in the form of an increase or decrease in abnormal returns or a significant change in return volatility.

## RESULTS AND DISCUSSION

### A. Overview of the Research Sample

The research sample consists of nine nickel companies listed in the Basic Materials sector's Metals & Minerals subsector on the Indonesia Stock Exchange. These nine companies exhibit a relatively high level of sensitivity to economic information, government regulations, and international market developments given nickel's status as a strategic commodity in the energy and electric vehicle industries. The list of companies included in the research sample is presented in Table 1.1.

**Table 1.1 Sample of Nickel Companies Listed on the Indonesia Stock Exchange**

| CompanyName                      | Stock Code |
|----------------------------------|------------|
| PT Vale Indonesia Tbk            | INCO       |
| PT Aneka Tambang Tbk             | ANTM       |
| PT Trimegah Bangun Persada Tbk   | NCKL       |
| PT Merdeka Battery Materials Tbk | MBMA       |
| PT Harum Energy Tbk              | HRUM       |
| PT Central Omega Resources Tbk   | DKFT       |
| PT Adhi Kartiko Pratama Tbk      | NICE       |

|                                |      |
|--------------------------------|------|
| PT Resource Alam Indonesia Tbk | KKGI |
| PT IFISHEDECO Tbk              | IFSH |

Source: Indonesia Stock Exchange, processed data (2026)

These nine companies operate across various stages of the nickel supply chain, ranging from exploration and mining to processing and downstream activities, with operations spread across Sulawesi and North Maluku. These characteristics make the nickel stock group a relevant subject for an event study examining policies that directly target non-tax government revenue rates and mineral royalties.

## B. Descriptive Statistics

The results of the descriptive statistical analysis of abnormal returns and volatility returns before and after the events are presented in Table 1.2

**Table 1.2 Descriptive Statistics for Abnormal Returns and Volatility Returns**

|                           | N  | Minimum    | Maximum    | Mean      | Std. Deviation |
|---------------------------|----|------------|------------|-----------|----------------|
| Abnormal return           | 11 | -16.136,46 | -14.791,53 | -15672,54 | 463,22         |
| Volatility return sebelum | 9  | .0199      | .0455      | .033856   | .0094879       |
| Volatility return sesudah | 9  | .0268      | .1859      | .058878   | .0502025       |

Source: processed data (2026)

The average abnormal return during the event window was recorded at minus 15,672.54 with a standard deviation of 463.22, indicating that actual returns on nickel stocks were consistently below expected returns throughout the observation period. Regarding return volatility, the pre-event average of 0.0339 increased to 0.0589 post-event, with the maximum post-event volatility reaching 0.1859 for ANTM. This pattern suggests a tendency toward increased stock return volatility following the issuance of regulations, although the significance of these statistical values can only be determined after hypothesis testing.

The daily movements of the Average Abnormal Return (AAR) during the event window are presented in Table 3, which show that the AAR values fluctuated within a relatively consistent negative range throughout the eleven days of observation, without any sharp spikes around the event date ( $t=0$ ).

**Table3.**  
**Average Abnormal Return(AAR) during the Event Window Period**

| Day | AAR        |
|-----|------------|
| t-5 | -16,041.62 |
| t-4 | -16,136.47 |
| t-3 | -14,861.46 |
| t-2 | -14,791.54 |
| t-1 | -15,500.43 |
| t=0 | -15,520.82 |
| t+1 | -15,784.22 |
| t+2 | -15,965.60 |
| t+3 | -15,862.41 |
| t+4 | -15,957.11 |
| t+5 | -15,976.27 |

**Source:** processed data (2026)

### **C. NormalityTest**

Normality tests were conducted to determine the appropriate type of hypothesis test for each variable. The results of the Kolmogorov-Smirnov and Shapiro-Wilk tests are presented in Table 1.4

**Table1.4 Results of the Normality Test**

| Variable        | Sig.Kolmogorov-Smirnov | Sig.Shapiro-Wilk |
|-----------------|------------------------|------------------|
| Abnormalreturn  | 0.102                  | 0.018            |
| Pre-volatility  | 0.200                  | 0.401            |
| Post-Volatility | 0.006                  | 0.001            |

**Source:** processed data (2026)

Based on the Kolmogorov-Smirnov test, the significance value for abnormal returns of 0.102 is above the significance level of 0.05; therefore, the abnormal return data is deemed to be normally distributed and can be tested using a one-sample t-test. The significance value for pre-event return volatility of 0.200 is also above 0.05, indicating a normal distribution, while the significance value for post-event return volatility of 0.006 is below 0.05, indicating a non-normal distribution. Since one of the volatility return data groups does not meet the assumption of normality, the test for differences in volatility returns is continued using the nonparametric Wilcoxon Signed-Rank Test.

#### D. Hypothesis Testing

The first hypothesis test used a one-sample t-test on abnormal returns during the event window. The test results showed a t-value of minus 1.086 with 10 degrees of freedom and a two-tailed significance level of 0.303. Since this significance level is above 0.05, H1 is rejected, meaning there is no significant difference in abnormal returns during the event window. The effect size calculated using Cohen's d (−0.328) and Hedges' correction (−0.302) also confirms that the event's impact on abnormal returns is relatively small.

The second hypothesis test used the Wilcoxon Signed-Rank Test on return volatility before and after the event. The test results showed that three companies experienced a decrease in return volatility (negative ranks) and six companies experienced an increase in return volatility (positive ranks) after the event, with no companies remaining unchanged (ties = 0). The Z-value obtained was −1.481 with an Asymp. Sig. (2-tailed) of 0.139, which is above 0.05; therefore, H2 is rejected, meaning there is no significant difference in return volatility between the periods before and after the issuance of Government Regulation No. 19 of 2025.

**Table 1.5 Summary of Hypothesis Test Results**

| Hipotesis             | Hasil Uji Statistik                                       | Keputusan |
|-----------------------|-----------------------------------------------------------|-----------|
| H1: Abnormal return   | One Sample T Test, $t=-1,086$ ; $df=10$ ; Sig.=0,303      | Reject    |
| H2: Volatility return | Wilcoxon Signed Rank Test, $Z=-1,481$ ; Asymp. Sig.=0,139 | Reject    |

Source: processed data (2026)

## ANALYSIS/DISCUSSION

Hypothesis testing in this study yielded consistent conclusions between the parametric and nonparametric approaches. The one-sample t-test to examine abnormal returns yielded a significance value of 0.303. The Wilcoxon signed-rank test for return volatility yielded a significance value of 0.139. Both values are above the 0.05 significance level. H1 and H2 in this study were rejected. These two results illustrate how the Indonesian capital market processes public policy information in the mineral sector. The framework of the Efficient Market Hypothesis is semi-strong, in accordance with Fama's (1970) theory. This theory explains that stock prices adjust rapidly to public information. Information that has already been anticipated by the market no longer elicits a significant reaction at the time of the official announcement.

The pattern of Average Abnormal Return (AAR) movements in Table 1.3 provides important insights into the nature of the market's reaction. The AAR values moved consistently in the negative direction throughout the eleven-day event window. These values ranged from minus 16,041.62 at t-5 to minus 15,976.27 at t+5. This movement did not show a sharp spike on day t=0 or on subsequent days. This relatively flat pattern indicates that the baseline returns of nickel stocks were indeed below expectations during the observation period. These negative values are not a direct result of the issuance of Government Regulation No. 19 of 2025. The results of this study are consistent with Daly's (2008) emphasis that both volatility and return deviations need to be assessed based on their movement patterns over time, not merely on the average value at a single observation point.

The non-significant abnormal returns can be traced to the nature of the policymaking process itself. Adjustments to royalty rates and non-tax government revenues in the mineral sector had been discussed in the public sphere for quite some time through media reports, legislative deliberations, and discourse on mineral downstreaming before the regulation was officially issued. This situation aligns with the concept proposed by Baker et al. (2016) regarding economic policy uncertainty. This concept explains that an open and protracted policy deliberation process tends to reduce the degree of surprise when the policy is finally enacted. Market participants have had sufficient time to form expectations. Investors in this study are presumed to have anticipated the direction of the policy well before the issuance date. The remaining new information at the time of the official announcement was relatively limited. This finding reinforces the results of Ariani et al. (2024), which show that political events and public policy do not always trigger abnormal returns if the market has anticipated the relevant information before the event date. These findings are also consistent with Wu (2025), who asserts that the strength of the market's reaction to a policy depends heavily on the level of certainty of the information and the characteristics of the affected companies.

The characteristics of the nickel industry also provide important context for the weak price reaction observed in this capital-intensive, long-term investment-oriented industry. Company performance is determined far more by global demand for electric vehicle batteries (International Renewable Energy Agency, 2024) and the geopolitical dynamics of the global critical minerals supply chain (Zhao & Zhao, 2025) than by administrative tariff adjustments alone. Nickel, as a strategic commodity in the clean energy transition, makes its stock price more sensitive to movements in global commodity prices and progress on downstream projects. Changes in non-tax revenue tariffs do not necessarily directly alter the company's cash flow projections or profitability in the short term. This differs from the findings of Khairunnisa et al., (2023) regarding market anomalies that are more heavily influenced by daily trading patterns. The reactions examined in this study relate to the informational content of policy announcements, not seasonal patterns in stock trading.

A similar pattern was also observed in the volatility-return test. Descriptively, average volatility increased from 0.0339 before the event to 0.0589 afterwards. Six of the nine companies in the sample experienced an increase in volatility. However, this increase was not statistically significant. These results are consistent with Wong and Hooy (2021), who state that changes in volatility around large-scale events are determined more by the level of uncertainty and the information content of the event itself, rather than solely by its status as a major event. The study by Rosman and Yudanto (2022) on cross-sector market reactions on the Indonesia Stock Exchange to the COVID-19 pandemic provides an interesting comparison in this regard. That study found far more significant changes in volatility because the event was sudden and could not be predicted in advance. This comparison makes it clear that the element of surprise is the key distinguishing factor between events that generate significant market reactions and those that do not. Government Regulation No. 19 of 2025, which was preceded by extensive public discussion, falls into the category of events whose direction can be anticipated.

A similar pattern was also found in studies of other corporate events. Ugras and Ritter (2025) showed that the volatility reaction to corporate earnings announcements varies depending on the prevailing volatility regime and the degree of surprise in the announced earnings figures relative to analysts' expectations. Romli et al. (2025) also found that dividend announcements whose amounts could be anticipated tend to result in limited changes in volatility returns. This contrasts with announcements that fall outside market expectations. Both studies reinforce the patterns identified in this research. Anticipated events—whether in the context of government policy or corporate announcements—tend to result in more limited changes in risk compared to unexpected events.

Evidence from the Indonesian capital market itself also supports this pattern. Dewi et al. (2025) examined the impact of the publication of the ESG Leader Index on

abnormal returns and trading volume activity on the Indonesia Stock Exchange. The study found that market reactions tended to be limited when market participants could largely anticipate the index composition before the official publication. This pattern is consistent with the findings of this study. The publication of policies that have long been discussed no longer contains sufficient information to drive significant price reactions or risk. El Ghouli et al. (2023) also emphasise that announcements related to environmental responsibility or regulations will only have a significant impact on stock returns if the information is new and material to investors' assessment of a company's prospects. The conditions do not appear to have been met in the case of Government Regulation No. 19 of 2025.

The results of this study theoretically reinforce the relevance of the semi-strong form of the Efficient Market Hypothesis in explaining the behavior of the Indonesian capital market in response to mineral sector policies. The results also confirm that the status of a piece of information as a government policy does not, in and of itself, make it influential on stock prices if the market has already absorbed that information through a lengthy public deliberation process. This study also enriches the event study literature by demonstrating that the simultaneous use of abnormal returns and volatility returns provides a more comprehensive picture of market responses. These two indicators captured different dimensions of investor reactions: changes in return levels on one hand and changes in risk perception on the other. The findings of Eden et al. (2022) regarding the application of author email correspondence in international business studies further support this approach. The combination of these two indicators helps mitigate the limitations that arise when market reactions are measured through only a single dimension.

These findings suggest that investors should avoid reacting solely to government policy announcements. It is also necessary to consider a company's fundamentals, the outlook for the nickel industry, and overall global commodity price movements before making investment decisions. Nickel company management should ensure that information regarding the impact of policies on operating costs, cash flow, and business strategy is transparently communicated to investors, enabling investment decisions based on adequate fundamental analysis. Furthermore, these findings highlight the importance for government and capital market authorities to maintain consistency and clarity in policy communication from the formulation stage onward. The quality of such communication determines the extent of new information available when the policy is officially announced to the public.

## **CONCLUSION**

This study analyses the capital market's reaction to the stocks of nickel companies listed on the Indonesia Stock Exchange following the issuance of Government Regulation No. 19 of 2025 using an event study approach. The test results

reveal two main conclusions. First, there were no significant differences in abnormal returns during the 11-trading-day event window; the issuance of the regulation did not trigger a significant market reaction in terms of changes in stock prices. Second, there were no significant differences in volatility returns between the pre- and post-event periods, indicating that the regulation did not significantly alter investors' risk perceptions during the observation period.

Both findings are consistent with the semi-strong form of the Efficient Market Hypothesis, which states that public information already anticipated by the market before the official announcement date tends not to generate significant price reactions or risk at the time the event occurs. Future research is encouraged to extend the observation period, test alternative return estimation models such as the Market-Adjusted Model or the Mean-Adjusted Model, and include additional indicators such as trading volume activity and bid-ask spread to enable a more comprehensive analysis of market reactions. Future research is also advised to account for macroeconomic factors and global commodity price movements as control variables, given that international market dynamics heavily influence the nickel industry.

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