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Shaping Nickel Mining Stocks: Global Prices and Investment In Downstream Context

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ABSTRACT

This study analyzes the impact of global nickel prices, supply, demand, and financial decisions on the stock prices of Indonesian nickel mining companies during the downstream policy period (2009–2023). Despite government efforts to encourage investment, stock prices have declined, indicating negative investor sentiment. Using panel data regression and E-Views 12, the study evaluates eight companies listed on the Indonesia Stock Exchange through saturation sampling. The findings reveal that global prices, supply, demand, and investment decisions positively affect stock prices, while funding decisions have a negative impact. The results highlight how global market forces and internal strategies influence stock valuation. This research provides insight into investor behavior and financial decision-making in Indonesia's nickel sector under the downstream policy framework.

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1. INTRODUCTION

BACKGROUND RESEARCH

Indonesia is home to some of the world's most substantial nickel reserves, significantly impacting both the national and global markets. In 2023, Indonesia contributed approximately 1.8 million metric tons of nickel, equating to 50% of global production. Nickel's critical role extends beyond industrial applications to everyday items, primarily due to its utility in manufacturing alloys and as a crucial component in lithium-ion batteries, which are pivotal in the electric vehicle industry (Biantoro & Rahadi, 2023).

The demand for nickel is on an upward trajectory, driven by its essential uses. Projections indicate that global nickel demand will reach 659 metric tons by 2030 and 987 metric tons by 2040, fueled by the burgeoning electric vehicle sector. This increasing demand underscores the need for strategic resource management, particularly in Indonesia, which has responded with robust downstreaming policies initiated in 2009 under Law No. 4 of 2009 and its amendment in 2020. These laws mandate the domestic processing of minerals to enhance their value, significantly impacting the nickel industry, especially after the 2020 ban on nickel ore exports. This ban has led to a dramatic increase in export values from IDR 54.1 trillion in 2017 to IDR 504.2 trillion in 2022.

Despite these policies, the stock prices of companies in the nickel sector have seen significant volatility. Data from Stockbit, indicates that while there was stability between 2014 and 2019, prices surged post-2020 due to the export ban, with a peak in May 2022. However, these gains were not sustained, and prices declined in the following years. This fluctuation points to the sensitivity of stock prices to both external market forces and internal corporate actions.

Several studies have highlighted the impact of global nickel prices on stock performance. For instance, Sihotang & Ishak (2024), explored how global nickel prices, GDP, inflation, exchange rates, and foreign direct investment impact the stock prices of nickel mining companies, using the export ban as a moderating factor. Their findings indicated a significant relationship between global nickel prices and stock prices, highlighting the influence of international market conditions on local stock markets. Additionally, studies like those by Purnama & Hanitha (2021) and Astuty et al (2023) have confirmed the significant impact of global commodity prices on stock indices and the direct correlation between global demand for nickel and its prices, respectively.

From an internal perspective, challenges such as financing and investment in the necessary technology to comply with downstreaming requirements have been substantial. Technologies like Rotary Kiln Electric Furnace (RKEF) and High-Pressure Acid Leaching (HPAL) are critical for processing nickel ore into value-added products. These internal factors, including financial decisions and investment in technology, play crucial roles in shaping company valuations and stock market performance.

This research endeavors to build upon previous findings by providing an in-depth analysis of how external factors, such as global nickel prices, and internal factors like financial strategies

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and investment decisions influence the stock prices of Indonesian nickel mining companies. It aims to bridge the existing research gaps by offering a longitudinal perspective specifically tailored to the nickel industry, thereby presenting novel insights into the interplay between market forces and corporate strategies. This study seeks to elucidate inconsistencies in previous research findings and contribute uniquely to the existing literature by highlighting the nuanced effects of strategic management and market dynamics within the nickel sector.

RESEARCH OBJECTIVES

The objectives of this study are as follows:

1. To examine and analyze the effect of global nickel price on the stock prices of nickel mining companies.
2. To examine and analyze the effect of global nickel supply on the stock prices of nickel mining companies.
3. To examine and analyze the effect of global nickel demand on the stock prices of nickel mining companies.
4. To examine and analyze the effect of funding decisions on the stock prices of nickel mining companies.
5. To examine and analyze the effect of investment decisions on the stock prices of nickel mining companies.

RESEARCH PROBLEMS / HYPOTHESIS

Referring to the background that has been presented, the research problems in this study are as follows:

1. Does global nickel price affect the stock prices of nickel mining companies?
2. Does global nickel supply affect the stock prices of nickel mining companies?
3. Does global nickel demand affect the stock prices of nickel mining companies?
4. Do funding decisions affect the stock prices of nickel mining companies?
5. Do investment decisions affect the stock prices of nickel mining companies?

The fluctuations in global nickel prices are a key economic indicator influencing the nickel industry. These prices reflect market dynamics and future expectations, which are crucial for the profitability of nickel producers and related sectors (Nurjaman et al., 2018; (Shen et al., 2021). Previous research by Sihotang & Ishak (2024) indicated a significant relationship between global nickel prices and the stock prices of companies in the nickel mining industry. Hence, the hypothesis is:

H1: Global nickel prices are related to the stock prices of nickel mining companies.

The supply of nickel on the global market can significantly influence nickel prices and, consequently, the performance of companies associated with the nickel industry (Labys & Lord, 1990); Humphreys, 2010). Changes in nickel supply can impact production costs for companies utilizing nickel as a raw material and affect the revenues of nickel mining companies. Thus, the hypothesis is proposed:

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H2: Global nickel supply influences the stock prices of nickel mining companies.

The global demand for nickel affects its market price, which in turn impacts the financial performance of nickel mining and production companies (Aruga, 2016); Labys & Lord, 1990). This relationship suggests that changes in global nickel demand are likely to impact stock prices within the industry. Therefore, the hypothesis is formulated:

H3: Global nickel demand affects the stock prices of nickel mining companies.

Financing decisions, such as the debt-to-equity ratio, reflect a company's financial strategy regarding its use of leverage, which could influence its risk and return profile. Research by Djuminah et al (2023) suggests that financing decisions have an observable impact on firm value. Accordingly, it is hypothesized:

H4: Financing decisions impact the stock prices of nickel mining companies.

Investment decisions, particularly those involving capital expenditures on real assets, can significantly influence a company's production capacity and efficiency. These decisions are expected to affect profitability and investor interest, potentially influencing stock prices. Previous findings by Panjaitan et al (2023) suggest that investment decisions play a role in stock market performance. Thus, the hypothesis is:

H5: Investment decisions influence the stock prices of nickel mining companies.

Figure 1 depicts the research model utilized in this study, which incorporates five hypotheses that have been discussed in related academic literature. This model delineates five independent variables: global nickel prices, global nickel supply, global nickel demand, financing decisions, and investment decisions. The dependent variable in this research is the stock prices of nickel mining companies. The purpose of this model is to explore the impacts of these independent variables on the dependent variable, aiming to enhance understanding of how economic factors and corporate financial strategies influence market valuations in the nickel mining industry.

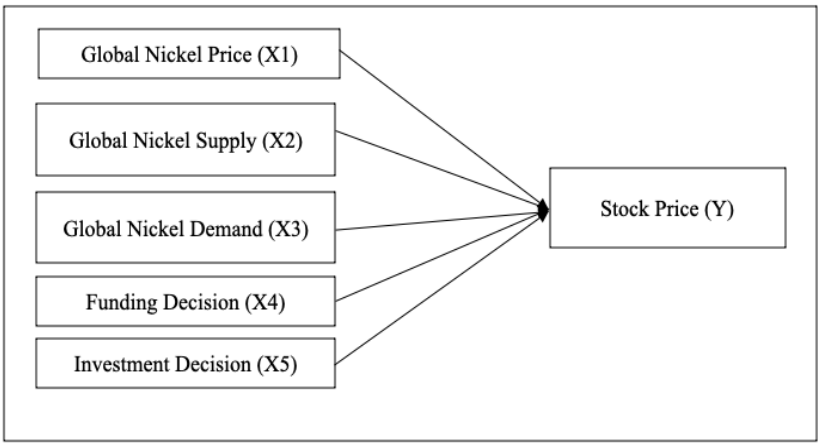

Figure 1. Research Model

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2. METHODOLOGY

Data Collections

The study explores the impact of various independent variables on the stock prices of nickel mining companies. The population comprises all nickel mining companies listed on the Indonesia Stock Exchange. A saturated sampling technique is employed, meaning every member of the population is included in the sample to ensure comprehensive data coverage. Secondary quantitative data is collected for this research. The data, spanning from 2009 to 2023, includes annual reports, financial statements, and commodity prices from recognized databases and platforms such as the London Metal Exchange and the United States Geological Survey.

Data are sourced from established financial and commodity databases including the London Metal Exchange for global nickel prices, and the United States Geological Survey for global nickel supply data. Stock prices are obtained from the Indonesia Stock Exchange and Yahoo Finance. The units of study are the listed nickel mining companies, with the annual closing stock prices and yearly commodity data forming the primary data points for analysis. Panel data analysis is employed to understand the dynamics across both cross-sectional and time-series dimensions. E-views software is utilized to perform regression analysis to estimate the relationships among the identified variables.

Table 1. Research Variables

Variable	Measurement	Proxy	References
Dependent Variable			
Stock Prices (SP)	Annual closing price	Closing price from the Indonesia Stock Exchange	Sihotang & Ishak (2024), Rizkian et al (2022)
Independent Variables			
Global Nickel Prices (GNP)	Average annual global price	Prices from the London Metal Exchange	Astuty et al (2023)
Global Nickel Supply (GNS)	Total annual global production	Data from the US Geological Survey	Nugroho (2022)
Global Nickel Demand (GND)	Total annual global demand	Data from the International Nickel Study Group	Santoso et al (2024)
Financing Decisions (FD)	Debt to Equity Ratio (DER)	DER = $\frac{Total\ Liabilities}{Total\ Equity}$	Djuminah et al (2023), Panjaitan et al (2023)
Investment Decisions (ID)	Capital Expenditure to Book Value Asset Ratio (CAPBVA)	CAPBVA = $\frac{\text{Fixed Asset Additions in One Year}}{\text{Total Assets}}$	Rizal et al (2022)

Source: Data Processed (2024)

Econometric Model

The methodological approach begins with examination of the panel data set using descriptive statistics. The regression analysis is executed in EViews, where the effects of the independent variables (Global Nickel Price, Global Nickel Supply, Global Nickel Demand, Financing Decision, and Investment Decision) on the dependent variable (Stock Price) are quantified. The general form of the econometric model can be written as:

$$SP_{it} = \beta_0 + \beta_1 GNP_{it} + \beta_2 GNS_{it} + \beta_3 GND_{it} + \beta_4 FD_{it} + \beta_5 ID_{it} + \mu_{it}$$

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Where: SP is the dependent variable (Stock Price), GNP, GNS, GND, FD, ID are the independent variables for entity iii at time ttt, which correspond to Global Nickel Price, Global Nickel Supply, Global Nickel Demand, Financing Decision, and Investment Decision respectively. β_0 is the intercept. β1,β2,β3,β4,β5 are the coefficients for each independent variable.

3. RESULT AND DISCUSSION

The study focuses on understanding the impact of global nickel prices, global nickel supply, global nickel demand, financing decisions, and investment decisions on the stock prices of companies. The entities under investigation are firms within the nickel mining sector that are publicly listed on the Indonesia Stock Exchange. To ensure comprehensive coverage of the population, a saturated sample technique is employed, wherein all members of the population are included as samples. There are eight nickel issuers listed on the Indonesia Stock Exchange. Therefore, the sample size used for the study encompasses these eight companies over a 15-year period from 2009 to 2023. However, due to the variation in the initial public offering (IPO) dates, the panel used in the study is unbalanced. This includes one company with data available from 2010 to 2023, one from 2019 to 2023, and another from 2021 to 2023, reflecting the different entry points of these companies into the market. The specific companies included in this research are outlined in the following table:

Table 1. Data Sample

No.	Code	Company Name
1	ANTM	PT Aneka Tambang Tbk
2	INCO	PT Vale Indonesia Tbk
3	DKFT	PT Central Omega Resources Tbk
4	IFSH	PT Ifishdeco Tbk
5	KKGI	PT Resources Alam Tbk
6	TINS	PT Timah Tbk
7	NICL	PT Pam Mineral Tbk
8	HRUM	PT Harum Energy Tbk

Source: www.tempo.com

This diverse selection of companies provides a broad perspective on the nickel mining industry in Indonesia, enabling the study to capture a wide array of data reflective of industry trends and company-specific dynamics over the specified period. The use of an unbalanced panel model is justified by the varying commencement dates of these companies' public trading, providing a realistic representation of the sector's development and the individual trajectories of each firm within the market.

Statistics Descriptives

The descriptive statistics presented in Table 3 provide a comprehensive overview of the variables related to the study, which aims to analyze the impact of global nickel prices, global nickel supply, global nickel demand, financing decisions, and investment decisions on the stock prices of nickel mining companies listed on the Indonesian Stock Exchange. This analysis is crucial for summarizing the distribution and central tendencies of the data collected from 2009 to 2023, with a total of 97 observations for each variable under study.

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Table 3. Statistics Descriptives

	SP	GNP	GNS	GND	FD	ID
Mean	1243.669	16794.98	2455670.	2192227.	0.935451	0.021850
Median	775.0000	15029.00	2450000.	2140000.	0.133300	0.008920
Maximum	7100.000	25867.00	3600000.	3100000.	59.03670	0.436567
Minimum	36.28000	9595.00	1400000.	1234000.	0.000300	-0.171106
Std. Dev	1326.378	4769.988	561626.9	0.211397	5.984137	0.070954
Observations	97	97	97	97	97	97

Source: E-Views 12 data processed (2024)

Stock Price (SP) has an average value of Rp1,243 per share, with substantial volatility indicated by a standard deviation of 1,326, higher than the mean itself. This variability, highlighted by a maximum of Rp7,100 and a minimum of Rp36, reflects the significant fluctuations in market conditions and investor sentiment over the studied period. Global Nickel Price (GNP) exhibits an average of USD 16,794/MT, with a wide range of USD 9,595 to USD 25,867, demonstrating the cyclical nature and high volatility of commodity prices influenced by global economic changes and industry-specific developments.

Global Nickel Supply (GNS) and Demand (GND) show less variability with relatively stable production and consumption levels. The supply has an average of 2,455,670 tons and a standard deviation of 561,626, suggesting consistent mining outputs, while the demand averages at 2,192,227 tons, both maintaining a balanced supply-demand scenario over the years. Financing Decision (FD), as measured by the Debt-to-Equity Ratio (DER), averages at 0.935, with an exceptionally high range from nearly zero to 59.03, indicating diverse financial strategies among companies ranging from conservative to highly leveraged approaches. Investment Decision (ID), quantified by the Capital Expenditure to Book Value of Asset Ratio (CAPBVA), shows an average of 0.02185. The range from -0.171106 to 0.436567 in CAPBVA values reflects varying levels of capital investment relative to companies' asset bases, suggesting differences in growth strategies and asset utilization. These statistics elucidate the significant influence of market dynamics, corporate financial management, and investment behaviors on stock price movements, crucial for understanding the sector's economic environment and investment potential.

Panel Model and Classic Assumption Test

In this study, a rigorous panel data analysis was conducted to examine the impact of global nickel price, global nickel supply, global nickel demand, financing decisions, and investment decisions on the stock prices of nickel mining companies listed on the Indonesian Stock Exchange. The analysis utilized the E-Views version 12 software and followed a structured approach to select the most suitable panel data model and to ensure the data adhered to the assumptions necessary for regression analysis.

Chow test was applied to determine the appropriate model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). The probability value from the cross-section Chi-Square statistic was significantly less than 0.05, leading to the selection of the Fixed Effect Model (FEM) as the more suitable model.

Following the selection of FEM, a Hausman test compared the Fixed Effect Model with the Random Effect Model (REM) to identify the best fitting model. The test resulted in a probability

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value greater than 0.05, indicating the Random Effect Model (REM) was more appropriate for this study. Lastly, the Lagrange Multiplier test compared the Random Effect Model to the Common Effect Model. The Breusch-Pagan statistic significantly favored the REM, confirming it as the optimal model for analyzing the data. The table below summarizes the results of the classical tests performed on the panel data:

Table 4. Panel Model and Classic Assumption Test Results

Test Type	Statistic	df	Prob.	Result
Cross-section F (Chow Test)	42.997684	7	<0.0001	FEM selected
Cross-section Random (Hausman Test)	3.733149	5	0.5884	REM selected
Breusch-Pagan (*Lagrance Multiplier)*	317.3874		<0.0001	REM confirmed
Normality Test			0.53	Data normally distributed
Multicollinearity				No multicollinearity detected

Source: E-Views 12 data processed (2024)

These results not only validate the use of the Random Effect Model for this study but also ensure that the model's assumptions are met, allowing for reliable and valid interpretations of the regression analysis.

Partial Test and Analysis

The empirical results reveal significant relationships between several market and internal variables on the stock price of nickel mining companies in Indonesia, utilizing a Random Effects Model (REM). Noteworthy findings from the analysis are discussed below, with respect to existing literature and theoretical frameworks. The adjusted R-squared value of 31% indicates that the independent variables explain 31% of the variance in stock prices, highlighting substantial influence but also suggesting that other factors not included in the model account for the remaining variance. These findings align with previous studies and contribute to the existing literature by elucidating the specific economic and financial dynamics within the Indonesian nickel sector, influenced by global commodity trends, regulatory changes, and corporate financial policies.

Table 5. Summary of Regression Analysis and Determination Coefficient

Variabel	Coefficient	Std. Error	t-Statistic	Prob.
C	-22.35660	8.710604	-2.566596	0.0119
GNP	1.279126	0.232250	5.507550	**0.0000**
GNS	2.798757	1.112787	2.515087	**0.0137**
GND	0.962406	0.457736	2.102537	**0.0383**
FD	-0.040373	0.009690	-4.166504	**0.0001**
ID	1.967226	0.783040	2.512294	**0.0138**
Adjusted R^2		**31%**		

Source : E-Views 12 data processed (2024)

Discussions and Analysis

The Impact of Global Nickel Prices (GNP) on Stock Prices (SP)

This research investigates the significant influence of global nickel prices on the stock prices of nickel mining companies, utilizing a rigorous partial t-test analysis. The findings reveal a t-value of 5.507550, which is substantially higher than the critical t-table value of 1.985251, and a

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significance level of 0.0000, clearly indicating that global nickel prices positively affect stock prices in the nickel mining sector.

The positive correlation between global nickel prices and stock prices is consistent with the hypothesis that higher nickel prices lead to increased stock values. This relationship is underpinned by the theory of transmission proposed by Dornbusch et al (2000), which suggests that significant commodities like nickel can act as a conduit for transmitting effects across financial markets, influencing investor sentiment and behaviors. This theory is particularly relevant in volatile market conditions like those observed between 2022 and 2023, where fluctuations in nickel prices mirrored the movements in stock prices of nickel mining companies.

Furthermore, the implementation of downstream processing policies in Indonesia since 2009, strengthened by the nickel export ban in 2020, has been a crucial factor impacting global nickel prices and, by extension, stock prices. These policies have shifted Indonesia from an exporter of raw nickel to a producer of higher-value nickel products, such as those used in electric vehicle batteries. This shift has occasionally led to supply pressures on the global market, which can elevate nickel prices, as evidenced by the peak prices in March 2022 on the London Metal Exchange (LME). However, it can also lead to over-supply and subsequent price drops if production exceeds market demand.

The research aligns with studies by Sihotang & Ishak (2024), Purnama & Hanitha (2021), and Yenny & Wahyudi (2023), which collectively assert that international nickel prices are a critical component in evaluating the prospects of the nickel industry and can reflect broader economic activities, influencing profitability within the nickel sector. These studies corroborate the observed phenomenon where increases in global nickel prices, spurred by regulatory and market changes, positively influence the stock prices of nickel mining companies by potentially increasing their revenues and thus making them more attractive to investors.

The Impact of Global Nickel Supply (GNS) on Stock Prices (SP)

This research examines the relationship between global nickel supply and the stock prices of nickel mining companies. Utilizing partial t-test analysis, the study reveals a t-value of 2.515087, which significantly exceeds the t-table value of 1.985251, with a research significance level of 0.0137 ($p < 0.05$). This result supports the hypothesis that an increase in global nickel supply has a positive significant effect on the stock prices of nickel mining companies.

The positive correlation found in this study indicates that as global nickel supply increases, stock prices tend to rise and vice versa. This relationship can be primarily attributed to the mining companies' ability to meet higher demands, especially in rapidly growing markets like electric vehicles (EVs) and renewable energy sectors. Increased supply capabilities enhance company revenues and profitability, which in turn positively impacts investor perceptions and drives up stock prices. This dynamic is explained through Dornbusch et al (2000)'s theory of contagion, where global market changes such as an increase in nickel supply can create domino effects on stock prices through market sentiment and international trade connections. An increased supply is often viewed by the market as an indication of supply stability, boosting investor confidence in mining companies' long-term demand fulfillment capabilities, thus encouraging capital inflows into mining stocks.

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The downstream nickel processing program implemented in Indonesia has significantly altered the global supply pattern of nickel supply during 2021-2023. This increase is driven by policies enacted by nickel companies, including the construction of smelter facilities and nickel processing plants as part of the downstreaming program. This alignment with the growing global demand for EV battery materials signifies Indonesia's success in transforming its nickel industry from merely exporting raw materials to producing higher value-added products.

Despite a significant surplus in global nickel supply during 2021-2023, suspected to originate from Indonesia, this has not adversely affected stock prices, contrary to theory of supply and demand might suggest. While high supply could depress commodity prices, in this case, nickel, the stock market may view increased supply as indicative of companies expanding their production capacity, reflecting potential business growth and higher future revenues. This perspective aligns with findings by Malla & Asianto (2020), where global commodity supply reflects corporate optimism in meeting global demands and can act as a positive signal for investors.

The Impact of Global Nickel Demand (GND) on Stock Prices (SP)

This study assesses the influence of global nickel demand on the stock prices of nickel mining companies, employing partial t-test analysis which indicates a t-value of 2.102537, surpassing the critical t-table value of 1.985251 with a significance level of 0.0383 ($p < 0.05$). These results support the hypothesis that an increase in global nickel demand significantly affects the stock prices of nickel mining companies positively.

The positive correlation found between global nickel demand and stock prices suggests that as global demand for nickel increases, so do the stock prices of mining companies, and vice versa. This relationship is likely driven by the economic principle that an uptick in demand not only raises commodity prices but also has a consequential impact on the financial performance of companies extracting and processing that commodity. Dornbusch et al (2002)'s theory of contagion explains this phenomenon, suggesting that positive economic events in one region can ripple through and affect other areas, including financial markets. As global demand for nickel increases, particularly for uses like electronic industries, electric vehicle batteries, and renewable energy technologies, investors react positively, perceiving these trends as opportunities for substantial financial gain, which in turn boosts stock prices.

Global nickel demand has been rising year-over-year, fueled by the expansion of industries that require nickel, such as the manufacturing of batteries for electric vehicles. The downstream processing initiatives in Indonesia aim to meet these global demands, allowing nickel companies to adopt policies that expand raw material processing capabilities, particularly through technologies like pyrometallurgy and hydrometallurgy, along with developing smelting industries. This alignment with global energy transition trends places Indonesia in a favorable position to supply the growing global demand for nickel, thereby adding value to the country’s nickel resources.

Despite the general positive trend, the study observes instances where stock prices of some nickel mining companies declined even amidst rising global nickel demand. This points to the complexities of external factors affecting stock valuations, such as the dynamics within the global nickel commodity market itself. For instance, a surplus in global nickel supply, despite high

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demand, can depress nickel prices if supply significantly outstrips demand, leading investors to view this as a negative signal due to potential declines in mining profitability.

Additionally, high demand for nickel often comes with heightened production costs, which are significantly influenced by the type of ore processed and other economic factors. Nickel production from laterite ore is particularly sensitive to energy cost increases, while sulfide ore processing costs are more impacted by labor costs and the revenues from by-products (Bleiwas, 1990). If company profit margins narrow, stock prices may decline even if global nickel demand is increasing. This research aligns with Malla & Asianto (2020), who found that high commodity demand encourages mining companies to ramp up production, which can increase profits and positively influence company performance, thereby attracting investor interest and potentially driving up stock prices. In conclusion, while the overall findings indicate a positive relationship between global nickel demand and stock prices, the nuances of supply-demand balances, production costs, and market dynamics highlight the need for investors to consider a comprehensive array of factors when assessing the financial prospects of nickel mining stocks.

The Impact of Financing Decisions (FD) on Stock Prices (SP)

This study explores the significant impact of financing decisions, projected through the Debt-to-Equity Ratio (DER), on the stock prices of nickel mining companies. Using partial t-test analysis, the research finds a t-value of -4.166504, which exceeds the critical t-table value of 1.985251, with a significance level of 0.0001 ($p < 0.05$). This confirms the hypothesis that there is a significant negative effect of financing decisions on stock prices, as measured by DER.

A higher DER, indicating a company's preference for debt over equity, correlates negatively with stock prices. This result aligns with signalling theory introduced by Spence (1973), which posits that a high DER can signal potential liquidity risks, negatively affecting investor confidence and subsequently reducing stock prices. This finding reflects the challenges faced by nickel mining companies, which often require substantial investment due to high operational costs, equipment needs, and inherent risks (Topal & Ramazan, 2010). The downstream processing initiatives compel these companies to make significant investments in processing and refining facilities, further necessitating considerable financial outlays.

The relationship between debt levels and profitability, it is evident that reliance on debt is risky, particularly in an industry like nickel mining that is susceptible to commodity price fluctuations. When global nickel prices decline, revenues fall, making existing debt burdens heavier (Dempster, 2020). Despite some companies managing to balance high debt levels with stable profitability, which aligns with the trade-off theory of capital structure (Kraus & Litzenberger, 1973), this balance is precarious. The trade-off theory suggests that companies weigh the tax benefits of debt against bankruptcy risks. However, if profit margins are narrow, even slight shifts in market conditions or commodity prices can exacerbate financial risks.

Government policies, such as the Indonesian ban on nickel ore exports to promote downstream processing, have complex implications for mining companies. While beneficial for companies equipped with processing facilities, those reliant on raw ore exports face significant challenges. This policy shift can potentially reduce revenue streams from exports, particularly for companies that are unprepared for such transitions Rahadian & Ibadi (2021).

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The research supports findings by Rizkian et al (2022) and Utami & Aziz (2023), which show that higher DER levels can depress stock prices due to increased financial risks. However, this study contrasts with findings by Djuminah et al (2023) and Panjaitan et al (2023), who argue that high DER can be beneficial under certain tax considerations, suggesting that leveraging debt is more cost-effective than equity financing. This discrepancy may arise from different industry dynamics; the nickel industry's high volatility and substantial capital needs make financial risk more salient to investors. Unlike more stable sectors such as coal, oil, and gas, the nickel industry's unique challenges—such as high price volatility and government policy impacts—make DER a more critical factor in investment decisions. In conclusion, this study illustrates the complex interplay between financing decisions and stock prices in the nickel mining industry. While higher debt levels can finance necessary growth and expansion, they also increase financial risk, particularly in volatile markets.

The Impact of Investment Decisions (ID) on Stock Prices (SP)

This study evaluates the influence of investment decisions, projected through the Capital Expenditure to Book Value of Assets (CAPBVA), on the stock prices of nickel mining companies. The analysis reveals a t-value of 2.512294, which significantly exceeds the critical t-table value of 1.985251, with a significance level of 0.0138 ($p < 0.05$). These results substantiate the hypothesis that there is a positive significant effect of investment decisions on stock prices.

Investment decisions, as measured by CAPBVA, demonstrate a positive correlation with stock prices. A higher CAPBVA indicates that companies are investing more in productive assets like machinery and technology, which typically signifies a focus on long-term strategic goals such as downstream processing. This aligns with Spence (1973)'s signaling theory, suggesting that substantial capital expenditures are a positive signal to investors about a company's optimism and future prospects. The positive signal generated by high CAPBVA reflects companies' commitment to investing in fixed assets to comply with strategic policies like downstream processing, which in turn positively influences investor perceptions and boosts stock prices.

The downstream processing policy in the nickel industry, which encourages investment in smelting and refining facilities, exemplifies this investment strategy. However, the average CAPBVA across the nickel mining industry, at 0.02, indicates a relatively low investment level compared to total asset values, suggesting a cautious and phased approach to capacity expansion among companies. This cautious approach could be a response to the significant infrastructure development required by downstream processing initiatives, which necessitates substantial investment in fixed assets.

The phenomenon where stock prices decline due to inadequate investment in fixed assets, particularly in the context of downstream processing, is notable. Insufficient investment can affect a company's ability to compete and meet market demands, as infrastructure development is crucial for downstream processing. The lack of investment in fixed assets can lead to reduced operational efficiency and slow expansion, which investors might interpret as a negative signal, indicating that the company is not well-prepared to capitalize on market opportunities or regulatory changes, such as the ban on nickel ore exports. This situation can diminish long-term growth projections and competitiveness, ultimately leading to a decline in stock prices (Abieva & Kanabekova, 2021; Belan et al., 2021).

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This research is consistent with findings by Djuminah et al (2023) and Rizal et al (2022), which assert that high investment decisions enhance company value by indicating a larger market value relative to the assets owned. These investments, considered semi-permanent decisions, signal to investors that the company expects to reap significant future benefits, thereby boosting stock prices. However, this study contrasts with findings by Panjaitan et al (2023), who observed a negative impact of investment decisions on company value, likely due to investor focus on immediate financial conditions rather than long-term investment strategies.

In summary, while investment decisions positively impact stock prices by signaling company growth and commitment to strategic initiatives, the nuances of investment in relation to industry-specific challenges like regulatory changes and market dynamics necessitate a balanced approach. Companies must strategically manage their investment decisions to align with both immediate financial health and long-term strategic goals, ensuring they remain attractive to investors while navigating the complexities of the nickel industry's regulatory and market environment.

4. CONCLUSIONS

This research aimed to analyze the impact of external factors such as global nickel prices, global nickel supply, and global nickel demand, alongside internal factors such as funding decisions projected by the debt-to-equity ratio (DER) and investment decisions projected by the capital expenditure to book value of assets ratio (CAPBVA) on the stock prices of nickel mining companies during the downstreaming era. The conclusions drawn from panel data regression are as follows: Global Nickel Prices has a significant positive influence on the stock prices was observed, affirming the hypothesis that higher global nickel prices positively impact the stock valuations of nickel mining companies. Global Nickel Supply also positively and significantly influenced stock prices, indicating that increased supply correlates with higher stock valuations in the nickel mining sector. Similar to supply, an increase in global demand for nickel significantly boosts stock prices, supporting the hypothesis that higher demand drives up stock prices. DER showed a significant negative impact on stock prices, suggesting that higher debt levels might reduce investor confidence and thereby depress stock prices. CAPBVA positively influenced stock prices significantly, indicating effective capital investment strategies enhance company valuations in the nickel sector.

The findings corroborate the theories suggested by prior studies such as those by Sihotang & Ishak (2024) and Purnama & Hanitha (2021), which highlight the critical role of global commodity prices in influencing mining stocks. This study extends these insights by specifically incorporating the effects of nickel downstreaming policies, thereby offering a refined understanding of how policy frameworks can impact economic indicators in the mining sector. These findings, while robust, are applicable primarily within the nickel mining industry and may not directly extend to other mining sectors without further investigation. This specificity is due to unique industry characteristics and the targeted nature of the downstreaming policy within Indonesia. This study makes unique contributions by demonstrating the combined impact of global market dynamics and national policy changes on stock prices within a specific commodity market and highlighting

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the dual role of internal financial decisions and external economic conditions in shaping corporate valuations in emerging markets.

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