

Research Article

Intrinsic and Relative Valuation of PT Aneka Tambang, Tbk: Navigating through Commodity Market Volatility and Industry Transformation

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Abstract: PT. Aneka Tambang, Tbk is the state-owned mining company of Indonesia, producing primarily gold, nickel, alumina, silver, along with several other metals. Gold contributes 69% of ANTAM's net sales, while nickel contributes 27%. Despite the shift in demand from the industry toward electric vehicles, ANTAM prepares for an increase in nickel production but holds back the challenge due to the low regulated nickel price set by the government. The core challenge of this research will be to evaluate the valuation of ANTAM for the next 5 years, considering these challenges and focusing on the influence of some commodities. Using a quantitative approach, this study comprises financial analysis, PESTEL analysis, intrinsic valuation using Discounted Cash Flow, and relative and sensitivity analysis. The results show that ANTAM's intrinsic value is at Rp. 1,878 per share, higher than the market price of Rp. 1,360, indicating possible undervaluation. Sensitivity analysis highlighted that the two most important factors were revenue and COGS. Recommendations include long-term growth in ANTAM stock, monitoring of the revenue and COGS, and leveraging market conditions. Management needs to extend production efficiency, control costs, and ensure financial transparency, while stakeholders need to keep themselves updated on performance and market trends.

Keywords: Intrinsic Valuation, DCF Method, Relative Valuation, Stock Valuation, Gold Industry, Nickel Industry, Aneka Tambang.

I. INTRODUCTION

The global demand for natural resources, particularly nickel and bauxite, is increasing due to industrial growth and the push for eco-friendly technologies (Group, 2017). This shift towards green development reduces reliance on fossil fuels, with electric vehicle (EV) batteries driving up the demand for these materials (Jones, 2020). As the Paris Agreement aims to limit global warming, nickel's role in EV batteries becomes crucial, with global production reaching 3.03 million tons in 2022, despite only 15% being used for battery production (Vuong, 2023). However, the surge in supply from major producers like Indonesia has led to a significant drop in nickel prices, from \$27,563 per ton to \$16,366 in 2023, with further declines expected (Warastri, 2024).

PT. Aneka Tambang, Tbk (ANTAM), a state-owned Indonesian mining company, was established in 1968 and listed on the Indonesia Stock Exchange in 1997. ANTAM's operations focus on nickel, gold, and bauxite mining and refining, with nickel production contributing 26% of its net sales in 2022. The company has successfully maintained competitive production costs and secured a Power Purchase Agreement to support its Ferronickel Factory (ANTAM, 2024). In addition to nickel, ANTAM's gold segment contributed 69% of net sales in 2022, supported by its LBMA-accredited refinery. The company also exceeded its alumina production targets and engaged in coal mining and other services.

In response to Indonesia's national development goals and the global push for downstream processing, ANTAM is expanding its focus on nickel downstream to support the EV battery industry (PT. Aneka Tambang, Tbk, 2024). The oversupply of nickel has led to price declines, challenging ANTAM to balance production while leveraging rising gold prices for stability (Noviani, 2024). This context necessitates a detailed analysis of ANTAM's future valuation, considering market volatility and industry transformations.

II. LITERATURE REVIEW

Valuation involves determining a company's intrinsic value through observable data and fundamental analysis, starting with metrics like earnings, revenue, and cash flow, as well as market indicators such as price-to-earnings (P/E) ratios and price-to-book (P/B) ratios (Damodaran, 2014). Analysts use this data to ground their valuations in reality, avoiding speculative errors and ensuring that growth projections are based on realistic market trends and historical performance. Rather than relying on a single method, a combination of approaches, including Discounted Cash Flow (DCF) analysis, relative valuation, and option



pricing models, offers a more comprehensive and accurate assessment. Simplicity in valuation models is crucial to prevent inaccuracies, as complex models can lead to confusion. Additionally, incorporating risk through techniques like sensitivity and scenario analysis helps analysts understand potential outcome variations and their impact on the company's value.

Weighted Average Cost of Capital (WACC) is the average return that a firm must pay out to finance its assets, covering both the cost of equity and the cost of debt, weighted by their proportion in the capital structure. It usually stands at a level lower than the cost of equity, which only deals with equity financing. Understanding the circumstances under which one would use each measure clarifies their role in investment analysis. WACC is computed using the estimates of costs of debt and equity along with their associated market value weights.

$$\text{WACC} = k_E [E / (D+E)] + k_D [D / (D+E)][1-T]$$

FCFF stands for Free Cash Flow to Firm. It measures the cash flow available to all sources of funds: equity, debt, and convertible bond investors. It is, therefore, money that a business generates through its core operations after capital expenditures and working capital changes. The effect of debt is not felt in the FCFF; hence, it is also referred to as unlevered free cash flow. FCFF can be calculated in the following manner:

$$\text{FCFF} = \text{NOPAT} + \text{Depreciation and Amortization} - \text{Capital Expenditure} - \text{Changes in Net Working Capital}$$

Here, NOPAT (Net Operating Profit After Tax) evaluates operating profitability, calculated as:

$$\text{NOPAT} = \text{EBIT} \times (1 - \text{tax rate})$$

FCFF is mainly used to measure a firm's liquidity, debt repayment, and potential dividend distribution. The two-step DCF model uses the intrinsic value for investment analysis, financial modeling, and business valuation purposes.

Relative valuation is the technique that finds out the value of an asset in relation to the prices of other comparable or similar market-based assets. Thus, it is also known as relative multiples-based valuation and comparable company analysis. This method is popular due to its straightforwardness and intuitive approach. However, it is crucial to ensure that the companies being compared are truly comparable and to understand the fundamental factors that might cause differences in multiples among the firms (Wardy, I.S. & Sudrajad, 2023). Relative valuation allows for comparing selected firms to comparable companies within the same industry and against average industrial benchmarks. This comparison uses values obtained from different ratio calculations, such as price-to-sales, EV-to-EBITDA, and EV-to-invested capital (Yusmar et al., 2023). These methods help investors and analysts evaluate a company's market value relative to its peers for informed investment decisions. However, limitations exist, such as the assumption of correct market valuation and potential disregard for future growth potential.

The approach that best fits a discounted cash flow model assumes that cash flows following the terminal year will grow at a constant rate forever. Based on this assumption, the terminal value can be determined using the formula:

$$\text{Terminal value} = \text{Free cash flow to the firm in the following year} / (\text{WACC} - \text{terminal growth rate})$$

In this context, both the cost of capital and the growth rate are considered constant indefinitely. The terminal growth rate may be based on the GDP growth rate, a sustainable growth rate, or assumed to be zero.

Sensitivity analysis is an essential tool in financial analysis, allowing modelers to quickly modify inputs and observe the resulting effects on key performance indicators (Samonas, 2015). Financial Sensitivity Analysis, also known as What-If analysis or What-If simulation, is commonly used by financial analysts to predict outcomes of specific actions under given conditions. This analysis operates within predefined limits set by a range of independent input variables.

PESTEL analysis is a strategic framework used by marketers and management teams to evaluate macro-environmental factors impacting an organization, encompassing Political, Economic, Social, Technological, Environmental, and Legal dimensions (A, Peteraf, Gamble, & Strickland, 2020). Political factors assess governmental influences, while economic factors consider economic performance and profitability impacts. The social factors pinpoint the emerging consumer trends. The technology factors assess the speed of innovation and change. The environmental factors are concerned with ecological impacts, especially highlighting CSR and sustainability. Finally, legal factors refer to regulations that influence the legality of operations. Embedded within SWOT analysis, PESTEL identifies threats and opportunities within an external environment that enables strategic planning, allowing an organization to respond to macro-environmental changes for competitive advantage.

III. RESEARCH AND METHODOLOGY

This would be a quantitative design study so that all factors that affect profitability can be understood in detail for PT Aneka Tambang, Tbk, and its present and future financial performance is analyzed correctly. The following figure presents the framework of research.

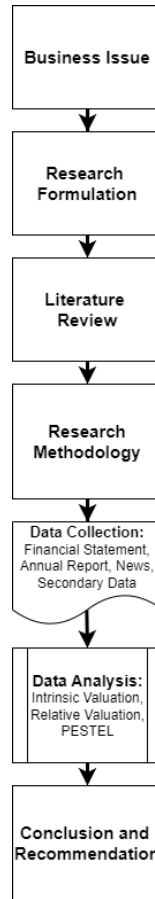


Fig. 1 Research Design

IV. RESULT AND DISCUSSION

A) PESTEL Analysis

The author uses the PESTEL Framework in classifying the critical external factors with the purpose of examining the business environment. This tool helps to determine the opportunities and threats for PT Aneka Tambang, Tbk (ANTAM). Politically, the Indonesian government's policies related to export, tax, and environmental policies have become very influential in its operation. Macroeconomic factors, including global nickel price and economic conditions in countries that have become significant nickel consumers, affect revenue and profitability.

What is important about social concerns is the good coordination of the mining operations with society and the practice of social responsibility. Concerning technology, the mining and refining of nickel should be keen on taking new technologies, digital transformation, and relentless research and experimentation for efficiency, cost minimization, and constant growth in the long-term perspective. Therefore, environmental regulations are very stringent, with provisions on sustainable mining and maximum technological best management practices. This is indispensable to dodge penalties and ameliorate corporate image for firms that satisfy the growth in demand for nickel concomitant with the rising number of electric vehicles.

ANTAM is next bound to comply with both local and international legislation concerning mining, environmental, labor, and the increasing legislation regarding corporate governance. Intellectual property rights enforcement and the rule of law are also included in avoiding fines, stoppages, and resulting reputation loss, and in the end, a competitive edge must be maintained.

B) Financial Performance

The financial performance of ANTAM has improved drastically in the past five years. Gross profit margins had increased during the period and peaked in 2023, proving adequate control over the cost of goods sold and an increase in gross profit. In other words, it is a trend that depicts the company's potential for value addition to products without allowing a rise in production costs. The operating profit margin, although volatile, has been rising since 2020, thus evidencing the successful management of operating expenses in relation to revenues and proving the firm's strong operational health. Net profit margin has moved in tandem with the upward trend: in 2023, it soared high, evidencing improved overall profitability after accounting for all expenses.

Improvements in the ROA and ROE further confirm that the company effectively uses the assets and equity to generate profit. In 2022, the peak margins for all profitability ratios were attained.

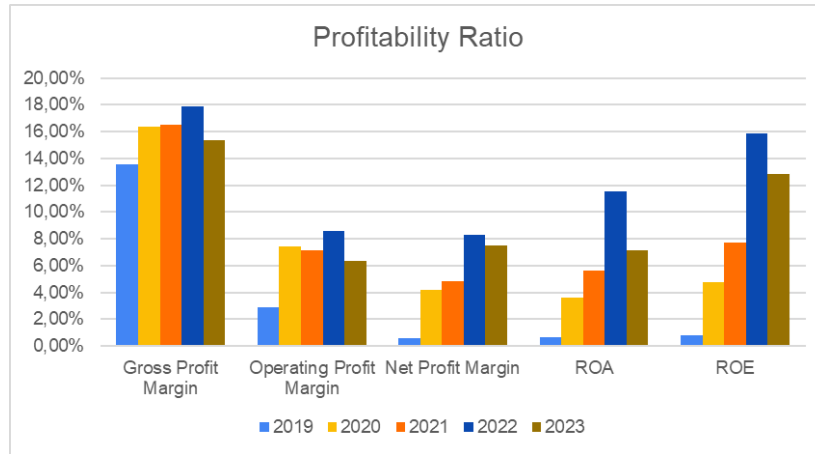


Fig. 2 Profitability ratio

On an overall note, the five-year liquidity ratios depict a positive trend and state an improved ST financial stability. The Current Ratio increased from less than 1 in the year 2019 to over 1.5 in 2023, which indicates that there is now a stronger capacity to cover the current liabilities with the current assets. Also, the Quick Ratio—excluding inventory—increases steadily, evidencing enhanced ability to service ST liabilities without using inventory sales. The cash ratio has improved significantly post-2021, reflecting the strengthened cash reserve and better cash flow management to command a strong liquidity position.

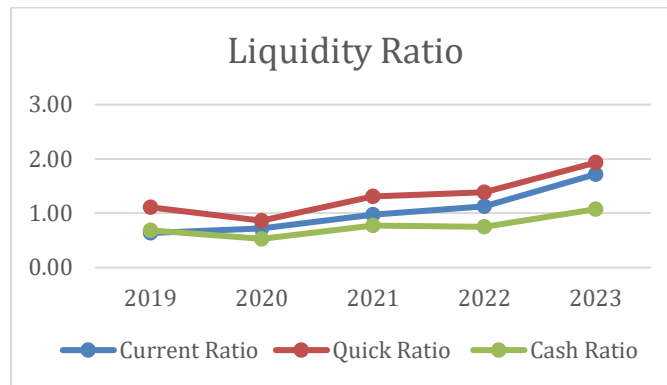


Fig. 3 Liquidity ratio

The debt-to-equity ratio is another important measure of financial leverage that decreased significantly from 67 percent in both 2019 and 2020 to 37 percent in 2023. This decline implies a more conservative capital structure with reduced financial risk, making the company financially more stable and more creditworthy. The decreasing trend would then indicate either successful debt repayment or an equity increase in retained earnings or by issuing new equity. This improved solvency position means the company is less burdened by debt and has greater financial flexibility for growth investments or to withstand economic downturns, thereby enhancing its long-term sustainability and financial health.

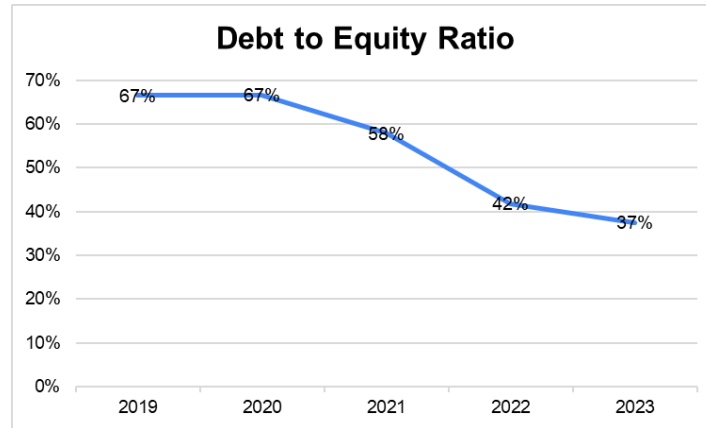


Fig. 3 Debt to Equity ratio

C) Intrinsic value using the DCF method

The ratios that illustrate ANTAM’s financial performance over the last 5 years are derived from the historical financial statements. Using these historical financial statements, projections for the next 5 years can be calculated based on assumptions such as CAGR, moving average growth, industry growth, and percent of net sales. From these factors, unleveraged future free cash flow for the next 5 years can be determined in the following table.

Table 1: Unlevered free cash flow

Unlevered Free Cash Flow	2024F	2025F	2026F	2027F	2028F
EBIT	2,828,879	3,337,653	3,525,725	3,751,576	3,830,410
Taxes	(853,360)	(1,069,414)	(1,190,929)	(1,279,472)	(1,274,539)
NOPAT	1,975,518	2,268,239	2,334,797	2,472,104	2,555,871
Depreciation & Amortisation	1,364,202	1,425,546	1,422,560	1,572,081	1,797,638
Capital Expenditures (Capex)	(1,069,136)	(1,013,361)	(1,086,538)	(1,246,758)	(1,418,303)
Change in Net Working Capital	3,882,404	(22,809)	(717,287)	(58,073)	268,106
Unlevered Free Cash Flow	6,152,988	2,657,616	1,953,532	2,739,353	3,203,312

Source: Author Analysis

The present value of free cash flow is obtained from unleveraged free cash flow after a discount. Unlevered free cash flow needs to be discounted using WACC. The WACC calculation for ANTAM is described below.

Table 2: WACC Calculation

Variables	Value
Risk-free rate	6.58%
Beta	1.34
Risk Premium	3.51%
Cost of Equity	11.28%
Tax rate	22.0%
Default spread of ANTAM	1.74%
Country default spread	2.07%
Cost of Debt after tax	8.10%
Equity to Total Capital Ratio	92.17%
Debt to Total Capital Ratio	7.83%
WACC	11.03%

Source: Author Analysis

Unlevered free cash flow will be discounted by 11,03% of WACC to obtain the present value of future free cash flow.

Table 2: Present value of Free Cash Flow

	2024F	2025F	2026F	2027F	2028F
Unlevered Free Cash flow	6,152,988	2,657,616	1,953,532	2,739,353	3,203,312
PV Free Cash Flow = Unlevered Free Cash Flow / (1+WACC) ^t					
PV of Free Cash Flow	5,541,834	2,155,893	1,427,325	1,802,677	1,898,614

Source: Author Analysis

From Table 2, it is found that the sum of the present value of free cash flow is IDR 12,826,344 million. Present value will be used in this method to obtain enterprise value. But enterprise value also needs terminal value. Table 1 shows that the free cash flow to the firm in the following year (2028F) is IDR 3,203,312 million. Below is the detail of the terminal value calculation.

$$\begin{aligned} \text{Terminal Value} &= 3,203,312 \times (1+3.4\%) / (11.03\% - 3.4\%) \\ &= 43,434,164 \text{ million IDR} \end{aligned}$$

The total present value of free cash flow will be added with a terminal value already divided by one plus WACC by the power of the following year. The detailed calculation is as follows:

$$\begin{aligned} \text{Enterprise value} &= 12,826,344 + (43,434,164 / (1+11.03\%)^5) \\ &= \text{IDR } 38,569,923 \text{ million} \end{aligned}$$

The intrinsic value of equity is obtained after enterprise value is reduced by debt and added by cash at the end of the year. The intrinsic value of equity will be used to define the company and obtain the equity value per share of the company after divided by the shares outstanding. The share outstanding of ANTAM is Rp. 24,030,764,724. Below is a detail of the calculation of equity value per share.

Table 3: Value of company using the DCF Method

Target Price	
Enterprise Value	38,569,923
Interest Bearing Debt	2,647,580
Intrinsic Value of Equity	45,131,157
Shares Outstanding	24,030,764,724
Equity Value per Share	Rp1,878

Source: Author Analysis

As of July 11, 2024, ANTAM’s share price is Rp. 1,360. However, using the DCF method, the intrinsic equity value per share is calculated at Rp. 1,878. This intrinsic valuation indicates that ANTAM’s stock may be undervalued, which could present a potential buying opportunity. Further analysis and consideration of broader market factors are recommended to confirm this finding.

Should ANTAM concentrate on one or two commodities exclusively, the valuation would vary. Using the DCF Method, WACC and terminal growth must be the same. However, the free cash flow should be different due to different revenue growth projections for each commodity. This differentiation of revenue growth projections is based on the different industry growth of each commodity. This differentiation also affects capex, depreciation and amortization growth.

Consequently, the free cash flow for each commodity will vary. This approach will be employed to determine ANTAM’s intrinsic value under scenarios where the company focuses exclusively on one or two commodities. Details are as below.

Table 4: Company valuation per commodity focused using the DCF method

(in million IDR)	Gold	Nickel	Other Materials	Gold and Nickel	ANTAM
Terminal value	28,148,697	16,983,403	5,238,859	41,496,818	43,434,164
Enterprise value	25,849,755	16,322,132	6,586,932	36,942,353	38,569,923
Intrinsic Value of Equity	32,410,989	22,883,366	13,148,166	43,503,587	45,131,157
Equity Value per Share	Rp1,349	Rp952	Rp547	Rp1,810	Rp1,878

Source: Author Analysis

D) Relative valuation

Relative valuation of ANTAM is analyzed using 3 companies from the same sector of ANTAM. The method compares the companies by their PE ratio and EV/EBITDA. The compared company's PE ratio and EV/EBITDA will be averaged.

Table 5: PER and EV/EBITDA company comparison

Company	P/E Ratio	EV/Ebitda
INCO	10.11	4.26
INTP	16	7.79
LTLS	14.19	5.15
AVG	13.43	5.73

Source: Author Analysis

Based on this comparison, the average price-to-earnings ratio (PER) is 13.43, and the average enterprise value-to-EBITDA ratio (EV/EBITDA) is 5.73. These values will be used to determine the share price per share through the relative valuation method.

Table 6: Company relative valuation

Industry Avg P/E	13.40	Industry Avg EV/EBITDA	5.92
Expected Earnings (IDR million)	2,097,427	Expected EBITDA (IDR million)	4,193,080.36
Share Outstanding	24,030,764,724	Share Outstanding	24,030,764,724
Expected EPS	87.28	EV	24,833,518.43
		Total debt	2647580
		Cash	9,208,814
		Market Cap	31,394,752.43
Share Price	1,170	Share Price	1,306
Market Value Weighted Average		1,223	
Current Price (July 11, 2024)		1,360	

Source: Author Analysis

According to the relative valuation method, the weighted average market value of ANTAM’s share price is Rp. 1,223, while the current share price as of July 11, 2024, is Rp. 1,360. This implies that ANTAM’s shares are probably overvalued in current terms; this could mean that the market prices are already considering future growth or other positive aspects that have not been accounted for under the relative valuation model.

E) Sensitivity Analysis

In this research, a sensitivity analysis will be conducted with respect to any change in the Weighted Average Cost of Capital and the terminal growth rate on the intrinsic value obtained using the Discounted Cash Flow method.

Table 7: Sensitivity analysis

Enterprise Value per Share						
WACC						
	9.43%	10.48%	11.03%	11.58%	12.74%	
Terminal Growth	2.9%	2,166	1,914	1,808	1,715	1,554
	3.2%	2,241	1,967	1,853	1,753	1,582
	3.4%	2,283	1,997	1,878	1,775	1,598
	3.6%	2,328	2,028	1,904	1,797	1,615
	3.9%	2,431	2,098	1,963	1,847	1,651

Source: Author Analysis

An add-in to Microsoft Excel, SensIt 140a, is employed to perform the sensitivity analysis. SensIt analyzes the firm’s value under worst-case, base-case, and best-case scenarios, given equity value per share assumptions. The Tornado feature of the tool helps to study how each input variable in the model affects the output while varying one variable at a time. The results of the sensitivity check using the SensIt model are discussed below.

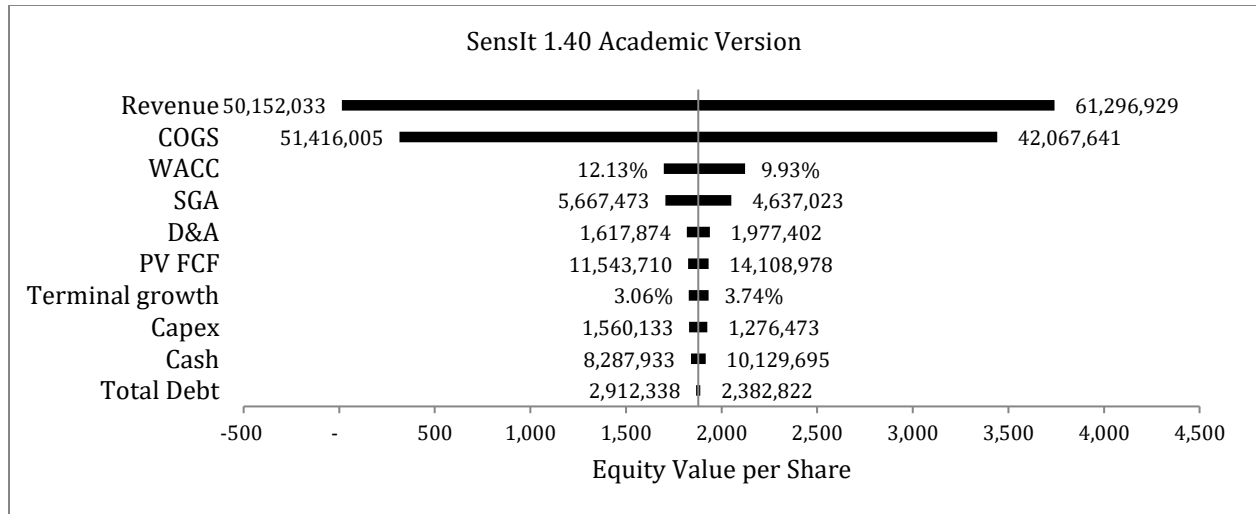


Fig. 4 Sensitivity analysis tornado diagram

The Tornado Chart above clearly shows which variables have the most sensitivity: revenue and cost of goods sold driving ANTAM’s equity value per share, followed by Weighted Average Cost of Capital, selling, general, and administrative expenses, and depreciation and amortization. This has the greatest effect on equity value per share from the revenue, where the variation is 3,727, which ranks 57.8% in percent. The second most influential is COGS, with a variation of 3,397 and a percentage change of 52.8%. The third rank is WACC, with a variation of 1,868 and a percentage change of 29.0%. Finally, the terminal growth rate has a variation of 686, which yields a percentage change of 10.4%. Such findings suggest that even the slightest change in these variables results in high fluctuation in equity value per share. Further, the analysis shows that WACC and terminal growth are not the factors that mostly influence equity value per share.

V. CONCLUSION

Research into PT Aneka Tambang, Tbk ANTAM shows the company has strategies to increase nickel production due to the increasing demand for nickel in the market. In the past five years, ANTAM has had quite good financial performance, with a significant fluctuation resulting from the commodity price volatility. Gold remains the biggest revenue contributor, averaging 67.87% of the total sales, followed by nickel with an average of 27.11%. Although it is showing a minor decline, gold remains the major source of revenue at an average of 62.42%, while the share of nickel is forecasted to rise to 32.66%. With a Weighted Average Cost of Capital (WACC) of 11.028% and a terminal growth rate of 3.4%, the intrinsic value of ANTAM, calculated using the Discounted Cash Flow (DCF) method, is Rp. 1,878 per share, surpassing the current share price of Rp. 1,360, suggesting potential undervaluation. Valuations focusing solely on gold, nickel, or other materials yield intrinsic values of Rp. 1,349, Rp. 952, and Rp. 547, respectively, with a combined gold and nickel valuation of Rp. 1,810. Sensitivity analysis highlights revenue and cost of goods sold (COGS) as the most critical factors impacting ANTAM’s equity value per share. Although the intrinsic valuation indicates potential undervaluation, the relative valuation is Rp. 1,223, suggesting that ANTAM’s market valuation may be lower compared to its peers. This analysis underscores the high sensitivity of ANTAM’s stock valuation to fluctuations in revenue and COGS, particularly amidst volatile commodity prices.

VI. RECOMMENDATION

Investors should consider ANTAM stock undervalued, having an intrinsic valuation more than the current market price. High intrinsic values for nickel, coupled with strong intrinsic values of gold and a mix of Gold-Nickel points, show possible long-term growth. Investors must watch keenly the fluctuations in revenue and the changes in the COGS since such items are the main drivers of valuation for this company. ANTAM’s management should continue with the strategy to capitalize on the upside of an improving nickel market while maintaining cautious cost control and productive efficiency. Effective cost management and operating performance will be required to support sustainable profitability and valuations. Improved transparency in financial reporting and proactive communication with stakeholders on trends in commodity markets could help manage expectations and boost investor confidence. The stakeholders should keep pace with ANTAM’s performance and market conditions, more specifically, the effects of commodity price volatility. They are expected to adjust their strategies according to financial performance and market development.

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