COAL STOCKS: UNDERVALUED OR OVERHYPED VALUATION STUDY WITH EV/EBITDA

(Study On Coal Commodity Stock Group For The Period 2020-2024)

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Abstract
This study evaluates the stock valuation of ITMG, BYAN, and PTBA using the EV/EBITDA method during the period 2020–2024 to determine whether the stocks are undervalued or overvalued . The data used comes from the company's financial statements and related publications. The analysis was carried out by comparing the EV/EBITDA value of each company to the industry average each year. The results of the study show that ITMG is consistently undervalued , with a lower EV/EBITDA ratio than the industry average. BYAN , on the other hand, tends to be overvalued , especially in the last three years with a ratio that is much higher than the industry average. PTBA experienced a change in trend, from being overvalued in 2020–2021 to being undervalued from 2022 to 2024. These results indicate that undervalued stocks such as ITMG and PTBA can be an investment opportunity for investors seeking attractive valuations, while BYAN's overvalued shares require further analysis related to market expectations and company growth. This study provides insight for investors in optimizing investment decisions in the coal sector.
Keywords : Stock valuation, EV/EBITDA, undervalued, overvalued

INTRODUCTION

The coal mining sector is one of the main industries in Indonesia that contributes greatly to the national economy, both in terms of state revenue and commodity exports (Penti et al., 2022) . In recent years, this industry has experienced quite high volatility due to the dynamics of global coal prices, transitional energy policies, and geopolitical factors that affect energy demand and supply (Wang et al., 2024) . Amid this uncertainty, coal company stocks remain attractive to investors because of their large dividend potential and strong fundamentals (Handini & Astawineru, 2020) . One way to assess whether coal stocks still have attractive valuations is to use the Enterprise Value to Earnings Before Interest, Taxes, Depreciation, and Amortization (EV/EBITDA) method , which can provide a more accurate picture of a company's valuation compared to conventional methods such as Price to Earnings Ratio (PER) or Price to Book Value (PBV) (Tri Wahyu Adi, 2019) .

In the context of the Indonesian capital market, three coal companies that often attract investors' attention are PT Indo Tambangraya Megah Tbk (ITMG), PT Bayan Resources Tbk (BYAN), and PT Bukit Asam Tbk (PTBA) . These three companies have different business characteristics, both in terms of capital structure, operational efficiency, and expansion strategy. ITMG is known as a coal company with high profitability and an attractive dividend policy for investors (Fadly et al., 2024) . BYAN , on the other hand, has a large operating scale and high cost efficiency, making it one of the coal companies with the largest market capitalization on the IDX (Anwar, 2022; Bayan Resources, 2023) . Meanwhile, PTBA is a state-owned coal company that has the advantage of owning coal reserves and diversifying its business into the new and renewable energy sector. With these different characteristics, valuation analysis using EV/EBITDA is important to determine whether these stocks are undervalued or overhyped .

In assessing stock valuation, investors often use financial ratios such as PER and PBV , but both of these methods have limitations in comprehensively capturing the intrinsic value of coal companies (D. Utami et al., 2023) . PER, for example, relies heavily on net income, which can be affected by accounting policies related to depreciation and amortization. Meanwhile, PBV only considers the book value of assets, without taking into account potential future cash flows. EV/EBITDA offers a more holistic approach because it not only considers market capitalization but also takes into account the company's debt and cash. Thus, this method can provide a more accurate picture of a company's valuation compared to other traditional methods.

This study aims to analyze the valuation of ITMG, BYAN, and PTBA shares using the EV/EBITDA method to determine whether the three shares are undervalued , fairly valued , or overhyped . By comparing the EV/EBITDA ratio of the three companies with the industry average, this study will provide insight into the attractiveness of coal stock investment in Indonesia. In addition, this study will also identify factors that influence valuation, such as global coal prices, government energy policies, and the level of operational efficiency of the company. The results of this study are expected to be a reference for investors in making more rational investment decisions based on strong fundamental data.

Thus, this study has significant contributions both in academic and practical aspects. From an academic perspective, this study will enrich the literature related to stock valuation using EV/EBITDA, especially in the mining industry which has unique characteristics. Meanwhile, from a practical perspective, this study can provide insight for investors in assessing whether ITMG, BYAN, and PTBA stocks still have growth potential or have experienced overvaluation due to market speculation. With a better understanding of coal stock valuation, investors can make more informed decisions and avoid unnecessary risks in investing in stocks in this sector.

Based on this background, this study formulates several main questions as follows:

1. How is the valuation of coal company shares based on the EV/EBITDA method in the 2020-2024 period?
2. How does the EV/EBITDA ratio of coal issuers compare to the industry average and historical trends?
3. Are coal stocks currently undervalued, fairly valued, or overhyped based on EV/EBITDA analysis?
4. What are the factors that influence the movement of the EV/EBITDA ratio in coal stocks in 2024?
5. How can EV/EBITDA valuation results be used as a basis for investment decision making in the coal sector, especially in facing industry dynamics and energy transition policies?

Capital Market and Stock Valuation

The capital market is one of the important elements in a country's financial system that functions as a means of raising funds for companies and providing investment alternatives for investors (Bodie, Kane, & Marcus, 2018). In the context of investment, stock valuation is a fundamental aspect in assessing the fairness of stock prices traded on the capital market.

Stock valuation aims to determine whether a stock is undervalued or overvalued based on various relevant financial parameters (Damodaran, 2020).

Stock valuation can be done through fundamental and technical approaches. The fundamental approach uses analysis of financial statements, operational performance, and business prospects of the company, while the technical approach focuses more on stock price movements in the market. Some valuation methods commonly used in the fundamental approach are Price to Earnings Ratio (PER) , Price to Book Value (PBV) , and Enterprise Value to EBITDA (EV/EBITDA **)** . The EV/EBITDA method is considered more comprehensive in assessing a company because it considers the overall capital structure, including equity and debt (Penman, 2016).

Stock Valuation Methods

Stock valuation is the process of determining the intrinsic value of a company by considering various financial aspects. Some commonly used valuation methods are as follows:

1. Price to Earnings Ratio (PER)
   PER measures the stock price relative to earnings per share (EPS). This ratio reflects investors' expectations of the company's future earnings growth (Brigham & Houston, 2021). A low PER compared to the industry average is often considered an indication that the stock is undervalued.
2. Price to Book Value (PBV)
   PBV compares the market price of a stock to the book value of a company's equity. A PBV lower than 1 indicates that the stock is trading below its book value, which could be an indication of undervaluation (Reilly & Brown, 2020).
3. Discounted Cash Flow (DCF)
   DCF calculates the fair value of stocks based on projected future cash flows by discounting them using an appropriate rate of return (Ross, Westerfield, & Jaffe, 2019). This method relies heavily on assumptions about earnings growth and discount rates.
4. Enterprise Value to EBITDA (EV/EBITDA)
   EV/EBITDA is a ratio that measures the total value of a company relative to earnings before interest, taxes, depreciation, and amortization. This method is considered more objective because it is not affected by different accounting policies related to depreciation and amortization (Damodaran, 2020).

EV/EBITDA Method in Stock Valuation

EV/EBITDA (Enterprise Value to Earnings Before Interest, Taxes, Depreciation, and Amortization) is one of the relative valuation methods used to assess the fairness of the price of a stock or company as a whole. This ratio measures the value of the company (enterprise value/EV) compared to the company's ability to generate operating profit before interest, taxes, depreciation, and amortization (EBITDA).

Unlike the Price to Earnings Ratio (PER) which only looks at the market value of equity compared to net income, EV/EBITDA considers the overall value **of the company** , including debt and cash. Therefore, this method is often considered more comprehensive, especially in evaluating companies with complex or different capital structures between industries.

Components in Calculation

a. Enterprise Value (EV)

Enterprise Value describes **the total economic value of a company** . The formula is:

EV = Market Capitalization + Total Debt − Cash and Cash Equivalents

Information :

a. *Market Capitalization* : share price x number of shares outstanding
b. *Total Debt* : short-term debt + long-term debt
c. *Cash and Equivalents* : cash and cash equivalents

b. **EBITDA**

EBITDA measures a company's operating profit without the influence of financing structure, tax policy, and depreciation/amortization method. EBITDA is calculated using the formula:

EBITDA = Operating Profit (EBIT) + Depreciation + Amortization

EV/EBITDA Ratio Formula

EV/EBITDA = Enterprise Value / EBITDA

EV/EBITDA ratio is used For compare mark company to profit operational his cash , and general used in analysis valuation industry .

EV/EBITDA Value Interpretation

1) EV/EBITDA < Industry average indicates that the stock is undervalued meaning the company is valued cheaply relative to its operating profit potential.
2) EV/EBITDA > Industry average indicates that the stock is overvalued , in other words the company's price is relatively expensive compared to its operating profit capabilities.
3) EV/EBITDA close to zero : Could indicate very low operating profits, or could indicate operational performance problems.

c. Strengths and Weaknesses of EV/EBITDA

The EV/EBITDA method has a number of advantages over other valuation ratios:

1) Not affected by accounting policies related to depreciation and amortization , so it better reflects the company's operational performance.
2) Allows comparisons between companies in the same industry without being affected by differences in capital structure.
3) More accurate in assessing companies with large fixed assets , such as the mining and manufacturing sectors.

However, this method also has some drawbacks:

1) Does not take into account the company's cash flow directly, which may affect the actual value of the company.
2) Not taking into account the company's financial risks, especially those related to its high debt structure.

The results of this study are expected to provide guidance for investors in assessing the valuation of coal stocks and determining whether the stocks are worth buying, holding, or selling based on their intrinsic value. This theoretical basis is the basis for assessing the fairness of coal stocks and determining whether ITMG, BYAN, and PTBA are currently undervalued or overhyped. By using the EV/EBITDA method, this study will provide a more comprehensive perspective on stock valuation in the coal sector (Pen- et al., 2021) .

METHOD

Types of research

This study is a quantitative descriptive study that aims to analyze the stock valuation of Indo Tambangraya Megah Tbk (ITMG), Bayan Resources Tbk (BYAN), and Bukit Asam Tbk (PTBA) in the period 2020–2024 using the EV/EBITDA method . The quantitative approach is used to calculate and compare the EV/EBITDA ratio to the industry average to determine whether the stock is undervalued or overvalued .

Data Collection Sources and Techniques

This study uses secondary data obtained from various official and trusted sources, such as:

a. The annual financial reports of each company (ITMG, BYAN, PTBA) published on the Indonesia Stock Exchange (IDX).
b. Daily stock price data obtained from the official IDX website or financial data providers such as Bloomberg, Reuters, and Yahoo Finance.
c. Industry reports and academic studies related to the coal sector.
d. Other sources such as academic journals, reference books, and publications from the Financial Services Authority (OJK) and the Ministry of Energy and Mineral Resources (ESDM).

Population and Sample

a. **The population** in this study includes all coal companies listed on the Indonesia Stock Exchange (IDX).
b. The research sample consists of three coal companies that are classified as large market capitalization and have high liquidity, namely ITMG, BYAN, and PTBA . The sample selection is based on the company's involvement in the LQ45 Index and data availability during the 2020–2024 research period .

Data Analysis Techniques

The analysis is done by calculating the Enterprise Value to EBITDA (EV/EBITDA) ratio of each company and comparing it to the industry average. The analysis steps are as follows:

1. Calculating Enterprise Value (EV):

EV = Market Capitalization + Total Debt - Cash and Cash Equivalents
Market Capitalization is calculated by multiplying the stock price at the end of the year by the number of shares outstanding. Total Debt includes all of the company's short-term and long-term liabilities. Cash and Cash Equivalents are obtained from the company's financial statements.

2. Calculating EBITDA:
   EBITDA=Net Income + Interest Expense + Tax + Depreciation + Amortization
3. Calculating EV/EBITDA
   Comparing to Industry Average:

   a. If EV/EBITDA is lower than the industry average, then the stock is considered undervalued , which means the stock price is lower than its fair value.
   b. If EV/EBITDA is higher than the industry average, then the stock is categorized as overvalued , which means the stock price is relatively expensive compared to its fundamental value.

RESULTS

In investment analysis, determining stock valuation is a fundamental aspect for investors in assessing the fairness of a stock price before making an investment decision. One method commonly used in assessing stock valuation is the Enterprise Value to EBITDA (EV/EBITDA) ratio , which measures the value of a company relative to its operating profit before interest, taxes, depreciation, and amortization.

This study focuses on the stock valuation of three coal companies included in the LQ45 Index , namely Indo Tambangraya Megah Tbk (ITMG), Bayan Resources Tbk (BYAN), and Bukit Asam Tbk (PTBA) . The evaluation was carried out by comparing the EV/EBITDA value of each company with the industry average in the 2020–2024 period , to determine whether the shares are undervalued (valued lower than their fair value) or overvalued (valued higher than their fair value).

The following table presents a comparison of the EV/EBITDA ratios of the three companies with the industry average and stock valuation categories based on the calculation results.

Table 1

Stock Price Valuation Results Using the EV/EBITDA Method for the 2020-2024 Period

Stock Code	Year	EV/EBITDA value	Industry Average	Stock Valuation
ITMG	2020	6.44	9.24	*undervalued*
	2021	1.57	3.42	*undervalued*
	2022	1.16	6.79	*undervalued*
	2023	2.13	11.67	*undervalued*
	2024	2.04	13.98	*undervalued*
BYAN	2020	11.55	9.24	*overvalued*
	2021	3.39	3.42	*undervalued*
	2022	14.84	6.79	*overvalued*
	2023	26.38	11.67	*overvalued*

	2024	31.41	13.98	*overvalued*
PTBA	2020	9.73	9.24	*overvalued*
	2021	5.30	3.42	*overvalued*
	2022	4.37	6.79	*undervalued*
	2023	6.49	11.67	*undervalued*
	2024	8.49	13.98	*undervalued*

Source: Processed Data 2025

Based on the results of the EV/EBITDA ratio calculation of three coal companies included in the LQ45 Index (ITMG, BYAN, and PTBA) during the 2020–2024 period , a varied valuation pattern was found. The EV/EBITDA ratio compared to the industry average is used to determine whether a company's shares are undervalued or overvalued .

1. ITMG Stock Valuation

   ITMG (Indo Tambangraya Megah Tbk) shares have consistently experienced undervaluation conditions during the 2020–2024 period. ITMG's EV/EBITDA value continues to be below the industry average, indicating that the stock is trading at a lower valuation compared to its peers in the coal industry.

   significant decline in the EV/EBITDA ratio occurred mainly in 2021 (1.57) and 2022 (1.16) , indicating that ITMG's share price does not optimally reflect its economic value. This is likely due to the high operating cash flow due to the surge in global coal prices, which caused an increase in EBITDA without being followed by a commensurate increase in market value.

   In 2023 and 2024 , although the EV/EBITDA ratio increased to 2.13 and 2.04 , this figure is still far below the industry average, confirming that ITMG shares are still undervalued . This situation may indicate that the market has not fully appreciated the company's fundamentals, or that there are external factors that affect investors' perceptions of ITMG's long-term prospects.

2. BYAN Stock Valuation

   BYAN (Bayan Resources Tbk) shares show a pattern opposite to ITMG. In 2020 , the EV/EBITDA value of 11.55 was higher than the industry average (9.24), so it was categorized as overvalued . However, in 2021 , the EV/EBITDA ratio dropped drastically to 3.39 , slightly below the industry average (3.42), indicating that BYAN shares were starting to enter the undervalued category .

   In 2022–2024 , BYAN's EV/EBITDA ratio experienced a significant spike. In 2022 , the ratio reached 14.84 , far above the industry average (6.79), and continued to increase to 26.38 in 2023 , and 31.41 in 2024. This spike shows that BYAN shares are trading at a very high valuation compared to other coal companies, indicating potential overvaluation .

   BYAN’s extreme increase in EV/EBITDA ratio could be due to several factors, such as investor expectations of long-term performance, the company’s expansion strategy, and market perception of profitability and strong operating cash flow. However, this high valuation also indicates that BYAN’s stock price may have exceeded its intrinsic value, potentially experiencing a price correction if not supported by commensurate earnings growth.

3. PTBA Stock Valuation

PTBA (Bukit Asam Tbk) shares show a more volatile valuation trend compared to ITMG and BYAN. In 2020 , PTBA had an EV/EBITDA ratio of 9.73 , slightly higher than the industry average (9.24), so it was categorized as overvalued . This overvaluation trend continued in 2021 , where the ratio reached 5.30 , still higher than the industry average at that time (3.42).

However, in 2022 , PTBA experienced a change in status to undervalued , with an EV/EBITDA ratio of 4.37 , lower than the industry average (6.79). This undervaluation trend continues into 2023 and 2024 , with ratio values of 6.49 and 8.49 , still below the industry average.

This pattern indicates that PTBA has experienced a shift in valuation from overvalued to undervalued in the last five years. Possible causes include a larger increase in EBITDA compared to the increase in the company's market value or a change in investor sentiment towards the company's long-term prospects.

4. Overall Analysis and Implications for Investors

From the analysis results, it can be seen that:

a. ITMG has been consistently undervalued , suggesting that its shares may be undervalued by the market despite its solid fundamentals.
b. BYAN experienced a significant valuation jump from undervalued to overvalued, which could be a signal that its stock price has reached speculative levels.
c. PTBA has shifted from overvalued to undervalued , which could be an opportunity for investors looking for stocks with attractive valuations.

For investors, the undervalued condition of ITMG and PTBA shares can be an opportunity for stock accumulation if the company's fundamentals remain strong (Nanda, 2019) . Conversely, a very high valuation of BYAN can indicate the risk of price correction, so investors need to consider aspects of profit growth and industry prospects before making investment decisions (Andriyani, 2024) . Further research can be conducted by considering external factors such as global energy policies, changes in coal industry regulations, and trends in demand and prices of coal commodities to obtain a more comprehensive picture of the valuation of shares in this sector.

Factors influencing the movement of the EV/EBITDA ratio in coal stocks in 2024

The movement of the EV/EBITDA ratio in Indonesian coal stocks in 2024, such as ITMG, BYAN, and PTBA, shows dynamics influenced by a combination of internal and external factors. In general, changes in EBITDA reflecting the company's operational performance, as well as fluctuations in enterprise value (which are influenced by stock prices and capital structure), are the main factors determining the value of this ratio. Based on data from the 2020–2024 period, the three stocks experienced different movements in the

EV/EBITDA ratio, reflecting varying responses to market factors and the fundamentals of their respective companies.

ITMG (Indo Tambangraya Megah) shares have consistently shown lower EV/EBITDA values compared to the industry average during the observation period. In 2024, ITMG's ratio value was recorded at 2.04, far below the industry average of 13.98, so it is categorized as undervalued. This shows that ITMG's EBITDA performance is quite solid, while its market value or enterprise value has not experienced a significant spike, making this stock appear relatively cheap. Most likely, this reflects the company's operational efficiency, cash flow stability, and conservative debt management.

In contrast to ITMG, BYAN (Bayan Resources) shares have shown a consistent pattern of being above the industry average in the last three years, including in 2024 with a ratio of 31.41, far exceeding the industry average. This causes BYAN to be considered overvalued. The high ratio was driven by a significant surge in BYAN's share price, drastically increasing enterprise value, while EBITDA growth was not comparable to the increase in market value. This phenomenon could be caused by positive investor sentiment towards the company's business prospects, including expansion and large coal reserves, although it has not been fully reflected in its operational performance.

Meanwhile, PTBA (Bukit Asam) shares show a more moderate and stable ratio movement. In 2024, PTBA's EV/EBITDA ratio of 8.49 is still below the industry average and is categorized as undervalued. This shows that although PTBA's market valuation is not as aggressive as BYAN, the company has quite good EBITDA performance. The decrease in the ratio from previous years also shows an increase in efficiency or higher revenue growth compared to the increase in market value. In addition, a consistent dividend distribution strategy and large coal reserves have attracted the attention of conservative investors, although they have not significantly increased the stock price.

Thus, the analysis of the movement of the EV/EBITDA ratio on each of the coal stocks above shows that this ratio is greatly influenced by a combination of financial performance (EBITDA), stock price (market capitalization), and market perception of the company's long-term prospects. A comprehensive evaluation of these three elements is important in understanding whether the stock is undervalued or overvalued.

EV/EBITDA valuation results can be used as a basis for making investment decisions in the coal sector, especially in facing industry dynamics and energy transition policies.

The valuation results using the EV/EBITDA method are one of the effective approaches in assessing the fairness of stock prices and are widely used in investment decision making, including in the coal sector. This ratio provides an overview of how much the company is worth compared to its capacity to generate operating profit before non-cash expenses and capital structure are taken into account. In the context of the coal sector, the EV/EBITDA ratio can reflect operational efficiency, funding structure, and market sentiment towards the company's prospects, making it an important indicator to determine whether a stock is undervalued or overvalued (Fahrozi & Rodi Muin, 2021) .

In facing the dynamics of the coal industry which is greatly influenced by commodity price fluctuations, government regulations, and energy transition policies, the use of the

EV/EBITDA ratio is becoming increasingly relevant (Team Ministry of Energy and Mineral Resources of the Republic of Indonesia, 2021) . When the EV/EBITDA value of a stock is below the industry average, as seen in ITMG and PTBA stocks in 2024, this may indicate that the stock is relatively cheap (undervalued) compared to its operational performance. This condition has the potential to be attractive to investors who are oriented towards value investing, especially amid market uncertainty due to changes in global energy policies and ESG (Environmental, Social, and Governance) pressures. Conversely, stocks that have a ratio far above the industry average, such as BYAN, indicate high valuations (overvalued), which may reflect overly optimistic market expectations and the risk of future price adjustments (D. Utami et al., 2023; FR Utami & Kusmayadi, 2024) .

Thus, the EV/EBITDA valuation results can be used as a tool in formulating investment strategies based on fundamental assessments. Investors can use this ratio to compare efficiency and valuations between companies in the same sector, as well as identify potential stocks that still have room for price appreciation or conversely, stocks that are at risk of correction. Moreover, in the context of the ever-evolving energy transition policy, the use of this indicator helps investors identify coal companies that are still able to maintain solid EBITDA performance, while demonstrating resilience to regulatory changes and long-term sustainability challenges.

CONCLUSION

Based on the results of stock valuation analysis using the EV/EBITDA ratio for three coal companies (ITMG, BYAN, and PTBA) during the 2020–2024 period , several main findings were obtained:

1. Indo Tambangraya Megah Tbk (ITMG) has consistently been in the undervalued category throughout the study period. This indicates that ITMG's stock price is lower than its fair value based on the company's operational profitability. ITMG's EV/EBITDA value , which is lower than the industry average, indicates an attractive investment potential for investors looking for stocks with relatively cheap prices and strong fundamentals.
2. Bayan Resources Tbk (BYAN) shows an overvalued pattern in most periods, especially in 2020, 2022, 2023, and 2024. This reflects that BYAN's stock price is higher than its fair value, which is likely due to high market expectations for the company's growth. However, BYAN experienced an undervalued condition in 2021 , which could be an entry opportunity for investors when its stock price is below its intrinsic value.
3. Bukit Asam Tbk (PTBA) experienced quite dynamic valuation changes. In 2020 and 2021 , PTBA shares were in the overvalued category , but from 2022 to 2024 , its status changed to undervalued . The decline in the EV/EBITDA ratio could reflect a correction in stock prices or a greater increase in profitability compared to its market capitalization.

In general, the EV/EBITDA movement of coal companies is greatly influenced by the volatility of coal commodity prices, global energy policies, and macroeconomic conditions. Investors need to consider these external factors in making investment decisions.

Suggestion

Based on the findings above, there are several recommendations for investors in making investment decisions in coal sector stocks:

1. Investors with a value investing strategy can consider ITMG and PTBA shares , considering that both have consistently shown undervalued valuations in recent years. These undervalued shares can provide long-term profit opportunities if market prices return to reflect the company's fundamental value.
2. Investors looking for stocks with growth momentum should be more cautious about BYAN , which has been overvalued for most of the period . Investors can wait for a price correction or make sure that BYAN's growth expectations are still reasonable before making a purchase at a high price level.
3. Short-term investors or traders need to pay attention to external factors such as global coal prices, environmental policies, and government regulations in the energy industry, as these factors can significantly affect stock valuations in the short to medium term.
4. Portfolio diversification remains an important strategy in dealing with coal price volatility. A combination of undervalued stocks and high-growth stocks can optimize the balance between risk and potential returns for investors.

By considering the results of this analysis, investors are expected to be able to make wiser and data-based investment decisions in assessing the fairness of stock prices in the coal sector.

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