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Financial Performance Analysis Based on Economic Value Added at PT. Pertamina Hulu Energi

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ABSTRACT

This study aims to analyze the financial performance of PT Pertamina Hulu Energi using the Economic Value Added (EVA) method during the 2020–2024 period. A quantitative descriptive approach was employed using secondary data obtained from the company's annual reports and the corrected EVA calculation workbook. The analysis involved the calculation of the effective tax rate, Net Operating Profit After Tax (NOPAT), Invested Capital, Weighted Average Cost of Capital (WACC), Capital Charge, and Economic Value Added (EVA). The results indicate that EVA was negative only in 2020 (USD −68.14 million), indicating that the company's NOPAT was insufficient to cover its capital charge. However, EVA remained positive throughout 2021–2024, demonstrating that PT Pertamina Hulu Energi consistently generated operating returns exceeding its cost of capital after 2020. The highest EVA was recorded in 2022 at USD 3,205.76 million. These findings suggest that the company successfully created economic value after 2020 and that EVA provides a useful value-based measure for evaluating financial performance in capital-intensive industries.

***Keywords*:** Financial Performance; Capital Charge; EVA; NOPAT; WACC;
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INTRODUCTION

Financial performance evaluation is an important aspect of assessing a company's ability to sustain its business, generate profits, and create value for shareholders. In capital-intensive industries, financial performance cannot be adequately evaluated using accounting profit alone because high accounting earnings do not necessarily indicate that a company has created economic value after considering the cost of capital. Consequently, value-based performance measurement has become increasingly important because it links operating performance with the returns expected by capital providers (Maulana, Rohyana and Juwita, 2023).

Economic Value Added (EVA) is one of the most widely used value-based performance measures because it evaluates whether operating profit after tax exceeds the cost of capital employed. Unlike conventional profitability ratios, EVA incorporates the opportunity cost of invested capital through Capital Charge, enabling a more comprehensive assessment of whether management has created value for shareholders. Therefore, EVA provides a better representation of corporate performance by considering both operating profitability and capital efficiency (Djuanta, Kartiko and Ramaddan, 2021; Susanti *et al.*, 2022).

Previous studies have shown that EVA has been widely applied to evaluate financial performance across various industries. Several researchers have used EVA as a value-based performance indicator, while others have examined its relationship with Market Value Added (MVA), firm value, profitability, and shareholder wealth creation (Putra and Gantino, 2021; Supriani and Pernamasari, 2021; Yuliyanti *et al.*, 2024). These studies confirm that EVA is an effective measure for assessing value creation beyond conventional accounting indicators.

However, previous studies generally emphasize the calculation of EVA or its association with firm value and market performance, while providing limited explanation of how EVA is formed. In particular, little empirical evidence discusses how operating profitability, invested capital, and the cost of capital interact to determine a company's ability to create economic value over time. This limitation is particularly evident in Indonesia's upstream oil and gas industry, where companies operate under substantially different financial characteristics, including large capital investments, long-lived assets, high operational risk, and fluctuating

commodity prices. As a result, evaluating financial performance solely through accounting profitability may not adequately reflect whether the company generates returns exceeding its cost of capital.

This limitation represents the main research gap addressed by the present study. Unlike previous studies that primarily report whether EVA is positive or negative, this research explains the process of EVA formation by analyzing the interaction among operating return, invested capital, and the cost of capital. Specifically, this study examines how changes in Net Operating Profit After Tax (NOPAT), Invested Capital, Weighted Average Cost of Capital (WACC), Capital Charge, Return on Invested Capital (ROIC), and EVA Spread collectively determine the company's ability to create economic value during the observation period. Therefore, the novelty of this study lies not merely in calculating EVA but in providing a comprehensive explanation of the financial mechanisms underlying EVA formation in a capital-intensive upstream oil and gas company.

PT Pertamina Hulu Energi (PHE), Indonesia's upstream oil and gas holding company, provides an appropriate context for this analysis because its operations require substantial long-term investment and effective capital management. The company operates in an industry characterized by high capital expenditure, long asset life cycles, and significant exposure to commodity price volatility. Under these conditions, the efficiency of capital utilization becomes as important as profitability itself. Therefore, evaluating PHE using EVA enables a more comprehensive assessment of whether the company's operating performance is sufficient to compensate providers of debt and equity capital (Siska, 2023; Firman and Syakiriyah, 2024).

Furthermore, PHE must continuously manage its financing structure by balancing debt and equity while responding to changes in borrowing costs, effective tax rates, and shareholders' required returns. These factors directly influence the Weighted Average Cost of Capital (WACC), which subsequently determines the amount of Capital Charge that must be covered by operating profit. Consequently, analyzing the dynamics of NOPAT, Invested Capital, WACC, Capital Charge, ROIC, EVA Spread, and EVA provides a more comprehensive understanding of the company's financial performance than relying solely on conventional profitability ratios (Supriani and Pernamasari, 2021; Firman and Syakiriyah, 2024).

Because PT Pertamina Hulu Energi underwent a major organizational restructuring through the establishment of Pertamina's Upstream Subholding beginning in 2021, the financial statements for 2020 represent the company's pre-reorganization condition. Consequently, the financial data for 2020 are treated as a baseline rather than being directly comparable with the post-reorganization period. Therefore, the interpretation of trends between 2020 and 2021 should be made cautiously because changes may reflect both improvements in financial performance and the effects of organizational restructuring.

Based on this background, this study aims to analyze the financial performance of PT Pertamina Hulu Energi during the 2020–2024 period using the Economic Value Added (EVA) approach. The study focuses on examining the interaction among operating profitability, invested capital, and the cost of capital through the calculation of NOPAT, Invested Capital, WACC, Capital Charge, ROIC, EVA Spread, and EVA to determine whether the company successfully created economic value throughout the observation period. By explaining the mechanisms underlying EVA formation rather than merely reporting its value, this study contributes to the literature on value-based performance measurement and extends the application of EVA within Indonesia's capital-intensive upstream oil and gas industry.

METHOD

This study employed a longitudinal single-case financial analysis using a value-based financial performance approach. The longitudinal design was selected because the study examined changes in the financial performance of a single company, PT Pertamina Hulu Energi (PHE), over a five-year observation period (2020–2024). Rather than comparing multiple companies, this study focused on explaining the evolution of value creation within one capital-intensive company by analyzing the interaction between operating profitability, invested capital, and the cost of capital through the Economic Value Added (EVA) framework.

The object of this study was PT Pertamina Hulu Energi, Indonesia's upstream oil and gas holding company. Secondary data were collected from the company's audited annual reports for the 2020–2024 period and subsequently reorganized into millions of U.S. dollars (USD million) to ensure consistency throughout the EVA calculation process. Since the observation period spans the organizational restructuring of Pertamina's Upstream Subholding, the financial data for 2020 were treated as the baseline representing the company's pre-reorganization condition, whereas the 2021–2024 financial statements represent the post-reorganization period. Therefore, the interpretation of year-to-year changes between 2020 and 2021 was conducted cautiously because structural organizational changes may also influence financial comparability. The study employed documentation techniques to collect financial data, including operating revenue, EBIT proxy, profit before tax, income tax expense, profit for the year, net finance expense, cash and cash equivalents, total liabilities, total

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equity, and interest-bearing debt. These variables constitute the primary inputs required to calculate NOPAT, Invested Capital, Cost of Debt, Cost of Equity, WACC, Capital Charge, ROIC, EVA Spread, and Economic Value Added (Kusumadewi and Yudianto, 2024).

The analysis was conducted using a longitudinal value-based financial performance analysis based on the Economic Value Added (EVA) framework. Unlike conventional profitability analysis, EVA evaluates whether operating returns exceed the cost of capital employed by the company. Therefore, this study not only calculated the final EVA value but also analyzed the financial mechanisms underlying EVA formation through the interaction among operating return (NOPAT), invested capital, and the weighted average cost of capital (WACC). This analytical approach enables a more comprehensive evaluation of value creation over time and is particularly relevant for capital-intensive industries such as upstream oil and gas.

Unlike many previous studies that assume a constant cost of capital, this study calculated the Weighted Average Cost of Capital (WACC) annually based on the company's capital structure, after-tax cost of debt, and cost of equity. Consequently, changes in financing structure, effective tax rate, borrowing costs, and shareholders' required returns were incorporated into the calculation of Capital Charge, allowing EVA to more accurately reflect annual changes in economic value creatio (Alfandia, 2024; Kusairi and Abdillah, 2025).

The cost of equity was estimated using the Capital Asset Pricing Model (CAPM). The risk-free rate was proxied by the annual yield of Indonesian 10-year government bonds, while the market risk premium was based on the long-term Indonesian equity market risk premium commonly used in financial valuation studies. The equity beta was obtained from publicly available market data and was applied consistently in estimating the company's cost of equity throughout the observation period. Consequently, annual variations in these parameters were incorporated into the WACC calculation whenever applicable.

The stages of the analysis consisted of calculating the Effective Tax Rate, Net Operating Profit After Tax (NOPAT), Invested Capital, Average Invested Capital, Cost of Debt before Tax, Cost of Debt after Tax, Cost of Equity, Weighted Average Cost of Capital (WACC), Capital Charge, Return on Invested Capital (ROIC), EVA Spread, and finally Economic Value Added (EVA). Each indicator was calculated sequentially because it forms an integral component of the EVA framework. The calculation stages used in this study are as follows.

1. Effective Tax Rate

$$\text{Effective Tax Rate} = \frac{\text{Tax Expense}}{\text{Profit Before Tax}}$$

Meaning: Effective Tax Rate shows the proportion of tax expense to the company's profit before tax.
Function: This formula is used to obtain the effective tax rate that will be used in the NOPAT calculation so that operating profit reflects the impact of actual tax.

2. Net Operating Profit After Tax (NOPAT)

$$\text{NOPAT} = \text{EBIT} \times (1 - \text{Effective Tax Rate})$$

Meaning: NOPAT is operating profit after tax generated from the company's main activities.
Function: This formula serves as the basis for measuring the company's operating ability to generate profit before deducting the cost of capital.

3. Invested Capital

$$\text{Invested Capital} = \text{Interest-bearing Debt} + \text{Total Equity} - \text{Cash and Cash Equivalents}$$

Meaning: Invested Capital is the capital actually used by the company to support operating activities.
Function: This formula is used to determine the amount of operating capital that becomes the basis for charging the cost of capital in the EVA calculation.

4. Average Invested Capital

$$\text{Average Invested Capital} = \frac{\text{Invested Capital}_t + \text{Invested Capital}_{t-1}}{2}$$

Meaning: Average Invested Capital is the average capital invested at the beginning and end of the period.

Function: This formula serves to smooth changes in capital between periods so that Capital Charge is not based solely on the year-end capital position.

5. Average Debt

$$\text{Average Debt} = \frac{\text{Interest-bearing Debt}_t + \text{Interest-bearing Debt}_{t-1}}{2}$$

Meaning: Average Debt represents the average amount of interest-bearing debt outstanding during the accounting period.
Function: This formula is used to estimate the average level of debt employed during the year so that the Cost of Debt reflects the borrowing cost over the entire reporting period rather than only the year-end debt balance.

6. Cost of Debt before tax

$$K_d = \frac{\text{Net Finance Expense}}{\text{Average Debt}}$$

Meaning: Cost of Debt before tax represents the company's borrowing cost before considering tax benefits.
Function: This formula measures the effective borrowing cost by comparing net finance expense with the average interest-bearing debt outstanding during the year.

7. Cost of Debt after tax

$$K_d \text{ after tax} = K_d \text{ before tax} \times (1 - \text{Effective Tax Rate})$$

Meaning: Cost of Debt after tax is the cost of debt after considering the tax savings from interest expense.
Function: This formula serves as the debt cost component in WACC because interest expense generally provides a tax shield effect.

8. Cost of Equity

$$\text{Cost of Equity} = \text{Risk-free Rate} + \beta \times \text{Market Risk Premium}$$

Meaning: Cost of Equity is the rate of return required by shareholders on the capital they invest.
Function: This formula is used as an approach to the cost of equity by considering the risk-free rate and market risk premium.

9. Weighted Average Cost of Capital (WACC)

$$\text{WACC} = (\text{Debt Weight} \times K_d \text{ after tax}) + (\text{Equity Weight} \times \text{Cost of Equity})$$

Meaning: WACC is the weighted average cost of capital originating from debt and equity.
Function: This formula serves to determine the company's cost of capital rate used in calculating Capital Charge.

10. Capital Charge

$$\text{Capital Charge} = \text{WACC} \times \text{Average Invested Capital}$$

Meaning: Capital Charge is the capital charge that must be covered by the company's operating profit.
Function: This formula is used to determine the minimum economic return that must be generated from Average Invested Capital.

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11. Return on Invested Capital (ROIC)

$$\text{ROIC} = \frac{NOPAT}{\text{Average Invested Capital}}$$

Meaning: Return on Invested Capital measures the operating return generated from the capital invested in the company's operations.
Function: ROIC is used to evaluate how efficiently the company converts invested capital into operating profit after tax and serves as the primary return indicator in EVA analysis.

12. Economic Value Added (EVA)

$$\text{EVA} = \text{NOPAT} - \text{Capital Charge}$$

Meaning: EVA is the economic value added obtained after NOPAT is reduced by Capital Charge.
Function: This formula becomes the main indicator of the study to determine whether the company creates economic value, breaks even, or has not covered the cost of capital.

13. EVA Spread

$$\text{EVA Spread} = \text{ROIC-WACC}$$

Meaning: EVA Spread measures the difference between the company's operating return and its weighted average cost of capital.
Function: A positive spread indicates that operating returns exceed the cost of capital, whereas a negative spread indicates that invested capital fails to generate sufficient economic return.

14. EVA Margin

$$\text{EVA Margin} = \frac{EVA}{Operating\ Revenue}$$

Meaning: EVA Margin measures the proportion of economic value created relative to operating revenue.
Function: This ratio provides an additional indicator of the company's efficiency in creating economic value from each unit of revenue generated.

The EVA assessment criteria are used to interpret the final results. If EVA is greater than zero, the company creates economic value added. If EVA is equal to zero, the company is in an economic break-even condition. If EVA is less than zero, the company has not succeeded in creating economic value because operating profit after tax is unable to cover the cost of capital (Agustin, Martini and Riskiputri, 2021).

Table 1. Criteria for Measuring Economic Value Added

Criteria	Status	Interpretation
EVA > 0	Positive EVA	The company creates economic value added because NOPAT exceeds Capital Charge.
EVA = 0	Break-even	The company is at the economic break-even point.
EVA < 0	Negative EVA	The company has not created economic value added because the cost of capital exceeds NOPAT.

Source: Authors' compilation based on the literature, 2026

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RESULTS

This section presents the results of data preparation and EVA calculation for PT Pertamina Hulu Energi for the 2020-2024 period. The results are presented gradually, starting from checking data completeness, basic financial data, NOPAT calculation, Invested Capital, WACC, Capital Charge, to Economic Value Added. Table 2. shows that all main requirements for EVA analysis are available. Financial statement data, tax components, finance expenses, capital structure, and final calculation results have been prepared for the entire observation period. Thus, the data can be used to build a complete EVA analysis.

Table 2. Data Completeness Check for EVA Analysis

Component	Status	Notes
Basic financial data	Complete	Operating revenue, EBIT proxy, profit before tax, tax expense, profit for the year, cash, liabilities, equity, and interest-bearing debt are available for 2020-2024.
Tax	Complete	Tax expense and effective tax rate are available for all years.
Finance expense	Complete	Net finance expense is available for the Kd calculation.
WACC	Complete for the model	Using annual calculations: risk-free rate proxy, beta, market risk premium, cost of debt, tax shield, and debt/equity weights.
Capital Charge and EVA	Complete	Calculations are available for all years 2020-2024.
Charts	Complete	Charts are prepared for NOPAT, invested capital, WACC, capital charge, EVA, and NOPAT vs capital charge.

Source: Authors' compilation based on the literature, 2026

Table 3 presents PHE's basic operational financial data used as the basis for calculating operating profit and NOPAT. In general, the company's operating revenue increased from USD 1.901,43 million in 2020 to USD 14.330,34 million in 2024. The EBIT proxy also increased from USD 441,98 million in 2020 to USD 5.099,39 million in 2024, although it reached its highest value in 2022 at USD 7.259,34 million. Changes in profit before tax, tax expense, and profit for the year show that the company's operational performance strengthened after 2020, but still fluctuated in line with the dynamics of the company's revenue and expenses. It should be noted that the financial data for 2020 represent the baseline period before the implementation of Pertamina's Upstream Subholding reorganization, whereas the financial statements from 2021 onward reflect the company's post-reorganization organizational structure. Consequently, direct comparisons between 2020 and subsequent years should be interpreted with caution because changes may reflect both operational performance and organizational restructuring. Therefore, the 2020 data are treated primarily as a baseline for evaluating the company's value creation after the restructuring process.

The EBIT values reported in this study represent an EBIT proxy because PT Pertamina Hulu Energi does not explicitly disclose EBIT in its published financial statements. Therefore, EBIT was approximated using operating profit before finance costs and income tax derived from the consolidated financial statements. This proxy was consistently applied throughout the observation period to ensure comparability in the EVA calculations. EBIT Proxy = Profit Before Tax + Net Finance Expense.

Table 3. Basic Operational Financial Data of PHE 2020-2024

Year	Operating Revenue	EBIT Proxy	Profit Before Tax	Tax Expense	Profit for the Year
2020	1,901.43	441.98	422.25	198.29	223.96
2021	11,740.08	4,853.67	4,734.98	1,782.34	2,952.64
2022	16,183.40	7,259.34	7,118.25	2,444.09	4,674.16
2023	14,568.38	4,830.68	4,492.03	1,766.49	2,725.54

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2024	14,330.34	5,099.39	4,892.57	1,771.54	3,121.03

Source: PT Pertamina Hulu Energi (2020-2024)

Table 4 presents basic data on capital, debt, and cash used to calculate invested capital, cost of debt, and the company's financing structure. Total equity increased from USD 2.773,73 million in 2020 to USD 15.107,36 million in 2024, while interest-bearing debt fluctuated from USD 197,08 million in 2020, increased to USD 5.219,22 million in 2023, and then decreased to USD 3.535,71 million in 2024. Changes in cash, liabilities, equity, and interest-bearing debt affect the amount of capital actually used in the company's operations as well as the weights of debt and equity in the WACC calculation.

Table 4. Basic Data on Capital, Debt, and Cash of PHE 2020-2024

Year	Financial Expense	Cash and Cash Equivalents	Total Liabilities	Total Equity	Interest-bearing Debt
2020	22.82	346.01	2,547.64	2,773.73	197.08
2021	123.98	3,211.27	15,087.00	13,391.59	2,416.75
2022	194.91	4,456.36	16,323.51	15,158.28	5,115.22
2023	318.88	5,018.74	16,710.35	14,178.57	5,219.22
2024	202.34	2,614.32	15,327.61	15,107.36	3,535.71

Source: Processed data, 2026.

Calculation of Net Operating Profit After Tax (NOPAT):

$$\text{NOPAT} = \text{EBIT} \times (1 - \text{Effective Tax Rate})$$

Table 5 presents the calculation of NOPAT based on the EBIT proxy and the effective tax rate. NOPAT increased substantially after 2020 despite annual fluctuations. The improvement reflects stronger operating profitability after tax, which became the primary driver of positive EVA during the post-reorganization period. NOPAT in 2020 was recorded at USD 234,42 million, then increased to USD 3.026,65 million in 2021 and reached its highest value of USD 4.766,81 million in 2022. In 2023, it decreased to USD 2.931,02 million before increasing again to USD 3.252,96 million in 2024. This change indicates that the company's ability to generate operating profit after tax is relatively strong, but remains influenced by the dynamics of EBIT and the effective tax rate.

Table 5. NOPAT Calculation

Year	EBIT Proxy	Effective Tax Rate	NOPAT
2020	441.98	46.96%	234.42
2021	4,853.67	37.64%	3,026.65
2022	7,259.34	34.34%	4,766.81
2023	4,830.68	39.32%	2,931.02
2024	5,099.39	36.21%	3,252.96

Source: Processed data, 2026.

Figure 1 illustrates the movement of NOPAT during the 2020–2024 period. The chart shows a very low NOPAT in 2020 at USD 234.42 million, followed by a strong increase to USD 3,026.65 million in 2021 and USD 4,766.81 million in 2022. After reaching its peak in 2022, NOPAT declined to USD 2,931.02 million in 2023 and then improved to USD 3,252.96 million in 2024. This visual pattern confirms that the company’s operating profit after tax improved substantially after 2020, although it did not move in a straight upward trend. The decline in 2023 indicates that operating performance weakened compared with 2022, but the recovery in 2024 shows that PHE was still able to maintain a strong level of operating return. Since NOPAT is the main source for covering capital charge, the positive movement after 2020 became an important foundation for the company’s positive EVA in the following years.

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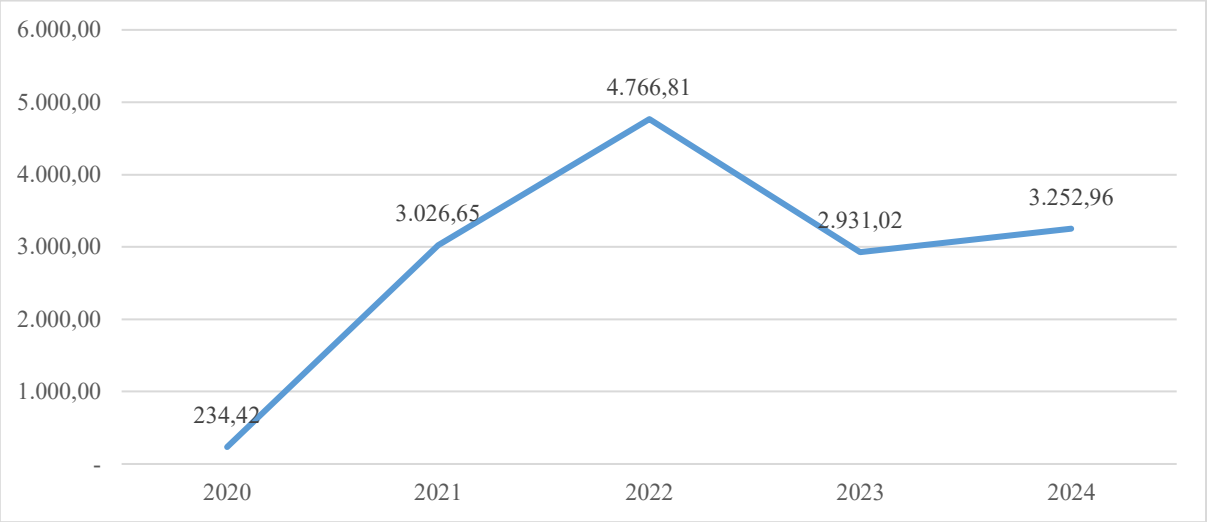

Source: Processed data, 2026.

Figure 1. NOPAT Chart

Calculation of Invested Capital:

$$\text{Invested Capital} = \text{Interest-bearing Debt} + \text{Total Equity} - \text{Cash and Cash Equivalents}$$

In calculating Invested Capital, total cash and cash equivalents were deducted as a proxy for non-operating cash because the annual reports do not separately disclose operating cash and excess cash. This approach follows the practical limitation of publicly available financial statements and may slightly underestimate invested capital if part of the reported cash is required for operational activities. Table 6 shows that ending invested capital moved from USD 2.624,80 million in 2020 to USD 16.028,75 million in 2024. A large increase occurred in 2021 and 2022 in line with increases in equity and interest-bearing debt. After decreasing in 2023, invested capital increased again in 2024. This pattern indicates that changes in financing structure and cash balances directly affect the amount of capital actually used in the company's operations. Because reliable invested capital data for 2019 were not available, the average invested capital for 2020 was assumed to be equal to the ending invested capital of 2020. Accordingly, the 2020 value is treated as the baseline for longitudinal analysis, and the interpretation of EVA in 2020 should be considered with this limitation.

Table 6. Invested Capital Calculation

Year	Interest-bearing Debt	Total Equity	Ending IC	Average IC
2020	197.08	2,773.73	2,624.80	2,624.80
2021	2,416.75	13,391.59	12,597.07	7,610.94
2022	5,115.22	15,158.28	15,817.14	14,207.10
2023	5,219.22	14,178.57	14,379.05	15,098.09
2024	3,535.71	15,107.36	16,028.75	15,203.90

Source: Processed data, 2026.

Figure 2 shows the movement of ending invested capital from 2020 to 2024. The chart indicates a sharp increase from USD 2,624.80 million in 2020 to USD 12,597.07 million in 2021, followed by another increase to USD 15,817.14 million in 2022. In 2023, invested capital declined to USD 14,379.05 million before rising again to USD 16,028.75 million in 2024. This pattern shows that PHE's operating capital expanded significantly after 2020. The increase in invested capital can support the company's operational capacity, but it also increases the required return that must be generated through NOPAT. Therefore, the chart reinforces the importance of capital efficiency in EVA analysis. If invested capital rises without being followed by adequate operating profit, the company's capital charge will increase and can reduce EVA. In this case, PHE was generally able to manage this challenge because EVA remained positive from 2021 to 2024.

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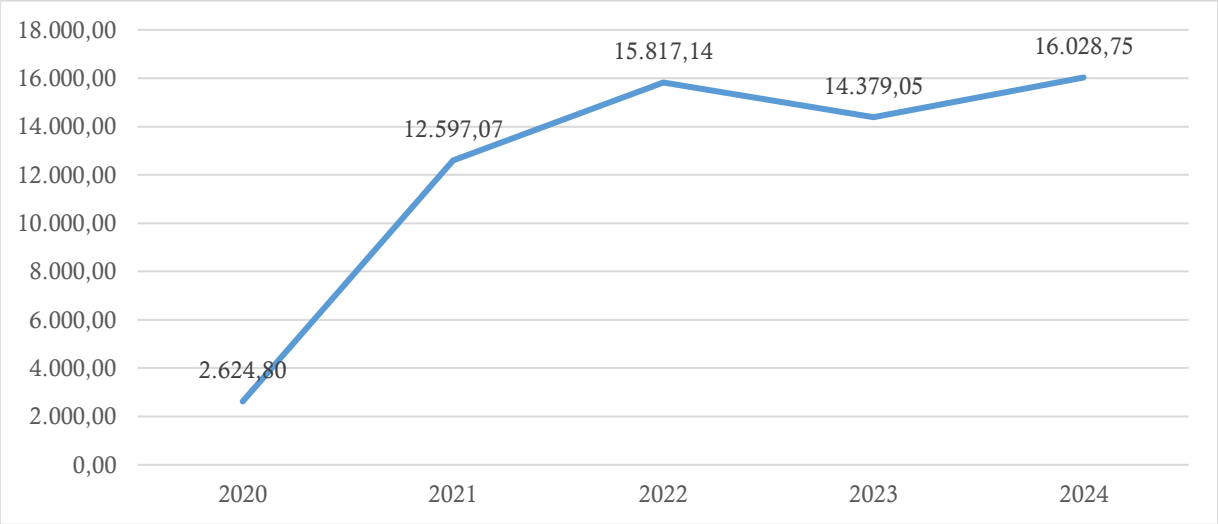

Source: Processed data, 2026.

Figure 2. Invested Capital Chart

Calculation of Weighted Average Cost of Capital (WACC):

$$\text{WACC} = (\text{Debt Weight} \times K_d \text{ after tax}) + (\text{Equity Weight} \times \text{Cost of Equity})$$

Table 7 shows that the company's WACC was in the range of around 10,24% to 11,53%. The highest WACC occurred in 2020 at 11,53%, while the lowest WACC occurred in 2023 at 10,24%. Changes in WACC are influenced by the combination of cost of equity, after-tax cost of debt, and capital structure weights. In the EVA model, WACC is an important component because it determines the amount of Capital Charge that must be covered by NOPAT.

Table 7. WACC Calculation

Year	Debt Weight	Equity Weight	Kd after tax	Cost of Equity	WACC
2020	6.63%	93.37%	6.14%	11.91%	11.53%
2021	13.92%	86.08%	5.92%	12.41%	11.51%
2022	20.87%	79.13%	3.40%	12.99%	10.99%
2023	26.05%	73.95%	3.74%	12.53%	10.24%
2024	23.01%	76.99%	2.95%	13.00%	10.69%

Source: Processed data, 2026.

Figure 3 presents the movement of WACC during the research period. The chart shows that WACC was 11.53% in 2020, slightly decreased to 11.51% in 2021, then declined to 10.99% in 2022 and reached its lowest point at 10.24% in 2023. In 2024, WACC increased again to 10.69%. This trend indicates that the company's cost of capital was not constant, which supports the decision to use annual WACC rather than a fixed assumption. The decline in WACC until 2023 helped reduce the capital cost burden relative to the level of invested capital. However, the increase in 2024 shows that changes in financing structure, after-tax cost of debt, and cost of equity can still affect the company's capital charge. Therefore, Figure 3 emphasizes that WACC is a strategic variable in EVA analysis because it directly determines the minimum return that must be generated by the company.

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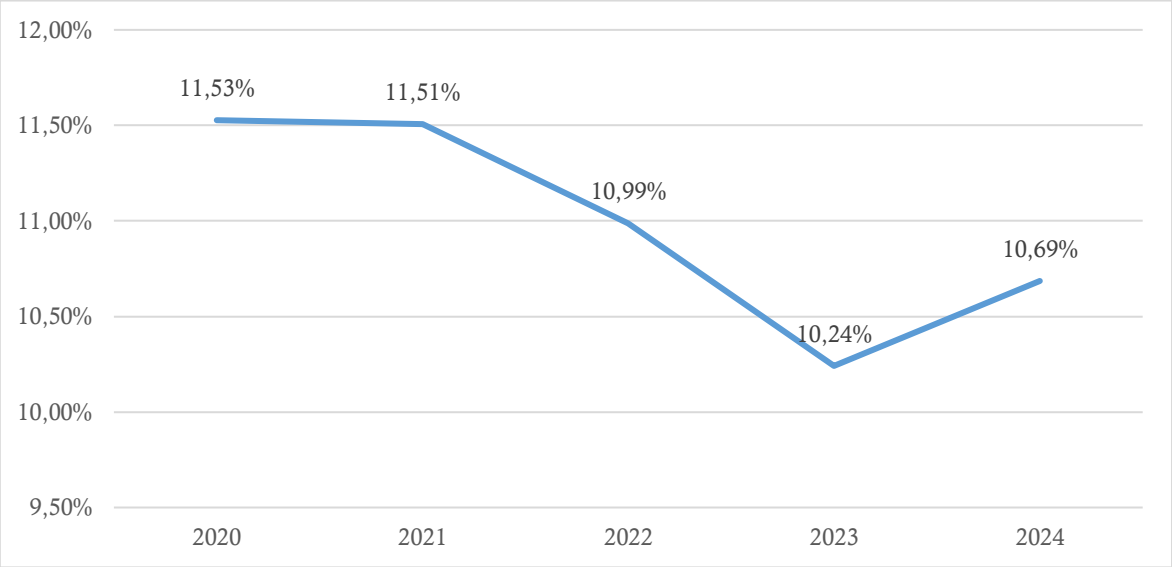

Source: Processed data, 2026.

Figure 3. WACC Chart

Calculation of Capital Charge:

$$\text{Capital Charge} = \text{WACC} \times \text{Average Invested Capital}$$

Table 8 shows that Capital Charge increased from USD 302,57 million in 2020 to USD 1.624,80 million in 2024. The highest Capital Charge occurred in 2024, while the largest increase was seen after 2020 because average invested capital rose sharply. Changes in Capital Charge are mainly influenced by the combination of WACC and average invested capital. When the capital used increases, the company needs a larger NOPAT in order to remain able to create positive EVA.

Table 8. Capital Charge Calculation

Year	WACC	Average IC	Capital Charge
2020	11.53%	2,624.80	302.57
2021	11.51%	7,610.94	875.72
2022	10.99%	14,207.10	1,561.05
2023	10.24%	15,098.09	1,546.25
2024	10.69%	15,203.90	1,624.80

Source: Processed data, 2026.

Figure 4 illustrates the movement of capital charge during the 2020–2024 period. The chart shows that capital charge increased from USD 302.57 million in 2020 to USD 875.72 million in 2021 and continued to rise to USD 1,561.05 million in 2022. In 2023, capital charge slightly decreased to USD 1,546.25 million, but it rose again to USD 1,624.80 million in 2024. This pattern indicates that the company's capital cost burden increased significantly after 2020, mainly because average invested capital increased sharply. Although WACC decreased in several years, the larger capital base kept capital charge at a relatively high level. This chart is important because it shows that higher NOPAT alone is not enough to ensure value creation; the company must also control the cost of capital attached to its invested capital. Therefore, capital charge becomes the threshold that determines whether EVA will be positive or negative.

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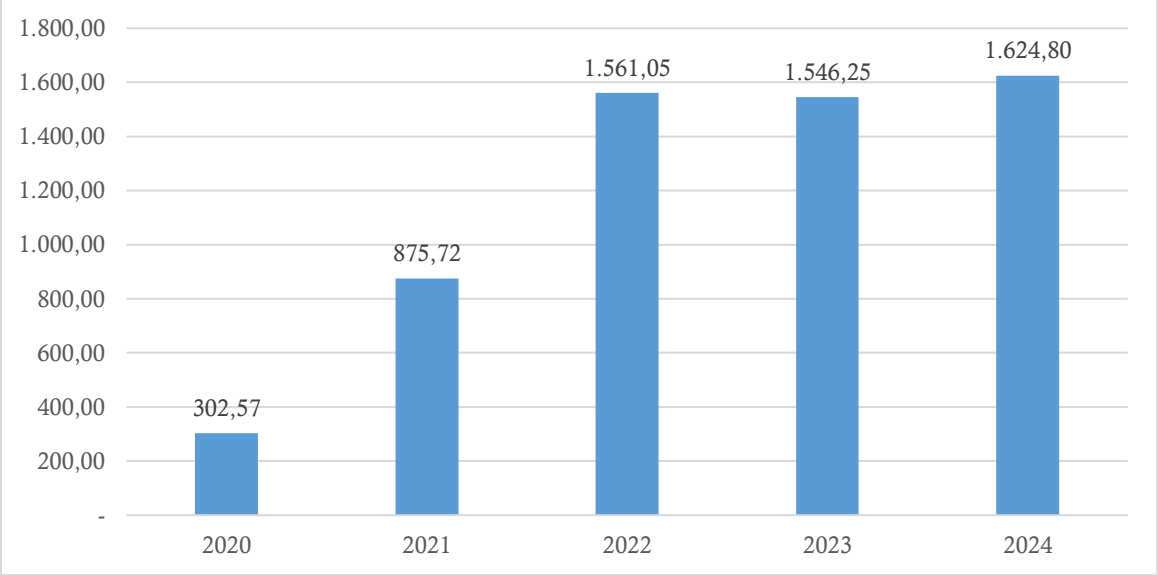


Source: Processed data, 2026.

Figure 4. Capital Charge Chart

Calculation of Economic Value Added (EVA):

$$\text{EVA} = \text{NOPAT} - \text{Capital Charge}$$

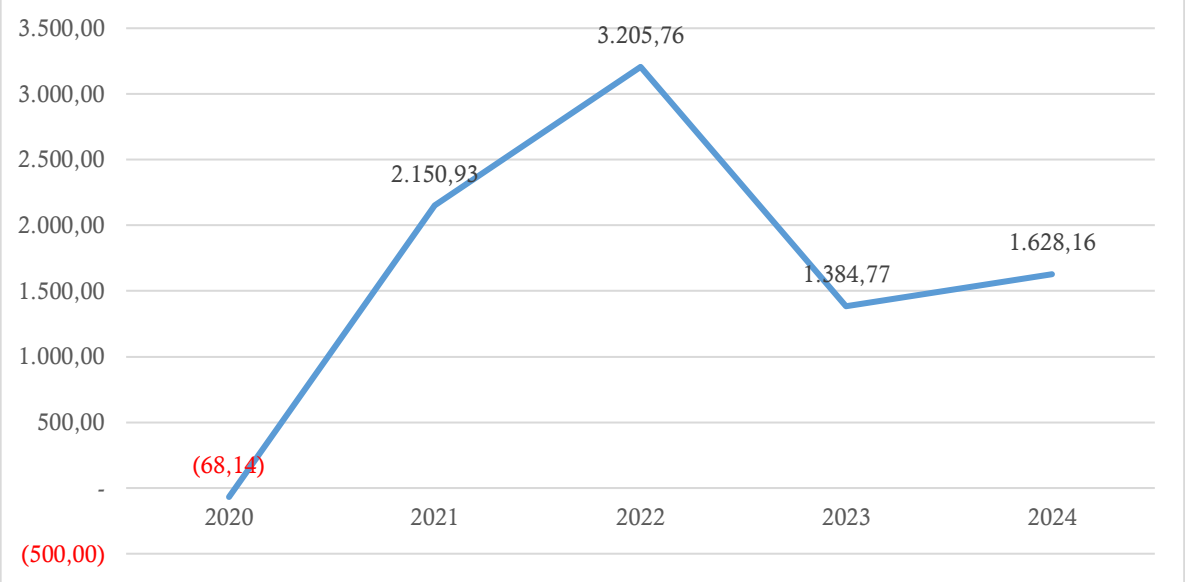
Table 9 shows that the EVA of PT Pertamina Hulu Energi was negative in 2020 and positive in 2021-2024. EVA in 2020 was USD -68,14 million, indicating that NOPAT was not yet able to cover Capital Charge. After that, EVA increased to USD 2.150,93 million in 2021 and reached its highest point of USD 3.205,76 million in 2022. In 2023, EVA decreased to USD 1.384,77 million, then increased again to USD 1.628,16 million in 2024. These results show that the company's NOPAT in 2021-2024 was consistently greater than Capital Charge. The negative EVA reported in 2020 should not be interpreted solely as weaker financial performance because the year also represents the pre-reorganization baseline. Therefore, the comparison between 2020 and 2021 should consider the structural changes associated with the establishment of Pertamina's Upstream Subholding in addition to changes in operating performance.

Table 9. Economic Value Added Calculation

Year	NOPAT	Capital Charge	EVA	EVA Margin	ROIC	Spread	Status
2020	234.42	302.57	-68.14	-3.58%	8.93%	-2.60%	Negative EVA
2021	3,026.65	875.72	2,150.93	18.32%	39.77%	28.26%	Positive EVA
2022	4,766.81	1,561.05	3,205.76	19.81%	33.55%	22.56%	Positive EVA
2023	2,931.02	1,546.25	1,384.77	9.51%	19.41%	9.17%	Positive EVA
2024	3,252.96	1,624.80	1,628.16	11.36%	21.40%	10.71%	Positive EVA

Source: Processed data, 2026.

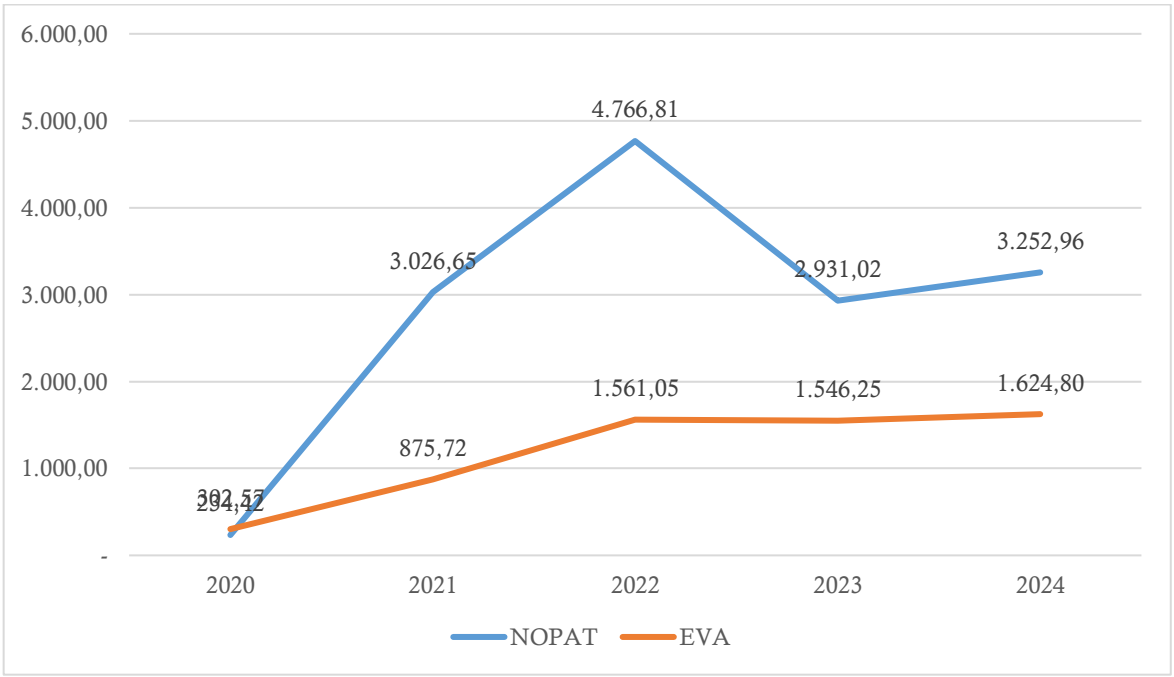
Figure 5 shows the movement of EVA during the 2020–2024 period. The chart clearly indicates that EVA was negative in 2020 at USD -68.14 million, then increased sharply to USD 2,150.93 million in 2021 and reached its highest point at USD 3,205.76 million in 2022. In 2023, EVA declined to USD 1,384.77 million before increasing again to USD 1,628.16 million in 2024. This pattern confirms that 2020 was the only year in which PHE failed to create economic value because its NOPAT was lower than capital charge. Meanwhile, the positive EVA from 2021 to 2024 indicates that the company was able to generate operating returns above its cost of capital. The decline in 2023 should not be interpreted as a failure because EVA remained positive; rather, it reflects a narrowing difference between NOPAT and capital charge. Thus, Figure 5 supports the conclusion that PHE's value creation improved after 2020.



Source: Processed data, 2026.

Figure 5. Economic Value Added Chart

Figure 6 compares NOPAT and capital charge, allowing a clearer interpretation of why EVA was negative in 2020 and positive in the following years. In 2020, NOPAT was USD 234.42 million, while capital charge was USD 302.57 million, creating negative EVA. From 2021 onward, NOPAT consistently exceeded capital charge: USD 3,026.65 million compared with USD 875.72 million in 2021, USD 4,766.81 million compared with USD 1,561.05 million in 2022, USD 2,931.02 million compared with USD 1,546.25 million in 2023, and USD 3,252.96 million compared with USD 1,624.80 million in 2024. This comparison confirms that EVA is determined by the spread between operating profit after tax and the capital cost burden. The chart also shows that the strongest value creation occurred in 2022 because the gap between NOPAT and capital charge was the largest. Therefore, Figure 6 reinforces the main finding that PHE created economic value during 2021–2024 because its operating return was consistently higher than the cost of capital used.



Source: Processed data, 2026.

Figure 6. NOPAT and Capital Charge Chart

Overall, the results indicate that PHE consistently generated positive economic value after 2020. Nevertheless, the interpretation of the transition from 2020 to 2021 should be made cautiously because 2020 represents the baseline before organizational restructuring. Furthermore, the calculation of invested capital uses total cash and cash equivalents as a proxy for non-operating cash due to data availability, and the average invested capital for 2020 is treated as a baseline because comparable 2019 data were unavailable. These methodological considerations should be taken into account when interpreting the trend of EVA over the study period.

DISCUSSION

The results show that PT Pertamina Hulu Energi was able to create positive EVA in the 2021-2024 period after previously recording negative EVA in 2020. This condition means that the company was able to generate operating profit after tax that was greater than the cost of capital charged on invested capital. This finding is in line with the concept of EVA as a value-based performance measurement tool that assesses whether a company truly creates economic wealth, not merely records accounting profit (Afriyani, Nurlaela and Suhendro, 2026).

Negative EVA in 2020 of USD -68,14 million occurred because NOPAT of USD 234,42 million was still lower than Capital Charge of USD 302,57 million. This condition shows that ROIC of 8,93% was not yet able to exceed WACC of 11,53%. Thus, although the company still earned profit, operating profit after tax was not sufficient to fully cover the cost of capital. This situation shows the importance of distinguishing between accounting profit and economic value in evaluating company performance (Permana *et al.*, 2024).

The interpretation of the substantial improvement in EVA between 2020 and 2021 should also consider the implementation of Pertamina's Upstream Subholding restructuring. Consequently, part of the observed changes may reflect differences in organizational structure and financial reporting scope rather than improvements in operational performance alone. Therefore, 2020 should be interpreted as a baseline reference instead of a fully comparable observation.

The increase in EVA in 2021 and 2022 was supported by a relatively large increase in NOPAT. The year 2022 became the strongest period because NOPAT reached USD 4.766,81 million, while Capital Charge was USD 1.561,05 million. Although Capital Charge in that year increased, the company was still able to generate a positive spread of 22,56%. This condition shows that the company's operating returns were still far above the cost of capital. This approach reinforces the view that value-based performance measures can complement traditional financial statement analysis (Christian, Rasyid and Ferdiansah, 2024).

The decline in EVA in 2023 does not directly indicate a failure of value creation because EVA remained positive. The decline is more accurately interpreted as a weakening of the difference between NOPAT and Capital Charge. NOPAT decreased to USD 2.931,02 million, while Capital Charge remained relatively high at USD 1.546,25 million. Thus, EVA in 2023 declined to USD 1.384,77 million. This phenomenon shows the importance of observing EVA components separately, especially NOPAT, WACC, and invested capital, as previous studies show that financial performance can be influenced by financing structure and company risk characteristics (Chika and Widianingsih, 2024).

The year 2024 showed an EVA recovery to USD 1.628,16 million. This was influenced by the increase in NOPAT to USD 3.252,96 million even though Capital Charge also increased to USD 1.624,80 million. WACC in 2024 was 10,69%, while ROIC was 21,40%, so the spread remained positive at 10,71%. These results indicate that the company can generate operating returns that are higher than the cost of capital, which is the core of value creation based on EVA (Musthafa and Arifin, 2024).

Viewed from the capital structure, PHE showed a dominant equity proportion throughout the research period, although debt weight increased in 2022 and 2023. This composition makes cost of equity an important component in the formation of WACC. The use of annual WACC is more appropriate than a fixed assumption because the cost of capital can change following market risk, cost of debt, effective tax rate, and financing structure. Thus, the correction of WACC from a fixed figure of 10% to annual WACC makes the EVA results more representative (Khasanah and Situngkir, 2025).

The positive EVA results in 2021-2024 can also be interpreted as an indication that PHE's operating strategy and capital use were able to generate economic value. Although this study does not examine stock returns or market value, positive EVA provides a signal that the company has value-creation capability that is relevant to shareholders and stakeholders. Previous studies also show that information digitalization and corporate responsibility can strengthen the quality of firm value in the long term (Safitri, Putra and Mansur, 2023).

In addition, EVA can be a useful tool for assessing the quality of the company's strategy because it takes into account economic value after the cost of capital. In the context of the energy sector, sustainability, risk management, and capital efficiency are important factors in maintaining long-term value creation. Previous studies suggest that long-term value creation depends not only on operating profitability but also on efficient capital allocation and effective financing decisions. Consequently, EVA provides a comprehensive framework for evaluating whether strategic investments generate returns exceeding the company's cost of capital.

Thus, the results of this study show that PT Pertamina Hulu Energi has the ability to create economic value added in the period after 2020. However, EVA interpretation still needs to consider the WACC assumptions used. If assumptions regarding the risk-free rate, beta, market risk premium, or cost of debt change, then the values of WACC, Capital Charge, and EVA may also change. Therefore, future research can enrich the analysis by conducting WACC sensitivity analysis, comparing EVA with MVA, and examining the relationship between EVA and market indicators as suggested in ESG-based and stock return research (Agustin *et al.*, 2024).

This study has several limitations. First, the 2020 financial statements represent the company's pre-reorganization condition, whereas the 2021–2024 reports reflect the post-reorganization organizational structure. Therefore, the comparison between 2020 and subsequent years should be interpreted cautiously. Second, invested capital was estimated by deducting total cash and cash equivalents as a proxy for non-operating cash because the annual reports do not separately disclose operating cash and excess cash. Finally, because reliable invested capital data for 2019 were unavailable, the average invested capital for 2020 was assumed to be equal to the ending invested capital, making 2020 a baseline rather than a fully comparable observation.

CONCLUSION

Based on the Economic Value Added (EVA) calculation for the 2020–2024 period, PT Pertamina Hulu Energi showed an improvement in financial performance after 2020. In 2020, the company recorded a negative EVA of USD -68.14 million because NOPAT of USD 234.42 million was lower than the Capital Charge of USD 302.57 million. This condition indicates that the company had not yet generated sufficient operating returns to cover its cost of capital.

However, PT Pertamina Hulu Energi successfully created positive economic value added from 2021 to 2024. EVA increased to USD 2,150.93 million in 2021 and reached its highest value of USD 3,205.76 million in 2022. Although EVA declined to USD 1,384.77 million in 2023, it recovered to USD 1,628.16 million in 2024. These findings indicate that the company consistently generated NOPAT exceeding its Capital Charge throughout the 2021–2024 period.

Overall, the EVA analysis demonstrates that PT Pertamina Hulu Energi improved its capital management after 2020. The consistently positive EVA, supported by a positive spread between ROIC and WACC, reflects the company's ability to create economic value for shareholders and stakeholders. Therefore, EVA can be considered an appropriate value-based performance measurement tool for evaluating the financial performance of PT Pertamina Hulu Energi, particularly because the company operates in the capital-intensive upstream oil and gas industry.

Nevertheless, these findings should be interpreted with consideration of the company's organizational restructuring beginning in 2021, the use of total cash and cash equivalents as a proxy for non-operating cash, and the assumption that average invested capital in 2020 equals ending invested capital due to the unavailability of comparable 2019 data.

RECOMMENDATIONS

Based on the findings of this study, three main recommendations are proposed:

1. Utilize the ROIC–WACC spread as a capital allocation indicator. PT Pertamina Hulu Energi should continuously monitor the spread between Return on Invested Capital (ROIC) and the Weighted Average Cost of Capital (WACC) when evaluating investment projects. Maintaining a positive ROIC–WACC spread will help ensure that future investments generate returns exceeding the company's cost of capital and continue creating economic value.
2. Control the growth of invested capital. The company should ensure that any expansion of invested capital is accompanied by a proportional increase in operating profitability. Efficient capital allocation and disciplined investment decisions are essential to prevent higher capital charges from reducing Economic Value Added (EVA).
3. Conduct WACC sensitivity analysis in future studies. Future research is encouraged to perform sensitivity analysis by varying key WACC assumptions, including the risk-free rate, beta, market risk premium, and

cost of debt. Such analysis would improve the robustness of EVA estimation and provide deeper insights into the impact of changes in capital costs on corporate value creation.

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