Business Performance Analysis and Valuation: Accounting Treatment Implications in Indonesia's Carbon Credit Industry

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Abstract.

This study examines how accounting treatment choices for special funding schemes affect financial performance and valuation in Indonesia's emerging carbon credit industry. Using PT. Argustara Pilar Utama as a case study, a forestry-based carbon credit company operating under a unique funding arrangement where a single investor fully finances project operations in exchange for fixed-price carbon credit offtake, the research employs quantitative financial analysis methodology including ratio analysis and Discounted Cash Flow (DCF) valuation. Two accounting scenarios are evaluated: Scenario A recognizing investor funds as revenue under IFRS 15, and Scenario B recognizing funds as equity under IAS 32. The findings reveal substantial financial implications from accounting treatment choice. Scenario A produces cumulative positive EBIT of IDR 129.37 billion (2025-2034), Interest Coverage Ratio of 11.37x qualifying for Aa2/AA credit rating, and Enterprise Value of IDR 116.28 billion with WACC of 8.49%. Conversely, Scenario B generates cumulative negative EBIT of IDR 95.60 billion, negative Interest Coverage Ratio triggering D2/D distressed rating, and negative Enterprise Value of IDR 43.99 billion with elevated WACC of 22.81%. The equity value differential between scenarios reaches IDR 160.27 billion. This study concludes that revenue recognition under IFRS 15 is the superior treatment, as net shareholder value of IDR 75.32 billion after tax significantly exceeds zero value under equity recognition, while recommending complementary tax optimization strategies to mitigate double taxation exposure.

Keywords: *Accounting treatment; carbon credit; DCF valuation; financial performance;IFRS 15 and revenue recognition.*

I. INTRODUCTION

Climate change has emerged as one of the most pressing global challenges, prompting the development of market-based mechanisms for emission reduction. The 2015 Paris Agreement, signed by 196 countries, established carbon trading as a key instrument for achieving greenhouse gas emission reduction targets through Nationally Determined Contributions (NDCs). Indonesia, possessing the world's third-largest tropical forest area, holds strategic potential in the global carbon market, leading to the establishment of the Indonesia Carbon Exchange (IDXCarbon) in 2023 as part of the nation's commitment to reducing emissions by 31.89% independently and 43.2% with international assistance by 2030 [1].The forestry sector, operating under the FOLU Net Sink 2030 roadmap, presents significant opportunities for carbon credit generation through conservation, restoration, and sustainable forest management activities. However, the implementation of forestry-based carbon projects faces substantial challenges, particularly regarding financial sustainability. These projects require long-term commitment and investment to ensure successful carbon sequestration, coupled with comprehensive Monitoring, Reporting, and Verification (MRV) processes essential for maintaining carbon credit integrity [2]. The financial constraints have led carbon credit developers to rely on external funding mechanisms that may not follow conventional patterns of equity or debt financing. A critical issue emerges when companies operating under special funding schemes fail to apply appropriate accounting treatment for investor funds received. When investor financing is incorrectly recognized as revenue rather than being classified according to its economic substance, financial statements become distorted, creating inaccurate profitability metrics and premature tax liabilities.

This misalignment between accounting treatment and economic reality poses significant financial and tax risks that can threaten business sustainability [3]. The variance in accounting treatment thus requires careful quantitative examination to understand its implications for financial performance, credit profile, and enterprise valuation. This research addresses a critical gap in understanding how special funding schemes in carbon projects affect companies' financial statements and valuations. Using PT. Argustara Pilar Utama as a case study a forestry-based carbon credit company operating under a unique funding arrangement where a single investor fully finances project operations in exchange for fixed-price carbon credit offtakethis study formulates three interconnected research questions: (1) What is the impact of the special funding scheme on

the company's financial statements? (2) How do projections of financial performance and company valuation change under different accounting scenarios? (3) What strategic recommendations can be derived from comparing the accounting treatment alternatives? The novelty of this research lies in its comprehensive comparison of two distinct accounting treatments—revenue recognition under IFRS 15 versus equity recognition under IAS 32—applied to a real-world carbon credit company, integrating financial ratio analysis with DCF valuation methodology to quantify the substantial differences in enterprise value and shareholder outcomes. The findings contribute to both academic literature on non-conventional financing strategies in the carbon trading industry and practical guidance for companies navigating accounting policy decisions in emerging carbon markets [4].

II. METHODS

This study adopts a quantitative research design to systematically analyze how accounting treatment choices for special funding schemes impact financial performance, credit profile, and enterprise valuation. The research focuses on comparing two scenarios: Scenario A where investor funds are recognized as revenue under IFRS 15 Revenue from Contracts with Customers, and Scenario B where investor funds are recognized as equity contributions under IAS 32 Financial Instruments: Presentation. The single case study approach enables detailed exploration of how these accounting alternatives create fundamentally different financial profiles for the same underlying business operations [5].The study utilizes secondary data sources including audited financial statements of PT. Argustara Pilar Utama for 2022-2024, the Project Service Agreement documenting funding terms and conditions, and external reference data from Bank Indonesia for risk-free rates and Damodaran's databases for equity risk premiums and synthetic credit rating spreads. The four-year analysis period captures the company's financial transformation while providing sufficient historical data for ratio analysis and projection development [6].The analytical framework comprises four integrated components.

First, Financial Performance Analysis evaluates historical financial condition using liquidity ratios (Current Ratio), solvency ratios (Debt Ratio, Debt to Equity Ratio, Interest Coverage Ratio), and profitability ratios (Gross Profit Margin, Operating Profit Margin, Net Profit Margin, ROA, ROE). Second, Financial Scenario Analysis develops ten-year projections (2025-2034) under both accounting scenarios, comparing cumulative EBIT, tax burden, and ownership structure implications. Third, DCF Valuation calculates Enterprise Value and Equity Value using Free Cash Flow to Firm (FCFF) methodology with scenario-specific Weighted Average Cost of Capital (WACC) derived from Damodaran's synthetic credit rating approach [7].The cost of equity is calculated using the Capital Asset Pricing Model (CAPM) with bottom-up beta approach. Unlevered beta of 0.826 is derived from peer companies in the carbon credit industry (Ostrom Climate Solutions Inc., Base Carbon Inc., Green Earth Group N.V.) and relevered to the company's capital structure using the Hamada equation. The cost of debt is determined through synthetic credit rating methodology, mapping Interest Coverage Ratio to credit ratings and corresponding default spreads. Terminal value is calculated using the Gordon Growth Model with terminal growth rate of 4.62% based on Indonesia's long-term GDP growth projection. Fourth, Shareholder Impact Analysis evaluates wealth implications including double taxation exposure under Scenario A and dilution effects under Scenario B [8].

III. RESULT AND DISCUSSION

3.1 Historical Financial Performance Analysis

The financial ratio analysis of PT. Argustara Pilar Utama for 2022-2024 reveals a company in financial transformation with a unique risk-return profile. From a liquidity perspective, the Current Ratio improved significantly from 0.97 in 2022 to 1.62 in 2024, indicating successful transformation from liquidity distress to adequate working capital position. The 2022 condition with Current Ratio below 1.0 indicated serious liquidity stress where current liabilities exceeded current assets by approximately IDR 170 million, creating negative working capital. The improvement was driven by current asset growth combined with current liability decline from IDR 6.0 billion to IDR 3.9 billion as revenue recognition from completed projects occurred under IFRS 15 principles [9].

The solvency analysis reveals high leverage characteristics typical of growth-stage companies in emerging industries. The Debt Ratio decreased from 1.59 in 2022 (indicating technical insolvency where liabilities exceeded assets) to 0.94 in 2024, marking the first positive equity position during the analysis period. However, 94% of assets being financed by debt remains substantially above the industry average of 0.40-0.60 for environmental services. The Debt to Equity Ratio declined from 12.03x to 6.09x, still far exceeding conservative benchmarks. Critically, the Interest Coverage Ratio improved from 6x to 11x, demonstrating strong debt servicing capability that corresponds to A/A2 credit rating under Damodaran's synthetic rating methodology. Table 1 summarizes the key financial metrics evolution.

Table 1. Financial Performance Summary PT APU (2022-2024)

Dimension / Ratio	2022	2023	2024	Assessment
Current Ratio	0.97	1.42	1.62	Improving
Debt Ratio	1.59	1.19	0.94	High Risk
Debt to Equity	12.03x	6.09x	6.09x	Very High
Interest Coverage	6x	11x	11x	Strong
Gross Profit Margin	15%	22%	21%	Healthy
ROA	19%	29%	23%	Excellent
Net Profit Margin	11.22%	17.86%	14.53%	Healthy

Profitability represents the company's main strength, with ROA of 23% and Net Profit Margin of 14.53% in 2024 far exceeding industry benchmarks of 5-10% for environmental services companies. The Gross Profit Margin improved from 15% in 2022 to 21% in 2024, reflecting improved pricing power and cost management efficiency in the voluntary carbon market. The exceptionally high ROE of 244% in 2024 must be interpreted as a mathematical artifact from the thin equity base rather than genuine operational excellence, as the high equity multiplier (Total Assets/Equity ≈ 10.6x) amplifies even moderate profitability. The strong underlying profitability provides the fundamental justification for the company's viability despite high leverage [10].

3.2 Scenario Analysis: Revenue vs Equity Recognition

The ten-year financial projections (2025-2034) reveal dramatic differences between accounting treatment alternatives. Under Scenario A (IFRS 15 revenue recognition), investor funds received are recognized as revenue as performance obligations are satisfied, with costs matched against recognized revenue. This treatment produces cumulative positive EBIT of IDR 129.37 billion over the projection period, generating consistent taxable income and positive cash flows available for debt service and shareholder returns. The Interest Coverage Ratio of 11.37x qualifies the company for Aa2/AA credit rating with a default spread of only 1.05%, resulting in a pre-tax cost of debt of 8.65% [11].

Conversely, Scenario B (IAS 32 equity recognition) treats investor funds as equity contributions, requiring new share issuance to record the investment. Revenue recognition is deferred until actual carbon credit sales to third parties occur, while operating costs are immediately expensed. This timing mismatch produces cumulative negative EBIT of IDR 95.60 billion over the projection period, as the company incurs costs without corresponding revenue recognition. The negative Interest Coverage Ratio triggers D2/D distressed credit rating with a default spread of 21.48%, elevating the pre-tax cost of debt to 29.08%. Table 2 summarizes the key scenario comparison metrics.

Table 2. Scenario Comparison: Key Financial Metrics

Metric	Scenario A (IFRS 15)	Scenario B (IAS 32)
Cumulative EBIT (IDR Billion)	+129.37	-95.60
Interest Coverage Ratio	11.37x	Negative
Credit Rating	Aa2/AA	D2/D
Default Spread	1.05%	21.48%
WACC	8.49%	22.81%
Enterprise Value (IDR Billion)	+116.28	-43.99
Equity Value (IDR Billion)	+113.87	-46.40
Original Shareholder Ownership	100%	0.29%

The DCF valuation quantifies the substantial value differential between scenarios. Scenario A produces Enterprise Value of IDR 116.28 billion using WACC of 8.49%, reflecting the favorable credit profile and reasonable cost of capital. After deducting net debt, Equity Value reaches IDR 113.87 billion,

representing significant shareholder wealth creation. Scenario B, with its distressed credit profile, requires WACC of 22.81% for discounting future cash flows. The combination of negative operating cash flows and elevated discount rate produces negative Enterprise Value of IDR 43.99 billion, with corresponding negative Equity Value of IDR 46.40 billion. The equity value differential between scenarios reaches IDR 160.27 billion, demonstrating the profound impact of accounting treatment choice on enterprise valuation [12].

3.3 Shareholder Impact and Strategic Recommendations

The shareholder impact analysis reveals critical trade-offs between scenarios. Scenario A creates double taxation exposure, with corporate income tax (22%) on EBIT combined with dividend withholding tax (10%) on distributed profits, producing an effective combined tax rate of approximately 29.8%. The cumulative corporate tax burden reaches IDR 28.46 billion, with additional dividend tax of IDR 10.09 billion, totaling IDR 38.55 billion in tax payments over the projection period. However, net shareholder value after tax remains IDR 75.32 billion, representing substantial wealth creation [13].Under Scenario B, the equity classification requires new share issuance to record cumulative investor funds of IDR 344.23 billion. At par value of IDR 505,000 per share, this would require issuing approximately 681,642 new shares, diluting original shareholders from 100% to merely 0.29% ownership.

While this treatment avoids corporate income tax on investor funds (since they bypass the income statement), the near-total dilution of original shareholders effectively transfers all future value to the investor. The research concludes that Scenario A is unambiguously superior for original shareholders, as net value of IDR 75.32 billion significantly exceeds the zero practical value under Scenario B [14].Strategic recommendations focus on optimizing Scenario A implementation while mitigating tax burden. First, the company should utilize accumulated tax losses of IDR 2.80 billion to offset initial taxable income. Second, application for tax holiday under Government Regulation 78/2019 as a pioneer industry in carbon trading could provide 5-20 years of corporate income tax exemption. Third, pursuit of R&D super deduction under Government Regulation 45/2019 for MRV technology development could reduce taxable income by up to 300% of qualifying R&D expenditure. Fourth, shareholder protection mechanisms including anti-dilution provisions and profit-sharing formulas should be incorporated into amended shareholder agreements to protect original shareholders from future funding rounds.

IV. CONCLUSION

This study demonstrates that accounting treatment choice for special funding schemes creates profound financial implications for carbon credit companies operating under investor financing arrangements. The analysis reveals that revenue recognition under IFRS 15 (Scenario A) is clearly superior to equity recognition under IAS 32 (Scenario B), producing cumulative positive EBIT of IDR 129.37 billion versus negative IDR 95.60 billion, favorable Aa2/AA credit rating versus distressed D2/D rating, Enterprise Value of IDR 116.28 billion versus negative IDR 43.99 billion, and net shareholder value of IDR 75.32 billion after tax versus effective zero value due to 99.71% ownership dilution. The equity value differential of IDR 160.27 billion between scenarios underscores the material nature of accounting policy decisions in determining enterprise value and shareholder outcomes. The research recommends adopting IFRS 15 revenue recognition complemented by tax optimization strategies including utilization of accumulated tax losses, tax holiday application under PP 78/2019, R&D super deduction under PP 45/2019, and shareholder protection mechanisms through amended agreements with anti-dilution provisions. The limitation of this single-case study design suggests future research should examine multiple carbon credit companies across different funding structures to validate the generalizability of findings, while longitudinal studies could track actual implementation outcomes following accounting policy decisions.

V. ACKNOWLEDGMENTS

The author expresses sincere appreciation to Oktofa Yudha Sudrajad S.T., M.S.M., Ph.D. for invaluable guidance throughout the research process. Gratitude is also extended to the management of PT. Argustara Pilar Utama for providing access to financial data, and to the School of Business and Management, Institut Teknologi Bandung for the academic environment that enabled this research.

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