



Strategic Optimization of Idle Industrial Assets: A Decision Tree Approach to Maximizing ROA PT ABC

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Abstract. PT ABC is a construction company that possesses numerous non-operational assets that are managed sub-optimally, rendering them unproductive. Out of a total current asset valuation of IDR 51,777,500,000, these assets only generate an additional revenue of IDR 1,610,000,000 per year, reflecting a low Return on Assets (ROA) of 3.1%. This study focuses on the optimization of Asset I, a 10,000 square meter industrial land plot in Kendal valued at IDR 20 billion, which currently generates zero active income (0.0% ROA). Through a mixed methods approach combining Focus Group Discussions (FGD) with quantitative financial modeling, Decision Tree Analysis was applied as the primary instrument to calculate the Expected Monetary Value (EMV) across all scenario probabilities. Based on the Decision Tree modeling, this research formulates three strategic recommendations for Asset I, tailored to the company's risk posture. If the company adopts an aggressive approach, Scenario A.3 (building 2 units for full fabrication expansion) can be selected to pursue the maximum potential Return on Assets (ROA), albeit with the lowest probability of success. If the company takes a defensive stance, Scenario A.1 (building 2 units strictly for lease) is recommended, as it provides liquidity security and downside protection against macroeconomic uncertainty. However, mathematically, the most optimal strategy is Scenario A.2 (a combination of 1 unit for lease and 1 unit for internal expansion), as it creates the best balance between securing cash flow and driving operational growth, ultimately generating the highest absolute Expected Monetary Value (EMV) among all available options.

Keywords: Asset Management; Asset Optimization; Decision Tree; Financial Performance; ROA.

1. INTRODUCTION

Effective capital allocation is essential for improving financial performance sustainably and increasing shareholder value (Brealey et al., 2020; Ross et al., 2019). As companies grow and accumulate substantial retained earnings, they face the challenge of maximizing capital utilization to achieve measurable profitability (Brigham & Ehrhardt, 2016; Fahlenbrach et al., 2021). In addition to reinvesting in core business operations, many companies allocate capital to non-operational assets such as land, buildings, and other financial instruments to preserve value and benefit from capital appreciation (Tampubolon & Saiful, 2024).

However, problems arise when these non-operational assets are managed passively and fail to generate optimal returns, creating significant opportunity costs and reducing financial efficiency (Brigham & Ehrhardt, 2016). This condition can be evaluated through Return on Assets (ROA), which reflects how effectively a company utilizes its assets to generate earnings. When ROA remains lower than conservative and low-risk investment instruments such as government bonds or inflation rates, it indicates poor asset utilization and weak financial performance (Daputra et al., 2024; Trading Economics, 2026). Therefore, asset optimization becomes crucial to transform passive non-operational assets into productive income-generating resources and improve the company's overall financial health (Kuntadi & Ardianto, 2022). PT

ABC is a construction services company specializing in warehouses, industrial buildings, and steel structures, located in Jababeka, Cikarang. The company provides construction solutions for investors and entrepreneurs, particularly in industrial warehouse development, by prioritizing cost efficiency, durability, and quality. Its services include warehouse design and build, steel fabrication and erection, as well as supporting infrastructure development for industrial areas. PT ABC offers end-to-end services, starting from feasibility studies and cost estimation to construction execution and project handover to clients.

During its 20 years of operation, PT ABC has accumulated significant retained earnings from various major projects, with a substantial portion allocated to non-operational assets such as industrial land, residential land, and industrial warehouses rather than assets directly supporting its core business activities. Although these assets continue to generate capital gains with an average annual growth of 16.37%, their realized Return on Assets (ROA) based on recent market values remains only 3.1%, indicating inefficient asset utilization and passive asset management. This condition reflects a fundamental inefficiency in capital allocation, particularly when compared to relatively low-risk investment instruments such as government bonds, mutual funds, or money market instruments that generally provide returns of 5–8% annually. With total non-operational assets valued at IDR 51.77 billion, the company currently generates only IDR 1.61 billion in annual income, resulting in significant opportunity costs and limiting financial resilience.

In addition, PT ABC's core business is highly sensitive to macroeconomic conditions, particularly changes in interest rates, as internal analysis shows an inverse correlation between company sales and national interest rates: when interest rates increase, sales tend to decline, while lower interest rates stimulate business expansion and increase project demand. This dependence creates substantial operational risk and raises the company's break-even point (BEP), which currently reaches IDR 14.64 billion annually. To strengthen the analysis of PT ABC's operational risk, the relationship between the company's total sales performance and national interest rate movements was examined. Internal company research indicates a recurring inverse correlation between these two variables, where increasing interest rates tend to reduce project demand and company sales, while declining interest rates stimulate business expansion and increase revenue opportunities. This relationship is presented in Figure 1 below.

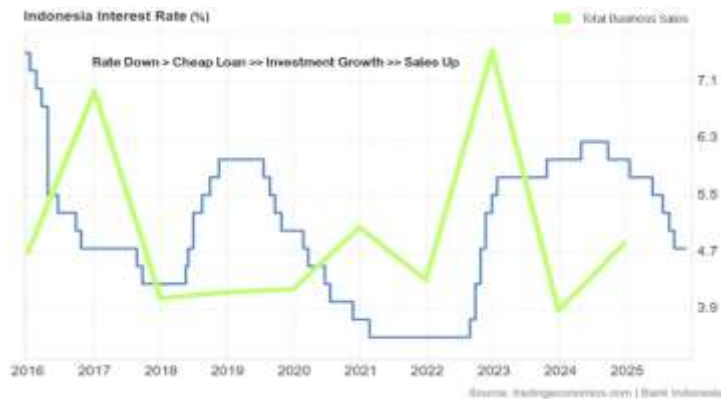


Figure 1. Inverse correlation of PT ABC total sales with interest rate.

If the company successfully optimizes its non-operational assets and achieves a conservative ROA target of 8%, it could generate an additional annual income of IDR 4.14 billion. This would significantly reduce fixed operational costs and lower the BEP by approximately 75.57%, from IDR 14.64 billion to only IDR 3.58 billion. Therefore, strategic asset optimization is urgently needed to transform non-productive assets into active income generating resources and improve the company's long-term financial performance.

This study focuses on the optimization of Asset I, a 10,000 square meter industrial land plot in Kendal valued at IDR 20 billion, which currently generates no active income and records a 0.0% Return on Assets (ROA). The ineffective utilization of this idle asset reflects inefficient capital allocation and reduces the company's overall financial performance, making asset optimization a strategic priority. Therefore, this study analyzes several feasible optimization scenarios, including land leasing and warehouse development for rental purposes, by considering industrial property market conditions, investment attractiveness, and long-term business sustainability (Balemi et al., 2021). Furthermore, the study evaluates the financial implications of each alternative scenario, particularly in improving Return on Assets (ROA), to identify the most suitable strategy for enhancing asset productivity, strengthening financial resilience, and supporting sustainable corporate growth under uncertain market conditions.

2. METHOD

This study employed a sequential explanatory mixed-methods design combining qualitative strategic assessment and quantitative financial modeling to evaluate corporate asset optimization strategies (Ciric Lalic et al., 2022; Clemen & Reilly, 2013). The research began by identifying the gap between the company's current ROA and targeted ROA, as ROA serves as a key indicator of asset utilization efficiency and financial performance. Qualitative data were collected through structured Focus Group Discussions (FGDs) with key stakeholders,

including the President Director and functional directors, to assess risk appetite, execution readiness, financial capability, and market confidence, supporting strategic decision-making under uncertainty (Taha, 2017). Quantitative data included internal financial statements, historical project Contribution Margin Ratio (CMR), operational costs, construction expenses, industrial property market benchmarks in Jababeka and Kendal (Pratama, 2023; Syah et al., 2025), and macroeconomic indicators such as inflation and government bond yields (Bank Indonesia, 2025; Trading Economics, 2026).

Data analysis was conducted in three stages: Gap Analysis, Scenario Modeling, and Decision Tree Analysis (DTA). The first stage focused on identifying underperforming and dormant assets through asset categorization, valuation updates, and baseline ROA calculations. The second stage involved qualitative feasibility and risk assessment using expert elicitation during FGDs. These qualitative findings were transformed into probability scores based on weighted strategic dimensions, including strategic alignment, financial readiness, execution capability, and market confidence. This approach is aligned with strategic asset optimization practices aimed at transforming passive assets into productive income-generating assets (Kuntadi & Ardianto, 2022).

The third stage involved quantitative financial modeling using Net Present Value (NPV), capital expenditure (CAPEX), operational expenditure (OPEX), projected revenues, and estimated capital gains over a ten-year period. These financial projections were integrated with qualitative probability scores using Decision Tree Analysis to calculate the Expected Monetary Value (EMV) of each optimization scenario. Decision Tree Analysis was selected because it provides a systematic framework for evaluating investment alternatives under uncertainty and enables comparison of potential outcomes and financial payoffs (Rad et al., 2025). The resulting scenarios were categorized into aggressive, defensive, and optimal strategies based on financial performance and risk profile. Validity and reliability were ensured through executive validation and triangulation between qualitative findings, internal financial data, and external market benchmarks, while final recommendations were refined through Board of Directors validation to ensure alignment with liquidity conditions, operational feasibility, and long-term strategic objectives.

3. RESULT AND DISCUSSION

Current Condition & Asset Prioritization

The company is currently facing inefficiencies in the management of non-operational assets due to the significant amount of capital tied to assets that do not generate active income.

Based on management evaluation, the non-operational assets were classified according to their characteristics, financial contribution, and strategic priority. Among the identified asset groups, Asset I in the form of industrial land was determined as the primary asset priority because it represents the largest concentration of capital while providing no operational return.

The prioritization process indicates that Asset I has the highest potential for optimization and strategic intervention compared to other non-operational assets. Therefore, this study focuses specifically on Asset I to evaluate its financial performance, market valuation, and strategic implications toward the company's operational efficiency and profitability.

Assets I Industrial Land Analysis

Asset I is an industrial land located in Kendal Industrial Park with a total area of 10,000 m². The asset was acquired in 2016 at a purchase price of IDR 12 billion and currently has an estimated market value of IDR 20 billion, reflecting a capital gain of 66.67% with an annual appreciation rate of 7.41%. However, the asset has not generated operational income, resulting in an ROA of 0.0%. The asset valuation was determined using comparative industrial land market data in the Kendal region, as presented in Table 4.

Type	List. No	Area (m ²)	Sell Price (Rp)	Price / M2 (Rp)
Land For Sell	1	6,300	13,000,000,000.00	2,063,492.06
	2	10,000	24,000,000,000.00	2,400,000.00
	3	66,000	128,000,000,000.00	1,939,393.94
	4	2,000	4,000,000,000.00	2,000,000.00
	5	5,500	10,450,000,000.00	1,900,000.00
	6	8,900	18,000,000,000.00	2,022,471.91
Average Sell Value		98,700	197,450,000,000.00	2,000,506.59
Data from Industrial Land for Sale in Kendal in rumah123.com accessed in 15 January 2026 19:45			$\begin{aligned} &10,000 \text{ m}^2 \\ &(\text{Total land Area}) \times \\ &2,000,000 \\ &(\text{Average Sell Value}) \end{aligned} = 20,000,000,000$	

Figure 2. Land Price Valuation in Kendal Region.

Based on the comparative market data, the average industrial land price in Kendal was approximately IDR 2,000,000 per m². Using this valuation benchmark, the estimated current market value of Asset I reached approximately IDR 20 billion. This indicates that the asset experienced a capital appreciation of 66.67% from its initial acquisition value, with an annual appreciation rate of approximately 7.41%. Although the asset demonstrates strong market value growth, it has not generated operational income and therefore recorded an ROA of 0.0%. This finding indicates that the industrial land functions primarily as a passive asset with unrealized gains rather than as a productive asset contributing to company cash flow and profitability.

Possible Scenarios

Based on the Focus Group Discussion (FGD) with management, several strategic scenarios were proposed for optimizing Asset I. These scenarios were developed by considering market opportunities, operational needs, investment risks, and the company's long-term financial objectives.

Scenario A: Warehouse Development, this scenario proposes the construction of a two-unit warehouse complex on the industrial land located in Kendal Industrial Park. The location is considered strategic due to the rapid industrial growth in Central Java, supported by competitive labor costs and Special Economic Zone (SEZ) incentives. In addition, manufacturing growth in Central Java has shown stronger performance compared to West Java, including during the COVID-19 period.

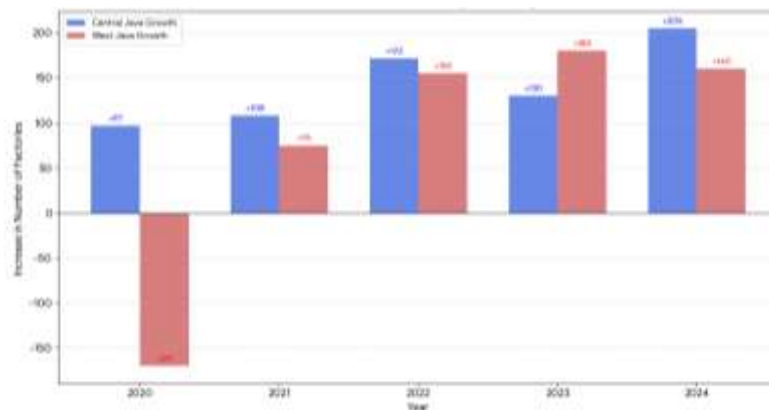


Figure 3. Annual Growth Industries Central Java and West Java.

To utilize its steel construction expertise, PT ABC plans to develop two warehouse units with a total building area of 6,490 m². The development strategy aims to transform undeveloped land into a productive commercial asset while reducing single-tenant concentration risk.

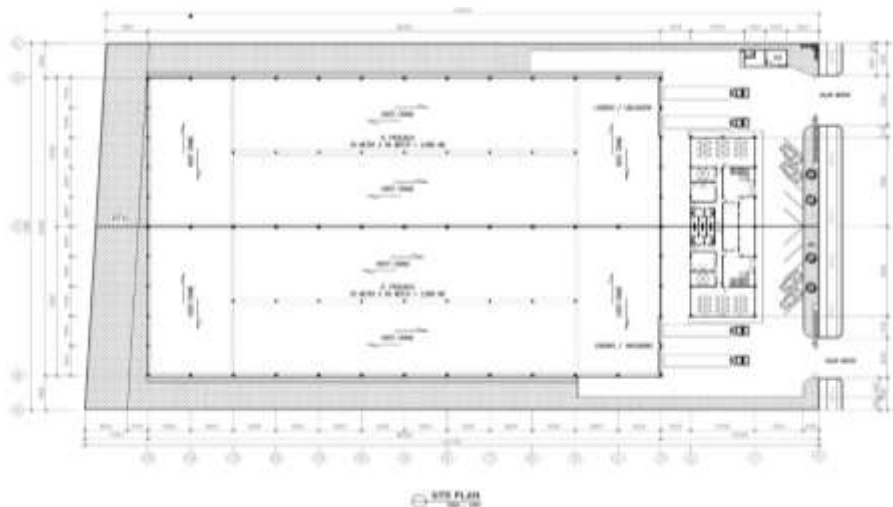


Figure 4. Kendal 2 Unit Warehouse Design Plan.

Scenario A terdiri atas empat opsi strategis. Opsi A.1 – 2 Units Rented, yaitu kedua unit disewakan kepada penyewa eksternal untuk memaksimalkan pendapatan sewa dan meningkatkan Return on Assets (ROA). Opsi A.2 – 1 Unit Rented and 1 Unit for Expansion mengombinasikan pendapatan sewa dari satu unit dengan pemanfaatan satu unit lainnya untuk mendukung aktivitas operasional perusahaan. Opsi A.3 – 2 Units for Expansion memanfaatkan kedua unit untuk mendukung ekspansi produksi dan meningkatkan efisiensi operasional melalui integrasi ke belakang (*backward integration*). Opsi A.4 – Unit for Sell/Capital Reallocation dilakukan dengan menjual kedua unit guna menghasilkan likuiditas dan menciptakan peluang reinvestasi. Sementara itu, Scenario B: Capital Reallocation melibatkan penjualan lahan industri pada nilai pasar dan mengalokasikan kembali hasil penjualannya ke dalam obligasi pemerintah sebagai instrumen investasi berisiko rendah. Investasi obligasi yang dipilih menawarkan imbal hasil yang stabil dan berfungsi sebagai tolok ukur pendapatan paling aman bagi perusahaan.

Pada Scenario C: Land Leasing, perusahaan tetap mempertahankan kepemilikan lahan namun menyewakannya untuk kebutuhan penyimpanan terbuka (*open storage*) atau aktivitas alat berat. Meskipun tingkat pengembalian yang diharapkan relatif rendah, strategi ini dapat menghasilkan pendapatan terbatas sekaligus mempertahankan potensi kenaikan nilai aset di masa depan. Adapun Scenario D: Do Nothing merepresentasikan kelanjutan kebijakan yang saat ini diterapkan tanpa adanya intervensi strategis. Dalam kondisi ini, lahan tetap tidak dimanfaatkan secara produktif dan perusahaan hanya mengandalkan potensi kenaikan nilai aset di masa depan tanpa memperoleh pendapatan operasional.

Market Risk Analysis

The feasibility of each scenario was evaluated using a strategic risk analysis approach based on management assessments from the Focus Group Discussion (FGD). The analysis generated Total Weighted Scores and Success Probabilities that were later used in the Decision Tree Analysis, scenario A: Build 2 Unit Warehouse.

Strategic Dimension & Risk Metrics	Weighted Value	Scenario A: Build 2 Unit Warehouse			
		A.1 2 Unit Rented	A.2 1 Unit Rented, 1 Unit for expansion	A.3 2 Unit Use for expansion	A.4 Unit for Sell
1. Strategic Alignment "Does this scenario align with our core identity, or is it a distraction?"	15%	5,00 <i>Aligned achieving additional active income</i>	4,00 <i>Aligned achieving additional active income & highly need</i>	3,00 <i>Aligned achieving additional active income but hard to operate</i>	4,00 <i>Aligned on profit but not achieving additional active income</i>
2. Financial Readiness "How much financial stress will this CAPEX cause to our cash flow?"	45%	3,50 <i>Need a lot of capital but still manageable</i>	2,50 <i>Need another lot of capital & bank leverage</i>	1,00 <i>Need a lot of capital & bank leverage</i>	5,00 <i>No risk of financial readiness</i>
3. Execution Capability "Are our team have expertise to execute this?"	20%	5,00 <i>Aligned with company construction core competency</i>	5,00 <i>Aligned with company construction core competency</i>	5,00 <i>Aligned with company construction core competency</i>	2,50 <i>Need to sell warehouse company just for renting</i>
4. Market Confidence "How confident are we that this scenario will succeed in the market?"	20%	4,00 <i>Global case showing industries</i>	3,50 <i>Need to start new connection & Marketing Strategies</i>	3,00 <i>Need to start new connection & Marketing Strategies</i>	3,00 <i>Need to start new connection & Marketing Strategies</i>
TOTAL WEIGHTED SCORE VALUE		4,125	3,425	2,5	3,95
Decision Tree Success Probability		82,50%	68,50%	50,00%	79,00%

Figure 5. Asset I Risk Analysis Scenario A.

Scenario A represents an active asset development strategy through the construction of a two-unit warehouse complex. The analysis produced four strategic options with different levels of risk and return. Option A.1 (2 Units Rented) was considered the safest and most stable alternative because it focuses on recurring rental income with low operational complexity. Management viewed this option as the company's "gold standard" strategy due to its strong strategic alignment, high execution capability, and stable market potential, resulting in a success probability of 96%.

Option A.2 (1 Unit Rented, 1 Unit for Expansion) combines rental income generation with internal operational expansion. This option provides balanced growth opportunities but introduces moderate financial and operational risks due to additional capital expenditures and debt requirements. The scenario achieved a success probability of 73%.

Option A.3 (2 Units for Expansion) focuses entirely on operational expansion and production capacity growth. Although management considered the company technically capable of executing the project, the scenario creates substantial financial pressure because of high capital expenditure and financing dependence. Consequently, this option recorded the lowest feasibility among Scenario A alternatives with a success probability of 50%.

Option A.4 (Unit for Sell) prioritizes liquidity generation through asset sales after development completion. This strategy provides immediate cash inflow and minimizes long-term debt exposure. However, management identified execution challenges related to property sales and marketing capability, resulting in a success probability of 79%, scenario B: Capital Reallocation.

Strategic Dimension & Risk Metrics	Weighted Value	Scenario B: Capital Reallocation
		A. Government Security Bonds
1. Strategic Alignment "Does this scenario align with our core identity, or is it a distraction?"	15%	5,00 Aligned
2. Financial Readiness "How much financial stress will this CAPEX cause to our cash flow?"	45%	5,00 No risk of financial readiness
3. Execution Capability "Are our team have expertise to execute this?"	20%	5,00 No Execution capability needed
4. Market Confidence "How confident are we that this scenario will success in the market?"	20%	5,00 No risk of loss
TOTAL WEIGHTED SCORE VALUE		5
Decision Tree Success Probability		100,00%

Figure 6. Asset I Risk Analysis Scenario B.

Scenario B involves selling the industrial land and reallocating the proceeds into government bonds as low-risk investment instruments. Management assessed this scenario as the most stable and financially secure alternative because it requires no additional capital

expenditure, financing, or specialized operational capability. As a result, Scenario B achieved the highest Total Weighted Score with a success probability of 100%, scenario C: Land Leasing

Strategic Dimension & Risk Metrics	Weighted Value	Scenario C: Land Leasing
1. Strategic Alignment "Does this scenario align with our core identity, or is it a distraction?"	15%	5.00 Aligned achieving additional active income
2. Financial Readiness "How much financial stress will this CAPEX cause to our cash flow?"	45%	5.00 No risk of financial readiness
3. Execution Capability "Are our team have expertise to execute this?"	20%	5.00 No Execution capability needed
4. Market Confidence "How confident are we that this scenario will success in the market?"	20%	2.50 Price not competitive since the land are in industrial park and have a high Official maintenance cost
TOTAL WEIGHTED SCORE VALUE		4.5
Decision Tree Success Probability		90.00%

Figure 7. Asset I Risk Analysis Scenario C.

Scenario C proposes leasing the land in its existing condition for open storage or heavy equipment activities. This strategy allows the company to maintain ownership while generating passive income without additional capital expenditure. Although financially safe and operationally simple, market demand uncertainty and rental competitiveness reduced the market confidence score. Nevertheless, the scenario remained highly feasible with a success probability of 90%.

Overall, the market risk analysis indicates that Scenario B provides the highest level of certainty and financial stability, while Scenario A offers higher growth potential with greater operational and financial risks. Meanwhile, Scenario C represents a moderate strategy that balances passive income generation with long-term asset ownership.

Financial Analysis

Financial analysis was conducted to determine the Value of Success (Vs) and Value of Failure (Vf) of each strategic alternative for optimizing Asset I located in the Kendal Industrial Area. The analysis compares several scenarios, namely warehouse development, capital reallocation, land leasing, and status quo strategy. The main indicators used include projected income, capital expenditure (CAPEX), maintenance costs, asset appreciation, Expected Monetary Value (EMV), and Return on Assets (ROA), scenario A: Build 2 Unit Warehouse.

Scenario A involves constructing a two-unit warehouse complex with a total building area of 6,490 m² on Asset I. This strategy utilizes the company's core competency as a construction contractor, allowing internal construction costs to be lower than standard market prices. Based on comparative market analysis in Kendal, the average warehouse rental rate reaches IDR 600,000/m²/year, while the average market selling price reaches IDR

6,325,951/m². Meanwhile, internal construction costs are estimated at IDR 2,000,000/m² with an average maintenance ratio of 0.25% of asset value. So it can be conclude that the construction cost (CAPEX) are around 6,490 m² x IDR 2,000,000/m² = IDR 12,980,000,000. The detailed comparison of warehouse rental prices and selling prices in Kendal can be seen in Table 5.

Type	List. No	Building Area (m ²)	Rent Price (Rp)	Price / M2 (Rp)
Warehouse For Rent	1	5,000	3,000,000,000.00	600,000.00
	2	4,000	2,000,000,000.00	500,000.00
	3	1,000	500,000,000.00	500,000.00
	4	5,000	3,800,000,000.00	760,000.00
	5	3,000	1,500,000,000.00	500,000.00
Average Rent Value		18,000	10,800,000,000.00	600,000.00
Type	List. No	Building Area (m ²)	Sell Price (Rp)	Price / M2 (Rp)
Warehouse For Sell	1	5,000	44,900,000,000.00	8,980,000.00
	2	10,000	33,000,000,000.00	3,300,000.00
	3	5,220	55,000,000,000.00	10,536,398.47
	4	8,000	60,000,000,000.00	7,500,000.00
	5	7,000	29,900,000,000.00	4,271,428.57
Average Sell Value		35,220	222,800,000,000	6,325,951.16

Figure 8. Warehouse Rent and Sell Price in Kendal.

In addition, the benchmark for construction costs and internal cost efficiency is presented in Table 6.

Table 1. PT ABC Historical Warehouse Construction Projects Cost.

Project Name	Total Area (m ²)	Total Contract Value (IDR)	Price / m ² (IDR)
Industrial Project A	2,000	5,600,000,000	2,800,000
Industrial Project B	3,500	10,850,000,000	3,100,000
Industrial Project C	3,000	7,950,000,000	2,650,000
Industrial Project D	1,500	4,425,000,000	2,950,000
Total / Average	10,000	28,825,000,000	2,882,500
Internal Construction Margin 30%		x 2,882,500	2,017,750
		=	
		Rounded	= 2,000,000

Four strategic alternatives were evaluated in Scenario A. Option A.1 focuses on leasing both warehouse units and generates an ROA of 7.69%. Option A.2 combines warehouse rental income with steel fabrication business expansion, requiring additional CAPEX of approximately IDR 5 billion and producing an ROA of 14.14%. Option A.3 allocates both warehouse units fully for fabrication operations and achieves the highest ROA of 20.34%, although with greater operational risk. Meanwhile, Option A.4 applies a build-and-sell strategy with an ROA of 5.67%. Among all alternatives, Option A.2 was selected as the most balanced strategy between profitability and operational risk.

Indicator	Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
A. CAPEX	(17.98)	-	-	-	-	-	-	-	-	-	-
B.1 Fabrication Target (Max Capacity 1,363 Tons/year)	-	408.9	545.2	681.5	817.8	954.1	1,090.4	1,226.7	1,363.0	1,363.0	1,363.0
B.2 Fabrication Market Price /Ton (+9.22% from IV.2.3.2 Steel Price CAGR Annually)	-	0.025	0.027	0.030	0.033	0.036	0.039	0.042	0.046	0.051	0.055
B.3 Total Revenue (B1 x B.2)	-	10.22	14.88	20.31	26.66	33.97	42.42	52.01	63.24	68.97	75.37
B.4 Total Cost & Tax (B.2 x 85% Operational & CO2E Cost)	-	(8.69)	(12.65)	(17.26)	(22.66)	(28.87)	(36.05)	(44.21)	(53.76)	(58.62)	(64.07)
B.5 Net Inc Bus. Fabrication (B3 + B4)	-	1.53	2.23	3.05	4.00	5.09	6.36	7.80	9.49	10.35	11.31
B.6 Net Inc Rent (D x 9.48%) (9.48% from IV.2.3.2 Rent ROA Asset Base Value Annually - Tax 10%)	-	1.75	1.88	2.02	2.17	2.33	2.50	2.69	2.89	3.10	3.33
B.7 Rent Maintenance (D Asset Base Value / 2 (because only 1 unit rented) x Budget 0.25% "	-	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	(0.08)	(0.08)	(0.09)	(0.10)	(0.10)
C Total Net Income	-	3.23	4.05	5.00	6.10	7.35	8.79	10.41	12.28	13.35	14.53
D. Asset Base (+7.41% Annually based from IV.2.3.1 Industrial Land Capital Base & IV.2.3.1.5.4.1 Unit for Sale)	41.05	44.09	47.36	50.87	54.64	58.69	63.03	67.70	72.72	78.11	83.90
E. ROA (%)	-	7.32%	8.56%	9.84%	11.17%	12.53%	13.94%	15.37%	16.89%	17.09%	17.32%
G. PV Factor (2.86% Inflation Rate from IV.2.3.1.5)	1.00	0.97	0.94	0.91	0.89	0.86	0.84	0.82	0.79	0.77	0.75
G. Present Value	(17.98)	3.14	3.83	4.60	5.45	6.39	7.42	8.54	9.80	10.36	10.96
Cum. Real Cash Flow	(17.98)	(14.75)	(10.70)	(5.69)	0.41	7.76	16.55	26.95	39.24	52.59	67.12
Cum. Cash Flow NPV	(17.98)	(14.84)	(11.01)	(6.41)	(0.96)	5.42	12.84	21.39	31.19	41.55	52.51

Figure 9. Asset I Scenario A.2 10-Year Financial Projection.

Scenario B: Capital Reallocation, scenario B represents a defensive strategy where the company sells Asset I at current market value and reallocates the proceeds into government securities (SBN). The land has a market value of IDR 20 billion, but after deducting disposal costs and transaction fees of 5.5%, the net investable capital becomes IDR 18.9 billion.

This strategy offers stable passive income with a government bond yield of 6.3% and 10% final tax on bond interest. Over a 10-year period, this option produces active income (NPV) of IDR 28.11 billion and ROA of 5.67%. While financially safe, this strategy eliminates future benefits from industrial land appreciation. The financial projection of this scenario is presented in Table 8.

Indicator	Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
A. Cash / Net Investable Capital (from IV.2.3.1.5 Net Investable Capital)	18.90	18.90	18.90	18.90	18.90	18.90	18.90	18.90	18.90	18.90	18.90
B. Net Inc - Yield (6.30% from IV.2.1.2 Scenario B: Capital Reallocation - Tax 10%)	-	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
B.7 Total Net Income	-	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
C. ROA (%)	-	5.67%	5.67%	5.67%	5.67%	5.67%	5.67%	5.67%	5.67%	5.67%	5.67%
D. PV Factor (2.86% Inflation Rate from IV.2.3.1.5)	-	0.97	0.95	0.92	0.89	0.87	0.84	0.82	0.80	0.78	0.75
E. Present Value	18.90	1.04	1.01	0.98	0.96	0.93	0.90	0.88	0.86	0.83	0.81
Cum. Real Cash Flow	18.90	19.97	21.04	22.11	23.19	24.26	25.33	26.40	27.47	28.54	29.62
Cum. Cash Flow NPV	18.90	19.94	20.95	21.94	22.90	23.83	24.73	25.61	26.47	27.30	28.11

Figure 10. Asset I Scenario B 10-Year Financial Projection.

Scenario C: Land Leasing, scenario C applies a zero-CAPEX strategy by leasing the vacant industrial land without constructing new facilities. Based on comparative market analysis from industrial land listings in Kendal, the average rental rate is IDR 97,770/m²/year. With a total land area of 10,000 m², projected active income over 10 years reaches IDR 12.13 billion. Combined with unrealized land appreciation of IDR 30.66 billion, this option produces a total Success Value (Vs) of IDR 42.79 billion and Failure Value (Vf) of IDR 30.66 billion. Since no

capital expenditure is required, the execution risk is very low. However, the ROA remains relatively small at only 4.40%. The projected financial performance of this zero-CAPEX strategy over a 10-year period is summarized in Table 9.

Indicator	Yr 0	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
A. CAPEX	-	-	-	-	-	-	-	-	-	-	-
B. Net Inc – Land Rent (C + 4.00% from (B.2.3.2) Land Rent ROA Asset Base Value Annually – Tax 10%)	0.88	0.95	1.02	1.09	1.17	1.26	1.35	1.45	1.56	1.67	1.80
B.7 Total Net Income	0.88	0.95	1.02	1.09	1.17	1.26	1.35	1.45	1.56	1.67	1.80
C. Asset Base (+1.81% Annually Based From (B.1.1) Industrial Land Capital Gain)	20.00	21.48	23.07	24.78	26.62	28.59	30.71	32.99	35.43	38.06	40.88
D. ROA (%)	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%	4.40%
G. PV Factor (5.56% Inflation Rate from (B.2.3.1))	1.00	0.97	0.94	0.91	0.89	0.86	0.84	0.82	0.79	0.77	0.75
F. Present Value	0.88	0.92	0.96	1.00	1.05	1.09	1.14	1.19	1.24	1.30	1.36
Cum. Real Cash Flow	0.88	1.83	2.84	3.93	5.10	6.36	7.71	9.16	10.72	12.40	14.20
Cum. Cash Flow NPV	0.88	1.80	2.76	3.76	4.81	5.90	7.04	8.23	9.48	10.78	12.13

Figure 11. Asset I Scenario C 10-Year Financial Projection.

Scenario D: Status Quo / Do Nothing, the status quo strategy assumes the company takes no operational action and only relies on land value appreciation over the next 10 years. This option generates no active income and records 0% ROA. The only financial benefit comes from unrealized asset appreciation of IDR 30.66 billion, making it the least productive strategic alternative despite having no execution risk.

Decision Tree Analysis

Decision Tree Analysis (DTA) was used to integrate qualitative risk assessment and quantitative financial projections by calculating Expected Monetary Value (EMV) using the formula: $EMV = (Ps \times Vs) + (Pf \times Vf)$(i)

where Ps represents success probability and Pf represents failure probability. In addition, the company applies a strategic benchmark of $ROA > 8\%$ as the minimum target for asset optimization. The summary of Value of Success (Vs), Value of Failure (Vf), and projected ROA for all scenarios is shown in Table 10.

Table 2. Asset I Success and Failure Value Calculation Resume.

Strategic Scenario	Success Value Components (Vs)	Total Vs (Billion IDR)	Detailed Failure Value Components (Vf)	Total Vf (Billion IDR)	Projected Average ROA
A.1: 2 Units Rented	NPV (27.40) + Asset Base (62.92)	90.32	Asset Base (62.92) - CAPEX (12.98) - Maint. NPV (1.43)	48.51	7.69%
A.2: 1 Rent, 1 Exp.	NPV (52.51) + Asset Base (62.92)	115.43	Asset Base (62.92) - CAPEX (17.98) - Maint. NPV (0.65)	44.29	14.14%
A.3: 2 Units Exp.	NPV (77.62) + Asset Base (62.92)	140.54	Asset Base (62.92) - CAPEX & Opex (22.98)	39.94	20.34%
A.4: Build then Sell	NPV SBN Reinvestment (44.71)	44.71	Asset Base (62.92) - CAPEX (12.98) - Maint. NPV (1.43)	48.51	5.67%
B.1: Capital Realloc.	NPV SBN Reinvestment (28.11)	28.11	N/A (100% Success Rate)	N/A	5.67%

C: Land Leasing	NPV Rent (12.13) + Asset Base (30.66)	42.79	Asset Base (30.66) - CAPEX (0.00)	30.66	4.40%
D Status Quo & Do nothing	Asset Base (30.66)	30,66	-	-	-

The results show that Scenario A.2 (1 Unit Rented and 1 Unit for Expansion) produces the highest EMV at IDR 93.02 billion with ROA of 14.14%, indicating the best balance between profitability and acceptable risk. Scenario A.3 generates the highest ROA (20.34%) and the highest Vs, but its probability of success is only 50%, making it significantly more aggressive and risk-intensive.

Scenario A.1 produces EMV of IDR 83.00 billion but fails to meet the company's minimum ROA target. Scenario B and Scenario C offer lower returns but stronger financial stability and lower operational risk. Meanwhile, Scenario D is the weakest option because it produces no active income and does not improve asset productivity.

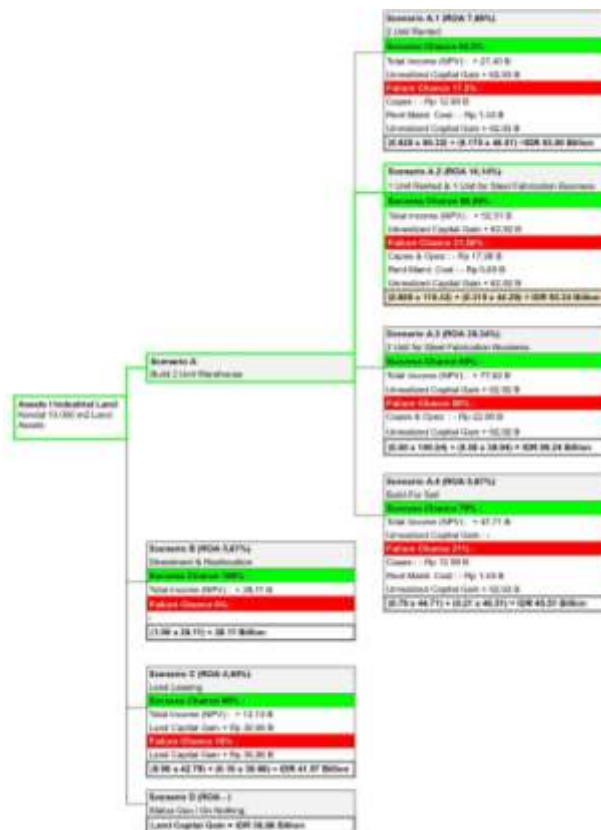


Figure 12. Asset I Decision Tree Model.

The comparison results indicate that Scenario A.2 provides the most optimal combination of profitability, asset productivity, and manageable execution risk compared to other strategic alternatives. This scenario achieves the highest Expected Monetary Value (EMV) of IDR 93.02 billion while maintaining a strong Return on Assets (ROA) of 14.14%, which exceeds the company's minimum target of 8%. Compared to other alternatives, Scenario

A.2 offers a balanced strategy between stable rental income and long-term operational expansion, allowing the company to generate sustainable active income while minimizing excessive operational risk.

Based on the overall financial analysis, Scenario A.2 is considered the most appropriate strategy for optimizing Asset I because it achieves strong financial returns, satisfies the ROA target, and maintains a reasonable risk profile. This strategy also supports long-term business expansion while preserving stable rental income, making it the most balanced and sustainable decision for the company.

Business Solutions

This study develops several strategic alternatives for optimizing Asset I (Kendal Industrial Land) based on financial feasibility, projected profitability, and risk-adjusted investment considerations. The analysis focuses specifically on Asset I to identify the most suitable optimization strategy for improving asset productivity and maximizing Return on Assets (ROA). In addition, the evaluation incorporates projected asset value growth and recurring income potential to provide a comprehensive assessment of long-term financial performance.

Aggressive Management Decision

The aggressive management strategy prioritizes maximum revenue growth through industrial asset development. Under this approach, Scenario A.3 (Steel Fabrication Units) offers the highest profitability potential by converting the idle industrial land into an active operational asset.

This scenario requires a high CAPEX of approximately IDR 22.98 billion and is projected to generate average annual active income of around IDR 12.24 billion with an estimated ROA of 20.34%. However, despite its strong financial return potential, the strategy also carries substantial operational and liquidity risk due to its reliance on large-scale investment and external financing. Therefore, this scenario is categorized as a high-risk expansion strategy under uncertain market conditions.

Defensive Management Decision

The aggressive management strategy prioritizes maximum revenue growth through industrial asset development. Under this approach, Scenario A.3 (Steel Fabrication Units) offers the highest profitability potential by converting the idle industrial land into an active operational asset. This scenario requires a high CAPEX of approximately IDR 22.98 billion and is projected to generate average annual active income of around IDR 12.24 billion with an estimated ROA of 20.34%. However, despite its strong financial return potential, the strategy

also carries substantial operational and liquidity risk due to its reliance on large-scale investment and external financing. Therefore, this scenario is categorized as a high-risk expansion strategy under uncertain market conditions.

Optimal Management Decision

The optimal management strategy was selected based on the highest balance between profitability and risk-adjusted financial stability. Under this approach, Scenario A.2 (1 Leased Unit and 1 Fabrication Expansion Unit) provides a combination of recurring rental income and operational business expansion.

This scenario requires an estimated CAPEX of approximately IDR 17.98 billion and is projected to generate average annual active income of around IDR 8.51 billion with an estimated ROA of 14.14%. Compared to the defensive strategy, this approach offers higher profitability potential, while maintaining lower risk exposure than the aggressive expansion strategy. Therefore, Scenario A.2 is categorized as a balanced optimization strategy that combines income stability, asset productivity growth, and long-term financial performance improvement.

Best Recommendation Decision

The quantitative evaluation identified Scenario A.1 (Build 2 Units for Rent) for Asset I (Kendal Industrial Land) as the most feasible optimization strategy. The asset, valued at IDR 20 billion, previously generated no active income and recorded a 0.0% ROA. Although other scenarios offered higher profitability, management selected Scenario A.1 due to its lower CAPEX requirement, lower operational risk, and more stable recurring income under uncertain macroeconomic conditions. This strategy requires an estimated CAPEX of IDR 12.98 billion to construct two rental warehouse units and is projected to generate average annual active income of approximately IDR 4.63 billion. Financial projections indicate that the asset's ROA could increase from 0.0% to approximately 7.69%. Therefore, Scenario A.1 was selected as the company's primary recommendation because it offers a balanced combination of profitability, manageable risk, stable cash flow, and long-term financial sustainability.

Implementation Plan

The implementation plan focuses on the phased execution of Scenario A.1 (Build 2 Units for Rent) for Asset I (Kendal Industrial Land) as the company's primary asset optimization strategy. This approach was selected to improve asset productivity while maintaining liquidity stability under uncertain macroeconomic conditions. The project will be implemented over a 24-month period and divided into two phases. Phase 1 focuses on engineering design, construction permits, land clearing, foundation work, and pre-leasing activities to secure

potential tenants. At Month 13, management will conduct a Go/No-Go evaluation based on macroeconomic conditions and leasing progress before continuing to the next phase.

If approved, Phase 2 will continue with steel structure construction, architectural and MEP installation, and project completion until the warehouse units begin generating recurring rental income. Throughout the implementation period, management will continuously monitor market conditions, interest rates, and geopolitical developments to ensure financial stability and strategic flexibility.

4. CONCLUSION

This study focused on the optimization of Asset I, namely a 10,000 m² industrial land located in Kendal with a valuation of IDR 20 billion that generated no active income (ROA 0.0%). Using a mixed-methods approach through Focus Group Discussion (FGD), quantitative financial modeling, and Decision Tree Analysis, several strategic scenarios were evaluated based on Expected Monetary Value (EMV), projected Return on Assets (ROA), and risk probability. The findings indicate that each scenario reflects a different strategic posture for the company. Scenario A.3 provides the highest projected ROA but also carries the highest financial and operational risk. Scenario A.1 offers greater financial stability and liquidity protection through recurring rental income with lower execution risk. Meanwhile, Scenario A.2 (1 Unit Rented and 1 Unit for Expansion) emerged as the most optimal strategy because it produced the highest Expected Monetary Value (EMV) and achieved a balanced combination of operational growth, sustainable cash flow, and manageable financial risk. Therefore, the optimization of Asset I demonstrates that transforming idle industrial land into productive assets can significantly improve asset productivity and support the company's long-term financial performance.

Based on the results of this study, PT ABC is recommended to optimize Asset I by considering the company's financial capacity, risk tolerance, and long-term strategic objectives. If management prioritizes financial stability and liquidity protection under uncertain macroeconomic conditions, Scenario A.1 (Build 2 Units for Rent) should be implemented through a phased construction strategy supported by aggressive pre-leasing activities to secure stable rental income. However, if the company seeks a more balanced approach between operational expansion and financial sustainability, Scenario A.2 may serve as the primary strategic alternative because it provides the highest Expected Monetary Value (EMV) while maintaining a strong Return on Assets (ROA) above the company's minimum target. In addition, management should strengthen periodic macroeconomic monitoring related

to interest rates, inflation, and industrial market conditions before making large-scale capital expenditure decisions. Future investment policies should also prioritize assets capable of generating recurring active income rather than relying solely on passive capital appreciation, thereby improving overall asset productivity and long-term corporate resilience.

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