

Optimal Capital Structure Analysis of PT Bluebird TBK

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Abstract

PT Bluebird Tbk, a leading Indonesian road transportation company, plans to acquire 1,000 electric vehicles (EVs) by 2025, which will require an investment of IDR 1.8 trillion. Currently, the company's capital structure consists of 25.24% debt and 74.76% equity, a proportion that differs significantly from the Indonesian road transportation industry average of 51.63% debt and 48.37% equity. This difference suggests that PT Bluebird Tbk may not yet have reached an optimal capital structure. Achieving an optimal mix between debt and equity is important for minimising the company's cost of capital and maximising its overall value. The planned expansion provides an opportunity for PT Bluebird Tbk to evaluate and potentially restructure its capital structure. This study utilised the Cost of Capital approach to identify the optimal capital structure, with the Weighted Average Cost of Capital (WACC) formula to analyse various debt and equity scenarios. The Damodaran Synthetic Rating is utilised to estimate the cost of debt, while the Capital Asset Pricing Model (CAPM) is applied to calculate the cost of equity. The results indicate that the optimal capital structure for PT Bluebird Tbk consists of 32% debt and 68% equity. Therefore, the most favourable financing strategy for the expansion involves raising IDR 742,475 million through debt and IDR 438,711 million through equity to achieve this optimal structure.

Keywords: Optimal Capital Structure, Cost of Capital, Financing Strategy

A. INTRODUCTION

Currently, the world's attention is focused on the issue of climate change (Karl et al., 2024). As a form of commitment to addressing the threat of climate change caused by greenhouse gas (GHG) emissions, Indonesia has ratified the Paris Agreement through Law No. 16/2016 and included climate resilience actions in the Enhanced Nationally Determined Contribution (ENDC) document. On the other hand, the low-carbon transition in Indonesia's energy and transportation sectors faces challenges, as most vehicles today still run on fossil fuels, causing CO₂ emissions. The Ministry of Energy and Mineral Resources (2024) report that approximately 11 million cars in Indonesia emit over 35 million tons of carbon annually. On a global scale, according to the Global Carbon Atlas, Indonesia has been one of the top 10 largest carbon emitters in the world since 2018. As of 2023, Indonesia is ranked 8th with total emissions of 733 million tons of CO₂, making it one of the top 10 for 6 years.

Recognising the huge impact of carbon emissions, the Indonesian government has set a target to reduce carbon emissions by 29% by 2030 through Presidential Regulation No. 55/2019. This encourages transportation companies to add electric vehicles (EVs) as a sustainable business strategy, including PT Bluebird Tbk. As part of the Bluebird Group, PT Bluebird Tbk is a pioneer of electric taxis in Indonesia and has successfully reduced more than 196,000 tons of carbon emissions by December 2024 through various initiatives (Bluebird, 2025). In 2025, PT Bluebird Tbk will focus on its sustainability mission by providing electric vehicle booking features in its application, adding 1,000 EV fleet units, and expanding services to more cities with a capital expenditure of IDR 1.8 trillion.

As of December 2024, the company reported cash and cash equivalents of IDR 1,161,954,000,000 and current liabilities of IDR 1,086,281,000,000, resulting in a cash ratio of 1.07. This figure indicates that PT Bluebird Tbk maintains a strong liquidity position, with sufficient cash to cover its short-term obligations. However, the company cannot use all its cash reserves for capital investment because doing so could put

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the company's financial situation at risk. To mitigate this, a conservative approach is taken by reducing the cash ratio to the minimum acceptable threshold of 0.5. As stated by Coulon (2020), a cash ratio of at least 0.5 is considered necessary to maintain a minimum liquidity buffer, with a target closer to one being more ideal.

In 2024, PT Bluebird Tbk reported long-term liabilities of IDR 1,359,686,000,000 and equity of IDR 5,388,067,000,000, resulting in a debt-to-equity ratio of 0.34. PT Bluebird Tbk's debt financing is significantly below the industry average (1.10). With only 25.24% of its capital structure comprised of long-term debt compared to an industry average of 51.63% the company appears to have room to increase financial leverage. Doing so may help lower its overall cost of capital and support expansion more efficiently. Therefore, the focus of this research is to identify the optimal capital structure of PT Bluebird Tbk and to identify the most suitable financing strategy to support the company's expansion plans.

B. LITERATURE REVIEW

The M&M Theory is considered a fundamental element of economic theory that forms the basis of modern thinking about capital structure. The authors of this theory are Franco Modigliani and Merton Miller. The first theory of capital structure is Modigliani-Miller Proposition I, which assumes that a leveraged company has the same overall risk as an unleveraged company and that financial leverage has no effect on shareholder wealth. According to (Modigliani and Miller, 1958), in a world without taxes, transaction costs, or financial distress, a company's capital structure is irrelevant because it does not affect the company's overall value. Instead, the value comes purely from the business's actual operations, which are its assets and the cash flow they generate, not by how those assets are financed.

As a company increases its use of debt, investors face more financial risk, and to offset this additional risk, they demand higher returns, making the cost of equity increase with higher financial leverage. Under the assumption of no taxes and no bankruptcy risk, the cost of debt remains flat as companies can borrow at the same rate regardless of their debt levels. Since lenders face no additional risk even as the company becomes more leveraged, there is no reason for them to demand higher interest rates. Therefore, the overall weighted average cost of capital (WACC) does not change. The increased proportion of cheaper debt exactly offsets the higher cost of equity. This implies that, in a perfect market, the choice between debt and equity financing becomes irrelevant to the company's valuation, and capital structure is purely a financing decision and does not influence shareholder wealth.

The theory of MM Proposition I is based on a set of unrealistic assumptions, which are under conditions of a perfect market and no taxes. To make it more accurate, (Modigliani and Miller, 1963) include a tax factor, and the inclusion of tax considerations reveals that leverage has a substantial impact. As companies increase the proportion of debt financing, interest payments on that debt become tax-deductible, creating a tax shield that effectively reduces the company's taxable income and tax payments. As a result, the overall cost of capital declines as leverage increases, because the tax savings from debt offset the increased financial risk borne by shareholders.

The cost of equity increases linearly with higher levels of debt due to the higher risk, while the cost of debt remains relatively stable. Importantly, the weighted average cost of capital (WACC) declines as debt increases, reflecting the benefits of the tax shield. As a result, the value of a leveraged company is greater than the value of an unleveraged company based on the present value of these tax savings. (Modigliani and Miller, 1963) emphasise that tax shields increase a company's profitability by reducing its tax burden, thereby increasing its net income and overall valuation.

Trade-off theory is a theory resulting from the development of M&M theory. The idea of (Modigliani and Miller, 1963) was then completed by (Kraus and Litzenberger, 1973) into a trade-off theory. According

to them, the company should be able to determine the optimal capital structure, which is the capital structure that balances the benefits and costs of the use of debt. Using debt can provide benefits in the form of tax savings, but excessive use of debt can incur costs in the form of interest payments. If the company is unable to pay off its debt, it risks experiencing financial distress, which can lead to bankruptcy if it drags on. The optimal level of debt usage will be achieved when the marginal benefit of debt (i.e. tax shields) is equal to the marginal cost of debt (i.e. bankruptcy cost).

In other words, according to (Kraus and Litzenberger, 1973), the optimal capital structure is the capital structure that minimizes the cost of capital. However, determining the optimal capital structure is very difficult because the conditions of the debt market (bonds) and the stock market are constantly changing, even very quickly. Therefore, (Myers, 1984) tried to improve this theory by adding the concept of target debt level. Although the optimal capital structure is very difficult to achieve, at least the company can determine the target debt level which is the debt ratio that can “minimize” the cost of capital and then adjust continuously to achieve or approach the target. If the company can manage its capital in such a way as to achieve an optimal capital structure, the share price or shareholder welfare will reach the maximum point.

The trade-off theory developed by (Myers, 1984) is often called static trade-off theory. However, this theory does not explicitly include adjustment costs as a theoretical basis for determining the optimal capital structure target. Several researchers then corrected this weakness by trying to include adjustment costs explicitly into the analytical framework so that a new version of static trade-off theory commonly called dynamic trade-off theory emerged. The pioneers of dynamic trade-off theory are (Fischer, 1989). Their version of dynamic trade-off theory is based on recapitalization cost as a form of adjustment cost. According to them, the existence of recapitalisation costs will encourage the company to adjust its capital structure over time, and the company may set an actual capital structure different from the target optimal capital structure. The adjustment is only done if the recapitalization cost is balanced with the tax saving benefit.

In contrast to trade-off theory, pecking order theory is based on asymmetric information which suggests that managers know more about their company prospects, risks, and value than outside investors. Asymmetric information affects the choice between internal and external financing and between new debt and equity issues. Managers adopt financial policies aimed at minimizing the costs associated with this asymmetry and this leads to a pecking order in which investments are financed first with internal funds (primarily reinvested earnings), then with new debt issues, and finally with new equity issues. (Myers and Majluf, 1984) stated that companies prefer internal financing due to flotation costs. They claim that the total advantage of debt financing (in terms of tax breaks and financial distress risk) is likely to outweigh the flotation cost.

According to (Myers and Majluf, 1984), companies should not try to maintain a certain level of debt (the optimal target ratio). They argue that the issuance of new shares is not in the interests of shareholders because it generally causes a decrease in share value. The sale of new shares is not attractive to current shareholders, as it will usually lead to a decline in the market price of the company's shares. New equity issues are a last resort when the company has exhausted its debt capacity, that is, when the threat of financial distress costs causes ongoing worry for current creditors and financial managers. Pecking order theory explains why profitable companies generally use a small amount of debt. This is not because they have a low target debt ratio, but because they need less external financing. Less profitable companies will tend to use more debt for two reasons, namely internal financing is insufficient, and debt is the preferred external source.

Optimal capital structure is said to be the perfect mix of debt and equity financing that helps maximize the value of the company in the market while minimizing its cost of capital (Vincent and Odi, 2021). One of the cues to determining the optimal capital structure is using WACC. However, there is no fixed percentage of WACC to be used to ensure an optimal capital structure. One way to determine the optimal

capital structure for a company is to find the capital structure with the lowest weighted average cost of capital (Amin and Cek, 2023). The weighted average cost of capital (WACC) refers to both sources of capital (equity and debt) that a company pays to finance its assets. It is the company's cost of funds, which includes the after-tax cost of debt multiplied by the proportion of debt to total capital and the cost of equity multiplied by the proportion of equity to total capital (Radu and Dragomir, 2022).

C. METHODS

Several steps were applied in this research to solve the problem. The research design consists of the research procedure, from problem identification to recommendations. The author started the research by identifying the problem in the news article and annual report of PT Bluebird Tbk in 2024, which led to the research questions and research objectives. After that, the author collects theories related to capital structure, optimal capital structure, cost of debt, cost of equity and other theories that support the research. After collecting relevant theories, secondary data including tax rate, risk-free rate, market risk premium, historical company data, and other information available from PT Bluebird Tbk 2024 financial statement were collected. The next step involves analysing secondary data using the Damodaran Interest Coverage Ratio Ratings, Capital Asset Pricing Model (CAPM), and Weighted Average Cost of Capital (WACC) to obtain the necessary results for answering the research questions. The final step is to provide conclusions and recommendations based on the results of the analysis at the end of the research.

The author uses secondary data in this study, which mostly comes from news articles and the annual report of PT Bluebird Tbk in 2024. From the news articles, the author obtained initial information about the company's expansion plan. From the annual report, the authors collect data on the balance sheet, income statement, and other supporting data. The data needed to calculate the company's WACC, which consists of 10-year government bond yields, beta, pre-tax cost of debt, and equity risk premium, are obtained from several sources, namely the Penilai Harga Efek Indonesia (PHEI), Yahoo Finance, and Damodaran's website.

To assess the company's capital structure, the Weighted Average Cost of Capital (WACC) method will be used to understand the company's current cost of financing. To calculate it, the author will need the company's current cost of debt, cost of equity, weight of debt, and weight of equity. The weight of debt will be calculated using the company's total long-term debt by dividing it by total capital. Meanwhile, the weight of equity will be calculated by dividing the market value of the company's equity by the total capital, which is the sum of the company's long-term debt and the market value of equity.

Calculating the cost of debt is usually done by using the bond valuation concept, however when the company under study does not issue bonds, the calculation of cost of debt can be done by adding up the risk-free rate and default spread. Based on the interest coverage ratio, Damodaran (2005) created a synthetic rating spread to estimate the default spread and rating of the company. To determine the company's cost of equity, the Capital Asset Pricing Model (CAPM) will be used. To compute CAPM, the risk-free rate, the company's levered beta, and the market risk premium should be available. The risk-free rate is typically taken as the yield on a benchmark quality government bond because the yield on a quality government bond is considered risk-free. After all, those governments will not default on their debt (Norrington, 2022).

D. RESULTS AND ANALYSIS

Current Cost of Capital

The first phase of data analysis involves examining the current capital structure of PT Bluebird Tbk. Calculating the company's current capital is necessary to obtain the current cost of capital. As of 31

December 2024, PT Bluebird Tbk has total equity of IDR 4,028,381 million based on market value and total debt based on book value of IDR 1,359,686 million, bringing its total capital to IDR 5,388,067 million. Based on that value, the weight of debt and equity would be 25.24% and 74.76% respectively. For the company's cost of debt, the author gathers data from the company's financial statements to calculate its cost of debt. This includes total debt, EBIT, and interest expense.

Additionally, the author collects market data, such as the tax rate and the percentage spread based on the interest coverage ratio, according to Damodaran. As of 31 December 2024, PT Bluebird Tbk has an EBIT of IDR 634,104 million and an interest expense of IDR 68,599 million. Thus, the company's latest interest coverage ratio is 9.24x. Based on (Damodaran, 2005) synthetic rating, PT Bluebird Tbk has a rating of A+ and implies a default spread of 0.77%. In this study, the authors chose to use interest coverage calculation as a proxy for the cost of debt to ensure consistency in the method used later to calculate the company's optimal capital structure. Assuming a Risk-Free Rate of 6.997% taken from the 10-year Government of Indonesia bond yield, the pre-tax cost of debt is determined to be 7.77%. Since interest on debt is tax-deductible, the cost of debt must be adjusted to reflect the marginal tax rate to determine the after-tax cost of debt. In Indonesia, the marginal tax rate is 22%. Thus, the after-tax cost of debt for PT Bluebird Tbk is calculated to be 6.06%.

Using the Capital Asset Pricing Model, the cost of equity is determined using the following inputs: 1) a risk-free rate (Rf) of 6.997% taken from the 10-year Government of Indonesia bond yield, 2) a levered beta of 1.01 taken from a 3-year weekly regression between JKSE and BIRD stock prices obtained from the author's calculations, and 3) a market risk premium of 6.87% taken from the Damodaran Market Risk Premium. The current cost of equity for PT Bluebird Tbk is 13.94%. To find out the current cost of capital, the author applies the formula for weighted average cost of capital. The elements required for calculating WACC were gathered from earlier steps, specifically the cost of debt, cost of equity, weight of debt, and weight of equity. The current cost of capital for PT Bluebird Tbk is determined to be 11.947%.

Optimal Capital Structure

The ideal capital structure for a company is the ideal proportion of debt to equity. The capital structure with the lowest weighted average cost of capital (WACC) is considered the ideal capital structure. Prior to selecting the capital structure with the lowest WACC, the author will first determine the cost of capital for each ratio of funding from debt and equity. PT Bluebird Tbk can use the ideal capital structure as a guide to modify its capital structure. The author will conclude by outlining how the company's capital structure has changed because of the expansion plan's additional funding.

The author analyses the cost of debt and the after-tax cost of debt for each debt level. To calculate the cost of debt, Damodaran's synthetic rating method is used, which reflects how the cost of debt changes as the level of debt increases. The first step involves calculating the total amount of debt by multiplying the debt proportion by the total capital. At the 0% debt level, there is no interest expense because the company has no debt. The synthetic rating in this case is AAA, which is the highest possible rating, and the corresponding risk spread is 0.45%. When added to the risk-free rate of 6.997%, this gives a pre-tax cost of debt of 7.45%. For higher debt levels, the process begins by estimating an initial interest rate, usually taken from the pre-tax cost of debt at the previous level. This estimated rate is used to calculate interest expense by multiplying it by the debt amount. The interest coverage ratio is then calculated by dividing EBIT by the interest expense. Based on the interest coverage ratio, the company's synthetic rating is determined, which leads to a new cost of debt by adding the appropriate spread to the risk-free rate. If the new cost of debt is not the same as the interest rate used in the beginning, the calculation is repeated using the updated rate. This process is done until the interest rate and cost of debt are the same, which means the result is accurate.

Table 1 shows how this works at a 15% debt level, where the calculation is done twice to get consistent results.

Table 1. Cost Of Debt Simulation At 15% Debt Level

	Iteration 1	Iteration 2
Estimated Rating	AAA	AA
Debt Proportion	15%	15%
D/E Ratio	18%	18%
Debt (IDR mn)	808,210	808,210
EBIT (IDR mn)	634,104	634,104
Interest Rate	7.45%	7.60%
	(from 10% pre-tax cost of debt)	(from Iteration 1 pre-tax cost of debt)
Interest Expense (IDR mn)	60,183	61,424
Interest Coverage Ratio	10.54	10.32
Implied Rating	AA	AA
Pre-Tax Cost of Debt	7.60%	7.60%

Source: Research data, 2025

At the 15% debt level, the interest rate used was 7.45%, based on the result from the pre-tax cost of debt at the 10% debt level. This resulted in an interest expense of IDR 60,183 million and an interest coverage ratio of 10.54. Based on this, the implied rating was AA, resulting in a new cost of debt of 7.60%. Since this was different from the initial rate, a second calculation was done using 7.60%. This time, the interest expense was IDR 61,424 million, and the interest coverage ratio was 10.32, which again gave an AA rating. Because the interest rate and the resulting cost of debt were now the same, the correct pre-tax cost of debt at the 15% level is confirmed to be 7.60%. This method was applied consistently across all debt levels, from 15% to 95% to ensure accuracy. Skipping this step could result in errors in further analysis, such as calculating the weighted average cost of capital (WACC) or determining the company's optimal debt level.

Furthermore, the tax rate must be adjusted to reflect the anticipated reduction in tax benefits when EBIT is less than the estimated interest expense. This occurs at a debt level of 70%, where the interest expense of IDR 644,952 million exceeds the EBIT of IDR 634,104 million. The tax benefit on the interest charge is limited to the amount of EBIT multiplied by the tax rate, which is IDR 139,503 million. The author then calculates the adjusted marginal tax rate from a 70% debt level to a 95% debt level. Table 2 summarises the cost of debt calculation for all debt levels.

Table 2. Cost of Debt Simulation (5% Margin)

Debt Level	Debt (IDR mn)	Interest Expense (IDR mn)	Interest Coverage Ratio	Implied Rating	Risk-Free Rate	Spread	Pre-Tax Cost of Debt	Tax Rate	After Tax Cost of Debt
0%	-	-	∞	Aaa/AAA	6.997%	0.45%	7.45%	22.00%	5.81%
5%	269,403	20,061	31.61	Aaa/AAA	6.997%	0.45%	7.45%	22.00%	5.81%
10%	538,807	40,122	15.80	Aaa/AAA	6.997%	0.45%	7.45%	22.00%	5.81%
15%	808,210	61,424	10.32	Aa2/AA	6.997%	0.60%	7.60%	22.00%	5.93%
20%	1,077,613	83,731	7.57	A1/A+	6.997%	0.77%	7.77%	22.00%	6.06%
25%	1,347,017	107,088	5.92	A3/A-	6.997%	0.95%	7.95%	22.00%	6.20%
30%	1,616,420	128,505	4.93	A3/A-	6.997%	0.95%	7.95%	22.00%	6.20%
35%	1,885,823	154,638	4.10	Baa2/BBB	6.997%	1.20%	8.20%	22.00%	6.39%
40%	2,155,227	190,307	3.33	Ba2/BB	6.997%	1.83%	8.83%	22.00%	6.88%
45%	2,424,630	233,007	2.72	B1/B+	6.997%	2.61%	9.61%	22.00%	7.49%
50%	2,694,034	269,403	2.35	B2/B	6.997%	3.00%	10.00%	22.00%	7.80%
55%	2,963,437	296,344	2.14	B2/B	6.997%	3.00%	10.00%	22.00%	7.80%
60%	3,232,840	369,190	1.72	B3/B-	6.997%	4.42%	11.42%	22.00%	8.90%
65%	3,502,244	399,956	1.59	B3/B-	6.997%	4.42%	11.42%	22.00%	8.90%

Debt Level	Debt (IDR mn)	Interest Expense (IDR mn)	Interest Coverage Ratio	Implied Rating	Risk-Free Rate	Spread	Pre-Tax Cost of Debt	Tax Rate	After Tax Cost of Debt
70%	3,771,647	644,952	0.98	Ca2/CC	6.997%	10.10%	17.10%	21.63%	17.06%
75%	4,041,050	691,020	0.92	Ca2/CC	6.997%	10.10%	17.10%	20.19%	17.06%
80%	4,310,454	737,088	0.86	Ca2/CC	6.997%	10.10%	17.10%	18.93%	17.06%
85%	4,579,857	783,156	0.81	Ca2/CC	6.997%	10.10%	17.10%	17.81%	17.07%
90%	4,849,260	1,091,084	0.58	C2/C	6.997%	15.50%	22.50%	12.79%	22.47%
95%	5,118,664	1,151,699	0.55	C2/C	6.997%	15.50%	22.50%	12.11%	22.47%
100%	5,388,067	1,212,315	0.52	C2/C	6.997%	15.50%	22.50%	11.51%	22.47%

Source: Research data, 2025

The results in Table 2 reflects the trade-off theory, which states that companies balance the benefits of debt (tax shield) with the risk of financial distress. At lower debt levels, the company benefits from lower after-tax cost of debt. However, as debt increases beyond 35%, the interest coverage ratio declines, indicating an increased risk of default. This results in a credit rating downgrade from BBB to C, which increases the default risk premium (spread) demanded by creditors. When debt levels are extremely high, the Interest Coverage Ratio falls below 1 meaning that the interest costs exceed EBIT and this indicates significant financial distress. This situation increases the after-tax cost of debt that is exacerbated by a reduction in the tax shield as the effective tax rate decreases from 22% to 11%. The rising cost of debt and declining credit ratings highlight the risk of excessive debt, reinforcing the trade-off theory's claim that too much debt diminishes the value of the company.

To simulate the cost of equity, the authors must first calculate the unlevered beta. As a result, at all debt levels, the unlevered beta is re-leveraged by 5%. At 0% debt, the unlevered beta equals levered beta since the debt-to-equity ratio is zero. The levered beta increases as debt levels rise, representing the added risk of borrowing, which raises the cost of equity progressively. This shows that shareholders expect higher returns in exchange for taking on more risk, given the company's increased borrowing. The CAPM method is then used to determine the cost of equity at each level. The whole calculation can be seen in Table 3. Once the costs of debt and equity have been simulated, the overall cost of capital can be determined by applying the WACC formula. Table 4 displays the simulation with a 5% margin.

Table 3. Cost of Equity Simulation (5% Margin)

Debt Level	Equity Level	D/E Ratio	Unlevered beta	Levered beta	Cost of Equity
0%	100%	0%	0.80	0.80	12.49%
5%	95%	5%	0.80	0.83	12.71%
10%	90%	11%	0.80	0.87	12.97%
15%	85%	18%	0.80	0.91	13.25%
20%	80%	25%	0.80	0.96	13.56%
25%	75%	33%	0.80	1.01	13.92%
30%	70%	43%	0.80	1.07	14.33%
35%	65%	54%	0.80	1.14	14.80%
40%	60%	67%	0.80	1.22	15.35%
45%	55%	82%	0.80	1.31	15.99%
50%	50%	100%	0.80	1.42	16.77%
55%	45%	122%	0.80	1.56	17.73%
60%	40%	150%	0.80	1.73	18.92%
65%	35%	186%	0.80	1.96	20.45%
70%	30%	233%	0.80	2.25	22.49%

Debt Level	Equity Level	D/E Ratio	Unlevered beta	Levered beta	Cost of Equity
75%	25%	300%	0.80	2.67	25.34%
80%	20%	400%	0.80	3.29	29.63%
85%	15%	567%	0.80	4.33	36.77%
90%	10%	900%	0.80	6.41	51.05%
95%	5%	1900%	0.80	12.65	93.89%

Source: Research data, 2025

Table 4 Cost of Capital Simulation (5% Margin)

Debt Level	Equity Level	D/E Ratio	Pre-Tax Cost of Debt	After-Tax Cost of Debt	Cost of Equity	Cost of Capital
0%	100%	0%	7.45%	5.81%	12.49%	12.49%
5%	95%	5%	7.45%	5.81%	12.71%	12.37%
10%	90%	11%	7.45%	5.81%	12.97%	12.25%
15%	85%	18%	7.60%	5.93%	13.25%	12.15%
20%	80%	25%	7.77%	6.06%	13.56%	12.06%
25%	75%	33%	7.95%	6.20%	13.92%	11.99%
30%	70%	43%	7.95%	6.20%	14.33%	11.89%
35%	65%	54%	8.20%	6.39%	14.80%	11.86%
40%	60%	67%	8.83%	6.88%	15.35%	11.96%
45%	55%	82%	9.61%	7.49%	15.99%	12.17%
50%	50%	100%	10.00%	7.80%	16.77%	12.29%
55%	45%	122%	10.00%	7.80%	17.73%	12.26%
60%	40%	150%	11.42%	8.90%	18.92%	12.91%
65%	35%	186%	11.42%	8.90%	20.45%	12.94%
70%	30%	233%	17.10%	17.06%	22.49%	18.69%
75%	25%	300%	17.10%	17.06%	25.34%	19.13%
80%	20%	400%	17.10%	17.06%	29.63%	19.58%
85%	15%	567%	17.10%	17.07%	36.77%	20.02%
90%	10%	900%	22.50%	22.47%	51.05%	25.33%
95%	5%	1900%	22.50%	22.47%	93.89%	26.04%

Source: Research data, 2025

From Table 4, it can be observed that the ideal range of cost of capital for PT Bluebird Tbk lies between a 30% and 40% debt level. This range indicates the most favourable balance between debt and equity that would optimise the company's cost of capital. Upon closer examination of the data, it is evident that the 35% debt level yields the lowest cost of capital at 11.86%. Although this figure represents the least cost of capital within the specified range, it is crucial to proceed with caution, as it might not truly indicate the absolute minimum cost of capital for the company. To gain a more comprehensive understanding, a calculation of a 1% margin is performed within the 30% to 40% range (Table 5).

Table 5. Cost of Capital Simulation (1% Margin)

Debt Level	Equity Level	D/E Ratio	Pre Tax Cost of Debt	After-Tax Cost of Debt	Cost of Equity	Cost of Capital
30%	70%	43%	7.95%	6.20%	14.33%	11.887%
31%	69%	45%	7.95%	6.20%	14.41%	11.867%
32%	68%	47%	7.95%	6.20%	14.51%	11.847%
33%	67%	49%	8.20%	6.39%	14.60%	11.891%
34%	66%	52%	8.20%	6.39%	14.70%	11.873%

Debt Level	Equity Level	D/E Ratio	Pre Tax Cost of Debt	After-Tax Cost of Debt	Cost of Equity	Cost of Capital
35%	65%	54%	8.20%	6.39%	14.80%	11.855%
36%	64%	56%	8.55%	6.67%	14.90%	11.935%
37%	63%	59%	8.55%	6.67%	15.01%	11.920%
38%	62%	61%	8.55%	6.67%	15.11%	11.904%
39%	61%	64%	8.55%	6.67%	15.23%	11.889%
40%	60%	67%	8.83%	6.88%	15.35%	11.961%

Source: Research data, 2025

According to the simulation presented above (Table 5), the minimum cost of capital that PT Bluebird Tbk can achieve is 11.847%. This figure can be reached when the company's debt is at 32%, while its equity is at 68% with a D/E Ratio of 0.47. In comparison, the data from Table 1.1 shows that the average debt proportion for companies in the Road Transportation Industry is 51.63%, with the equity portion at 48.37%, leading to an industry average D/E ratio of 1.20. This comparison reveals that PT Bluebird Tbk relies much less on debt than its industry peers.

The industry's average D/E ratio of 1.20 suggests a higher reliance on debt, reflecting a more aggressive financing strategy and a greater emphasis on leveraging the tax shield benefits associated with debt. In contrast, PT Bluebird Tbk's lower D/E ratio implies a more conservative approach, with a preference for equity financing over debt. This strategy appears to focus on minimising financial risk, as higher debt levels elevate the potential for financial distress and increase the overall cost of capital. According to the trade-off Theory, while additional debt can lower the cost of capital through tax advantages, excessive debt also raises the company's financial risk, which can negate the benefits by driving up the cost of capital.

On the other hand, the Modigliani and Miller (1958) Theory suggests that using debt more extensively can reduce the weighted average cost of capital (WACC) and enhance company value, provided that the company can manage the additional risks associated with higher leverage. Despite the industry average indicating a higher reliance on debt, the debt level of 32% for PT Bluebird Tbk may already be optimal for minimising the cost of capital while maintaining financial stability. Increasing the debt proportion beyond this level could elevate the company's financial risk without resulting in significant reductions in the cost of capital or significant improvements in company value.

To assess the company's financial structure and its alignment with value optimisation, a detailed comparison of key capital components is performed. This includes an analysis of the current and optimal levels of weight of equity, weight of debt, cost of equity, cost of debt, cost of capital and debt-to-equity ratio. The following table outlines these figures, along with the variances between current and optimal values.

Table 6. Comparison of Current and Optimal Capital Structure Metrics

Item	Current	Optimal	Difference
Weight of Equity	74.76%	68%	-6.76%
Weight of Debt	25.24%	32%	6.76%
Cost of Equity	13.94%	14.51%	0.57%
Cost of Debt	7.77%	7.95%	0.18%
Cost of Capital	11.947%	11.847%	-0.10%
Debt-to-Equity Ratio	0.34	0.47	0.13

Source: Research data, 2025

Financing Strategy

The author has identified the optimal capital structure for PT Bluebird Tbk. The optimal capital structure for the company consists of 32% debt and 68% equity relative to total capital. Previously, the company had a financing mix of 25.24% debt and 74.76% equity. The company can use its current investment plan of

IDR 1.8 trillion to adjust its capital structure, as it needs an additional external financing of IDR 1,181,187 million to support the investment fully. According to the table below, the total capital of PT Bluebird Tbk is IDR 6,569,254 million, which includes an additional IDR 1.8 trillion for its EV investment.

Table 7. Total Capital

Capital Structure	Value (IDR mn)
Current Total Debt	1,359,686
Current Total Equity	4,028,381
Current Total Capital	5,388,067
Additional capital for the expansion project	1,181,187
Total capital after adding capital	6,569,254

Source: Research data, 2025

Therefore, the optimal amount of the company's debt is IDR 2,102,161 million, which is calculated by multiplying the optimal debt weight of 32% by the total capital of IDR 6,569,254 million. Similarly, the optimal amount of equity for the company is IDR 4,467,092 million, which is obtained by multiplying the total capital by the optimum equity weight of 68%. Table 8 illustrates the company's existing capital structure in comparison to the suggested optimal capital structure. At present, the company is financed with 25.24% debt and 74.76% equity, based on total capital of IDR 5,388,067 million. To achieve the optimal capital structure, the company is advised to adjust its composition to 32% debt and 68% equity. It is recommended that the company consider increasing its total capital to IDR 6,569,254 million. This would involve raising the debt portion by IDR 742,475 million and the equity portion by IDR 438,711 million.

Table 8. Expected Capital Structure

Variable	Capital Structure (Before Additional Capital)	Optimal Capital Structure (After Additional Capital)	Difference
Weight of Debt	25.24%	32%	6.76%
Weight of Equity	74.76%	68%	-6.76%
Total Debt (IDR mn)	1,359,686	2,102,161	742,475
Total Equity (IDR mn)	4,028,381	4,467,092	438,711
Total Capital (IDR mn)	5,388,067	6,569,254	1,181,187

Source: Research data, 2025

E. CONCLUSION

The current capital structure of PT Bluebird Tbk consists of 25.24% debt and 74.76% equity. Calculated by using the Damodaran Synthetic Rating and Capital Asset Pricing Model (CAPM), the company's current cost of capital is 11.95%. The company's existing debt level is significantly outside the typical range for the road transportation industry in which the company operates, making the company's capital mix more conservative compared to its industry peers, with a heavier reliance on equity. Based on the analysis, the current capital structure is nearly optimal for PT Bluebird Tbk, but there is room for improvement. The minimum cost of capital can be achieved when the company's capital structure is 32% debt and 68% equity, resulting in a cost of capital of 11.85%. The difference between the current and optimal capital structures is 0.10%. For the investment of IDR 1.8 trillion in 1,000 electric vehicles (EVs), the company needs additional external financing of IDR 1,181,187 million, and the optimal financing strategy for PT Bluebird Tbk is to increase debt by IDR 742,475 million and increase equity by IDR 438,711 million.

PT Bluebird Tbk is advised to increase its debt portion from 25.24% to 32% and decrease its equity portion from 74.76% to 68% to achieve an optimal capital structure that lowers the cost of capital (WACC) from 11.95% to 11.85%. Since PT Bluebird Tbk is currently seeking external funding of IDR 1,181,187 million for its expansion plan, the company can utilise this opportunity to secure a funding source that will optimise its capital structure. The increase in debt can be achieved through green bonds or sustainable loans to reduce costs while strengthening its ESG image in line with EV investment.

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