



FINANCING STRATEGY TO SUPPORT A PRODUCT DEVELOPMENT OF ALUMINIUM FINISHED GOODS (CASE STUDY: PT. XYZ)

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ABSTRACT

Nowadays, the use of wood materials for construction is starting to be reduced because it can cause global warming due to cutting down forests. There are changes in the construction used aluminium materials such as frames and doors. There is an increasing demand for aluminium products which is an opportunity for companies to develop products. Currently the company manufactures aluminium profile products (semi-finished goods), so the company needs to develop aluminium finished goods products to increase profits and brand image. The investment required by the company is 11,232,000,000 rupiah to develop aluminium finished goods products. This research uses financial feasibility study, then selects the best investment financing. Net Present Value (NPV), Profitability Index (PI), Internal Rate of Return (IRR), Payback Period (PP), and Return on Investment (ROI) are used as variables for determining investment. There are four financing alternatives, including internal financing, bank, leasing and IPO. The results showed that bank financing provided the highest NPV and ROI with an NPV value of 1,546,356,903, Profitability Index (PI) of 1.14, Internal Rate of Return (IRR) of 10.09%, Payback Period of 4 years 1 month, Return on Investment (ROI) of 28.24% and US Index of 4.71. Thus, the results of this research recommend using bank financing for investment in product development.

Keywords: aluminium finished goods, financial feasibility study, US Index

1. Introduction

Nowadays, the use of wood materials for construction is starting to be reduced. This is because it can have a negative impact on the environment, one of which can cause global warming due to cutting down forests. That way the use of wood must be replaced. Many construction service companies replace wood with aluminium which is generally used for frames. The use of aluminium as a frame is used for housing, apartments, hotels, hospitals, and others. In addition, the use of aluminium can be developed into doors. The use of aluminium has several advantages such as aluminium is not easy to rust, better durability, easier maintenance and more affordable price compared to wood. Thus, making the demand for aluminium frames increase compared to the decrease in demand for wooden frames.

Due to the increasing demand for aluminum frames, this is an opportunity for the company to increase revenue. So far, the company has only focused on producing and selling aluminum profiles of various shapes according to customer needs, one of which is an aluminum frame which is commonly used as a frame. This case study was conducted at the company PT. XYZ. PT. XYZ is a company engaged in the field of aluminum profiles. The company has several facilities including Raw Material, Extrusion, Anodizing, Anodizing Laquer and Powder Coating. The company can produce and sell aluminum profiles in various colors as needed. This aluminum profile is a semi-finished product. The company has customers with various categories including distributors, industry, projects and individuals. Actually the company has the ability to process semi-finished goods into finished goods.

When sales of aluminum profiles decline, new innovations are needed as another source of income. In addition, so that the company can develop and be sustainable. For this reason, it is necessary to develop other products that can sell finished goods from aluminum profiles to aluminum frames or from aluminum profiles to doors that can be used by consumers. This is an opportunity for the company to increase revenue. If the company only sells semi-finished goods, it is seen that the economic value is still lacking because the selling value of the goods is still cheap compared to finished goods. That way, the company should be able to develop semi-finished goods into finished goods to get a higher selling value.

The company has a business issue in this development which is to find a funding strategy for the development of new products by making aluminum finished goods. This study only examines the funding strategy for companies to make finished goods in the form of aluminum frames and doors.

2. Business Issue Exploration

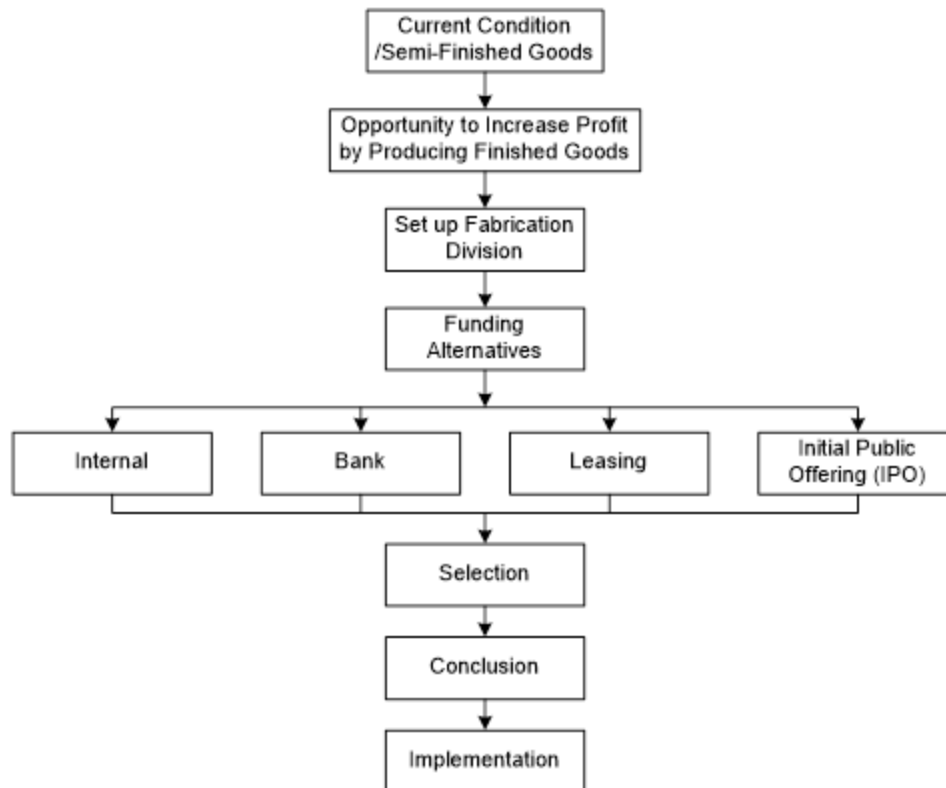


Figure 1. Conceptual framework

Based on the conceptual framework above, the beginning of this research starts from the current condition of companies that produce semi-finished goods and then sees an opportunity to develop new products from semi-finished goods into finished goods. With this opportunity, the company can increase profits from the sale of finished goods.

To support the development and manufacture of finished goods, a special division is needed to handle this by establishing a fabrication division. This fabrication division will later prepare the equipment needed, the production process to sales to customers. Furthermore, to create a fabrication division, funding is needed for the purchase of equipment, worker and other facilities.

The next step in this research is to conduct financial projections and feasibility studies for new product development projects. It will start by calculating capital expenditures and operational expenditures which will be used to measure cash flow projections using capital budgeting techniques. Thus, the main objective of this research is to determine the most appropriate funding alternative to finance the development of new products and in the hope of making a profit. After selecting the most appropriate funding alternative, then carry out the implementation in this research.

There is a business opportunity that can be utilized from the construction of a house which requires a door as a complement to the development so that this new product in the form of a door can be absorbed in the market. According to data from the Ministry of Public Works and Public Housing, the number of housing needs or backlogs reached 7.64 million house units at the beginning of 2020, consisting of 6.48 million house units for low revenue people (non fixed), 1.72 million house units for low revenue people (fixed) and 0.56 million house units for non low revenue people (Petriella, 2020).

Furthermore, there is the potential for the aluminium market in the property sector where the government through the Ministry of Public Works and Public Housing will build houses for low-income people. The government plans to build a total of 102,500 cheap or subsidized housing units in 2020 (Indraini, 2019). There are private developers who will build houses, hospitals and apartments that require aluminium doors for the construction of houses, hospitals or apartments.

Based on *Bisnis.com*'s records, the property industry grows 5 percent annually on average (Budhiman, 2020). By looking at the previous year, a number of parties projected this industry could grow in the range of 5 percent to 8 percent in 2020. Due to the Covid-19 pandemic, housing sales throughout 2020 in Jabodebek-Banten as the national housing benchmark decreased dramatically by 31.8 percent compared to sales in 2019 and is the lowest level of sales since the property cycle slowed down in 2013 (Lubis, 2021).

According to the CEO of Indonesia Property Watch (IPW) Ali Tranghanda, there is something interesting about sales in the Rp. 1 billion to Rp. 2 billion in 2020, an increase of 12.5 percent compared to the previous year. Furthermore, sales of price segments below Rp. 300 million were under the greatest pressure with a decrease in 2020 of 42.9 percent, followed by the housing segment with prices over Rp. 2 billion, which fell 41.1 percent. Meanwhile, home sales in the medium price segment range from Rp. 301 million to Rp. 500 million and in the price segment Rp. 501 million to Rp. 1 billion also decreased by 34.2 percent and 25.6 percent respectively (Lubis, 2021). However, if the Covid-19 pandemic disappears, then the property business is likely to recover and economic growth will improve. With the recovering of the property business, it will have a positive impact and have great potential for companies to be able to market finished aluminium products for new and old homes.

Therefore, to more easily achieve the desired target in business implementation, an appropriate strategy is needed. However, before developing a business strategy, it is important for a company to conduct a situation analysis to identify its business capabilities, customers, and business environment. Then in this study will analyze the business situation using the Porter's Five Force analysis approach and SWOT Analysis to evaluate the company's strategy.

There are five factors from Porter are the threat of new entrants, the bargaining power of suppliers, the bargaining power of buyers, the threat of substitutive products and the rivalry from similar companies from inside an industry (Porter, 1985). Based on the results of discussions conducted with 5 participants consisting of the General Manager, Sales Manager and the Sales team. The discussion is about how the company's prospects and challenges will be when developing finished goods products.

Summary of five forces analysis, the first analysis of the threat of new entrants is low to medium because there is always high demand for frames and doors. However, it is neither easy nor difficult to invest in this field. Second, the

bargaining power of suppliers is low because there are most of the materials available in the company. Third, the bargaining power of buyers is medium because the finished goods that will be produced are still new products. Fourth, the threat of substitutive products is medium because they have cheaper substitutes using plastic or plywood materials. The last is rivalry among competitors from medium to high because there are other companies that already have almost the same products but still have market share.

According to Pickton and Wright (Pickton & Wright, 1998) SWOT analysis (Strength, Weakness, Opportunity, Threat) is indeed good to use because it is easy and practical when implemented. Next to reassess its value as a strategic management tool. This method aims to analyze the internal and external factors of the company's management plan. The first, Strength analysis consists of has more than 10 years of experience in aluminum profiles, good aluminum raw materials and large aluminum profile production capacity. The second, Weakness analysis is that the finished product for aluminum doors is not widely known. The third, Opportunity analysis consists of high demand for special aluminum frames or doors, the potential market share in Indonesia is still wide, and the number of housing needs or backlogs in 2019 reached 5.4 million units based on ministry data. public works and public housing. The last Threat analysis is the presence of competitors such as aluminum shops and contractor services.

3. Literature Review

Capital structure is a combination of debt and equity to fund the investment of a project used by the company. To get the optimal capital structure, it can minimize costs by using the total capital or the average cost of capital. Development in a project requires funds in its financing. Usually, financing options are used at the cost of debt or the cost of own capital. The formula for calculating the cost of debt is as follows:

$$ri = rd \times (1 - T)$$

Where:

- ri = Cost of debt after tax
- rd = Interest rate (Cost of debt before tax)
- T = Income tax rate

Using the Capital asset pricing (CAPM) model approach, it will help to get a cost of equity equivalent to the risk-free rate plus a risk premium to cover investment risk. As for the investment beta, it is the risk that is added to the investment in the market which measures other factors against the investment. CAPM calculating formula is:

$$rs = Rf + \beta(rm - Rf)$$

Where:

- rs = cost of equity
- Rf = risk free rate
- β = beta
- rm = market rate of return

Beta can measure how an asset moves when the stock market increases or decreases as a whole. Beta is divided into levered beta and unlevered beta. The company is not listed on the Indonesia Stock Exchange and the beta version is not identified. Therefore, the author will use the homebuilding industry, the unlevered beta released by Damodaran in 2021 is 1.18. (Damodaran, *Betas By Sector (US)*, 2021).

$$\text{Unlevered Beta} = \frac{\text{Beta}}{1 + \{(1 - \text{Tax}) \times \text{Debt to Equity Ratio}\}}$$

Weighted-Average Cost of Capital (WACC) is the average of the estimated future cost of funds and is calculated by weighting the company's debt and capital according to the amount of weight that is a portion of each funding source used. WACC calculating formula is:

$$WACC = (wi \times ri) + (ws \times rs)$$

Where:

- wi = Proportion of long-term debt in capital structure
- ws = Proportion of equity in capital structure
- ri = Cost of long-term debt

- r_s = Cost of Equity

In conducting investment analysis, it is necessary to calculate capital budgeting. Capital budgeting is the process of evaluating and selecting sustainable long-term investments with the aim of maximizing shareholder wealth (Gitman & Zutter, 2015). The analytical method used to evaluate and select appropriate investments by analyzing alternative financing that provides the best return with Net Present Value (NPV), Profitability Index (PI), Internal Rate of Return (IRR), Payback Period (PP), and Return on Investments (ROI).

Net Present Value (NPV) is a capital budgeting method for evaluating investment projects regarding profitability. The NPV formula is as follows:

$$NPV = \sum_{t=1}^n \frac{CF_t}{(1+r)^t} - CF_0$$

Where CF_0 = Cash flow at year 0, CF_t = Cash flow at year t, r = cost of capital

If the NPV is > 0 , the investment project is accepted or the projected cumulative cash flow yields a return, and vice versa.

Profitability Index is a capital budgeting method which is another form of NPV. PI can be calculated from the present value of the cash inflows divided by the initial cash outflows. The PI formula is as follows:

$$PI = \frac{\sum_{t=1}^n \frac{CF_t}{(1+r)^t}}{CF_0}$$

If the PI is > 1 , the investment project is accepted or the projected cumulative cash flow is greater than the investment, vice versa.

Internal Rate of Return (IRR) is the discount rate calculated so that the NPV is equal to 0. In other words, the rate of return obtained from the company when investing. The IRR formula is as follows:

$$0 = \sum_{t=1}^n \frac{CF_t}{(1+IRR)^t} - CF_0$$

If the percentage of IRR is $>$ percentage of capital cost, the investment project is accepted, vice versa.

Return on Investment (ROI) is a measure of how effectively an investment generates profit in the form of a percentage over a certain period. The ROI results can determine the profitable value of an investment compared to other investments and choose which one is more profitable. The ROI formula is as follows:

$$ROI = \text{Net Income} / \text{Cost of Investment}$$

In this study, the author will try to analyze the financing strategy that the company can use to develop its business. The financing strategy will be taken for five years to achieve the goal. One of the financing strategies is to use debt, when using debt financing an indicator is needed for consideration, the US Index can be an indicator tool in providing insight into loan selection. US Index is a theory from Dr. Ir. Uke Marius Siahaan, MBA which is used as an indicator to measure a company's ability to pay debts. In addition, the US Index can assist in making decisions to use investment financing through debt or equity (Dr. Ir. Uke Marius Siahaan, 2019). The formula for getting the US Index is as follows:

$$US\ Index = \text{Business Generic Profitability} / \text{Loan Interest Rate}$$

$$\text{Business Generic Profitability} = (\text{Earnings before Interest and Taxes} / \text{Total Assets}) \times 100\%$$

If US Index > 1 then company should go leverage, if US Index < 1 then company should go equity and if US Index = 1 then company is free to choose either go leverage or go equity.

Companies prefer to use internal financing whenever possible which is an important element in pecking order theory (Ross et al, 2009). Furthermore, the pecking order is financing for the company obtained from retained earnings,

followed by debt financing and finally external financing (Gitman & Zutter, 2015). If you look at the previous theory, internal financing is a company that uses the funds generated from retained earnings to be used as investment.

The company uses bank loans for investment financing. Banks will provide money to be lent to customers with interest. The advantage of using a loan or debt is that taxable income is reduced because there are interest payments on the debt, which means the cost of debt is subsidized by the government (Gitman & Zutter, 2015). However, the higher the proportion of money, the more likely the company is not able to pay its debts when they fall due, so that it can create the risk of company bankruptcy. Financing using bank loans usually requires collateral such as assets and then if the company is unable to pay its debts, the assets will be confiscated by the bank.

Leasing is a lease agreement between the lessee who agrees to pay rent to the lessor for the use of the asset (Harrison Jr. & et al, 2012). With leasing will allow the lessee to use the assets used without having to pay in advance in large amounts as required in the purchase agreement. Meanwhile, according to the decision of the minister of finance, leasing is a financing activity in the form of providing capital goods either on a finance lease or operating lease for use by customers for a certain period based on periodic payments (Keputusan Menteri Keuangan Republik No. 1169/KMK.01/1991, 1991).

When a company wants to expand, it can use an initial public offering (IPO). IPO aims to obtain additional funds by offering shares made by companies that have gone public and the IPO is part of equity financing. By going public, the company will decide to sell some of its shares to the public and be ready to be publicly valued by the public. When a company first goes public, it is often referred to as an Initial Public Offering (IPO) (Fahmi, 2011).

If the company goes public, then there are benefits for the company (PT. Bursa Efek Indonesia, 2015) such as having access to funding in the stock market, adding value to trust for access to loans, building company professionalism, improving company image, liquidity and the possibility of profitable divestments. for the founding shareholders, building the loyalty of the company's employees, increasing the value of the company, and finally having the ability to maintain the company's viability. According to the Indonesia Stock Exchange go public information center, to become a go public company there are stages that must be passed (PT. Bursa Efek Indonesia, 2016), namely the initial stage is the appointment of an underwriter and preparation of documents, this stage the company needs to form an internal team, appoint underwriters and capital market supporting institutions and professions to assist companies in preparing to go public. Next, the stage of submitting an application for listing shares to the Indonesia Stock Exchange and submitting a registration statement to the Financial Services Authority. Next, the stage of the public offering of shares to the public. And the last stage is the listing and trading of company shares on the Indonesia Stock Exchange.

4. Business Solution

The process of selecting expansion project financing for new products in this study, the authors obtained several assumptions from the company's internal data and the company's historical data approach. Before choosing, it is necessary to assess each alternative with project analysis and investment using a financial feasibility study. Next, the author must identify investment opportunities and investment costs.

Financial-based analysis to find out and explore the sources that the company currently has so that it can determine a financial strategic approach. The financial resources used are based on the company's internal financial statements in 2018 and 2019. There are four categories of ratios used to analyze the company's financial ratios, namely liquidity, activity, profitability and debt ratio.

Liquidity ratio in this analysis is the current ratio and the fast ratio. In 2018, the company had a current ratio of 1.4 and there was an increase in the current year ratio to 1.6. If the company's current ratio is above one, it shows the company's short-term healthy financial capacity. The company has the same quick ratio of 0.9 in 2018 and 2019. If you look at the quick ratio, which is close to one, this is still considered quite good.

Activity ratio analysis consists of inventory turnover, average collection period (days) and average payment period (days). The inventory turnover ratio decreased slightly from 4.5 to 4.2 in 2018 to 2019. This shows that the inventory turnover has not changed much. In 2018, the average collection period was 78.8 days and in 2019 it was 92.7 days.

This period experienced a decline in payment of receivables from customers so that the company needed to improve so that cash flow could be better. The average payment period in 2018 was 153.4 days and decreased in 2019 to 164.9 days. This shows that the company's payments to suppliers are late, so it can affect supplier confidence.

Profitability ratio in this analysis are gross profit margin and operating profit margin. In 2018, the company had a gross profit margin of 23.1%, then experienced a drastic decline in 2019 to 11%. This sees a reduction in the company's profits, so it needs to be considered in the management of the company. The company has an operating profit margin of 4.2% in 2018 and 1.3% in 2019. There is a decrease in operating profit margin by almost 3% so that it is necessary to increase efficiency in company operations.

There are two types of debt ratios in this analysis, namely debt to equity ratio and debt to asset ratio. In 2018, the debt to equity ratio was 55.4% and decreased in 2019 to 42.3%. This shows that the company is still safe because the smaller the portion of debt to equity, the safer it is. The company's debt to asset ratio in 2018 and 2019 was 69.2% and 63.7%, respectively. There is a slight drop in value, but it's still safe. The company still has assets that are greater than debt.

The process of making finished aluminum products requires several people to carry out production operations. Some of these people will then be formed into a fabrication division. The assumption of total employees and salary per month for the initial stage required is 35 people and Rp. 198,000,000 for salary per month. Furthermore, investment projections for making finished goods products need to build new production areas and equipment to support day-to-day operations. The initial investment required for the plan to create a production area and purchase new equipment is Rp. 11,231,000,000 (11.2 billion) consisting of building of Rp. 9,273,600,000, new equipment Rp. 1,829,000,000, and office equipment of Rp. 128,600,000.

The depreciation used in this projection is the straight-line method. The method of calculating depreciation in this study is based on the Law of the Republic of Indonesia Number 36 of 2008. Based on Article 11 paragraph 1 explains that depreciation costs follow the useful life. Article 11 paragraph 6 (paragraph 1) explains that the useful life for permanent buildings is 20 years. Then, the useful life for the equipment is 8 years. The calculation of depreciation expense from 2022 – 2026 is Rp. 695,861,250.

Based on the projected production of 500 doors for one month with a composition of 60% for the first model (CD-01) and 40% for the second model (CD-02). If it is calculated in one year, the assumption is that the production yield is 3,600 CD-01 doors and 2,400 CD-02 for the first year. Furthermore, for the second year there is an estimated growth of 25%, then the third year of 40% growth, and the fourth and fifth years of 25% and 10% growth. Assuming the selling price by taking a profit margin of 30%, the door for the CD-01 model is Rp. 2,420,000 per unit and the CD-02 model is Rp. 2,250,000 per unit for the first year. Furthermore, for the following year it is estimated that there will be an average selling price increase of 5%, more details can be seen in the table below.

Table 1. Revenue Projection

Product	2022	2023	2024	2025	2026
Quantity Growth	0%	25%	40%	25%	10%
Sales Price					
CD-01	2,420,000	2,480,000	2,570,000	2,710,000	2,880,000
CD-02	2,250,000	2,300,000	2,380,000	2,510,000	2,670,000
Quantity	6,000	7,500	10,500	13,128	14,436
60% CD-01	3,600	4,500	6,300	7,872	8,664
40% CD-02	2,400	3,000	4,200	5,256	5,772
Total Revenue	14,112,000,000	18,060,000,000	26,187,000,000	34,525,680,000	40,363,560,000

Product	2022	2023	2024	2025	2026
Quantity Growth	0%	25%	40%	25%	10%
CD-01	8,712,000,000	11,160,000,000	16,191,000,000	21,333,120,000	24,952,320,000
CD-02	5,400,000,000	6,900,000,000	9,996,000,000	13,192,560,000	15,411,240,000

Operating expenses consist of 8 activities. Estimated operational cost details are as follows:

Table 2. Operating Expense

Operating Expenditure	2022	2023	2024	2025	2026
Staff Salary	756,000,000	989,611,200	1,172,732,242	1,272,531,756	1,497,279,262
Consumption Cost	30,000,000	31,500,000	33,075,000	34,728,750	36,465,188
Transport fee	48,000,000	50,400,000	52,920,000	55,566,000	58,344,300
Water & Electricity Fee	96,000,000	100,800,000	105,840,000	111,132,000	116,688,600
Telephone Fee	18,000,000	18,900,000	19,845,000	20,837,250	21,879,113
Office Stationery Cost	36,000,000	37,800,000	39,690,000	41,674,500	43,758,225
Insurance	95,040,000	115,107,408	151,466,140	198,085,666	256,201,118
Other Expenses	12,000,000	12,600,000	13,230,000	13,891,500	14,586,075
Total OPEX	1,091,040,000	1,356,718,608	1,588,798,382	1,748,447,422	2,045,201,880

The analysis of financing alternatives uses four alternatives, namely Internal Financing, Bank Financing, Leasing and IPOs. In this study using the Weighted Average Cost of Capital as the discount rate. WACC is used to determine the composition of the cost of equity and the cost of debt. The first alternative, internal financing uses variables, as follows:

1. Risk Free Rate is based on market risk-free use of the current yield on 5 year Indonesian Bonds of 5.90% (PT.Penilai Harga Efek Indonesia, 2021).
2. Beta (β) will use unlevered beta 1.18 from industry homebuilding based on Damodaran reference, last updated in January 2021.
3. Risk Equity Premium is based on market risk premium for Indonesia applied in this research is 1.84% according to Damodaran Country Default Spreads and Market Risk Premium, last updated in January 2021 (Damodaran, Country Default Spreads and Risk Premiums, 2021).

Based on the information above, the WACC calculation is as follows:

Table 3. WACC for Internal Financing

Variables	Calculation Result
Risk Free rate (R_f)	5.90%
Beta (β)	1.18
Risk Equity Premium ($rm - R_f$)	1.84%
Cost of Equity (r_s)	8.07%
Equity to Capital Ratio (w_s)	100%
Cost of Debt (r_i)	8.0%
Debt to Capital Ratio (w_i)	0%
WACC ($r_s * w_s$) + ($r_i * w_i$)	8.07%

The calculation of financial projections for 5 years using the value of the company's free cash flow obtained from the value of profit after tax. For more details, please refer to the table below:

Table 4. Free Cash Flow of Internal Financing

	2021	2022	2023	2024	2025	2026
	Expressed in Million					
EBIT		1,506	2,127	3,787	5,604	6,603
NAT		1,129	1,594	2,840	4,203	4,952
Depreciation		696	696	696	696	696
R/G		113	159	284	420	495
FCF	(11,232)	1,712	2,131	3,252	4,479	5,153
Accumulated FCF	(11,232)	(9,520)	(7,389)	(4,137)	342	5,495
Disc. Rate		0.9253	0.8562	0.7923	0.7331	0.6784
Present Value FCF		1,584	1,825	2,577	3,284	3,496

The second alternative, bank financing uses variables, as follows:

1. Interest rates follow an internal source from a bank reference that the company has used for loans, namely Bank CIMBNIAGA. The assumed interest rate of 8.0% per year will be used based on the previous loan interest rate.
2. Income tax refers to the Law of the Republic of Indonesia No. 36 Year 2008 paragraph 17 paragraph 2a with a rate of 25%.
3. Beta (β) will use unlevered beta 1.18 from industry homebuilding based on Damodaran reference, last updated in January 2021.

Based on the information above, the WACC calculation is as follows:

Table 5. WACC for Debt Financing

Variables	Calculation Result
Interest Rate (rd)	8.00%
Income Tax (T)	25%
Cost of Equity (rs)	8.07%
Equity to Capital Ratio (ws)	0%
Cost of Debt (ri)	6.00%
Debt to Capital Ratio (wi)	100%
WACC (rs * ws) + (ri * wi)	6.00%

The calculation of financial projections for 5 years using the company's free cash flow value based on bank loans. The loan interest assumption used is a fixed rate. For more details, please refer to the table below:

Table 6. Free Cash Flow of Debt Financing

	2021	2022	2023	2024	2025	2026
	Expressed in Million					
EBIT		1,506	2,127	3,787	5,604	6,603
NAT		1,039	1,467	2,613	3,866	4,556
Depreciation		696	696	696	696	696
R/G		104	147	261	387	456
FCF	(11,232)	1,631	2,016	3,048	4,175	4,796
Accumulated FCF	(11,232)	(9,601)	(7,585)	(4,537)	(362)	4,434
Disc. Rate		0.9434	0.8900	0.8396	0.7921	0.7473
Present Value FCF		1,539	1,794	2,559	3,307	3,584

The third alternative, leasing in this study uses variables, as follows:

1. Interest rate for leasing follows one of the leasing companies, namely PT. Buana Finance Tbk. Interest rates from Buana Finance range from 7.33% - 9.13% for investment financing. The assumption of interest rates is taken as an average value between 7.33% -9.13% is 8.23% per year to be used (PT Buana Finance, 2021).
2. Income tax refers to the Law of the Republic of Indonesia No. 36 Year 2008 paragraph 17 paragraph 2a with a rate of 25%.

Based on the information above, the WACC calculation is as follows:

Table 7. WACC for Leasing Financing

Variables	Calculation Result
Interest Rate (rd)	8.23%
Income Tax (T)	25%
Cost of Equity (rs)	8.07%
Equity to Capital Ratio (ws)	0%
Cost of Debt (ri)	6.17%
Debt to Capital Ratio (wi)	100%
WACC (rs * ws) + (ri * wi)	6.17%

Calculation of financial projections using the value of the company's free cash flow based on a loan from a leasing company for 5 years. The loan interest assumption used is a fixed rate. For more details, please refer to the table below:

Table 8. Free Cash Flow of Leasing Financing

	2021	2022	2023	2024	2025	2026
	Expressed in Million					
EBIT		1,506	2,127	3,787	5,604	6,603
NAT		1,036	1,464	2,607	3,856	4,544
Depreciation		696	696	696	696	696
R/G		104	146	261	386	454
FCF	(11,232)	1,628	2,014	3,042	4,166	4,786
Accumulated FCF	(11,232)	(9,604)	(7,590)	(4,548)	(382)	4,404
Disc. Rate		0.9419	0.8871	0.8356	0.7870	0.7413
Present Value FCF		1,533	1,787	2,542	3,279	3,548

The last alternative, in this study, uses the projected IPO financing from the cost of equity obtained from investors and uses the following variables:

1. Bank Indonesia Certificates (SBI) of 3.5% based on the period 18 March 2021 from Bank Indonesia.
2. Stock elasticity (β) will use unlevered beta 1.18 from industry homebuilding based on Damodaran reference, last updated in January 2021.
3. Risk Equity Premium (RP_M) is based on market risk premium for Indonesia applied in this research is 1.84% according to Damodaran Country Default Spreads and Market Risk Premium, last updated in January 2021 (Damodaran, Country Default Spreads and Risk Premiums, 2021).
4. The growth assumption used is 10% based on the projected average growth for 5 years

Calculation of financial projections using the value of the company's free cash flow. For more details, please refer to the table below:

Table 9. Financial Projection

	2022	2023	2024	2025	2026
	Expressed in Million				
Sales	14,112	18,060	26,187	34,526	40,364
COGS	10,819	13,881	20,115	26,478	31,020
Gross Profit	3,293	4,179	6,072	8,048	9,344
Operating Expense	1,091	1,357	1,589	1,748	2,045
Depreciation	696	696	696	696	696
EBIT	1,506	2,126	3,787	5,604	6,603
Taxes, 25%	377	532	947	1,401	1,651
Net After Tax	1,129	1,594	2,840	4,203	4,952
R/G	113	159	284	420	495
FCF	1,712	2,131	3,252	4,479	5,153
Accumulated FCF	(9,520)	(7,389)	(4,137)	342	5,495
Disc. Rate	0.9253	0.8562	0.7923	0.7331	0.6784
Present Value FCF	1,584	1,825	2,577	3,284	3,496

After analyzing the capital structure technique and free cash flow analysis of four alternative financing are internal, bank, leasing and IPO. The four existing financing alternatives will provide insight into feasible financing alternatives for new product development. From the four financing alternatives that have been analyzed, show good results of NPV, PI, IRR, PBP and ROI. Comparison results of alternative financing can be seen in the table below.

Table 10. Comparison of Financing Alternatives

Variables	Internal Financing	Bank Financing	Leasing Financing	IPO Financing
WACC	8.07%	6.00%	6.17%	8.07%
NPV (rupiah)	1,532,218,602	1,551,282,129	1,456,582,971	1,532,218,602
PI	1.14	1.14	1.13	1.14
IRR	12.24%	10.11%	10.04%	12.24%
Payback Period	3 years 11 months	4 years 1 month	4 years 1 month	3 years 11 months
ROI	26.36%	28.25%	28.09%	26.36%

5. Implementation Plan

The implementation plan for the development of new finished goods products will be proposed based on the analysis of the selected financing alternatives. The company should take appropriate action in mid-2021 so that the implementation plan can be carried out properly. There are several proposed time schedules for the implementation plan, which can be seen in the table below.

Table 11. Implementation Plan Schedule

Activity	2021							2022					
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Strategy planning													
Planning for procurement of goods													
Planning for building construction designs													
Submitting an investment loan to the bank													
Construction of buildings and facilities													
Set up of fabrication division													
Procurement of human resources													
Procurement of equipment and supplies													
Conduct worker training													

Resource requirements that will be used are the requirements of the selected financing. After making an implementation plan, there is a need for resources that must be prepared for the implementation of the investment to run smoothly. When bank financing has been selected, the company must prepare the documents required by the bank consisting of business legality (Deed of establishment, SIUP, TDP, Company NPWP, Company Profile), company owner data (KTP, NPWP), company guarantee data (SHM, IMB, PBB), and company financial data (company accounts, financial reports, inventory reports, accounts receivable reports, accounts payable reports).

6. Conclusions

Based on the analysis that has been done previously, the following conclusions can be drawn:

1. Product development aims to open wider market opportunities for companies that focus on providing household construction needs. Thus, the company will get other benefits from selling this product.
2. There are four financing alternatives that will be proposed for investment funding in this research. The first alternative uses financing from internal companies, the second alternative uses financing from banks, the third alternative uses financing from leasing and the last uses financing from IPO. After calculating the financial projections for the four alternative financing, internal financing was not selected because the retained earnings were insufficient and the company's profits decreased based on financial resources. IPO financing was not chosen because the owner did not share ownership with other parties. Lease financing was not chosen because it has lower

NPV, PI, IRR, Payback period and ROI results than others. Then the last option is bank financing, this financing has the highest NPV and ROI values, which shows the projected income earned exceeds the projected costs used when investing.

3. Based on the above analysis, the company is recommended to choose bank financing to finance the initial investment with a composition of 100% bank debt and an assumption of an interest rate of 8% per year. Bank financing gets the highest NPV and ROI with details Net Present Value (NPV) of 1,546,356,903, Profitability Index (PI) value of 1.14, Internal Rate of Return (IRR) value of 10.09%, Payback Period (PBP) value for 4 years 1 month, Return on Investment (ROI) of 28.24% and US Index of 4.71. With the US Index greater than one, it indicates that the company should go leverage / debt.
4. The company will be more easily approved by the bank for debt loans. This is because the company has had previous debt loans to banks. In addition, the bank will find it easier to conduct evaluation analysis.

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