Jurnal Riset Manajemen Sains Indonesia, 16(1) 2025, 35-48
Jurnal Riset Manajemen Sains Indonesia
http://journal.unj.ac.id/unj/index.php/jrmsi

ANALYSIS OF CAPITAL BUDGETING PROJECTIONS IN MAKING FUNDING INVESTMENT CONSIDERATIONS AT PT NUSKAINO

Pandu Kameswara[1]*, Ratri Kurniasari[2], Titik Purwinarti[3]
[1, 2, 3] *State Polytechnic of Jakarta*
*pandu.kameswara.an20@mhsw.pnj.ac.id

Article Info

Article history:
Received: August 4, 2024;
Accepted: March 3, 2025;
Published: April 1,2025.

Keywords:
Capital Budgeting, Crowdfunding, Investment Consideration, Risk Analysis

ABSTRACT

PT NUSKAINO currently needs funding of IDR 5 billion through a crowdfunding funding system, however, PT NUSKAINO does not yet have ideal capital budgeting projections and risk analysis. Therefore, this research aims to test the feasibility of considering funding investment projects using the capital budgeting method along with risk analysis based on groupings of economic conditions. The research methodology used in this research is a mixed method, which involves collecting quantitative and qualitative data, integrating two forms of data, and using different designs that can include philosophical assumptions and theoretical frameworks. The results of the research show that by using capital budgeting calculation techniques, when economic conditions are stable, funding investment activities are feasible. Meanwhile, when economic conditions are weak, investment in financing activities is not feasible. Then, when economic conditions are strong, funding investment activities are feasible. The analysis that has been carried out shows that the use of the capital budgeting method can provide good benefits for companies in making investment considerations so that they do not take the wrong steps in the future. Moreover, simulating the economic conditions that will occur could be a wise step for PT NUSKAINO in considering investment funding using the crowdfunding funding system.

INTRODUCTION

Companies that are still in the early stages or start-ups, certainly have problems that occur in them. (Dihni, 2022) states that as many as 34.1% of start-up companies have problems with their sources of capital or funds. Because, lack of capital or funds will make the company's business processes not run optimally. To overcome this, the company management is looking for an investment related to funding investment from external parties. The management decision to do this is so that the project of the funding investment that will be carried out can provide benefits in the future (Sampe et al., 2023).

There are several ways that can be used to obtain investment funding from external parties, one of which is through crowdfunding. According to Schwienbacher (Hariyani et al., 2024) defines crowdfunding as a process of financing a project or business that does not come from professional parties (banks and capital companies). This crowdfunding process involves business actors who are usually MSMEs and new companies with the community to raise a number of funds through a crowdfunding management institution via the internet. The following is the amount of funds raised from the crowdfunding industry.

SSN
2301-8313 (online) DOI:
doi.org/10.21109/JRMSI.016.1.04

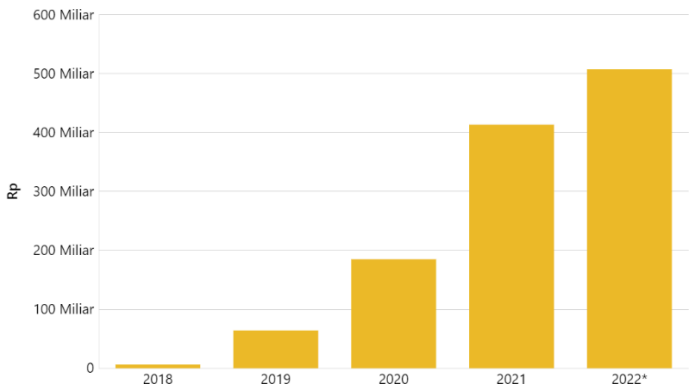

Figure 1 Funding Raised by Crowdfunding Industry (2018-2022*)
Source: Annur (2022)

Based on Figure 1 it shows that the amount of funding raised in the crowdfunding industry shows the results of growth every year which is always increasing with the amount of funds collected in 2022 totaling IDR 507.20 billion. Funding through the crowdfunding process is used as an alternative funding for MSMEs and start-up companies, where regulations related to crowdfunding have been regulated in POJK No. 57/POJK.04/2020. The scheme carried out in this funding system is that potential investors and MSMEs/new companies are directed to a platform. Then, potential investors can buy and get ownership of securities.

With the growth of funding and the number of potential investors always increasing, MSMEs/new companies are advised to apply for funding for project investment using this system. Furthermore, quoting LBS.ID (2024) states that before continuing to apply for funding related to project investment, MSMEs/new companies need to complete administrative requirements, in the form of company profiles, projected financial statements, reports on the use of funds, investment bid proposals, company legality, project profiles, and guarantee documents. Administrative requirements in applying for funds on crowdfunding organizers aim to ensure transparency, reliability, and security for all parties involved.

The purpose of investment itself is to increase financial welfare with the benchmark being the increase in financial value of current assets in the future (Lubis, 2016). With the addition of financial value, the investment planning process must be made so that the funds that have been given by investors can be allocated appropriately and profitably. Therefore, so that companies and potential investors can see the conditions of the economy in the future, it is necessary to create several alternative investment risks. According to Amri et al. (2022) investment risk is the possibility of not achieving the expected return, or the return obtained is less than expected. Therefore, ideally investment planning should include several conditions, so that companies and potential investors can assess the planned investment based on the level of return to be obtained.

In conducting investment planning, what is needed is an analysis and calculation using one of the most commonly used methods, namely capital budgeting. Capital budgeting has a function to see the feasibility of the investment to be made which is related to the evaluation of the purchase of assets. The methods used in conducting capital budgeting analysis include the Payback Period (PP), Net Present Value (NPV), Profitability Index (PI), and Internal Rate of Return (IRR) methods. By looking at the indexes and results that have been calculated by these methods, it will provide an answer, in the form of whether the investment plan should be accepted or rejected (Adnyana, 2020). According Jaya et al. (2023) stated that the use of the investment appraisal method using capital budgeting is because to make an investment, a careful calculation must be made by looking at the time value of money and the return that will be generated in the future. So, the use of capital budgeting here aims to see the objectivity and financial risk management of the project to be carried out.

To facilitate the planning of capital budgeting in order to see good results, it is necessary to prepare a financial budget for the current year to several years in the future, starting from the sales budget, purchase budget, cost of goods sold budget, operating expense budget, profit and loss budget, cash budget, and balance sheet budget (Adnyana, 2020). The preparation of the budget must be done systematically, because each type of budget made will always be sustainable. In addition, by making several alternatives to the certain or uncertain conditions of an investment, companies and potential investors can make estimates and considerations for making investment decisions on alternative risks faced.

PT NUSKAINO is a company that was just pioneered at the end of 2022 engaged as a supplier and importer of spare parts for agricultural and plantation heavy equipment in Indonesia. In the interview (2024) that has been conducted, it states that PT NUSKAINO is in need of funding for the smooth running of its business with the total funding required of IDR 5.000.000.000 with details, as follows.

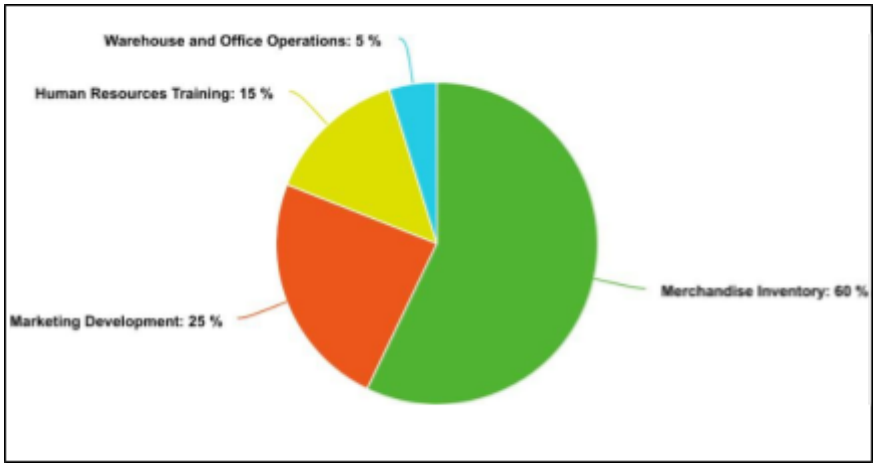

Figure 2. Details of Investment Activity Plan
Source: Secondary Data (2024)

Referring to figure 2 the results of the follow-up interview (2024) conducted stated that the percentage amount was obtained on the basis of the plan that will be carried out by PT NUSKAINO. With the largest percentage, which lies in the funding section for the purchase of trade goods inventory which will later be used in meeting market demand, because trade goods inventory is sometimes out of stock. Furthermore, because it is in line with the next percentage, which is related to market development, where currently.

PT NUSKAINO has markets in Sumatra, Java and Sulawesi. Funding planning between merchandise inventory and marketing development has a relationship, in the form of expanding the marketing area which will have a wider impact on fulfilling demand for new customers, strengthening the stock in the company's warehouse must be very concerned. In addition, funding is related to HR training, especially marketing HR, the training refers to the company's business concept, namely B2B (Business to Business). The training is used so that marketing human resources are more skilled in getting new prospective customers, because with the improvement of marketing skills, such as communication, it will be easier to reach the market and strengthen the company's position. Finally, funding related to warehouse and office operations is used to purchase warehouse and office supplies and equipment, because PT NUSKAINO is a company that is in the start-up phase, in which phase the warehouse and office supplies and equipment are still not sufficient to meet the company's business processes. Therefore, seeing the nominal amount of investment that can be said to be not small, an in-depth analysis is needed for budgeting in the following year if the funding source has been obtained so that the investment made by potential investors generates profits based on investment planning.

Based on the background description that has been described, the researcher is interested in analyzing budget preparation to see capital budgeting projections and risk analysis in considering investment in trade goods inventory, marketing development, HR training, and warehouse and office operations at PT NUSKAINO with the research title "ANALYSIS OF CAPITAL BUDGETING PROJECTIONS IN MAKING FUNDING INVESTMENT CONSIDERATIONS AT PT NUSKAINO "

LITERATURE REVIEW

Budgeting

According to Nurhadi & Effendy (2020), “The budget is the task of managing plans and overseeing the day-to-day operations of the company, which is incorporated into the program and finance unit, where the purpose of this work is to show the company's operations in financial statements, including balance sheets, profit and loss projections, and statements of owner's equity and cash flow.” Meanwhile, according to Hansen dan Mowen (Adnyana, 2020), “The budget is a control tool that shows revenues and costs for one year and helps management assess the results that have been achieved”.

From several experts who have put forward the definition of a budget, it can be said that a budget is a tool used to manage and control company activities that refer to operational activities carried out for one year based on financial reports that can be used as an assessment of the results achieved.

There are types of trading company budgets as follows.

1. Sales Budget

   The sales budget is a budget used to plan the company's sales for the following season in more detail, which includes plans for the types of goods sold (quality), the number of goods sold (quantity), the price of the goods sold, the time of sale and the place of sale (area). Before the company prepares the sales budget, the company must do sales forecasting (sales forecast) which will later be used as the basis

for preparing the sales budget. The following is one method for preparing sales forecasts.

a. Moving Average Method

The moving average method uses different past data to predict future results. This method is very useful for keeping the market demand increasing over the next few periods. A five-period moving average of sales is obtained by dividing the total sales of five periods by five. Conversely, a three-period moving average of sales is obtained by dividing the total sales of the three periods by three.

2. Purchasing Budget

The merchandise purchase budget is a budget that contains a plan for the amount of merchandise that the company must purchase in the next period. Buying too much trade goods poses various risks, such as piles of trade goods in warehouses that can cause quality deterioration or higher storage costs.

3. Cost of Goods Sold Budget

The cost of goods sold budget is a budget that reflects the estimated price for goods to be sold.

4. Operating Expense Budget

The operating expense budget is a budget related to the estimated costs associated with all company activities. Operating expenses are divided into two main categories, namely for sales and administrative activities.

5. Profit and Loss Budget

Profit and loss budget is a budget related to the amount of profit or loss obtained by the company from various main activities which include sales and purchasing activities during a certain period of time.

6. Cash Budget

The cash budget is a budget used to estimate cash inflows and outflows so that the company can maintain an optimal level of cash. The cash budget also provides information on whether additional funds are needed to eliminate cash shortages.

7. Balance Sheet Budget

The balance sheet budget is a budget that shows the involvement of various types of budgets in the asset and liability elements in the coming year.

Cost of Capital

According to Surindra et al. (2020), "the cost of capital or cosf of capital is the real cost required to use funds from alternative resources available in funding company operations". Meawhile, according to Harmono (Layarda, 2021), "the cost of capital is the minimum rate of return that a company uses to maintain the market price of its securities, which is calculated based on the equity proportion of all investments".

From several experts who have put forward a definition of the cost of capital, it can be said that the cost of capital is a real cost required in the use of funds from alternative resources for company funding as well as being the minimum rate of return for the company in maintaining market prices based on the overall proportion of equity. investment.

The formula used to calculate the cost of debt is as follows.

Cost of debt before tax:

$$Kb = \frac{I + \frac{N - Nb}{n}}{\frac{Nb + N}{2}}$$

Description:
"Kb : Cost of debt before tax"
"I : Amount of interest to be paid"
"N : Value of debt (bond) at the end of the period"
"Nb : Net proceeds from sales"
"n : Age of debt (bond)"

Cost of debt after tax:

$$Ki = Kb(1 - t)$$

Description:
"Ki : Cost of debt after tax"
"Kb : Cost of debt before tax"
"t : Tax rate"

Capital Budgeting

According to Jenita & Herispon (2022), "Capital Budgeting is a planned step and making decisions regarding spending on funding with a payback duration of more than a year." Meanwhile, according to Savitri (2016) explain, "Capital Budgeting is the process of selecting optimal long-term alternative options."

From several experts who have put forward the definition of capital budgeting, it can be said that capital budgeting is a decision-making process by selecting the most optimal long-term option with a return time of more than one year.

There are several capital budgeting calculation techniques as follows.

1. Payback Period (PP), Payback Period is the period required for investment costs to be covered by income or net cash flow. In other words, the payback period is a method of assessing the feasibility of an investment that uses time for the investment to fully recover. If the return is the same every year, then the investment payback period can be calculated by dividing the investment amount by the annual return".
   The formula used to calculate the payback period is as follows.

$$PP = \frac{IO}{CFt} \text{ or a reduction is}$$

   Description:
   "IO : Initial Outlays"
   "CFt : Cash flow in period t"

   Criteria:
   From the calculation formula, it can be seen that the main point in assessing the feasibility of an investment is the length of return on the investment. This means that this method indirectly provides conditions for companies that have several investment opportunities at the same time. In this case, the smaller the payback period of the completed project, the faster the return on investment.

2. Net Present Value (NPV), Net Present Value (NPV) is an investment appraisal method where investments are valued based on results discounted based on the desired cost of capital. This means that the company's cash inflow in subsequent years will be assessed. The present value of money refers to the amount of money in the present, compared to the amount of money in the future, taking into account interest rates between those years. This means that the current value of a certain amount of money is lower than the value of that money in the future.
   The formula used to calculate net present value is as follows.

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

   Description:
   "IO : Initial outlays"
   "CFt : Cash flow in the period t"
   "r : Discount rate (cost of capital)" "t : Period"
   "n : Number of periods"

   Criteria:
   a) "If NPV > 0, then a project is declared profitable and feasible to run."
   b) "If NPV < 0, then a project does not produce value for the costs used. In other words, the project is detrimental and not worth running."
   c) "If NPV = 0, then a project is able to return social capital equal to the opportunity cost of normal production factors. Therefore, it is better to keep the capital or funds in the bank because it is more profitable."

3. Profitability Index (PI), Project calculations made with the profitability index provide calculations for the project's financial life cycle. Although what is emphasized here is benefits for the public interest and not financial benefits for the company, this does not mean that private companies ignore this criterion. Based on the profitability index, the investment index level is calculated by dividing the cash value (present value) of cash flows by the present value of cash flows out of the investment. This index is generally used as a tool for ranking investment proposals from lowest to highest.
   The formula used for the profitability index is as follows.

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

   Description:
   "IO : Initial Outlays"

“CFt : Cash flow in the period t”
“r : Discount rate (cost of capital)” “t : Period”

Criteria:

a) "If PI ≥ 1, then the investment proposal is worth implementing because the flow of benefits obtained is greater than the flow of costs."
b) "If PI < 1, then the investment proposal is not feasible because the flow of benefits obtained is smaller than the flow of costs."

4. Internal Rate of Return (IRR), The Internal Rate of Return (IRR) method is an investment appraisal method that looks for the interest rate that can provide a net present value of all investment cash flows equal to zero. To calculate the IRR of a proposed investment, the net present value of the investment must be zero. The interest rate at which cash flows are discounted so that their net value is zero is simulated through trial and error.

   One way to estimate IRR is by referring to the cost of capital or debt. The formula used to calculate the internal rate of return is as follows.

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

Trial and Error IRR:

$$TE = i_1 + \left(\frac{NPV_1}{NPV_1 - NPV_2} \times i_2 - i_1\right)$$

Description:
“IO : Initial outlays”
“CFt : Cash flow in the period t”
“IRR : Discount rate (cost of capital)” “t : Period”
“n : Number of periods” “TE : Trial and error” “NPV : Net Present Value” “i : Discount rate”

Criteria:

a) "The investment proposal is accepted if IRR > cost of capital because this shows that the investment proposal in question is feasible."
b) "The investment proposal is rejected if the IRR < cost of capital because this shows that the investment proposal in question is not feasible.”

RESEARCH AND METHODOLOGY

The research method applied to this study is mixed method research, "a research method that involves collecting quantitative and qualitative data, integrating two forms of data, and using different designs that can involve philosophical assumptions and theoretical frameworks" (Pane et al., 2021). The object of research and scope in this study is investment consideration for potential investors to be carried out by PT NUSKAINO, namely funding planning for trade goods inventory, marketing development, HR training, and warehouse and office operations using capital budgeting calculation techniques and risk analysis, based on the results of the preparation of the sales budget, purchase budget, cost of goods sold budget, operating expense budget, cash budget, and balance sheet budget as well as by looking at taxation conditions, inflation, economic growth, and balance of trade for investment risk assessment that is and will occur.

RESULT AND DISCUSSION

Result

Determination of Initial Outlays

Initial Outlays or details of expenditure to start an investment project must be made, because determining these initial outlays is important to help calculate the initial capital spent in carrying out the investment project. The

following is a breakdown of investment project expenditure at PT NUSKAINO.

Table 1. Initial Outlays

No	Usage Plan	Nominal	%
1	Merchandise Inventory	Rp3.000.000.000	**60,00%**
2	Marketing Development	Rp1.250.000.000	**25,00%**
3	HR Training	Rp500.000.000	**10,00%**
4	Warehouse & Office Operations	Rp250.000.000	**5,00%**
Total		**Rp5.000.000.000**	**100,00%**

Source: Author (2024)

Determination of Cost of Capital

The interest rate used is 6.25% in accordance with Bank Indonesia regulations regarding interest rates in the first quarter of 2024. Determining the interest rate is used as a basis for calculating the cost of debt which will later be used as a reference as a discount factor in calculating capital budgeting. By looking at the provisions for an interest rate of 6.25%, the cost of debt can be determined from several economic conditions, namely as follows.

1. Cost of debt stable economic conditions

   Cost of debt before tax:

$$\text{[illegible]} = \frac{625.000.000 + \frac{5.625.000.000 - 5.000.000.000}{3}}{\frac{5.000.000.000 + 5.625.000.000}{2}}$$

$$\text{[illegible]} = \frac{625.000.000 + 208.333.333}{5.312.500.000}$$

$$\text{[illegible]} = \frac{833.333.333}{5.312.500.000} = 0{,}1569 \text{ [illegible]} 15{,}69\%$$

   So, the cost of debt before tax in stable economic conditions is 15.69%. After that, calculate the cost of debt after tax using the Corporate Income Tax rate of 50% from 22%, namely 11%.

   Cost of debt after tax:

   $Ki = 15{,}69\%(1 - 11\%)$

   $Ki = 13{,}96\%$

2. Cost of debt weak economic conditions

   Cost of debt before tax:

   $Kbl = 15{,}69\% - 5{,}11\% = 10{,}58\%$

   Cost of debt after tax:

   $Kil = 10{,}58\%(1 - 11\%)$

   $Kil = 9{,}41\%$

3. Cost of debt strong economic conditions

   Cost of debt before tax:

   $KbK = 15{,}69\% + 5{,}11\% = 20{,}80\%$

   Cost of debt after tax:

   $KiK = 20{,}80\%(1 - 11\%)$

   $KiK = 18{,}51\%$

Investment Assessment of Stable Economic Conditions using Capital Budgeting

In calculating investment assessments in stable economic conditions, several basic assumptions used are: VAT rate of 11% in 2024 and 12% the following year, corporate income tax rate of 22% with a reduction of 50% for net income below IDR 50 billion, PPh rate of 22 imports 2.5% because they have NIB, inflation rate 3% which affects buying and selling prices and operational costs, economic growth 5.11% which affects the quantity of spare parts sold, import duties 7.5%, and shipping and insurance costs 10% of the value of imported goods. The following are the results of capital budgeting calculations in stable economic conditions.

Table 2. Budget Summary In Stable Economic Conditions

Description	2024	2025	2026
Sale			
Spare Parts Sales	Rp7.493.728.951	Rp7.938.981.682	Rp8.439.840.692
Total Sales	**Rp7.493.728.951**	**Rp7.938.981.682**	**Rp8.439.840.692**
Cost of Goods Sold			
Opening Inventory	Rp334.102.954	Rp472.662.997	Rp501.191.646
Inflation Difference	Rp0	Rp14.179.890	Rp15.035.749
Purchase	Rp2.626.260.024	Rp2.652.199.528	Rp2.825.466.142
Inventory Ready for Sale	Rp2.960.362.978	Rp3.139.042.415	Rp3.341.693.537
Ending Inventory	Rp472.662.997	Rp501.191.646	Rp533.547.708
Total Cost of Goods Sold	**Rp2.487.699.982**	**Rp2.637.850.769**	**Rp2.808.145.830**
Gross Profit	**Rp5.006.028.970**	**Rp5.301.130.913**	**Rp5.631.694.862**
Expenses			
Operational Expenses	Rp2.002.765.506	Rp1.988.149.914	Rp2.050.366.039

Depreciation Expense	Rp4.658.667	Rp4.658.667	Rp4.658.667
Total Expenses	**Rp2.007.424.172**	**Rp1.992.808.580**	**Rp2.055.024.706**
Operating Profit	**Rp2.998.604.797**	**Rp3.308.322.332**	**Rp3.576.670.156**
Other Income & Expenses			
Profit Sharing	Rp698.039.216	Rp465.359.477	Rp232.679.739
Total Other Income & Expenses	**Rp698.039.216**	**Rp465.359.477**	**Rp232.679.739**
EBT	**Rp2.300.565.581**	**Rp2.842.962.855**	**Rp3.343.990.418**
Corporate Income Tax (50% * 22%)	Rp253.062.214	Rp312.725.914	Rp367.838.946
EAT	**Rp2.047.503.367**	**Rp2.530.236.941**	**Rp2.976.151.472**

Source: Author (2024)

Table 3. Total Cash In Flow Summary In Stable Economic Conditions

Year	Net Profit	Depreciation (1-t)	Total Cash Inflow
2024	Rp2.047.503.367	Rp4.146.213	Rp2.051.649.581
2025	Rp2.530.236.941	Rp4.146.213	Rp2.534.383.155
2026	Rp2.976.151.472	Rp4.146.213	Rp2.980.297.685

Source: Author (2024)

Capital Budgeting Calculations In Stable Economic Conditions

Investment Assessment of Weak Economic Conditions using Capital Budgeting

In carrying out investment assessment calculations in weak economic conditions, several basic assumptions used in calculating the budget are the same as in stable economic conditions, however, there was an economic decline of 5.11% which affected the quantity of spare parts sold. The following are the results of capital budgeting calculations in weak economic conditions.

Table 4. Budget Summary In Weak Economic Conditions

Description	2024	2025	2026
Sale			
Spare Parts Sales	Rp6.400.789.509	Rp6.098.653.411	Rp5.822.194.792
Total Sales	**Rp6.400.789.509**	**Rp6.098.653.411**	**Rp5.822.194.792**
Cost of Goods Sold			
Opening Inventory	Rp334.102.954	Rp403.726.418	Rp385.010.857
Inflation Difference	Rp0	Rp12.111.793	Rp11.550.326
Purchase	Rp2.194.499.350	Rp1.995.545.579	Rp1.908.694.499
Inventory Ready for Sale	Rp2.528.602.304	Rp2.411.383.789	Rp2.305.255.682
Ending Inventory	Rp403.726.418	Rp385.010.857	Rp368.066.033
Total Cost of Goods Sold	**Rp2.124.875.886**	**Rp2.026.372.932**	**Rp1.937.189.649**
Gross Profit	**Rp4.275.913.623**	**Rp4.072.280.479**	**Rp3.885.005.144**
Expenses			
Operational Expenses	Rp1.901.813.287	Rp1.829.983.515	Rp1.828.289.610
Depreciation Expense	Rp4.658.667	Rp4.658.667	Rp4.658.667
Total Expenses	**Rp1.906.471.954**	**Rp1.834.642.182**	**Rp1.832.948.276**
Operating Profit	**Rp2.369.441.669**	**Rp2.237.638.297**	**Rp2.052.056.867**
Other Income & Expenses			
Profit Sharing	Rp470.500.000	Rp313.666.667	Rp156.833.333
Total Other Income & Expenses	**Rp470.500.000**	**Rp313.666.667**	**Rp156.833.333**
EBT	**Rp1.898.941.669**	**Rp1.923.971.631**	**Rp1.895.223.534**
Corporate Income Tax (50% * 22%)	Rp208.883.584	Rp211.636.879	Rp208.474.589
EAT	**Rp1.690.058.085**	**Rp1.712.334.751**	**Rp1.686.748.945**

Source: Author (2024)

Table 5. Total Cash In Flow Summary In Weak Economic Conditions

Year	Net Profit	Depreciation (1-t)	Total Cash Inflow
2024	Rp1.690.058.085	Rp4.146.213	Rp1.694.204.299
2025	Rp1.712.334.751	Rp4.146.213	Rp1.716.480.964
2026	Rp1.686.748.945	Rp4.146.213	Rp1.690.895.159

Source: Author (2024)

Capital Budgeting Calculations In Weak Economic Conditions

1. Payback Period

$$PP = 2 + \left(\frac{1.589.314.737}{1.690.895.159}\right)$$
$$PP = 2 + 0{,}93 = 2{,}93\ tahun$$

2. Net Present Value

$$NPV = -5.000.000.000 + \left(\frac{1.694.204.299}{(1+9{,}41\%)^1} + \frac{1.716.480.964}{(1+9{,}41\%)^2} + \frac{1.690.895.159}{(1+9{,}41\%)^3}\right)$$
$$NPV = -5.000.000.000 + (1.548.491.270 + 1.433.920.110 + 1.291.057.624)$$
$$NPV = \quad -726.530.996$$

3. Profitability Indeks

$$PI = \frac{\left(\frac{1.694.204.299}{(1+9{,}41\%)^1} + \frac{1.716.480.964}{(1+9{,}41\%)^2} + \frac{1.690.895.159}{(1+9{,}41\%)^3}\right)}{5.000.000.000}$$
$$PI = \frac{(1.548.491.270 + 1.433.920.110 + 1.291.057.624)}{5.000.000.000}$$
$$PI = \frac{4.273.469.004}{5.000.000.000} = 0{,}85$$

4. Internal Rate of Return

Discount Factor 9,41%:

$$IRR = -5.000.000.000 + \left(\frac{1.694.204.299}{(1+9{,}41\%)^1} + \frac{1.716.480.964}{(1+9{,}41\%)^2} + \frac{1.690.895.159}{(1+9{,}41\%)^3}\right)$$
$$IRR = -5.000.000.000 + (1.548.491.270 + 1.433.920.110 + 1.291.057.624)$$
$$IRR = \quad -726.530.996$$

Discount Factor 1,00%:

$$IRR = -5.000.000.000 + \left(\frac{1.694.204.299}{(1+1{,}00\%)^1} + \frac{1.716.480.964}{(1+1{,}00\%)^2} + \frac{1.690.895.159}{(1+1{,}00\%)^3}\right)$$
$$IRR = -5.000.000.000 + (1.677.429.999 + 1.682.659.508 + 1.641.166.182)$$
$$IRR = \quad 1.255.689$$

Trial and Error IRR:

$$TE = 9{,}41\% + \left(\frac{-726.530.996}{-726.530.996 - 1.255.689} \times 1{,}00\% - 9{,}41\%\right)$$
$$TE = 9{,}41\% + \left(\frac{-726.530.996}{-727.786.686} \times -8{,}41\%\right)$$
$$TE = 9{,}41\% + (-8{,}40\%)$$
$$TE = 1{,}01\%$$

Investment Assessment of Strong Economic Conditions using Capital Budgeting

In carrying out investment assessment calculations in strong economic conditions, several basic assumptions used in calculating the budget are the same as in stable economic conditions, however, there is economic growth of 5.11% which affects the quantity of spare parts sold. The following are the results of capital budgeting calculations in strong economic conditions.

Table 6. Budget Summary In Weak Economic Conditions

Description	2024	2025	2026
Sale			
Spare Parts Sales	Rp8.222.355.247	Rp8.675.112.990	Rp9.187.739.520
Total Sales	**Rp8.222.355.247**	**Rp8.675.112.990**	**Rp9.187.739.520**
Cost of Goods Sold			
Opening Inventory	Rp334.102.954	Rp518.620.715	Rp547.663.962
Inflation Difference	Rp0	Rp15.558.621	Rp16.429.919
Purchase	Rp2.914.100.474	Rp2.895.926.528	Rp3.073.724.758
Inventory Ready for Sale	Rp3.248.203.428	Rp3.430.105.865	Rp3.637.818.639
Ending Inventory	Rp518.620.715	Rp547.663.962	Rp580.828.186

Total Cost of Goods Sold	**Rp2.729.582.712**	**Rp2.882.441.903**	**Rp3.056.990.453**
Gross Profit	**Rp5.492.772.534**	**Rp5.792.671.086**	**Rp6.130.749.067**
Expenses			
Operational Expenses	Rp2.070.066.985	Rp2.048.235.464	Rp2.111.518.856
Depreciation Expense	Rp4.658.667	Rp4.658.667	Rp4.658.667
Total Expenses	**Rp2.074.725.652**	**Rp2.052.894.130**	**Rp2.116.177.523**
Operating Profit	**Rp3.418.046.882**	**Rp3.739.776.956**	**Rp4.014.571.544**
Other Income & Expenses			
Profit Sharing	Rp925.500.000	Rp617.000.000	Rp308.500.000
Total Other Income & Expenses	**Rp925.500.000**	**Rp617.000.000**	**Rp308.500.000**
EBT	**Rp2.492.546.882**	**Rp3.122.776.956**	**Rp3.706.071.544**
Corporate Income Tax (50% * 22%)	Rp274.180.157	Rp343.505.465	Rp407.667.870
EAT	**Rp2.218.366.725**	**Rp2.779.271.491**	**Rp3.298.403.675**

Source: Author (2024)

Table 7. Total Cash In Flow Summary In Weak Economic Conditions

Year	Net Profit	Depreciation (1-t)	Total Cash Inflow
2024	Rp2.218.366.725	Rp4.146.213	Rp2.222.512.939
2025	Rp2.779.271.491	Rp4.146.213	Rp2.783.417.704
2026	Rp3.298.403.675	Rp4.146.213	Rp3.302.549.888

Source: Author (2024)

Capital Budgeting Calculations In Strong Economic Conditions

1. Payback Period

$$= 1 + \left(\frac{2.777.487.061}{2.783.417.704}\right)$$

$$= 1 + 0,99 = 1,99$$

2. Net Present Value

$$= -5.000.000.000 + \left(\frac{2.222.512.939}{(1 + 18,51\%)^1} + \frac{2.783.417.704}{(1 + 18,51\%)^2} + \frac{3.302.549.888}{(1 + 18,51\%)^3}\right)$$

$$= -5.000.000.000 + (1.875.380.085 + 1.981.839.085 + 1.984.195.189)$$

$$= 841.414.359$$

3. Profitability Indeks

$$= \frac{\left(\frac{2.222.512.939}{(1 + 18,51\%)^1} + \frac{2.783.417.704}{(1 + 18,51\%)^2} + \frac{3.302.549.888}{(1 + 18,51\%)^3}\right)}{5.000.000.000}$$

$$= \frac{(1.875.380.085 + 1.981.839.085 + 1.984.195.189)}{5.000.000.000}$$

$$= \frac{5.841.414.359}{5.000.000.000} = 1,17$$

4. **Internal Rate of Return**

Discount Factor 18,51%:

$$NPV = -5.000.000.000 + \left[\frac{2.222.512.939}{(1+18,51\%)^1} + \frac{2.783.417.704}{(1+18,51\%)^2} + \frac{3.302.549.888}{(1+18,51\%)^3}\right]$$

$$NPV = -5.000.000.000 + [1.875.380.085 + 1.981.839.085 + 1.984.195.189]$$

$$NPV = 841.414.359$$

Discount Factor 27,10%:

$$NPV = -5.000.000.000 + \left[\frac{2.222.512.939}{(1+27,10\%)^1} + \frac{2.783.417.704}{(1+27,10\%)^2} + \frac{3.302.549.888}{(1+27,10\%)^3}\right]$$

$$NPV = -5.000.000.000 + [1.734.982.778 + 1.696.211.978 + 1.571.093.376]$$

$$NPV = 2.288.132$$

Trial and Errror IRR:

$$IRR = 18,51\% + \left[\frac{841.414.359}{841.414.359 - 2.288.132} \times 27,10\% - 18,51\%\right]$$

$$IRR = 18,51\% + \left[\frac{841.414.359}{839.126.227} \times 9,59\%\right]$$

$$IRR = 18,51\% + 9,62\%$$

$$IRR = 28,13\%$$

Discussion

Consideration in making an investment is very important to do, not only seeing related to the income to be obtained and the costs that will be incurred. However, it is also necessary to consider risk factors that can affect the investment to be made. Moreover, the results of an investment assessment will be given to external parties of the company to be seen and assessed by potential investors. By creating risk factors, it can provide a signal or sign to potential investors regarding the financial projections that will occur based on the risks that the company has considered (Spence, 1973).

The use of the capital budgeting method is a method of assessing the investment to be made. The calculation techniques in this method are Payback Period (PP), Net Present Value (NPV), Profitability Index (PI), and Internal Rate of Return (IRR). Adnyana (2020) explains that the capital budgeting calculation technique to achieve the criteria that an investment can be said to be feasible is as follows.

1. Payback Period (PP) is said to be feasible if the project payback time is faster than the predetermined time.
2. Net Present Value (NPV) is said to be feasible if the value of the NPV calculation is greater than zero.
3. Profitability Index (PI) is said to be feasible if the value of the PI calculation is greater than equal to one.
4. Internal Rate of Return (IRR) is said to be feasible if the value of the IRR calculation is greater than the estimated cost of capital.

The capital budgeting method allows decision makers, namely companies and potential investors to measure the value that will be generated by investments. However, by looking at the unknown future developments, especially related to the changing economic environment, the process of preparing financial projections to assess the investment to be made must be carried out, because investment risk will affect the level of return that the company will provide to potential investors (Jaya et al., 2023). By calculating various economic conditions that will occur, such as stable, weak, and strong economic conditions. Risk analysis is used to provide a comprehensive picture of the resilience or success of investments against economic changes that will occur. The following are the results of capital budgeting calculations to see the feasibility of investment based on economic conditions that are likely to occur.

1. Risk Analysis of Funding Investment Project Feasibility under Stable Economic Conditions

   The following are the results of the risk analysis of funding investment projects using capital budgeting calculations in stable economic conditions, as follows.

Table 8. Investment Feasibility Calculation Results under Stable Economic Conditions

No.	Capital Budgeting Calculation Technique	Calculation Result	Feasibility Criteria	Description
1	*"Payback Period* (PP)"	2,13 years	3 years	"Feasibility"
2	*"Net Present Value* (NPV)"	765.473.275	> 0	"Feasibility"
3	*"Profitability Index* (PI)"	1.15	≥ 1	"Feasibility"
4	*"Internal Rate of Return* (IRR)"	22.31%	> 13,96%	"Feasibility"

Source: Author (2024)

Based on table 8, it is known that the results of the calculation of investment feasibility in stable economic conditions in this study are feasible to continue. This can be concluded from the capital budgeting calculation technique, where the PP results show results of less than three years, which is only 2.13 years. Then, the NPV result shows a value above zero, which is 765,473,275. Furthermore, the PI result shows a result above equal to one, which is 1.15. Next, the IRR result shows a result above 13.96%, which is 22.31%.

The results of this study are in line with previous research conducted by Fransiska (2010), Wibowo (2014), and Zulaihah et al. (2019) which state that the overall capital budgeting calculation technique shows feasible results where the PP results are faster than the predetermined time, NPV results are greater than equal to zero, PI results are greater than equal to one, and IRR results are greater than the cost of capital.

2. Risk Analysis of Funding Investment Project Feasibility under Weak Economic Conditions

The following are the results of the risk analysis of funding investment projects using capital budgeting calculations in weak economic conditions, as follows.

Table 9. Investment Feasibility Calculation Results under Weak Economic Conditions

No.	Capital Budgeting Calculation Technique	Calculation Result	Feasibility Criteria	Description
1	*"Payback Period* (PP)"	2,93 years	3 years	"Feasibility"
2	*"Net Present Value* (NPV)"	-726.530.996	> 0	"Unfeasibility"
3	*"Profitability Index* (PI)"	0,85	≥ 1	"Unfeasibility"
4	*"Internal Rate of Return* (IRR)"	1,01%	> 9,41%	"Unfeasibility"

Source: Author (2024)

Based on table 9, it is known that the results of the calculation of investment feasibility in weak economic conditions in this study are more inclined towards not being feasible to continue. This can be concluded from the capital budgeting calculation technique, where the NPV result shows a value below zero, which is -726,530,996. Furthermore, the PI result shows a result below equal to one, which is 0.85. Next, the IRR result shows a result below 9.41%, which is 1.01%. However, there is still a feasible calculation technique, namely the PP results show results of less than three years, which is only 2.93 years.

The results of this study are in line with previous research conducted by Hermawan (2014), (Takaeb & Kelen, 2021), and (Setiawan, 2023) which state that all capital budgeting calculation techniques show unfeasible results where the NPV result is less than zero, the PI result is less than one, and the IRR result is less than the cost of capital.

3. Risk Analysis of Funding Investment Project Feasibility under Strong Economic Conditions

The following are the results of the risk analysis of funding investment projects using capital budgeting calculations in strong economic conditions, as follows.

Table 10. Investment Feasibility Calculation Results under Weak Economic Conditions

No.	Capital Budgeting Calculation Technique	Calculation Result	Feasibility Criteria	Description
1	*"Payback Period* (PP)"	1,99 years	3 years	"Feasibility"
2	*"Net Present Value* (NPV)"	841.414.359	> 0	"Feasibility"
3	*"Profitability Index* (PI)"	1.17	≥ 1	"Feasibility"
4	*"Internal Rate of Return* (IRR)"	28,13%	> 18,51%	"Feasibility"

Source: Author (2024)

Based on table 10, it is known that the results of the calculation of investment feasibility in strong economic conditions in this study are feasible to continue. This can be concluded from the capital budgeting calculation technique, where the PP results show results of less than three years, which is only 1.99 years. Then, the NPV result shows a value above one, which is 841,414,359. Furthermore, the PI result shows a result above equal to one, which is 1.17. Next, the IRR results show results above 18.51%, which is 28.13%.

The results of this study are in line with previous research conducted by Fransiska (2010), Wibowo (2014), and Zulaihah et al. (2019) which state that the overall capital budgeting calculation

technique shows feasible results where the PP results are faster than the predetermined time, NPV results are greater than equal to zero, PI results are greater than equal to one, and IRR results are greater than the cost of capital.

CONCLUSION

Based on the results of research with the capital budgeting method calculation technique to assess feasibility considerations for funding investment risks based on economic conditions that will occur, several conclusions can be drawn, namely as follows.

a. Based on the investment risk under stable economic conditions, it is known that the cost of capital obtained is 16.30%. In the capital budgeting calculation technique, where the PP results show results of less than three years, which is only 2.12 years. Then, the NPV result shows a value above zero, which is 605,979,419. Furthermore, the PI result shows a result above equal to one, which is 1.12. Next, the IRR results show results above 16.30%, which amounted to 23.18%. The results of the capital budgeting calculation technique show results that state that in stable economic conditions the funding investment is feasible to run.
b. Based on the investment risk in weak economic conditions, it is known that the cost of capital obtained is 8.95%. In the capital budgeting calculation technique, where the NPV result shows a value below zero, which is -505,820,750. Furthermore, the PI result shows a result below equal to one, which is 0.90. Next, the IRR result shows result below 8.95%, which amounted to 3.52%. The results of the capital budgeting calculation technique show results that state that in stable economic conditions the funding investment is not feasible to run. However, because only PP results show feasible results, it indicates that when there is an economic recession, the company can only return the principal of the sukuk along with the profit sharing that will be given to investors.
c. Based on the investment risk under strong economic conditions, it is known that the cost of capital obtained is 17.51%. In the capital budgeting calculation technique, where the PP results show results of less than three years, which is only 2.12 years. Then, the NPV result shows a value above one, which is 843,268,105. Furthermore, the PI result shows a result above equal to one, which is 1.17. Next, the IRR results show results above 17.51%, which amounted to 26.96%. The results of the capital budgeting calculation technique show results that state that in stable economic conditions the funding investment is feasible to run.

Acknowledgements

The researcher's gratitude goes to all those who have provided support and assistance during this research process. Starting from PT NUSKAINO employees, those who have provided suggestions related to research, family and friends who always provide moral support and enthusiasm during the research process, and those from the JRMSI Journal who have helped in the article release process.

REFERENCES

Adnyana, I. M. (2020). *STUDI KELAYAKAN BISNIS*. Lembaga Penerbitan Universitas Nasional (LPU-UNAS).

Amri, A. A., Husain, T. K., & Amran, F. D. (2022). Analisis Tingkat Resiko Usahatani Stroberi Di Kawasan Wisata Malino. *Jurnal Sains Agribisnis*, *2*(1), 1–11.

Annur, C. M. (2022). *Dana Securities Crowdfunding Tembus Rp507 Miliar per Juni 2022*. Databoks.Katadata.Co.Id. https://databoks.katadata.co.id/datapublish/2022/06/09/dana-securities-crowdfunding-tembus-rp507-miliar-per-juni-2022

Dihni, V. A. (2022, May 25). *Ini Ragam Permasalahan yang Dihadapi Startup di Indonesia*. Databoks.Katadata.Co.Id.

Fransiska, S. (2010). *ANALISIS PENGANGGARAN MODAL DALAM UPAYA PENILAIAN KELAYAKAN PEMBELIAN MESIN VARNIS*.

Hariyani, I., Serfiyani, C. Y., & Serfiyani, C. R. (2024). *PROPERTY TOP SECRET BUKU PINTAR BISNIS & INVESTASI PROPERTI DI ERA REVOLUSI INDUSTRI 4.0: BUKU PINTAR BISNIS & INVESTASI PROPERTI DI ERA REVOLUSI INDUSTRI 4.0*. Penerbit Andi. https://books.google.co.id/books?id=GQ0VEAAAQBAJ

Hermawan. (2014). *Analisis Capital Budgeting Proyek Pembangunan Pertamina Energy Tower*. Universitas Indonesia.

Jaya, A., Kuswandi, S., Prasetyandari, C. W., Baidlowi, I., Mardiana, Ardana, Y., Sunandes, A., Nurlina, Panus, & Muchsidin, M. (2023). *MANAJEMEN KEUANGAN*. PT Global Eksekutif Teknologi. www.globaleksekutifteknologi.co.id

Jenita, & Herispon. (2022). *MANAJEMEN KEUANGAN PERUSAHAAN*. CV Azka Pustaka.

Layarda, D. (2021). ANALISIS PENGARUH BETA SAHAM, LEVERAGE, UKURAN PERUSAHAAN TERHADAP BIAYA MODAL EKUITAS PADA PERUSAHAAN MANUFAKTUR YANG TERDAFTAR DI BURSA EFEK INDONESIA. *Jurnal FinAcc* , *6*(1).

LBS.ID. (2024, March). *Pendanaan Syariah Tanpa Ribet di LBS Urun Dana*. ..Lbs.Id. https://www.lbs.id/publication/investasi/pendanaan-syariah-tanpa-ribet-di-lbs-urun-dana

Lubis, T. A. (2016). *MANAJEMEN INVESTASI DAN PERILAKU KEUANGAN (PENDEKATAN TEORITIS DAN EMPIRIS)*. Salim Media Indonesia.

Nurhadi, A., & Effendy, A. A. (2020). *PENGANGGARAN PERUSAHAAN*. Unpam Press. www.unpam.ac.id

Pane, I., Hadju, V. A., Maghfuroh, L., Akbar, H., Simamora, R. S., Lestari, Z. W., Galih, A. P., Wijayanto, P. W., Waluyo, Uslan, & Aulia, U. (2021). *DESAIN PENELITIAN MIXED METHOD*. Yayasan Penerbit Muhammad Zaini.

Sampe, F., Supatminingsih, T., Ratnasari, A. R., Said, M. I., Almahdali, F., Fauzan, T. R., & Roni, A. (2023). *Pengantar Bisnis*. Sada Kurnia Pustaka. https://books.google.co.id/books?id=Q3usEAAAQBAJ

Savitri, E. (2016). *PENGANGGARAN PERUSAHAAN II*. Pustaka Sahila Yogyakarta.

Setiawan, R. A. (2023). *CAPITAL BUDGETING ANALYSIS TO ASSESS THE FEASIBILITY OF INVESTMENT IN THE LAYING HENS SECTOR IN VILLAGE-OWNED BUSINESS ENTITIES (BUMDES) WARGAKERTA OF TASIKMALAYA REGENCY*.

Spence, M. (1973). Job Market Signaling. *Source: The Quarterly Journal of Economics*, *87*(3), 355–374.

Surindra, B., Lestari, S. N., & Ridwan. (2020). *MANAJEMEN KEUANGAN*. Kepel Press.

Takaeb, M. Z., & Kelen, L. H. S. (2021). ANALISIS KELAYAKAN INVESTASI PADA USAHA BARBERSHOP DI KABUPATEN SUMBA TIMUR. *Juremi: Jurnal Riset Ekonomi*, *1*(2).

Wibowo, S. (2014). *ANALISIS CAPITAL BUDGETING UNTUK MENILAI KELAYAKAN RENCANA INVESTASI AKTIVA TETAP MESIN PRODUKSI*.

Zulaihah, L., Waluyo, M. R., & Mardhiyya, A. (2019). ANALISIS STUDI KELAYAKAN INVESTASI DENGAN METODE CAPITAL BUDGETING STUDI KASUS: PENDIRIAN STASIUN PENDIRIAN BAHAN BAKAR GAS (SPBG) DI PONDOK LABU, JAKARTA SELATAN. *Jurnal IKRA-ITH TEKNOLOGI*, *3*(3).