



Application of Capital Budgeting Method to Evaluate Investment Decisions on Additions to Fixed Assets at PT Hatten Bali

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Abstract. This research was conducted to evaluate the investment decision to add fixed assets by PT Hatten Bali using the capital budgeting method. The results of this study are expected to be used as material for evaluating the application of the capital budgeting method in making investment decisions on fixed assets at PT Hatten Bali. The data used for this study were obtained from interviews and documentation and were analyzed using descriptive qualitative research analysis techniques with a case study approach. Based on the results of research using the capital budgeting method which consists of the method of calculating the payback period, net present value, profitability index, internal rate of return and average rate of return, all of which have shown a favorable results. From these results it can be concluded that the investment decision to add fixed assets in the form of distribution vehicles made by PT Hatten Bali can benefit the company in stable sales conditions and the application of capital budgeting methods can reduce the risk of errors or failures in making investment decisions and improve subsequent investment decisions.

Keywords: *Capital Budgeting, Fixed Asset Investment Decisions*

1. Introduction

The addition of fixed assets will generally affect the company's finances in the long term, because the capital that must be spent is quite large and there is uncertainty in the period of return of invested capital. Therefore, companies need to carefully consider the capital they have before making investment decisions [1]. Investment decisions that have been made also need to be evaluated to see whether the investment performance has been made in accordance with the initial objectives when the investment is planned. Reassessment of investment can make it easier for an organization to plan future investments, or in other words it can help companies to avoid previous mistakes and systematically identify a successful process that can be repeated [2].

PT Hatten Bali in making an investment decision to add fixed assets did not calculate whether the investment provides a favorable prospect or not for the company and the company's subsequent financial condition, if there is an error in making this decision it can be bad for the company's finances.

Based on this background, the authors will evaluate the investment decision to add fixed assets that have been made by PT Hatten Bali using the capital budgeting method.



2. Literature Review

2.1 Investment

Investment is a commitment to a number of funds or other resources carried out at this time, with the aim of obtaining a number of benefits in the future [3]. There are several stages in the investment decision making process, including: 1) Determining the objectives and types of investment decisions to be selected, 2) Identifying investment alternatives, 3) Conducting preliminary studies to obtain information in order to realize project ideas to be implemented, in this case deciding to choose of several existing investment alternatives, 4) Conducting a business feasibility study in order to implement investment decisions, 5) Implementing investment decisions [4].

2.2 Fixed Assets

Fixed assets or also known as tangible assets are assets that are relatively permanent (in a long period of time) that are used in the normal activities of the company [5]. Related functions in the fixed asset accounting system consist of 1) User Function, 2) Research and Development Function, 3) Related Director, 4) President Director, 5) Purchasing Function, 6) Receiving Function, 7) Fixed Asset Function, 8) Accounting Function. More specifically, in the fixed asset purchase system or procedure, the related function or division is the part that requires fixed assets, managing director, purchasing department, receiving division, debt division, fixed asset division, and fixed asset card division [6].

2.3 Capital Budgeting

Capital Budgeting is the entire process of collecting, evaluating, completing and determining investment alternatives that will provide revenue for the company for a period of more than one year [7]. In capital budgeting, there are several calculation methods [8], including:

2.3.1 Payback Period (PP)

The payback period method is a calculation or determination of the time period needed to cover the initial investment of a project using the cash inflows generated by the project. .

Criteria:

- a. If the payback period is less than the target return, the investment project is feasible.
- b. If the payback period is greater than the target return on investment, the investment project is not feasible.

2.3.2 Net Present Value (NPV)

Net Present Value is a method for assessing the difference between the present value of net cash receipts in the future.

Criteria:

- a. If the $NPV \geq 0$ (positive) then the proposed investment project is feasible
- b. If the $NPV \leq 0$ (negative) then the investment project proposal is not feasible

2.3.3 Profitability Index (PI)

Profitability index is a capital budgeting technique that calculates the ratio between the present value of future net cash receipts and the future and present value of the investment.

Criteria:

- a. If $PI \geq 1$ then the proposed investment project is feasible
- b. If $PI \leq 0$ then the investment project proposal is not feasible

2.3.4 Internal Rate of Return (IRR)

The internal rate of return method is a method that calculates interest rates by equating the present value of investment with the present value of cash receipts future clean.

Criteria:

- a. If the $IRR >$ of the required interest rate, the investment project is feasible.
- b. If the $IRR <$ of the required interest rate, the investment project is not feasible.

2.3.5 Average Rate of Return (ARR)

Average Rate of Return (ARR) is a method that calculates the average rate of return according to accounting obtained from an investment.

Criteria:

- a. If the ARR is greater than the minimum ARR, then the investment project is feasible.
- b. If the ARR is less than the minimum ARR, then the investment project is feasible.

3. Research Methods

The data used in this study are quantitative and qualitative data [9]. The quantitative data used in this study are the income statement, list of fixed assets, sales data, distribution data, net income of distribution, and other numerical supporting data. The qualitative data in this study is in the form of an investment financing agreement letter for the purchase of the company's fixed assets and the results of interviews with distribution managers, general affairs, purchases, and finance regarding decision-making procedures for adding company fixed assets. The data collection techniques used in this study were interviews and documentation. In this research, the analysis technique used is descriptive qualitative analysis technique with the analysis stages carried out, namely describing the investment decision making procedure for adding fixed assets at PT Hatten Bali and evaluating investment decisions using the capital budgeting method.

4. Results and Discussion

4.1 Investment Decision Making Procedures for Addition of Fixed Assets at PT Hatten Bali

4.1.1 Related Sections or Departments in the Fixed Asset Purchase System

The divisions or departments involved in the investment decision making procedure for the addition of fixed assets at PT Hatten Bali as follows: 1) Divisions or departments requiring asset purchases, 2) CEO of PT Hatten Bali, 3) Procurement (General Affairs), 4) Purchasing Department, 5) Head of Corporate Finance, and 6) Finance & Accounting Department.

Based on the results of the study, there are several differences related to the part involved in the purchase of fixed assets at PT Hatten Bali, there are several differences that lie in the General Affair procurement section which functions as receiving division, fixed asset division, and fixed asset card division and other different parts namely the director, where at PT Hatten Bali the authorization for fixed asset investment is given by the main management or the CEO and the authorization for cash disbursements must be given by the Head of Corporate Finance.

4.1.2 Investment Decision Making Procedure for Addition of Fixed Assets

The process of making investment decisions to add fixed assets in the form of distribution vehicles at PT Hatten Bali consists of the following stages: 1) Determination of Investment Objectives and Types of Investments, 2) Identification of Investment Alternatives, 3) Conducting Preliminary Study, and 4) Implementation of Investment Decisions.

Based on the results of the study, in making investment decisions to add fixed assets by PT Hatten Bali to the addition of distribution vehicles is slightly different from the theory. The difference lies in the investment feasibility study process, where the process is not carried out in the investment decision-making process to add fixed assets. In making investment decisions, it is necessary to carry out an investment feasibility study that can be carried out using the capital budgeting method because it can reduce the risk of loss or failure which will have an impact on the company's survival [10].

4.1.3 Procedure for Implementing Decisions on Adding Fixed Assets

The implementation of investment decisions to add fixed assets in the form of distribution vehicles begins with a submission from the distribution department to add distribution vehicles, then the distribution department requests approval from the CEO of PT Hatten Bali regarding the implementation of the addition of these distribution vehicles. After obtaining approval from the CEO, the distribution department forwards a request to the procurement or general affairs department to make a purchase

request to the purchasing department. Then the purchasing department will look for suppliers or suppliers and leasing companies that have the appropriate criteria. Suppliers who have been selected will be sent the purchase order and the required documents, after which the supplier will send invoices and invoices for the purchase of fixed assets. The finance department makes a payment submission to the Head of Corporate Finance for authorization, after being authorized, the finance department will prepare a check and receipt according to the first payment amount to be submitted to the supplier as well as the installment payment schedule along with interest to the leasing party, proof of bank disbursements, and receipts. The vehicle will be received by the general affair department together with a receipt, after which the general affair will make a letter of placement of assets to be submitted to the distribution department that has proposed the purchase of the fixed assets. Finally, the general affairs section will put the purchased property and equipment on the fixed asset card.

4.2 Application of Capital Budgeting Method to Evaluate Investment Decisions Addition of Fixed Assets at PT Hatten Bali

PT Hatten Bali added fixed assets in the form of a Mitsubishi FE 71 PS box truck with an initial investment value of Rp 344,500,000.00. Depreciation of vehicles with an estimated economic life of 8 years without residual value and depreciated using the straight-line method is Rp 43,062,500.00 PT Hatten Bali in adding these fixed assets uses 2 sources of funds, 30% of own capital and 70% of loan capital from leasing company.

Table 1. Calculation Cost of Capital

Type of Capital	Cost of Capital	Proportion	WACC
Own Capital	14.6%	30%	4.4%
Loans	4.8%	70%	3.3%
			7.7%

Based on distribution reports, sales reports and distribution net income reports for the year 2016-2019, projections are made to predict the amount of distribution, sales and profits in the future using the trend linear method.

Table 2. Estimated Distribution, Sales, and Net Income from Distribution At PT Hatten Bali in 2020-2027

Year	Distribution (Unit)	Sales (Unit)	Total Net Profit Distribution (Rp)
2020	1.558.506	1.732.285	18.171.722.719
2021	1.719.223	1.932.037	19.872.155.460
2022	1.879.940	2.131.789	21.572.588.201
2023	2.040.657	2.331.541	23.273.020.942
2024	2.201.374	2.531.293	24.973.453.682
2025	2.362.091	2.731.046	26.673.886.423
2026	2.522.807	2.930.798	28.374.319.164
2027	2.683.524	3.130.550	30.074.751.904
TOTAL	16.968.121	19.451.338	192.985.898.495

The projection of cash inflows is carried out to describe the condition of the company's cash in the future, so that it can be seen the amount of net cash received on the investment made. In estimating the net cash flow each year over the economic life of the invested fixed assets, it is based on cash inflows in addition to cash outflows.

Table 3. Calculation of Incremental Cash Inflow
PT Hatten Bali 2020-2027

Year	Cash Inflow After Investment (Rp)	Cash Inflow Before Investasi (Rp)	Incremental Cash Inflow (Rp)	Kumulatif Cash Inflow (Rp)
2020	2.025.700.247	1.686.376.240	339.324.007	339.324.007
2021	2.214.637.218	1.686.376.240	528.260.978	867.584.985
2022	2.403.574.189	1.686.376.240	717.197.949	1.584.782.934
2023	2.590.675.938	1.686.376.240	904.299.698	2.489.082.632
2024	2.779.612.909	1.686.376.240	1.093.236.669	3.582.319.301
2025	2.968.549.880	1.686.376.240	1.282.173.640	4.864.492.941
2026	3.157.486.852	1.686.376.240	1.471.110.612	6.335.603.553
2027	3.346.423.823	1.686.376.240	1.660.047.583	7.995.651.136
TOTAL			7.995.651.136	

The capital budgeting method used in evaluating the decision to add fixed assets at PT Hatten Bali is:

4.2.1 Payback Period

$$\text{Payback Period} = 1 + \frac{b - c}{d - c}$$

$$\text{Payback Period} = 1 + \frac{\text{Rp } 344.500.000 - \text{Rp } 339.324.007}{\text{Rp } 867.584.985 - \text{Rp } 339.324.007}$$

$$\text{Payback Period} = 1 + \frac{\text{Rp } 5.175.993}{\text{Rp } 528.260.978}$$

$$\text{Payback Period} = 1 + 0,010$$

$$\text{Payback Period} = 1 \text{ year over } 0,010$$

$$\text{Payback Period} = 0,010 \times 12 = 0,118 \text{ month}$$

$$\text{Payback Period} = 0,118 \times 30 = 3,527 \text{ days}$$

Payback Period = 1 year 4 days

The results of the calculations above show that the initial investment closure period of the investment is 1 year 4 days and after that the company can get a profit from the investment.

4.2.2 Net Present Value (NPV)

Table 4. Calculating of Net Present Value

Year	Cash Inflow (Rp)	Present Value 7,7%	Present Value Cash Inflow (Rp)
2020	339.324.007	0,928389031	315.024.686
2021	528.260.978	0,861906193	455.311.409
2022	717.197.949	0,800184256	573.890.507
2023	904.299.698	0,742882286	671.788.227
2024	1.093.236.669	0,689683766	753.987.583
2025	1.282.173.640	0,640294843	820.969.170
2026	1.471.110.612	0,594442709	874.490.978
2027	1.660.047.583	0,551874091	916.137.251
	PV Cash Inflow		5.381.599.810
	Initial Investment		344.500.000
	Net Present Value		5.037.099.810

The calculation above, it can be seen that the net present value generated amounting to Rp5,037,099,810.00 which indicates that the investment is profitable to continue because the difference between the present value of future net cash receipts and the investment value produces a positive value.

4.2.3 Profitability Index (PI)

$$\text{Profitability Index} = \frac{\text{PV Cash Inflow}}{\text{Initial Investment}}$$

$$\text{Profitability Index} = \frac{\text{Rp } 5.381.599.810}{\text{Rp } 344.500.000}$$

$$\text{Profitability Index} = \mathbf{15,62}$$

The calculation above, the calculation result is obtained from the profitability index of 15.62. Based on these results, investment in the addition of distribution vehicles is profitable because the resulting profitability index is more than 1.

4.2.4 *Internal Rate of Return (IRR)*

Table 5. Calculating of Internal Rate of Return

Year	Cash Inflow (Rp)	PVIF 137%	PV Cash Inflow (Rp)	PVIF 138%	PV Cash Inflow (Rp)
2020	339.324.007	0,42194093	143.174.686	0,42016807	142.573.112
2021	528.260.978	0,17803415	94.048.493	0,17654120	93.259.829
2022	717.197.949	0,07511989	53.875.833	0,07417698	53.199.576
2023	904.299.698	0,03169616	28.662.826	0,03116680	28.184.125
2024	1.093.236.669	0,01337391	14.620.845	0,01309529	14.316.254
2025	1.282.173.640	0,00564300	7.235.304	0,00550222	7.054.806
2026	1.471.110.612	0,00238101	3.502.732	0,00231186	3.401.000
2027	1.660.047.583	0,00100465	1.667.761	0,00097137	1.612.519
Total PV Cash Inflow			346.788.479		343.601.222
Initial Investment			344.500.000		344.500.000
NPV			2.288.479		- 898.778

$$IRR = i_1 + \frac{NPV_1}{NPV_1 - NPV_2} \times (i_2 - i_1)$$

$$IRR = 137\% + \frac{Rp2.288.479}{Rp 2.288.479 - (-Rp 898.778)} \times (138\% - 137\%)$$

$$IRR = 137\% + 0,72\%$$

$$IRR = 137,72\%$$

The results of the above calculations can be seen that the resulting IRR is 137.72% greater than the rate of return expected by the company namely 7.7%.

4.2.5 *Average Rate of Return (ARR)*

$$\text{Average Rate Of Return} = \frac{\text{Average Cash Inflow}}{\text{Average Investment}} \times 100\%$$

$$\text{Average Rate Of Return} = \frac{Rp 999.456.392}{Rp 172.250.000} \times 100\%$$

$$\text{Average Rate Of Return} = 580\%$$

From the above calculation, it can be seen that the resulting average rate of return is 580% and exceeds the rate of return expected by the company namely 7.7%.

Table 6. Comparison of Evaluation Calculation Results
Investment Decision for Addition of Fixed Assets
with the Capital Budgeting Method

No	Capital Budgeting Techniques	Criteria	Result	Conclusion
1	Payback Period (PP)	< 8 year	1 year, 4 days	Favorable
2	Net Present Value (NPV)	≥ 0 (positive)	Rp 5.037.099.810	Favorable
3	Profitability Index (PI)	> 1	15,62	Favorable
4	Internal Rate Of Return (IRR)	> 7,7%	137,72%	Favorable
5	Average Rate Of Return (ARR)	> 7,7%	580%	Favorable

Based on the comparison between the calculation results and the criteria for each calculation method investment decision to add distribution vehicles are declared profitable for the company.

5. Conclusion

Based on the discussion and the results of research that has been carried out related to the evaluation of investment decisions to add fixed assets in the form of a box truck type distribution vehicle carried out by PT Hatten Bali, it can be concluded that: PT Hatten Bali did not carry out the feasibility study stage investment prior to implementation investment decisions, so it is necessary to re-evaluate the investment to improve investment decisions in the future. Making investment decisions to add distribution vehicles to PT Hatten Bali which are re-evaluated using the capital budgeting method can benefit the company in stable sales conditions and the application of the capital budgeting method can reduce the risk of errors or failures in making investment decisions and improve further investment decisions.

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7. References

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