

# A Study on Evaluation of Capital Budgeting in Tube Products of India

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**Abstract:** *This study examines the capital budgeting practices within Tube Products of India, focusing on the effectiveness of investment decision-making processes. Utilizing quantitative and qualitative analyses, the research assesses the alignment of capital budgeting strategies with organizational objectives, evaluating factors such as risk management, cost estimation accuracy, and investment appraisal techniques. By investigating the existing practices and identifying potential areas for improvement, this research aims to provide valuable insights for enhancing capital allocation efficiency within Tube Products of India.*

**Keywords:** Capital budgeting, Tube Products of India, Evaluation, Investment decisions, financial analysis, Project appraisal (Net Present Value), IRR (Internal Rate of Return).

## I. INTRODUCTION

Capital budgeting (or investment appraisal) is the planning process used to determine whether an organization's long-term investments such as new machinery, replacement machinery, new plants, new products, and research development projects are worth the funding of cash through the firm's capitalization structure (debt, equity or retained earnings) It is the process of allocating resources for major capital, or investment, expenditures. One of the primary goals of capital budgeting investments is to increase the value of the firm to the shareholders

The capital budgeting is the process in which a business determines whether projects such as building a new plant or investing in a long-term venture are worth pursuing. Often, a prospective project's lifetime each inflow and outflows are assessed in order to determine whether the returns generated meet a sufficient target benchmark and also known as "investment appraisal

Capital budgeting is considered as the process of making investment decisions on capital expenditure. The general idea is that the capital or long-term funds, raised by the firms are used to invest in assets that will enable the firm to generate revenues several years into the future. Often the funds raised to invest in such assets are not unrestricted or infinitely available, thus the firm must budget how these funds are invested. Capital budgeting is a required managerial tool. One duty of a financial manager is to choose invests with satisfactory cash flows and rates of return. Therefore, a financial manager must be able to decide whether can invest is worth undertaking and be able to choose intelligently between two or more alternatives. To do this, a sound procedure to evaluate, compare and select projects is needed.

## EVALUATION OF THE CAPITAL BUDGETING TECHNIQUES:

The process of capital budgeting requires constant evaluation in order to make sure that you are making the right decisions for your business. Here are a few of the more popular methods of evaluation for capital budgeting

### Net Present Value

Calculating the net present value is one of the most common ways to evaluate a capital budgeting process. In order to perform this calculation, you will take the value of the present benefits of the project and subtract the present costs. The difference provides you with the net present value.

### Internal Rate of Return

Another popular method of evaluation is referred to as the internal rate of return. This is a discount rate that is commonly used to determine how much of a return an investor can. Expect to realize from a particular project

### **Payback Period**

The payback period is another method that many businesses use to determine whether to keep pursuing a project. With this method, you are basically determining how long it will take to pay back the initial investment that is required to undergo a project. In order to calculate this, you would take the total cost of the project and divide it by how much cash inflow you expect to receive each year. This will give you the total number of years or the payback period

### **OBJECTIVE OF THE STUDY:**

#### **PRIMARY OBJECTIVE:**

- To study and evaluate the capital budget for the last 5 years.

#### **SECONDARY OBJECTIVES:**

- To estimate the future cash inflows of the firm.
- To determine the expected rate of return on each project.
- To analyse and assess the financial viability of the investment proposal using the traditional and modern.
- To guide the management for taking correct investment decision.
- To evaluate the net present value and internal rate of return in decision making.

### **NEED FOR THE STUDY:**

Its future cash flow. The degree of uncertainty associated with these future cash flows the value of these future cash flows considering their uncertainty. As large sum of money is involved which influences the profitability of the firm making capital budgeting an important task

Investment decision is the base on which the profit will be earned and probably. Measured through the return on the capital. A proper mix of capital investment is quite important to ensure adequate rate of return on investment, calling for the need of capital budgeting.

The implication of long-term investment decisions is more extensive than those of short run decisions because of time factor involved, capital budgeting decisions are subject to the higher degree of risk and uncertainty than short run decision. Whether or not funds should be invested in long-term projects such as setting of industry, purchase of plant and machinery, etc.

### **SCOPE OF THE STUDY:**

This study will help the company to take decision regarding the effective utilization of limited funds in new projects on the basis of payback period and rate of return or the profitability that could be acquired from the investment on fixed asset. By this study, the employee will have the awareness or the knowledge about the new long-term projects that are undertaken by the company.

The results of this study reveal a number of subjective factors used by managers to evaluate proposed investments. So the human side of Capital budgeting would be an interesting focus for further research. There is a need to link the survey responses across different areas of financial management. As these decisions affect the long-term future survival and growth of the organization, it would also be interesting to study whether the capital budgeting decision makers are getting any special incentives or otherwise for taking such decision which generate desired results.

### **LIMITATION OF THE STUDY:**

- Due to the confidential financial records, the data is not exposed be detailed and full-fledged. the study may not
- Limited span of time is a major limitation for this project.
- The time within which, the study is being attempted is too short to carry detail analysis.
- This analysis is based on secondary data, so the scope of the study is limited, only to
- that extent.
- This study requires the estimates of cash flows which is a tedious task.

## **II. REVIEW OF LITERATURE:**

**1. Dhankar RS (2021):** Examined methods of evaluating investments and uncertainty in Indian companies. He selected a sample of 75 firms. His findings revealed that 33% of firms used non-discounted methods like PBP and ARR whereas 16% of companies were using modern DCF techniques. Moreover, almost 50% of the companies incorporated risk by "Adjusting the Discount Rate and "Capital Asset Pricing Model

**2. C Prabhakara Babu & Aradhana Sharma (2021):** Had done an empirical study on capital budgeting practices in Indian Industry. The authors have conducted a survey of 73 companies in and around Delhi and Chandigarh. They used personal interview method. It has been found by them that 90% of companies have been using capital budgeting methods. Around 73% of the companies have been using DCF methods. The popular investment appraisal methods are the "IRR and the "PBP", used either individually or jointly. Around 70% executives felt that it is possible to estimate accurately the cash flows associated with each capital investment separately. They have observed that capital investment proposals are prepared by the concerned departments and the final decision is vested with other personnel/committee. The popular discount rate used by the firms in "the term lending rate of financial institutions" closely followed by 'cost of capital". The most often used method to resolve the uncertainty in the future returns seems to be inflating or deflating the future cashflows and it is followed by the use of "sensitivity analysis". Most of the executives (around 75%) appreciate the suitability of the DCF technique in our country.

**3. Jain PK and Kumar M (2022):** Has done a comparative study of capital budgeting practices in Indian context and observed that 25% of sample companies invested for expansion and diversification and firms were making regular investments for replacement and maintenance. The selected sample companies' preference for evaluating capital budgeting projects were PBP, due to its simplicity, easy understanding, less cost and less time, followed by NPV and Recompenses preferred WACC followed by "Arbitrary rate and Marginal cost of additional funds as cut-off rate for discounting the projects. For adjusting risk, the "sensitivity analysis" was preferred followed by "Higher cut off rate" and 'Shorter Pay Back Period'

**4. Anand Manoj (2021) :** Surveyed 81 CFOs of India to find out their corporate finance practices vis-à-vis capital budgeting decisions, cost of capital, capital structure, and dividend policy decisions. It analysed the responses by the firm characteristics like firm size, profitability, leverage, PE ratio, CFO's education, and the sector. The analysis reveals that practitioners do use the basic corporate finance tools that the professional institutes and business schools have taught for years to a great extent. It is also observed that the corporate finance practices vary with firm size. As per his findings, the firms use DCF techniques more than before. They use multiple criteria in their project choice decisions, 85% of the respondents consider IRR as a very important/important project choice. About 65% of the respondents always or almost always use NPV. The PBP method is also popular. Large firms are significantly more likely to use NPV than small firms. Small firms are more likely to use PBP method than large firms. High growth firms are more likely to use IRR than the low growth firms. The sensitivity analysis and scenario analysis are most widely used techniques for assessing the project risk.

## **III. RESEARCH METHODOLOGY**

### **Secondary data:**

The secondary data are those which have already collected and stored. Secondary data easily get those secondary data from records, journals, annual reports of the company etc. It will save the time, money, and efforts to collect the data. Secondary data also made available through trade magazines, balance sheets, books etc.

### **SOURCE OF DATA USED IN THIS STUDY:**

Secondary data are collected from the monthly tracker and annual report Of Tube products of India.

### **RESEARCH DESIGN:**

Research design is purely and simply the framework or plan for a study that guides the collection and analysis of data. The research design of this study is the analytical research.

### **ANALYTICAL RESEARCH:**

As the researcher has to use facts or information already available and analyze them to make a critical evaluation of the material. It is kind of "quantitative research", Quantitative research is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity.

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**IV. DATA ANALYSIS AND INTREPRETATION**

**TABLE 1**

YEAR	CASH INFLOWS (Rs. In lakhs)	CUMULATIVE CASH INFLOWS
18 – 19	212	212
19 – 20	320	532
20 – 21	533	1065
21 – 22	205	1270
22 - 23	608	1878

Here cash flows are not uniform. Therefore, formula methods cannot be used. Hence PBP Period is computed with the help of cumulative cash inflows.

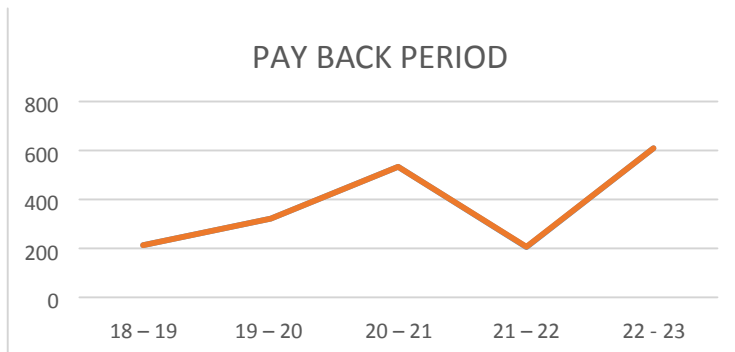
$$\text{PAYBACK PERIOD} = \frac{\text{INITIAL INVESTMENT} - \text{CUMULATIVE CASH INFLOWS}}{\text{NEXT YEAR CASH INFLOW}}$$

Initial investment = 824 lakhs

$$= 2 \text{ years} + \frac{824 - 532}{533}$$

$$= 2 + 0.54$$

$$= 2.55$$



**INFERENCE :**

From the above calculation it is clear that the project is viable since it lies below the standard form. Hence the project is accepted.

**NET PRESENT VALUE METHOD**

**FORMULA**

$$\text{NPV} = R * \frac{1 - (1+i)^{-n}}{i} - \text{initial investment}$$

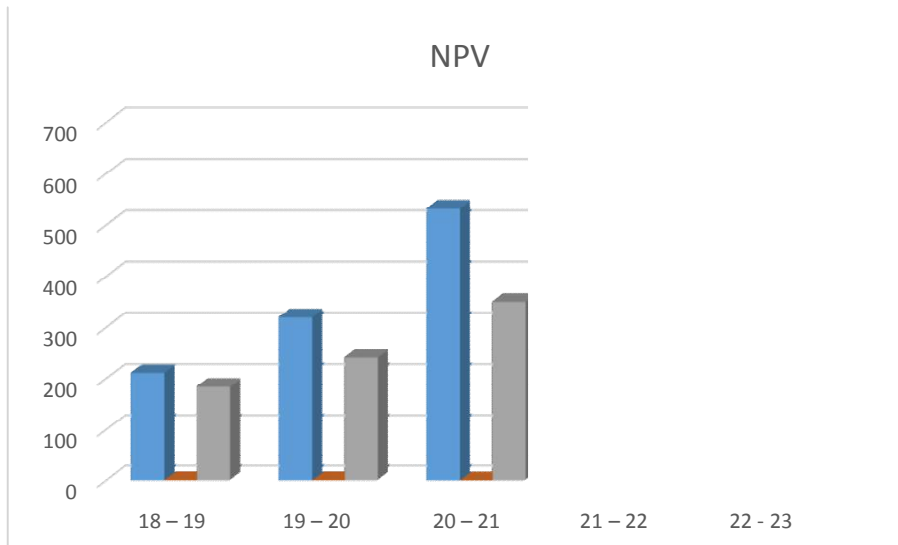
$$\text{Discount factor} = \frac{1}{(1+r)^n}$$

**TABLE 2 :**

YEAR	CASH INFLOWS(Rs. In lakhs)	DISCOUNT FACTOR @ 15%	PRESENT VALUE
18 -19	212	0.869	184.228
19 – 20	320	0.756	241.92
20 – 21	533	0.658	350.714
21 – 22	205	0.571	117.055

22 – 23	608	0.497	302.176
		TOTAL PV	1196.093
		LESS : INITIAL INVESTMENTS	824.000
		NPV	372.093

**NPV = PV of cash inflow – PV of cash outflow**



**INFERENCE:**

NPV of cash inflows Rs.1196.093 is greater than that of cash outflow of rs.824.thus , it generates a positive net present value of rs. 372.hence the project is accepted (NPV > 0)

**PROFITABILITY INDEX:**

FORMULA :

$$PI = \frac{\text{present value of cash inflows}}{\text{present value of cash outflows}}$$

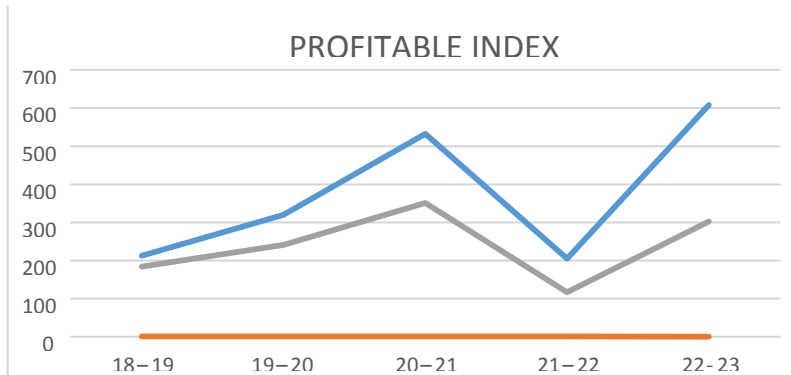
**TABLE 3:**

YEAR	CASH INFLOWS (Rs. In lakhs)	DISCOUNT FACTOR @ 15%	PRESENT VALUE
18 -19	212	0.869	184.228
19 – 20	320	0.756	241.92
20 – 21	533	0.658	350.714
21 – 22	205	0.571	117.055
22 – 23	608	0.497	302.176
		TOTAL PV	1196.093
		LESS : INITIAL INVESTMENTS	824.000

		NPV	372.093
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$$\text{Profitability index} = \frac{1196.093}{824}$$

$$\text{PI} = 1.451$$



**INFERENCE :**

The above with positive NPV will have PI greater than one. I less than means that the project NPV is negative. Hence the project is accepted (PI > 1)

**INTERNAL RATE OF RETURN**

As cash inflows are unequal applying trial and error method

$$\text{Present value factor} = \frac{\text{initial investn}}{\text{average annual ca}}$$

$$\text{Average annual cash inflow} = \frac{\text{total cash i}}{\text{no of yec}}$$

**FORMULA:**

$$\text{IRR} = \text{Lower rate} + \frac{\text{Positiv}}{\text{Difference is calculi}} \quad * \text{ difference in rate}$$

**TABLE 4 : AVERAGE ANNUAL CASH INFLOW**

YEAR		CASH INFLOWS (IN LAKHS)
18 – 19	C1	212
19 – 20	C2	320
20 – 21	C3	533
21 – 22	C4	205
22 - 23	C5	608
	TOTAL	1878

$$\text{AVERAGE ANNUAL CASH INFLOW} = \frac{1878}{5} = 375.6$$

$$\text{PV FACTOR} = \frac{824}{375.6} = 2.19$$

Table value near to 2.19 in present value annuity table for n = 5 years and the corresponding (r) rate, by trial-and-error method, assuming that it should lie between 26% to 36%

LTR = 26%

HTR = 36%

**NET PRESENT VALUE @ HTR 36%**

**TABLE 5(1)**

YEAR	CASH INFLOW (Rs. In lakhs)	Discount Factor @36%	Present value
18 – 19	212	0.735	155.82
19 – 20	320	0.541	173.12
20 – 21	533	0.398	212.13
21 – 22	205	0.292	59.86
22 - 23	608	0.215	130.72
		TOTAL PV	731.65
		LESS: initial investment	824
		NPV	(92.35)

**NET PRESENT VALUE @ LTR 26%**

**TABLE 5(2)**

YEAR	CASH INFLOW (Rs. In lakhs)	Discount factor @26%	Present value
18 – 19	212	0.794	168.33
19 – 20	320	0.630	201.6
20 – 21	533	0.500	266.5
21 – 22	205	0.397	81.39
22 - 23	608	0.315	191.52
		TOTAL PV	909.34
		LESS : initial investment	824
		NPV	85.34

$$\begin{aligned}
 \text{IRR} &= \text{lower rate} + \frac{\text{positive difference in calcula}}{\text{difference in rate}} \\
 &= 26\% + \frac{85.34}{909.34 - 731.65} * (36 - 26) \\
 &= 26\% + (0.480) * (10) \\
 &= 26\% + 4.80 \\
 &= 30.80 \text{ or } 31\%
 \end{aligned}$$

**DECISION CRITERIA FOR CAPITAL BUDGETING TECHNIQUES**

DECISION METHOD	RESULT	ACCEPT / REJECT	REASON
PAYBACK PERIOD METHOD	2.55	Accepted	Because payback period is below the standard norm of the company i.e., 2.55 < 4 years
NET PRESENT VALUE METHOD	372.093	Accepted	NPV is accepted because it gives a positive value.

INTERNAL RATE OF RETURN METHOD	31%	Accepted	IRR is accepted because it is more than the expected rate of return.
PROFITABILITY INDEX	1.451	Accepted	It is accepted because it is more than one.

Thus, the above table shows the various decision method and the reason we are accepting the project.

**Financial Ratios:**

The key financial ratios of the Company during the financial year compared to the previous financial year are as under:

S.NO	Financial Ratio	FY 2022 - 2023	FY 2021-2022	% change over previous year
1	Interest Coverage Ratio (times)	50.7	60.4	(19.2%)
2	Debt-Equity Ratio (times)	0.1	0.1	11.5%
3	Net Profit Margin	9.2%	7.5%	23.0%
4	Return on Net Worth	20.2%	17.6%	12.9%
5	Return on Capital Employed	27.6%	22.6%	22.2%
6	Revenue Growth	13.8%	49.4%	
7	Debtors Turnover (times)	10.4	9.9	4.7%
8	Inventory Turnover (times)	7.5	7.1	4.5%
9	Current Ratio (times)	1.5	1.1	2.9%
10	Operating Profit Margin	13.0%	10.9%	16.0%

**INFERENCE:**

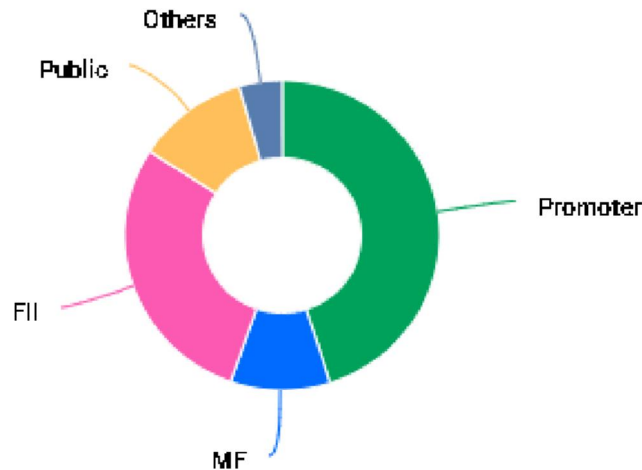
The company exhibited a slight decline in interest coverage ratio but maintained a strong position, while also keeping its debt equity ratio stable at low level, indicating sound financial management. Improved profitability metrics, including higher net profit margin and returns on net worth and capital employed, underscore the company's effective utilisation of resources and enhanced financial performance.

**SUMMARY DATA OF PROMOTERS AND NON PROMOTERS SHAREHOLDING :**

MONTHS	PROMOTERS	FII	DII	PUBLIC
MAR 2021	46.7%	25.5%	15.0%	12.9%
JUNE2021	46.7%	25.8%	14.8%	12.7%
SEP 2021	46.5%	25.2%	15.7%	12.6%
DEC 2021	46.5%	26.1%	15.0%	12.5%
MAR 2022	46.5%	26.1%	14.4%	13.1%
JUNE2022	46.5%	25.9%	14.7%	13.0%
SEP 2022	46.5%	26.3%	14.5%	12.7%
DEC 2022	46.5%	28.8%	12.2%	12.5%
MAR 2023	46.2%	28.9%	12.3%	12.6%
JUNE2023	46.1%	29.4%	12.7%	11.8%
SEP 2023	46.1%	30.4%	11.9%	11.5%



DEC 2023	45.1%	28.8%	14.6%	11.5%
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#### V. FINDING

- The investment summary shows the various investment descriptions and the total proposal cost of Rs.824 (in lakhs) required for the implementation of new high temperature annealing furnace.
- From the analysis, the payback period is 2.55 years. It shows the viability of the project as it lies below the standard norm (2.55<4 yrs). Hence the project is accepted.
- From the Net Present Value method, the value of NPV is Rs. 372.093. thus it generates a positive NPV
- From the Profitability Index, the value of PI is 1.451. This also shows the acceptability of the project (1.451>1).
- From the Internal Rate of Return method, the value of IRR is 31%. Hence it is also acceptable because it is above the expected rate return (31%>15.75%)
- There is increase in sales which results in capital productivity and efficiency of the concern of the comparison for the period of years

#### VI. SUGGESTION

- The firm may create awareness to the shareholders regarding investment decisions.
- They are an assessment of future events, which are difficult to predict.
- There should be proper budgeting control system
- Education about the importance of budgeting should be communicated to all concerned authorities involved directly or indirectly to work according for the growth of company
- Screening of project proposal should not be made only on the cost associated but also on the impacted results.
- A frequent follow up of the implemented project is necessary to know actual performance, so that the deviation from the budgeted data can be found and corrections could be made
- The investment decision involves commitment of large amount funds so the investment programme should be handled carefully as it is going to shape the basic character of a firm.

#### VII. CONCLUSION

TPI is the leading organization and it is the unit of Tube Investment of India, and is one among the Murugappa group TPI maintains the standard, quality of services and the brand image through its uncompromising customer service. It has separate finance department which is entrusted with the task of carrying out its various efficiently

The business of TPI is carried on in a very effective manner, in the current scenario, an efficient allocation of capital is the most important finance function to commit the firm funds to the long-term assets. Capital budgeting decisions are of considerable importance they tend to determine its value by influencing its growth, profitability, and risk. The effects of investment decisions extend into the future and must be endured for a longer period than the consequences of the current operating expenditure.

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