

## A STUDY ON CAPITAL BUDGETING TECHNIQUES

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### ABSTRACT

The project entitled "A STUDY ON CAPITAL BUDGETING IN BEVCON WAYORS PVT. LTD.". The study was set out to determine the capital budgeting techniques used in investment appraisal decisions. Capital budgeting techniques are useful tools to administrators in managing resources. The details regarding the history, finance and inventory policies of the company were collected from records, reports and profile of the company. Data analysis was carried out and findings are listed. Suitable suggestion has been provided. The tools used in this study were pay-back period, Accounting rate of return, Net present value method, Profitability index, Internal Rate of Return. This study also gives an overall picture of financial position of the firm for five years. From the study, we found that the financial position of the firm is satisfactory.

**Keywords:** Capital budgeting, Capital budgeting techniques, pay-back period, Accounting rate of return, Net present value method, Profitability index, Internal Rate of Return

### 1. INTRODUCTION

Capital budgeting (or investment appraisal) is the planning process used to determine whether a firm's long term investments such as new machinery, replacement machinery, new plants, new products, and research development projects are worth pursuing. It is budget for major capital, or investment, expenditures.

**Many formal methods are used in capital budgeting, including the techniques such as**

- Average rate of return
- Net present value
- Profitability index
- Internal rate of return
- Payback period

These methods use the incremental cash flows from each potential investment, or project. Techniques based on accounting earnings and accounting rules are sometimes used - though economists consider this to be improper - such as the accounting rate of return, and "return on investment." Simplified and hybrid methods are used as well, such as payback period and discounted payback period.

**Process of making long-term planning decisions for capital investments.**

**There are typically two types of investment decisions:**

(1) Selecting new facilities or expanding existing facilities. Examples include:

(a) Investments in long-term assets such as property, plant, and equipment; and

(b) Resource commitments in the form of new product development, market research, refunding of long-term debt, introduction of a computer, etc.

(2) Replacing existing facilities with new facilities. Examples include replacing a manual bookkeeping system with a computerized system and replacing an inefficient lathe with one that is numerically controlled. As such, capital budgeting decisions are a key factor in the long-term profitability of a firm.

To make wise investment decisions, managers need tools at their disposal that will guide them in comparing the benefits and costs of various investment alternatives. Many techniques used for evaluating investment proposals are widely available.

They include payback, Accounting Rate of Return, Internal Rate of Return and the Net Present Value method.

Capital budgeting is the planning of long-term corporate financial projects relating to investments funded through and affecting the firm's capital structure. Management must allocate the firm's limited resources between competing opportunities (projects), which is one of the main focuses of capital budgeting. [2] Capital budgeting is also concerned with the setting of criteria about which projects should receive investment funding to increase the value of the firm, and whether to finance that investment with equity or debt capital. Investments should be made on the basis of value-

added to the future of the corporation. Capital budgeting projects may include a wide variety of different types of investments, including but not limited to, expansion policies, or mergers and acquisitions. When no such value can be added through the capital budgeting process and excess cash surplus exists and is not needed, then management is expected to pay out some or all of those surplus earnings in the form of cash dividends or to repurchase the company's stock through a share buyback program.

## 2. REVIEW OF LITERATURE

### Article:1

**Title:** A study on capital budgeting practices

**Author:** Md. Anhar Sharif Mollah and Md. Abdur Rouf

**Source:** Discover Journals

**Abstract:** The basic objective of financial management is the maximization of the shareholders' wealth by focusing on three decisions which are capital budgeting decisions, capital structure decision and dividend decision. Most of the scholar and practitioner opine that although three decisions are important, firm success and survival ultimately depend on a right investment decision because a good investment decision remains good business even though bad finance taken; on the contrary, a bad investment decision will be a wrong decision even with best finance policy (Brealey et al., 2015). A sound capital budgeting decision is very critical for a firm because it is aligned with the firm's primary objective (wealth maximization), and it requires a substantial amount of resource and long-term commitment. Once the decision has been made, the process cannot be manipulated without incurring losses (Hall and Millard, 2010). Capital budgeting is a major terrain of the sphere of financial management. Capital budgeting is related activities, it is not a standalone single activity; rather it is defined as a process called "capital budgeting process." Capital budgeting is extremely important for capital investment decisions owing to its nature of capital budgeting process. Gitman et al. (2015) define capital budgeting as "the process of evaluating and selecting long term investment consistent with the firm owners' goal of wealth maximization" (p. 344). Universally accepted definition yet to exist, because it is involved with multifaceted activities and influenced by many changing factors in the organizational environment.

### Article:2

**Title:** A Review of the Literature on Capital Budgeting and Investment Appraisal

**Author:** Susan F Haka

**Source:** Research in International Business and Finance

**Abstract:** This chapter provides a historical appraisal of the development of current capital budgeting practices and reviews capital budgeting academic research. In the late eighteenth and early nineteenth centuries, the industrial revolution was instrumental in creating demand for capital budgeting processes and techniques. Academic research, beginning in the late 1940s and early 1950s, is categorized by its focus on appraisal techniques, individual decision-maker effects, organizational issues, and environmental factors. Experimental, analytical, agency-based, survey-based, and case-based research is reviewed. The chapter concludes with a compilation of issues identified by academic research and a set of questions that have not yet been addressed.

### OBJECTIVES:

- To know about the planning process of the BevonWayors future activities they related to expect economic, technical, competitive and social environment.
- To know about the financial statements, cash budgets and operating budgets.
- To know about the companies future performance and finding requirements.
- To know about the cash moving in and out of the business.
- To prepare sales forecast from the subjective and objective methods.

## 3. RESEARCH METHODOLOGY

### RESEARCH GAP ANALYSIS

The current research study is expected to assess management in choosing the best capital budgeting technique in the evaluation of its future investment projects.

### Need For The Study

The principal objective of corporate financial management is to maximize the market value of the equity shares. Hence the key question of interest to us in this study is, "What is the relationship between dividend policy and market price of equity shares? Most of the discussion on dividend of dividend policy and firm value assumes that the

investment decision of a firm is independent of its dividend decision. The need for this study arise from the above raised question and the most controversial and unresolved doubts about the relevance of irrelevance of the dividend policy.

#### Scope Of The Study:

1. The scope is limited to operations of Bevcon Groups (I) LTD. Hyderabad.
2. Two projects spread over 2 years.

The scope of the study is limited to collecting the financial data from the company with preference to the objectives stated above and an analysis of the data with a view to evaluate the projects.

#### Methodology

##### Sources of data

Data refers to a collection of natural phenomena descriptors including the results of experience observation or a set of premises. This may consist of numbers words or images particularly as measurement or observations of a set of variables.

There are two sources of data:

##### Primary source:

Primary source is used to collect initial material during the research process. Primary data is the data that the researcher collects himself using methods such as surveys, direct observations, interviews, as well as logs. Primary data is a reliable way to collect data because the researcher will know where it came from and how it was collected and analyzed since he did it himself. Primary sources of information allow the learner to access original and unedited information. A primary source requires the learner to interact with the source and extract information.

##### Secondary source:

Secondary sources are edited primary sources, second-hand versions. They represent thinking of someone else. Secondary data are data that were collected by persons or agencies for purposes other than solving the problem at hand. They are one of the cheapest and easiest means of access to information. Hence, the first thing a researcher should do is to search for secondary data available on the topic. The amount of secondary is overwhelming, and researchers have to locate and utilize the data that are relevant to their research. Secondary sources take the role of analyzing, and combining the information from the primary source with additional information.

#### Limitations Of The Study

The following are the various aspects involved in the analysis of the study.

1. The study is limited to two projects of the company.
2. The data used in this study have been taken from finance dept. of company
3. This study is conducted within a short period of 2 months.

## 4. DATA ANALYSIS & INTERPRETATION

##### Data:

This project considers the two projects (infrastructure development projects) for the study. The two projects are as follows.

##### Project - 1 :

Project 1 is the engineering procurement and construction of software development data centre.

Cost of project: Initial capital of the project is 40 cr. the cash flows are estimated for the period of 1 year, it's wiser to take the cost of capital at 10%.

Life of the project is estimated 4 years.

The cash flows are as follows.

years	Cash inflows(cr)
1	11
2	12
3	13
4	16

##### Project - 2:

Project 2 is the chemical laboratory (equipment, land procurement) and construction of complete laboratory.

**Cost of project:** Initial capital of the project estimated is 50 cr.

The cash flows are estimate for the period of 1year, it's wiser to take the cost of capital at 10%.Life of the project is estimated 5 years.

The cash flows are follows.

Years	Cash inflows(cr)
1	12
2	13
3	14
4	16
5	15

#### Payback Period:

##### Project1:

As the project doesn't get equal cash inflow, cumulative cash inflows are taken as under.

Years	Cash inflows(cr)	Cumulative Cash inflows(cr)
1	11	11
2	12	23
3	13	36
4	16	52

Payback period: Base year+ (required cash inflows/next yearcashinflows).

$$PBP=3+ (4/16).$$

$$=3+(0.25)$$

$$=3.25\text{years.}$$

##### Project - 2:

As the project doesn't get equal inflow, cumulative cash inflow, cumulative cash flows are take as under

Years	Cash inflows(cr)	Cumulative cash inflows
1	12	12
2	13	25
3	14	39
4	16	55
5	15	70

Pay back period: Base year+(required cash inflows/next Yearcashinflows)

$$PBP= 3+(11/16)\text{years}$$

$$= 3+0.6875\text{years}$$

$$= 3.6875\text{year}$$

#### Net present value:

##### Project 1:

Years	Cashinflows(CFAT)	PV factor (10%)	PVCFAT
1	11,00,00,000	0.909	9,99,90,000
2	12,00,00,000	0.826	9,91,20,000
3	13,00,00,000	0.751	9,76,30,000
4	16,00,00,000	0.683	10,92,80,000

Total of PVCFAT=40,60,20,000

Net present value (NPV)=TOTAL OF PVCFAT-Cash out flow

$$=40,60,20,000-40,00,00,000$$

$$=60,20,000$$

##### Project2:

Years	Cash Inflows(CFAT)	PV Factor (10%)	PVCFAT
1	12,00,00,000	0.909	10,90,80,000
2	13,00,00,000	0.826	10,73,80,000

3	14,00,00,000	0.751	10,51,40,000
4	16,00,00,000	0.683	10,92,80,000
5	15,00,00,000	0.621	9,31,50,000

Total of PVCFAT=52,40,30,000

Net present value (NPV)=TOTAL OF PVCFAT-Cash out flow

=52,40,30,000-50,00,00,000

=2,40,30,000

**Profitability index:**

**Project 1**

Years	Cash inflows(CFAT)	PV factor (10%)	PVCFAT
1	11,00,00,000	0.909	9,99,90,000
2	12,00,00,000	0.826	9,91,20,000
3	13,00,00,000	0.751	9,76,30,000
4	16,00,00,000	0.683	10,92,80,000

Total = 40,60,20,000

Profitability index=total of PVCFAT/ cash out flow

=40,60,20,000/40,00,00,000

=1.015

**Project2:**

Years	CashInflows(CFAT)	PVFactor (20%)	PVCFAT
1	12,00,00,000	0.909	10,90,80,000
2	13,00,00,000	0.826	10,73,80,000
3	14,00,00,000	0.751	10,51,40,000
4	16,00,00,000	0.683	10,92,80,000
5	15,00,00,000	0.621	9,31,50,000
6			

Total =52,40,30,000

Profitability index=total of PVCFAT/ cash out flow

=52,40,30,000/50,00,00,000

=1.048

**Internal Rate of return**

**Project 1**

years	CFAT	PVF@10%	PVCFAT	PVF@20%	PVCFAT
1	11,00,00,000	0.909	9,99,90,000	0.833	9,16,30,000
2	12,00,00,000	0.826	9,91,20,000	0.694	8,32,80,000
3	13,00,00,000	0.751	9,76,30,000	0.579	7,52,70,000
4	16,00,00,000	0.683	10,92,80,000	0.482	7,71,20,000
Total			40,60,20,000		32,73,00,000

Net present value at lower rate = total of PVCFAT-Cash out flow

=40,60,20,000-40,00,00,000

=60,20,000

Net present value at higher rate = total of PVCFAT-Cash out flow

=32,73,00,000-40,00,00,000

=(-)72,70,000

IRR=lower rate+(difference b/n A and B )/(difference b/n B and C)\*HR-LR

Where A=initial outlay

B=total of PVCFAT at lower rate

C=total of PVCFAT at higher rate

IRR=10%+(40,00,00,000-40,60,20,000)/(40,60,20,000-32,73,00,000)\*(20%-10%)

$$=10\%+(60,20,000/7,87,20,000)*10\%$$

$$=10\%+0.0764$$

$$=10.76\%$$

#### Internal Rate of return

Years	CFAT	PVF@10%	PVCFAT	PVF20%	PVCFAT
1	12,00,00,000	0.909	10,90,80,000	0.833	9,99,60,000
2	13,00,00,000	0.826	10,73,80,000	0.694	9,02,20,000
3	14,00,00,000	0.751	10,51,40,000	0.579	8,10,60,000
4	16,00,00,000	0.683	10,92,80,000	0.482	7,71,20,000
5	15,00,00,000	0.621	9,31,50,000	0.402	6,03,00,000
TOTAL			52,40,30,000		40,86,60,000

Net present value at lower rate = total of PVCFAT-Cash out flow

$$=52,40,30,000-50,00,00,000$$

$$=2,40,30,000$$

Net present value at higher rate = total of PVCFAT-Cash out flow

$$=40,86,60,000-50,00,00,000$$

$$=(-)9,13,40,000$$

$$IRR=\text{lower rate}+(\text{difference b/n A and B})/(\text{difference b/n B and C})*HR-LR$$

Where A=initial outlay

B=total of PVCFAT at lower rate

C=total of PVCFAT at higher rate

$$=10\%+(50,00,00,000-52,40,30,000)/(52,40,30,000-40,86,60,000)*(20\%-10\%)$$

$$=20\%+(2,40,30,000/11,53,70,000)*10\%$$

$$=10\%+2.08$$

$$=12.08\%$$

## 5. CONCLUSION

As seen from the above ranking of the projects, project 2 is more preferable than the other in the since that it has a better internal rate of return and net presser value than the project 1. Since both the projects are in software development the most appropriate criteria in decision making is NPV and IRR. Because the investor would look to get more returns. It is noticed that the company stands to gain even taking into account discount cash inflows.

## 6. REFERENCES

- [1] Financial management by PRASANNA CHANDRA.
- [2] Financial management by KHAN AND JAIN.
- [3] Financial accounting by JAIN AND NARANG.