

CAPITAL BUDGETING

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ABSTRACT

Capital budgeting provides quantitative methods to analyse financial returns and allocate resources among competing projects. Capital budgeting is a step by step process that businesses use to determine the merits of an investment project. The decision of whether to accept or deny an investment project as part of a company's growth initiatives, involves determining the investment rate of return that such a project will generate. However, what rate of return is deemed acceptable or unacceptable is influenced by other factors that are specific to the company as well as the project.

1. INTRODUCTION

Capital budgeting, which is also called "investment appraisal," is the planning process used to determine which of an organization's long term investments such as new machinery, replacement machinery, new plants, new products, and research development projects are worth pursuing. It is to budget for major capital investments or expenditures

2. INVESTMENT DECISIONS:

This refers to investment decisions, which deal with investment of firm's resources in Long term (fixed) Assets and Short term (current) Assets or Capital Budgeting Decisions and Working Capital Management. Capital budgeting is a decision making process for investment in assets that have long term implications, affect the future growth and profitability of the firm and basic composition and assets mix of the firm. It involves

- Measuring the benefits and costs associated with each alternative option in terms of incremental cash flows,
- Evaluating different proposals in the light of return expected by the investors of the firm and the return promised by the proposal, and
- Applying different techniques to select an alternative with the objective of maximization of value of the firm

Types of Investment Decisions

- **INDEPENDENT INVESTMENTS:** These are proposals, which do not compete with one another in a way that acceptance of one precludes the possibility of acceptance of another. In case of such proposals the firm may straightaway —accept or reject a proposal on the basis of a minimum return on investment required. All these proposals, which give a higher, return than a certain desired rate of return, are accepted and the rest are rejected.
- **Contingent Investments:** These are proposals whose acceptance depends on the acceptance of one or more other proposals. For example a new machine has to be purchased on account of substantial expansion of plant; in this case investment in the machine is dependent upon expansion of plant. When a contingent investment proposal is made, it should also contain the proposal on which it is dependent in order to have a better perspective of the situation.
- **Mutually Exclusive Investments:** These are proposals, which compete with each other in a way that the acceptance of one precludes the acceptance of other or others. For example, if a company is considering investment in one of two temperature control systems, acceptance of one system will rule out the acceptance of another. Thus two or more mutually exclusive proposals cannot be accepted. Some technique has to be used for selecting the better or the best one. Once this is done other alternatives get automatically get eliminated. (I.M.Pandey 2005, p142-143)
- **Make Or Buy Decision:** Make or buy decision is no longer a short run operating decision and it becomes a problem of capital expenditure which necessitates consideration of required rate of return, A company has to take this decision, when it has to face following choice

Buy certain part or sub-assemblies from outside suppliers; or

Use available capacity to produce the item within the factor

3. CAPITAL BUDGETING PROCESS

Capital Budgeting is a complex process as it involves decisions relating to the investment of current funds for the benefit to the achieved in future and the future is always uncertain, which may be divided into following phases:

- Identification of potential investment opportunities

- Assembling of proposed investment Decision making
- Preparation of capital budget and appropriations
- Implementation
- Performance review

EVALUATION TECHNIQUES OF CAPITAL BUDGETING

Evaluation Techniques of Capital Budgeting are classified into two types:

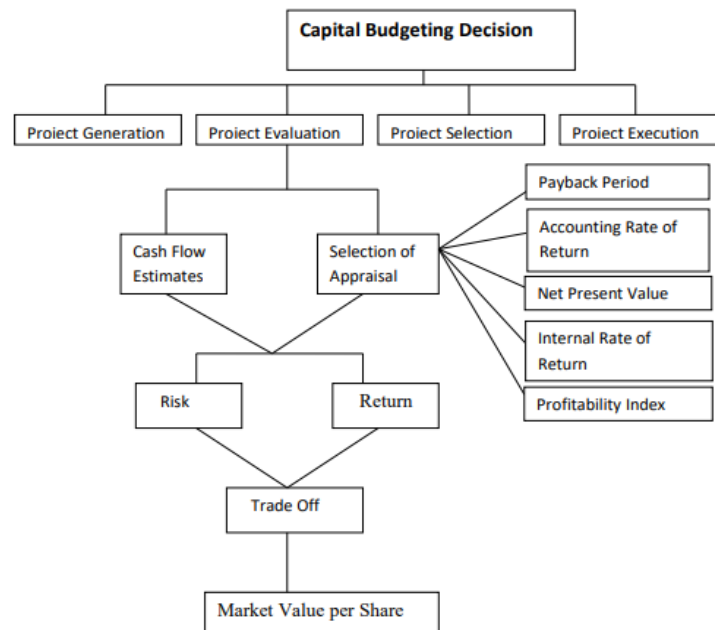
1. TRADITIONAL TECHNIQUES:

- Average rate of return
- Pay-back period

2. MODERN (OR) DISCOUNTED CASH FLOW (DCF) TECHNIQUES:

- Net present value (NPV)
- Internal rate of return (IRR)
- Profitability index (PI) or Benefit-cost ratio (B/C RATIO)

An Overview of Capital Budgeting Decision



4. REVIEW OF LITERATURE:

1. According to **Mao (1970)**, since the 60s, the literature on capital budgeting has been characterized by an increase in the application of such analytical techniques. There are modern budgeting techniques that can be used in investment decision making, but managers seem not to have adopted new techniques at a large scale.

2. The interest in understanding the capital budgeting practices used by companies was first observed in the beginning of the 1960s. Evidence from the 60s and 70s reflected a certain managerial trend to gradually use models that were theoretically superior based on discounted cash flows (**Andrés et al., 2015**). The fields of engineering economics and finance have long stories of research on how to choose an interest rate for an investment project or capital budgeting problem (**Eschenbach & Cohen, 2006**).

3. Capital budgeting is a tool that can be used for very simple operational decisions such as equipment replacement or more complex strategies such as the construction of a new plant (**Leon et al., 2008**). In any case, when considering the importance of capital investment decisions, it is imperative that managers use the appropriate practice to ensure a sound decision (**Toit & Pienaar, 2005**).

Capital budgeting is one of the most important decisions faced by the financial management of any organization (**Batra & Verma, 2014**). It is a planning mechanism used by an organization to make evaluation decisions on how to allocate resources among investment projects (**Al-Mutairi et al., 2018**) and assessing the investment projects that will create benefits for periods of over one year and that will assist the company to obtain revenues or reduce future costs (**Khamees et al., 2010**).

Empirical research provided inconclusive evidence regarding the capital budgeting practices among practitioners; while several researches showed the payback period (PP) as the most popular technique employed in evaluating projects, other investigations demonstrated that discounted cash-flows practices are the most frequently used capital budgeting techniques (for example Sandahl & Sjögren, 2003; Hall & Mutshutshu, 2013; Andrés et al., 2015).

5. OBJECTIVES

- To understand the need of the organizations to identify and invest in high quality capital projects.
- To prepare a list of the main financial variables required for a project appraisal.
- To evaluate capital projects using traditional methods of investment appraisal and discounted cash flow methods.
- To illustrate the important differences, this can arise in evaluating projects when using NPV and IRR

NEED FOR THE STUDY:

The need of study CAPITAL BUDGETING is the organization understand and allocate substantial amounts of major resources of people, time and technology, intellectual capital and of course, money. Research and development investments to improve existing technology's as Well as create technical breakthroughs that lead to new products and services. Capital investments in new manufacturing plants and equipment, timed to coincide with market trends. Marketing investments in the growth of both existing and new businesses. Human resource investments in new talent and better organizational structures

Analysis and interpretation:

- Average Rate of Return: As per the management, the minimum rate of return expected is 20%. The project showing ARR greater than 20% is accepted with respect to operation level 30 Tons or 20 Tons or 10 Tons per month variation in sales price.
- Pay Back Period: The project is accepted when Pay Back is less than 3 years which is standard payback period set by the management. The project, which gives lesser payback period among difference in sales price and quantity to be produced, is accepted and it is at price of Rs.900 whether the quantities are 30 Tons or 20 Tons or 10 Tons.
- Net Present Value: The net income of the project is discounted at the minimum required rate of return – 9% and NPV is positive for different sales price and at different operational levels.
- Internal Rate of Return: The capital invested is getting return of more than 40%, which is greater than 9% (cost of capital).
- Profitability Index: The project showing PI more than 1 and also where NPV is positive is taken up.
- As sales price rises, demand factor also needs to be taken into consideration

6. CONCLUSION

It is concluded that the project is viable and profitable as the ARR is getting more than 20%. The PBP indicates that investment is fully recovered in short period depending upon sales price and quantity. NPV of the project is considered as better because of its higher Net Present Value. The IRR of the project is giving more than 40% Rate of Return whatever be the sales price and operational level. The PI more than 1 and where project shows NPV as positive is given first preference. The company has to sell at lesser price for more quantity produced and sell at higher price for less quantity produced.

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