

## OVER VIEW OF CAPITAL BUDGETING

T.Sanjeev Kumar<sup>1</sup>, G S Harish<sup>2</sup>, E.Gireesh<sup>3</sup>, V.Gangaraju<sup>4</sup>

<sup>1</sup>Asst.Prof, Department of Management, Gates Institute of Technology, Gooty, A.P

<sup>2,3,4</sup> P.G Student, Department of Management Studies, Gates Institute of Technology, Gooty, A.P

### ABSTRACT

Capital budgeting, or investment appraisal, is the planning process used to determine whether an organization's long term investments such as new machinery, replacement of 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.

Capital budgeting decisions are crucial to a firm's success for several reasons. First, capital expenditures typically require large outlays of funds. Second, firms must ascertain the best way to raise and repay these funds. Third, most capital budgeting decisions require a long-term commitment. Finally, the timing of capital budgeting decisions is important. When large amounts of funds are raised, firms must pay close attention to the financial markets because the cost of capital is directly related to the current interest rate. This paper only discuss about Capital Budgeting Process, Methods & Importance of Capital Budgeting etc.

**Keyword:** Capital Budgeting, Investment Appraisal, Expenditure, Shareholder etc.

### I. INTRODUCTION

An efficient allocation of capital is the most important finance function in modern times. It involves decisions to commit firm's funds to long-term assets. Such decisions are tend to determine the value of company/firm by influencing its growth, profitability & risk.

Investment decisions are generally known as capital budgeting or capital expenditure decisions. It is clever decisions to invest current in long term assets expecting long-term benefits firm's investment decisions would generally include expansion, acquisition, modernization and replacement of long-term assets.

Such decisions can be investment decisions, financing decisions or operating decisions. Investment decisions deal with investment of organization's resources in Long term (fixed) Assets and / or Short term (Current) Assets. Decisions pertaining to investment in Short term Assets fall under "Working Capital Management". Decisions pertaining to investment in Long term Assets are classified as "Capital Budgeting" decisions.

Capital budgeting decisions are related to allocation of investible funds to different long-term assets. They have long-term implications and affect the future growth and profitability of the firm.

In evaluating such investment proposals, it is important to carefully consider the expected benefits of investment against the expenses associated with it.

Organizations are frequently faced with Capital Budgeting decisions. Any decision that requires the use of resources is a capital budgeting decisions. Capital budgeting is more or less a continuous process in any growing concern.

## **II. PROCESS OF CAPITAL BUDGETING**

Capital budgeting is perhaps the most important decision for a financial manager. Since it involves buying expensive assets for long term use, capital budgeting decisions may have a role to play in the future success of the company. The right decisions made in capital budgeting process will help the manager and the company to maximize the shareholder value which is the primary goal of any business.

**Capital Budgeting Process:** The capital budgeting process includes identifying and then evaluating capital projects for the company. Capital projects are the ones where the cash flows are received by the company over longer periods of time which exceeds a year. Almost all the corporate decisions that impact future earnings of the company can be studied using this framework. This process can be used to examine various decisions like buying a new machine, expanding operations at another geographic location, moving the headquarters or even replacing the old asset. These decisions have the power to impact the future success of the company. This is the reason the capital budgeting process is an invaluable part of any company.

The capital budgeting process has the following four steps:

- **Generation of Ideas:** The generation of good quality project ideas is the most important capital budgeting step. Ideas can be generated through a number of sources like senior management, employees and functional divisions or even from outside the company.
- **Analysis of Proposals:** The basis of accepting or rejecting a capital project is the project's expected cash flows in the future. Hence, all the project proposals are analysed by forecasting their cash flows to determine expected the profitability of each project.
- **Creating the Corporate Capital Budget:** Once the profitable projects are shortlisted, they are prioritized according to the available company resources, a timing of the cash flows of the project and the overall strategic plan of the company. Some projects may be attractive on their own, but may not be a fit to the overall strategy.
- **Monitoring and Post-Audit:** A follow up on all decisions is equally important in the capital budgeting process. The analysts compare the actual results of the projects to the projected ones and the project managers are responsible if the projections match or do not match the actual results. A post-audit to recognize systematic errors in the cash flow forecasting process is also essential as the capital budgeting process is as good as the inputs' estimates into the forecasting model.

### **Categories of Capital Budgeting Projects:**

Capital budgeting projects are categorized as follows:

- **Replacement Projects for Maintaining Business:** Such projects are implemented without any detailed analysis. The only issues pertaining to these types of projects are first whether the existing operations continue and, if they do so, whether the existing processes should be changed or maintained as such.

- **Replacement Projects for Reducing Cost:** Such projects are implemented after a detailed analysis because these determine whether the obsolete, but still operational, equipment should be replaced.
- **Expansion Projects:** Such projects require a very detailed analysis. These projects are undertaken to expand the business operations and involve a process of making complex decisions as they are based on an accurate forecast of future demand.
- **New Product/Market Development:** Such projects also consist of making complex decisions that require a detailed analysis as there is a great amount of uncertainty involved.
- **Mandatory Projects:** Such projects are required by an insurance company or a governmental agency and often involve environmental or safety-related concerns. These projects will not generate any revenue, but they surely accompany new projects started by the company to produce revenue.
- **Other Projects:** Some projects that cannot be easily analyzed fall into this category. A pet project involving senior management or a high-risk project that cannot be analyzed easily with typical assessment methods are included in such projects.

**Principles of Capital Budgeting:** The capital budgeting process is based on the following five principles:

- All the capital budgeting decisions are based on the incremental cash flows of the project, and not on the accounting income generated by it. **Sunk costs are not considered in the analysis.** The external factors that can impact the implementation of the project and eventually the cash flow of company has to be fully considered while preparing / planning the capital budgeting.
- All the cash flows of the project should be based on the opportunity costs. Opportunity costs account for the money that the company will lose by implementing the project under analysis. These are the existing cash flows already generated by an asset of the company that will be forgone if the project under analysis is undertaken.
- The timing of the receipt of the cash flows is important. As per the time value of money concept, cash flows of the project received earlier has more value than the cash flows received later.
- All the cash flows from the project should be analysed on an after-tax basis. The company should evaluate only those cash flows that they will keep, not those that they will pay to the government.
- The financing costs pertaining to a project should not be considered while evaluating incremental cash flows. These costs are already reflected in the project's required rate of return.

**Evaluation and Selection of Capital Projects:** All the capital projects are thoroughly analysed on the basis of their cash flows forecast. However, the evaluation and selection of capital projects are also affected by the following categories:

- **Independent versus Mutually Exclusive Projects:** Independent projects are unrelated to each other and are thus, evaluated independently based on the individual profitability of each project. For example, assume both projects X and Y are independent and are profitable as well, then there is a probability that the company will accept both the projects. However, mutually exclusive implies that only one of the projects from a set will be accepted and that there is a competition among the projects itself. For example, if projects X and Y are mutually exclusive, the company cannot select both but only either X or Y.
- **Project Sequencing:** Some projects are implemented in a certain sequence or order so that the investment in one project today generates the opportunity to invest in other future projects. If a project implemented

today is profitable, it will create the option to invest in the second project next year. However, if the same current project becomes unprofitable, the company won't invest in the next project.

- **Unlimited Funds versus Capital Rationing:** If a company has unlimited funds, it can execute all the projects where expected returns are in excess of the cost of capital. However, many companies have capital constraints and have to use capital rationing. If the company's profitable projects exceed the funds available for investing, the company resorts to rationing or prioritizing, the capital expenditures. This helps the company to achieve the goal of maximum increase in the shareholders' value given the available capital.

### **III. IMPORTANCE OF CAPITAL BUDGETING:**

There are several factors that make capital budgeting decisions among the critical decisions to be taken by the management. The importance of capital budgeting can be understood from the following aspects of capital budgeting decisions.

1. **Long Term Implications:** Capital Budgeting decisions have long term effects on the risk and return composition of the firm. These decisions affect the future position of the firm to a considerable extent. The finance manager is also committing to the future needs for funds of that project.
2. **Substantial Commitments:** The capital budgeting decisions generally involve large commitment of funds. As a result, substantial portion of capital funds is blocked.
3. **Irreversible Decisions:** Most of the capital budgeting decisions are irreversible decisions. Once taken the firm may not be in a position to revert back unless it is ready to absorb heavy losses which may result due to abandoning a project midway.
4. **After the Capacity and Strength to Compete:** Capital budgeting decisions affect the capacity and strength of a firm to face competition. A firm may lose competitiveness if the decision to modernize is delayed.

### **IV. PROBLEMS & DIFFICULTIES IN CAPITAL BUDGETING:**

1. **Future uncertainty:** Capital Budgeting decisions involve long-term commitments. There is lot of uncertainty in the long term. The uncertainty may be with reference to cost of the project, future expected returns, future competition, legal provisions, political situation etc.
1. **Time Element:** The implications of a Capital Budgeting decision are scattered over a long period. The cost and benefits of a decision may occur at different point of time. The cost of a project is incurred immediately. However, the investment is recovered over a number of years. The future benefits have to be adjusted to make them comparable with the cost. Longer the time period involved, greater would be the uncertainty.
3. **Difficulty in Quantification of Impact:** The finance manager may face difficulties in measuring the cost and benefits of projects in quantitative terms.

**Example:** The new product proposed to be launched by a firm may result in increase or decrease in sales of other products already being sold by the same firm. It is very difficult to ascertain the extent of impact as the sales of other products may also be influenced by factors other than the launch of the new product.

## **V. ASSUMPTIONS IN CAPITAL BUDGETING:**

The Capital Budgeting decision process is a multi-faceted and analytical process. A number of assumptions are required to be made.

1. **Certainty with respect to cost & Benefits:** It is very difficult to estimate the cost and benefits of a proposal beyond 2-3 years in future.
2. **Profit Motive :** Another assumption is that the capital budgeting decisions are taken with a primary motive of increasing the profit of the firm.

### **The activities can be listed as follows:**

- ❖ Dis-investments i.e., sale of division or business.
- ❖ Change in methods of sales distribution.
- ❖ Undertakings an advertisement campaign.
- ❖ Research & Development programs.
- ❖ Launching new projects.
- ❖ Diversification.
- ❖ Cost reduction.

### **FEATURES OF INVESTMENT DECISIONS:**

- ❖ The exchange of current funds for future benefits.
- ❖ The funds are invested in long-term assets.
- ❖ The future benefits will occur to the firm over a series of years.

### **IMPORTANT OF INVESTMENT DECISIONS:**

- ❖ They influence the firm's growth in long run.
- ❖ They effect the risk of the firm.
- ❖ They involve commitment of large amount of funds.
- ❖ They are irreversible, or reversible at substantial loss.
- ❖ They are among the most difficult decisions to make.

### **TYPE OF INVESTMENT DECISIONS:**

- ❖ Expansion of existing business.
- ❖ Expansion of new business.
- ❖ Replacement & Modernization.

### **INVESTMENT EVALUATION CRITERIA:**

- ❖ Estimation of cash flows.
- ❖ Estimation of the required rate of return.

Consideration of cash flows is to determine true profitability of the project and it is an unambiguous way of identifying good projects from the pool. Ranking is possible it should recognize the fact that bigger cash flows are preferable to smaller ones & early cash flows are referable to later ones I should help to choose among mutually exclusive projects that which maximizes the shareholders wealth. It should be a criterion which is applicable to any considerable investment project independent of other. There are number of techniques that are in use in practice. The chart of techniques can be outlined as follows:

**Capital Budgeting Techniques:**

<p><b>Traditional Approach</b> (or) <b>Non-Discounted Cash Flows</b></p> <p>Pay Back Period (PB)</p> <p><i>Accounting Rate of Return (ARR)</i></p>	<p><b>Modern Approach</b> (or) <b>Disconnected Cash Flows</b></p> <p>Net Present Value (NPV)</p> <p><i>Internal Rate of Return</i> Profitability Index (PI) Discounted Payable Period</p>
--	---

**NET PRESENT VALUE :**

The Net Present value method is a classic economic method of evaluating the investment proposals. It is one of the methods of discounted cash flow. It recognizes the importance of time value of money”.

It correctly postulates that cash flows arising of different time period, differ in value and are comparable only when their equivalent i.e., present values are found out.

**The following steps are involved in the calculation of NPV:**

- ◆ Cash flows of the investment project should be forecasted based on realistic assumptions.
- ◆ An appropriate rate of interest should be selected to discount the cash flows, generally this will be the “Cost of capital rate” of the company.
- ◆ The present value of inflows and out flows of an investment proposal, has to be computed by discounting them with an appropriate cost of capital rate.
- ◆ The Net Present value is the difference between the “Present Value of Cash inflows” and the present value of cash outflows.
- ◆ Net present value should be found out by subtracting present value of cash outflows from present value of cash inflows. The project should be accepted if NPV is positive.

**NPV = Present Value of Cash inflow – Present value of the cash outflow**

**Acceptance Rule:**

- Accept if  $NPV > 0$
- Reject if  $NPV < 0$
- May accept if  $NPV = 0$
- One with higher NPV is selected.

**INTERNAL RATE OF RETURN METHOD:**

The internal rate of return (IRR) method is another discounted cash flow technique. This method is based on the principle of present value. It takes into account of the magnitude & timing of cash flows.

IRR nothing but the rate of interest that equates the present value of future periodic net cash flows, with the present value of the capital investment expenditure required to undertake a project.

The concept of internal rate of return is quite simple to understand in the case of one-period project.

**Acceptance Rule:**

Accept if  $r > k$

Reject if  $r < k$

May accept if  $r = k$

where  $r$  = rate return

$k$  = opportunity cost of capital

**PROFITABILITY INDEX (OR) BENEFIT COST RATIO:**

Yet another time-adjusted method of evaluating the investment proposals is the benefit-cost (B/C) ratio of profitability index (PI). It is benefit cost ratio. It is ratio of present value of future net cash inflows at the required rate of return, to the initial cash outflow of the investment.

$$PI = \frac{\text{Present Value of Cash inflows}}{\text{Present Value of Cash outflows}}$$

**Acceptance Rule :**

Accept if  $PI > 1$

Reject if  $PI < 1$

May accept if  $PI = 1$

**PAY BACK PERIODE METHOD:**

One of the top concerns of any person or organization investing a large amount of money would be the time by which the money will come back. The concern making the investment would want that at least the capital invested is recovered as early as possible. The pay back period is defined as the period required for the proposal's cumulative cash flows to be equal to its cash outflows. In other words, the payback period is the length of time required to recover the initial cost of the project. The payback period is usually stated in terms of number of years. It can also be stated as the period required for a proposal to 'break even' on its net investment.

The payback period is the number of years it takes the firm to recover its original investment by net returns before depreciation, but after taxes.

If project generates constant annual cash inflows, the pay back period is completed as follows:

$$\text{Pay Back} = \frac{\text{Initial Investment}}{\text{Annual cash inflow}}$$

In case of unequal cash inflows, the payback period can be found out by adding up the cash inflows until the total is equal to initial cash outlay.

**Acceptance Rule:**

- ◆ Accept if calculated value is less than standard fixed by management otherwise reject it.
- ◆ If the payback period calculated for a project is less than the maximum payback period set up by the company it can be accepted.
- ◆ As a ranking method it gives highest rank to a project which has lowest pay back period, and lowest rank to a project with highest pay back period.

**DISCOUNTED PAY BACK PERIOD:**

One of the serious objections to pay back method is that it does not discount the cash flows. Hence discounted pay back period has come into existence. The number of periods taken in recovering the investment outlay on the present value basis is called the discounted pay back period.

Discounted Pay Back rule is better as it does discount the cash flows until the outlay is recovered.

**ACCOUNTING RATE OF RETURN (OR)**

**AVERAGE RATE OF RETURN (ARR) :**

It is also known as return on investment (ROI). It is an accounting method, which uses the accounting information revealed by the financial statements to measure the profitability of an investment proposal. According to Solomon, ARR on an investment can be calculated as “ the ratio of accounting net income to the initial investment i.e.” .

$$\begin{array}{rcl}
 \text{ARR} & = & \frac{\text{Average Net Income}}{\text{Average Investment}} \\
 \text{Average Income} & = & \text{Average of after tax profit} \\
 \text{Average Investment} & = & \text{Half of Original Investment}
 \end{array}$$

**Acceptance Rule:**

- ◆ Accept if calculated rate is higher than minimum rate established by the management.
- ◆ It can reject the projects with an ARR lower than the expected rate of return.
- ◆ This method can also help, the management to rank the proposals on the basis of ARR.
- ◆ A highest rank will be given to a project with highest ARR, whereas a lowest rank to a project with lowest ARR.

**CAPITAL BUDGETING METHODS IN PRACTICE**

- ◆ In a study of the capital budgeting practices of fourteen medium to large size companies in India, it was found that almost all companies used pay back.
- ◆ With pay back and/or other techniques, about 2/3<sup>rd</sup> of companies used IRR and about 2/5<sup>th</sup> NPV. IRR is found to be second most popular method.
- ◆ Pay back gained significance because of its simplicity to use & understand, its emphasis on the early recovery of investment & focus on risk.
- ◆ It was found that 1/3<sup>rd</sup> of companies always insisted on computation of pay back for all projects, 1/3<sup>rd</sup> for majority of projects & remaining for some of the projects.

- ◆ Reasons for secondary of DCF techniques in India included difficulty in understanding & using threes techniques, lack of qualified professionals & unwillingness of top management to use DCF techniques.
- ◆ One large manufacturing and marketing organization mentioned that conditions of its business were such that DCF techniques were not needed.
- ◆ Yet another company stated that replacement projects were very frequent in the company, and it was not considered necessary to use DCF techniques for evaluating such projects. techniques in India included difficulty in understanding & using threes techniques, lack of qualified professionals & unwillingness of top management to use DCF techniques.

### **CONCLUSION**

Every organization has pre-determined set of objective and goals, but reaching those objectives and goals only by proper planning and executing of the plans economically.

### **REFERENCES**

- [1.] Financial accounting
- [2.] Cost and management accounting
- [3.] Financial accounting
- [4.] Accounting for management
- [5.] **Website :**
- [6.] [www.google.com](http://www.google.com)
- [7.] [www.yahoofinance.com](http://www.yahoofinance.com)
- [8.] [www.wikipedia.com](http://www.wikipedia.com)