



## Factors Influencing the Selection of Capital Budgeting Method

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### ABSTRACT

Capital budgeting practices are the most vital component of financial management. Majority of the studies investigating capital budgeting practices among surveyed firms are from developed economics. Capital budgeting method can be categorized into two groups: discounted cash flow (DCF) method and non-discounted cash flow (non-DCF) methods. Non-DCFs include payback method (PBM) and accounting rate of return (ARR). DCFs include net present value (NPV), internal rate of return (IRR), discounted payback method and profitability index (PI). While DCFs take into account the time value of money, the non-discounted methods are not considered time value of money. Selection of capital budgeting techniques can be influenced by both the financial and nonfinancial factors. The purpose of the study is to provide the theoretical knowledge on the factors that are influencing the selection of capital budgeting method in domestic and multinational decisions.

**Key Words:** Capital Budgeting, DCF, Capital Planning. MNCs

### Introduction

A firm incurs two types of expenses i.e., Revenue Expenditure and Capital Expenditure. The benefits of which are supposed to be exhausted within the year concerned and their planning and control is done through various functional departments and the Capital Expenditure is that the benefits of which are expected to be received over long period a series of years in future like building, plant, machinery or to undertake a program on Research and development of a product, Diversification in to a new product line, Replacement of a machine, Expansion in production capacity and Promotional campaign.

Capital expenditure involves investment of substantial funds for longer period and the benefits of such investment are in the form of increasing revenues or decreasing costs. Wrong decision under this head may effect future earnings, employment capacity, quantity and quality of production. Hence, long term planning and right decision to incur or not to incur such expenditure is a crucial responsibility of management. The techniques used by management to carry out this responsibility is known as capital budgeting. Hence planning and control of capital expenditure is termed as capital budgeting.

“**Capital budgeting** (also known as investment appraisal) is the process by which a company determines whether projects (such as investing in R&D, opening a new branch, replacing a machine) are worth pursuing. A project is worth pursuing if it increases the value of the company”. In general a project typically does add a value to a company if it earns the expected return of the project which is greater than the cost of that project. Expected rate of return is known as the opportunity cost of any project. While capital budgeting is a fairly straightforward process from a conceptual viewpoint, it can be very challenging in practice. Not only is it difficult to determine the group's appropriate cost of capital, it is often even trickier to accurately forecast the incremental cash flows that result from taking on the project.

### Objectives of Capital Budgeting

Following are the objectives of capital budgeting;

**Shareholder's wealth maximization:** In tune with objectives of financial management, its aim is selecting those projects that maximize shareholder's wealth. The decision should avoid over/under investment in fixed assets.

**Evaluation of proposed capital expenditure:** Capital budgeting helps in evaluating expenditure to be incurred on various assets to measure validity of each expenditure.

**Controlling costs:** Controlling costs by evaluating expenditure costs can be controlled.

**Determining priority:** Arranging projects in order of their profitability enabling the management to select most profitable project.

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## Literature Review

Capital Budgeting is a decision process relating to long-term capital investment programmes. 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 Planning is critical on the grounds that it makes responsibility and another was to put its assets in a undertaking without understanding the hazard and return involved would be considered as mindful by its vary own investors for the more if an individual as no chance to get of exempting the viability and its speculation choices chances are that business will have minimal possibility of getting by in the aggressive commercial center. The Indian business environment today has become highly turbulent with companies being exposed to a multitude of risks such as business cycle risk, slowdown in demand, unanticipated actions of competitors, interest rate risk, inflation rate risk, unexpected technological developments, government policy changes, and above all, exchange rate risks. In the Indian corporate sector, the use of capital budgeting techniques has shifted dramatically towards increasing adoption of sophisticated DCF techniques like NPV, IRR and advanced techniques like NPV with Real Options, MIRR and Simulation Analysis (Anand, 2002; Singh et al., 2012; Verma et al., 2009). This does not disregard the usage of old NDCF techniques especially payback period method, which is still used widely as a secondary criterion (Gupta et al., 2011). **Leon et al. (2008)** pointed out that capital budgeting is a process of evaluating and decision-making on investment projects. The authors also stated that evaluation must involve the cash flows from the proposed project considering the risk and uncertainty. Thus, care must be taken in project selection to ensure a greater probability that positive results will be made in the long run to the firm. **Garrison et al., (2018)** Capital budgeting is considered an important element in the firm managerial decisions and long-term financial performance. **Rose et al., (2016)** defined capital budgeting as the ways of planning and managing the firm investment in the long-term assets. Capital budgeting also plays a vital role in the firm's strategic decisions like firm expansion, asset replacement and new asset selection, cost minimization and choosing between leases or buy. **Leon et al. (2008)** Capital budgeting refers to the financial assessment of the capital investment proposals of a company. In other words, capital budgeting involves assessing whether the future cash flows resulting from a suggested investment justify whether it should be made, considering the risks and uncertainties. **Ibrahim E.Ahmed (2013)**, study found a sizable number of UAE companies that use capital budgeting techniques in their capital investment decisions. The widely used methods are: PB, NPV, and IRR by most of the UAE companies. The study also revealed that many financial and nonfinancial factors influence the selection of capital budgeting technique such as the size of the company, revenues, profitability, leverage level, expenditure, familiarity with the project, availability of cash, and the level of education of decision makers. Significant differences were found between the methods selected and the factors influencing the selection of the technique. It has been found that there is a positive association between most of the financial factors and the methods but negative with majority of the nonfinancial variables.

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## Features of Capital budgeting Decisions

Following are the features of capital budgeting decisions;

**Long term effect:** Such decisions have long term effect on future profitability and influence pace of firms growth. A good decision may bring amazing/good returns and wrong decision may endanger very survival of firm. Hence capital budgeting decisions determine future destiny of firm.

**High degree of risk:** Decision is based on estimated return. Changes in taste, fashion, research and technological advancement leads to greater risk in such decisions.

**Huge funds :** Large amount/funds are required and sparing huge funds is problem and hence decision to be taken after proper care/analysis

**Irreversible decision :** Reverting from a decision is very difficult as sale of high value asset would be a problem.

**Most difficult decision:** Decision is based on future estimates/uncertainty. Future events are affected by economic, political and technological changes taking place.

**Impact on firm's future competitive strengths :** These decisions determine future profit/ cost and hence affect the competitive strengths of firm.

**Impact on cost structure:** Due to this vital decision, firm commits itself to fixed costs such as supervision, insurance, rent, interest etc. If investment does not generate anticipated profit, future profitability would be affected.

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## Factors affecting Capital Budgeting Decisions (CBD)

**Technological changes:** Before taking CBD, management must undertake in-depth study of cost of new product /equipment as well productive efficiencies of new as well as old equipment.

**Demand forecast:** Analysis of demand for a long period must be undertaken before CBD.

**Competitive strategy:** If a competitor is going for new machinery /equipment of high capacity and cost effective, we may have to follow that.

**Type of management:** If management is innovative, firm may go for new equipments/ investment as compared to conservative management.

**Cash flow:** Cash flow statement or cash budget helps a firm in identifying time when a firm can make investment in CBD.

**Other factors:** Like fiscal policy (tax concessions, rebate on investments) political stability, global situation etc.

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## Capital Budgeting Techniques

**Net Present Value (NPV)** : NPV is the abbreviation of **net present value** and it's the difference between the present value of cash inflows and present value of cash outflows over a period of time. NPV is used in *capital budgeting* to analyze the profitability of a projected investment or project.

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### Strengths of NPV

- Calculation of NPV is easy and the interpretation of resulted figure is also easy. The resulted NPV figure shows how the wealth of the company or wealth of shareholder will change if the positive NPV projects are accepted.
- The positive NPV projects theoretically increase the wealth of Shareholder this concept is consistent with shareholder wealth maximization concept.

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### Weakness of NPV

- When the NPV calculation is based on wrong estimation this may result in the acceptance of wrong projects especially when the company decides about many projects.

**Internal Rate of Return** : IRR is the abbreviation of **internal rate of return** and it's the method of calculating IRR of the company. The term internal refers to the fact that the internal rate excludes factors such as inflation the Cost of capital, or various financial risks. It is also called the discounted cash flow rate of return.

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### IRR Strengths

- The major strength of IRR is that it is generated by the project itself.
- The acceptance criteria if the IRR is equal or greater to the required rate of return.
- The IRR acceptance criteria are consistent with shareholder wealth maximization.

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### IRR Weakness

- IRR is difficult to calculate.
- Thorough finance knowledge is required to understand IRR.
- It is possible that multiple IRR exist of a project. So decision on the basis of IRR would be difficult.
- The multiple IRR sometimes requires the re estimation of Cash flows.

**Profitability Index** : Profitability index also known as profit investment ratio and value investment ratio is the ratio of payoff to investment of a proposed project. It is a useful tool for ranking projects because it allows you to quantify the amount of value created per unit of investment.

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### Strengths of Profitability Index

- The *Profitability index* number is easy to understand simply it is saying how many dollars you get by investing how many dollars.
- It is consistent with the shareholder wealth maximization.
- Very useful when the company uses capital rationing.

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### Weakness of Profitability Index

- The major weakness is if the initial cash flow in a project is not an out flow but inflow then the calculation of profitability index would difficult.
- In case of mutually exclusive projects the Profitability index would be difficult to apply.

**Payback Period** : Payback period is the length of time required for an investment to recover its initial out lay in terms of profits or saving.

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### Strengths of Payback Period

- Easy to calculate and does not require Finance calculation or knowledge.

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### Weakness of Payback Period

- It is not based on discounted cash flow.
- The method is applicable for small business only in order to solve the major weakness we calculate discounted payback period.

The DCF techniques are good techniques for apply in the project decision making but precautions should be taken to apply these techniques because there are times when one technique output is better for some reason as compared to other.

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### International Capital Budgeting

International Capital Budgeting is a process of investigation and analysis that leads to a key financial decision for both purely domestic firms and MNCs. More broadly, *capital budgeting* is defined as the process of analyzing capital investment opportunities and deciding which, if any, to undertake.

While calculating the cash flows for **international capital budgeting** the following accounts must be taken into accounts while calculating the incremental cash flows.

**Cannibalization** : Sometime the new projects causes the existing cash flows to diminish because of the new projects ; these diminish cash flows are considered as the cash out flows for the new projects and these cash out flows are deducted in the final analysis ; this is known as cannibalization.

**Fees and Royalties** : Some time you have to pay extra fee of license and other royalties to domestic government these are considered as cash out flows.

**Opportunity Cost** : Sometimes the opportunity cost is also considered as the cash out flows.

**Transfer Pricing** : In the international transfer major portion of some product is manufactured in some other subsidiary and the host country little value to finished product. The parent country and the host country are involved in transfer pricing.

So all this discussion implies that:

Incremental Cash flow of International = Global corporate Cash flow with project- Global corporate Cash flow without project.

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### Factors Considering the International Capital Budgeting

- Exchange Rate Fluctuations
- Inflation
- Financing Arrangements
- Blocked Funds
- Remittance Provisions
- Uncertain salvage value
- Impact of the project on prevailing cash flows
- Government incentives
- Social costs
- Threat of expropriation - projects of a foreign company forcibly being taken over by the host government.

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### Major Issues in International Capital Budgeting

Two major issues in consideration while investing internationally.

- “Parent against the project cash flow” the analyst estimates the relevant cash flows or the incremental cash flow of the particular project when the subsidiary transfer or subsidiary remits that cash flow to the parent company.
- “How to account for the increased economic and political risk of project.”

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### The International Complications in Capital Budgeting

- Parent cash flows must be distinguished from project cash flows.
- Parent cash flows often depend on the form of financing. Thus cash flows cannot be clearly separated from the financing decisions, as in done in domestic capital budgeting.

- Remittance of funds to the parent must be explicitly recognized because of differing tax system, legal and political constraints on the movement of funds, local business norms and differences in how financial markets and institutions function.
- Cash flows from affiliate to parent can be generated by an array of non-financial payments such as payment of license fees and payments for imports from the parent.
- Differing rates of national inflation must be anticipated because of their importance in causing changes in Competitive position and thus in cash flows over period of time.
- The possibility of unanticipated foreign exchange rate changes must be remembered because of the possible direct offsets on the competitive position of the foreign affiliate.
- Use of segmented national capital market may create an opportunity for financial gains or may lead to additional financial costs.
- Use of the host government subsidized loans complicates both capital structure and the ability to determine appropriate WACC for discounting purposes.
- Political risks must be evaluated because political events can drastically reduce the value or availability of expected cash flows.
- Terminal value is more difficult to estimate because potential purchasers from the host, parent, third countries or the private or public sector may have widely divergent perspectives on the value to them of acquiring the project.
- All foreign complexities must be qualified as modifications to either expected cash flows or the discount rate.

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### Attempting the Numerical of the Capital Budgeting

Whenever the capital budgeting problems are encountered they must be having data related to following accounts. Each problem should have the purchase price data. The alternative names for purchase price are initial cost, initial investment or simply cost. This account needs to be depreciated and the depreciation methods are either "straight line" or "accelerated rates". And the depreciated value needs to be subtracted from the cash inflows. This account is also called as cash outflow account. The second account in these problems will mention the related cash inflows. The alternative name for cash inflow is Annual savings, Net savings. The third account could be related to the method of depreciation. Always remember that depreciation is applied on initial investments or purchase price or initial cost or cost. The problem mentions the method of depreciation also. The fourth account is cost of Capital which is also called discounting rate. These problems will mention the tax rate as well. While solving the capital budgeting problems we always go for operating cash flows. The method of calculating operating cash flows; identify the relevant cash inflows. This may be in the form of annual saving, or net saving. In the second row calculate the relevant depreciation amount.

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### Conclusion

Investment decision making does not depend merely on accounting information. Managers with different expertise and information must debate amongst themselves to clarify complex problems and the feasibility of possible solutions. There are many Capital budgeting appraisal methods in practice, but the main methods to evaluate investments are Net Present Value (NPV), the Internal Rate of Return (IRR), the Pay Back (PB) method, the Accounting Rate of Return (ARR) and Profitability Index (PI). It is assumed that cash flows are known with certainty, sufficient funds are available to undertake all profitable investments, and there are no taxes or inflation. Decision outcomes are rarely based exclusively on signals computed by financial analyses. Intuition and judgement based on experience play a major role in decision-making. Executives adopt 'holistic' approaches incorporating financial and strategic considerations. They are not just technocrats anchored to financial calculations.

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