CHAPTER - 1

Introduction : Capital Budgeting Practices in India:

A Study of the Role of Non-Financial Factors in Decision-making

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1.1: Statement of the Problem

Effective capital budgeting decision-making, which involves huge long-term investments in expansion, renovation and capacity addition, is critically important in determining strategic success and survival of a corporate house. Decisions of this nature help a company to mould its future opportunities and develop competitive advantage by rebuilding its technology, its process and capacity (Kersyte Agne, 2011).

Financial evaluation of an investment proposal is essentially an important step in the process of capital budgeting, which is undertaken for assessing the economic merit of an investment proposal so that resources can be earmarked, approved and allocated for giving final shape to the investment proposal. However, in the process of assessing merit of a capital budgeting proposals, contemporary investment theories assign a great degree of emphasis on normative financial appraisal [See, Weston and Brigham (1978),Van Horne James (2003), Bailey and Myres (2003)] and neglect myriads of other important non-financial factors that predominantly affect the success of the investment projects.

Given the task of creating wealth for their shareholders, Finance Executives and CFOs grossly use financial appraisal methods such as DCF and other sophisticated methods, which include IRR, NPV, sensitivity analysis, etc. Findings from research studies, undertaken in Indian or abroad, provide evidences in support of this industry practice. Notable of the studies cited are Gitman and Forrester (1987), Pike (1996); Graham and Harvey (2002)]. In India notable of such studies have been done by Chandra P (1975), Porwal L S (1976), Babu C Prabhakara (1995); Anand Manoj (2002) and Shah Kamini (2008); Gupta Divya (2013). In more than 90% of the studies, the researchers devoted their attention on surveying the methods and techniques of normative financial appraisal.

[See Summary Table 2A and 2B in Chapter - 2].

Success of a project, in practice depends on numerous financial and non-financial factors. The important non-financial factors that affect the success of an investment proposal are environmental clearance, social acceptance, organizational structure, workers' commitment, governmental clearance, technological feasibility and so on. Ignoring either of these factors in making a capital budgeting decision is thoroughly mistaken. In the corporate world such instances of ignoring non-financial factors appear very costly. Due to disregard for these factors, many of the projects with very good index of financial prospect have been abandoned half-way, resulting in wastage of shareholders' wealth. It reflects that undue emphasis on normative financial clearance alone is not justified; in other words, analyzing numbers of other incidental non-financial factors affecting success of a project in addition to usual financial appraisal is essential.

In India any research study to investigate the effect of many other non-financial, organizational and environmental factors on the success of capital budgeting has not been undertaken by any scholar. Fig. 1.1 as shown below portrays how numerous non-financial factors can influence success of a long-term investment in capital projects.

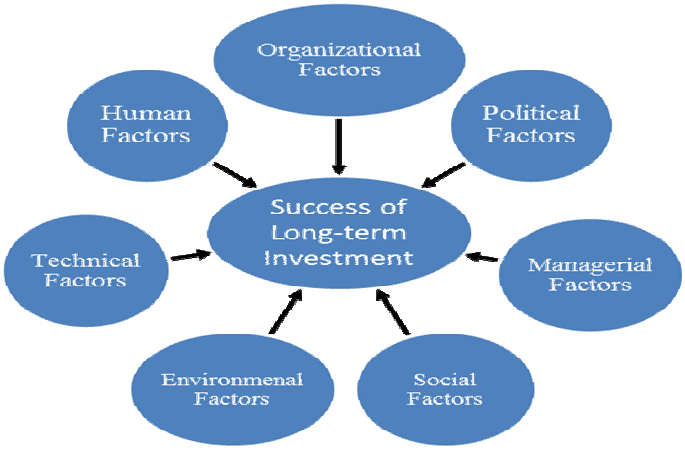

Fig. 1.1 Influence of Non-Financial Factors on Success of Capital Budgeting

Mohamed and McCowan (2001) advocate that non-monetary project aspects are required to be carefully analyzed so that they can be managed. In extreme cases, neglect of these aspects can cause the failure of a project despite very favourable financial components. The majority of organizations resort to estimating the necessary money contingencies for these qualitative aspects without an appropriate quantification of the effects of these factors.

Agne Kersyte (2011) points that satisfying an index of financial benchmark is only one step, which indicates that project is desirable. Mohamed and McCowan (2001) argue that financial evaluation is only a part of the whole decision-making process. Therefore, even if the financial conditions are extremely favourable, neglecting other qualitative aspects may cause serious problems in making a project a success. In the context of making capital budgeting analysis objective and rational, this study appreciates the need for analyzing both the financial and non-financial factors before taking a decision regarding financing a project.

Skitmore et. al. (1989) point to the need for taking into accounts both financial and non-financial aspects of capital budgeting decisions. Proctor and Canada (1992), Chen (1995), Lopes & Flavell (1998), Adler (2000), Mohamed and McCowan (2001) and Love et al. (2002) stress on the need and importance of incorporating non-financial factors into investment analysis. Almost all of the authors, noted in this paragraph, have strongly advocated the need for taking both financial and non-financial aspects into account before giving final clearance for an investment in long-term project.

A limited number of researchers, who have attempted to study the role of non-financial factors, have seriously devoted on studying inter-relationship between the non-financial factors and implications thereof. Due to their excessive bias for the cause of non-financial factors, they overlooked analysis of financial factors into their studies. However, success of a project does not depend on non-financial factors alone; rather, it depends on the analysis of the both kinds of factors - financial and non-financial. Meredith and Mantel (2000) provide a list, which includes forty four variables, both financial as well as non-financial that affect success of an investment **[See Table.5A Chapter 5]**.

The question is - how much weights evaluator should assign to financial and non-financial factors to make a rational capital budgeting decision? While around 90 percent researchers over-emphasize the role of financial factors, remaining handful of researchers argue strongly for the cause of non-financial factors. The issue is how to distribute the weights between financial and non-financial factors. As the question is left unanswered, this research proposes to fill this gap by undertaking an empirical work. The objective of the work is to study financial and non-financial factors together and assess

the relative merits/weights of the each set of the factors. The result of the study is likely to help the management and CFOs to decide the weights they should assign to each set of factors to arrive at a rational capital budgeting decision in the competitive and economic framework of industrial world.

1.2: Capital Budgeting Defined

Preparing budget for making investments in high value fixed assets and projects, in usual sense, is referred to as capital budgeting. Various authors and finance experts defined Capital Budgeting in the light of their own understanding. According to Gitman Lawrence (1988) capital budgeting is the process of evaluating and selecting long-term investments consistent with the goal of shareholders' wealth maximization; it outlines the process of allocating the financial resources of a business to assets from which benefits are expected to be received in future. According to Herbrst (1982) capital investment mechanism and analysis surrounding it are generally referred to as Capital Budgeting. It is the process of allocating the financial resources of a business to long-term assets from which benefits are likely to arise in future. According to Peterson and Fabozzi (2002) capital budgeting is the process of analyzing investment opportunities in long-term assets which are expected to produce benefits for more than one year.

In the light of the definitions stated above it is understood that Capital Budgeting refers to the process of identifying capital projects, undertaking appraisal, choosing an investment with the potentials of the highest value addition and efficiently allocating those funds to the projects. In the process of selecting a project or investment in capital budgeting, different forms of appraisals are made; those include technical appraisal, financial appraisal, environmental appraisal, market appraisal. However, in majority of the research studies, the scholars lay major emphasis on financial evaluation; evaluations of remaining other categories of variables have been grossly overlooked.

1.3 Scope of the Study:

There are several aspects in capital budgeting, such as identifying, evaluating, planning, scheduling, implementing and auditing. Evaluation of Projects is a part of capital budgeting. In this work we plan to study only the issues connected with evaluation techniques used in capital budgeting.

1.4: Importance of the Study

Capital Budgeting is the most important of the three decisions, when it comes to the creation of shareholders' wealth (Van Horne James, 1994). Capital Budgeting is the mechanism of translating strategies into action. It is the process of making investments in long-term fixed assets in order to add to Operating Leverage of the firms, which results in rising level of EBIT corresponding to a given percentage change in sales. In the imperfectly competitive market, a factor that predominantly pushes up capital budget outlay is the compulsion to fight competition and improve efficiency.

Table 1.1 shows that size of Fixed Assets in Indian corporate houses has increased steadily over the period of twelve years from 2000-01 to 2012-13. Time weighted growth rate in Fixed Assets is determined to be 13.1%. However, during the same period from 2000-01 to 2012-13 a great degree of volatility is noticed in profitability. In some years growth rates of profits were found to be very close to zero. In three years (i.e., 2001-02, 2008-09 and 2012-13) growth rates of profits were negative.

In the last six years from 2006-07 to 2012-13 the scenario worsened further. During this period time weighted growth rate in Fixed Assets was more than 20%, while rise in profits was limited to 10% only. Obviously, this scenario indicates presence of inadequacy in the process of capital budgeting.

Table 1.4: Trend in Size of Corporate Fixed Assets and Profitability

Year	Fixed Assets (Rs billion)	Year to Year Growth Rate (%)	Profits (billion)	Year to year Growth Rate (%)
2012-13	21802.60	11.83%	4442.63	(-)1.63%
2011-12	19495.51	21.31%	4516.30	15.75%
2010-11	16070.07	18.84%	3901.62	17.19%
2009-10	13521.84	28.05%	3329.31	12.10%
2008-09	10559.66	24.94%	2969.91	(-)0.2%
2007-08	8451.32	18.17%	2975.76	23.2582
2006-07	7151.31	17.82%	2414.25	0.308799
2005-06	6069.40	18.29%	1844.63	0.27566
2004-05	5130.69	8.39%	1446.02	0.565533
2003-04	4733.31	6.42%	923.66	0.493315
2002-03	4447.59	2.96	618.53	0.773105
2001-02	4319.60	8.09%	348.84	(-)0.02283
2000-01	3996.04		356.99	

Source: Industry Characteristics, RBI.
Calculation of percentage is done by the author

Using secondary and survey data Klammer Thomas (1973) observes that there is an association between choice of capital budgeting technique and financial performance of the firm. Indeed the findings should be true, because the future of the firm depends on investment decisions made today. However, aggregate record of corporate performance as tabulated above appears contradictory. Even after making rising investments in fixed assets, the corporate houses face falling return on capital employed.

In the light of the scenario discussed above, it is necessary to examine how profitability of the corporate houses can be increased with the use of improved methods of Capital Budgeting practice. There is a need to examine if existing theory is still relevant in respect of choosing the right investment. This is also important to find the factors that predominantly influence the success of a long-term investment. This may help in designing corporate policy for optimum allocation of limited resources.

1.5: Research Background

More than Ninety percent of 'research studies in Capital Budgeting' is focused on financial appraisal, which cover survey of appraisal methods used, methods of determining cut-off rate for discounting and tools of incorporating risk in project decisions. In this respect, plenty of literature is available. Notable of studies are credited to Klammer Thomas (1972), Brigham (1975), Pike Richard, (1995), Arnold, G. C. and P. D. Hatzopoulos (2000), Graham and Harvey (2001), Ryan and Ryan (2002), George Kester and Geraldine Robbins (2011),

Pike (1996) from the study of top 100 UK companies observe 54% companies to use IRR, whereas use of NPV was reported as low as 33%. A chronological survey of studies made in USA reveals a clear trend of gradual increase in the use of sophisticated methods. Suk, Trevor and Seung (1986) find 49% and 21% of the companies to use IRR and NPV respectively as primary methods for project appraisal. So, combined use of DCF methods increases to 70%, which was just 7% in 1949. Some years later Bierman (1993) finds 73 out of responding 74 sampled 'Fortune 100' companies to rely on use of Discounted Cash Flow methods. Especially he observes that IRR is preferred to NPV. However, Payback period still remains as a very popular secondary method. Graham and Harvey (2002) observe the highest percentage of corporate houses in the USA to depend on the use of IRR as primary method for evaluation of long-term investment projects.

From a survey of companies listed on Irish Stock Exchange George Kester and Geraldine Robbins (2011) find almost 100 percent companies to use economically justified DCF methods, such as NPV and IRR, alone or in combination with non-DCF methods such as Payback Period.

Very limited numbers of research studies cover investigations of non-financial areas. Bower Joseph (1972) points to the role of organization structure and reward system in choosing the long-term project proposals.

Stage 1: Need of a project originates form the gap between desired and actual result.
Stage 2: Project takes its operational shape at departments /divisions.
Stage 3: Project proposal is sent to the Investment Center for approval

Project decision is taken at investment center. Divisional Managers define projects according their individual goals. Investment idea is influenced by the reward and responsibility structure of the company.

Table 1.5: Relationship between Project Selection and Management's Reward

Reward criteria	Investment Evaluation Method
Batting average	Payback
Return on investment	Net Present Value
Growth rate	Internal rate of return

This model is providing an explanation why managers behave differently at the time of choosing the project evaluation methods. The Process Approach to capital budgeting, advocated by Bower (1972), does not confine the attention to estimation of normative value index; instead, it is attempting to explain the way capital budgeting decisions are taken. Participation of personnel in decision-making process and their commitment to making a project stand are dominant variables behind success of a project. It integrates the way investment opportunities are identified, the way information is gathered, the way evaluation is made and how organizational resources are combined and deployed for proper implementation of it.

Later some academic experts pointing to **agency theory** (Jensen and Meckling, 1976) come to argue that a financial decision, which does not provide substantial weight to the interests of top level management executives, has little possibility of getting included into financial plans and implementing them finally. Williamson (1963) argues that the investment allowing some discretionary power to the managers add to the utility function of management; it motivates managers to strive hard to make the project stand successfully. Later the stakeholder theory (Titman Sheridan, 1984) come to highlight that any financial decision undermining the interest of non-financial stakeholders carries the risk of putting long-term survival of a project.

In India the pioneering works in the area of capital budgeting decision-making in corporate sector have been done by Chandra Prasanna (1975) and Porwal L S (1976). Focus of their studies has been on surveying financial appraisal of investments. They report prevalence of traditional appraisal methods of quantitative evaluation of investment proposals. They find the largest number of firms to rely on Payback Period method, which is not theoretically recognized as a sound method for project evaluation. From a study of a small sample of fourteen large Indian firms, Pandey I M (1989) obtains at almost similar results. His findings confirm that the majority of the companies have been using Payback Period as the primary method for evaluation of projects.

Pandey I M (1989) reports that about two-thirds of the companies were using Payback Period and Internal Rate of Return (IRR); the former as primary method and the latter as the secondary method. From a study of 64 firms of different sizes Shivaswamy M (1996) obtains almost similar results once again. Babu Prabhakara C et al. (1996) present a survey, which reports that '73% companies has been using DCF methods for appraisal of capital investments.

However, studies conducted in late nineties of last century present a better practice consistent with modern theories of quantitative appraisal. Chadwell-Hatfield, *et al* (1997) from a study observes that '67% firms' insists that acceptable projects should have a shorter Payback Period in addition to passing NPV or IRR criterion. Patel B M (2000) observes that some of the Indian firms even use multiple methods, ranging from two to five methods simultaneously before arriving at the final decision regarding acceptance or rejection of a long-term investment. The findings reflect that today the firms tend to be more careful in choosing an investment proposal.

In India the use of IRR has registered a steady increase. To the practicing managers popularity of Payback Period is still very high. Anand Manoj (2002) reports that '85 % of the firms has been using IRR. In addition to using IRR, 67% of these companies simultaneously use Payback Period as a supporting second method.

Shah Kamini (2008) reports that majority of the Indian companies are using now multiple techniques for evaluating their capital budgeting proposals. The researcher observes that the companies prefer 'IRR and NPV' to Payback period method. Interestingly the scholar reports presence of two different trends, one for choosing new

investments and another for replacements. For investing in new projects firms use IRR, PBP and NPV, while for replacement and modernization firms largely rely on Payback period method. Sensitivity analysis and scenario analysis have been found as the most important and second most important technique for risk analysis. Using a sample of 75 companies, Gupta Divya (2013) shows that there is a positive relationship between the size of project and frequency of using of DCF techniques.

Quite different line of thinking has been noticed in the studies of Carr, Chris et al.(2010), Shapiro Allan (2013), Kaplan and Atkinson (2003); they have handled the issues of strategy and technology. Organizational factors and decision-making mechanism down the hierarchical layers have been analyzed by Bower Joseph (1970). Later Karsyte Agne (2011) has focused attention on the process of capital budgeting; the scholar observes that management in the organization has different objective other than shareholders' wealth maximization; so, they try to influence the outcome of the decisions so that interests of management is better served. These observations are in line with the managerial models of Williamson O (1963) and Marris R (1963).

Skitmore et. al. (1989), Flavell (1998), Adler (2000) and Love et al. (2001) point to the need for taking into accounts both financial and non-financial aspects of capital budgeting decisions. Moutinho Nuno (2010) examines how success of projects is associated with non-financial factors.

The outstanding feature of the studies is that while each researcher wants to make a dedicated focus on a point, other points are left untouched. It is a fact that if several factors are not comprehensively analyzed, a well encompassed rational decision cannot be made. This study aims to address this issue and focuses on combining larger number of factors such as financial, non-financial, technological, organizational, etc. into a decision-making framework so that capital budgeting decisions can be made objectively eliminating biases and hubris.

Some commentaries and opinions are occasionally voiced in respect of the impact of environment pollution on project selection. One such example can be cited in respect of Green Projects (Neha Vyas, Vikalpa)

Andreou et al. (1989) bring it to the notice that a project generates externalities, in terms of costs and benefits that are not taken into account in financial forecasts.

Paucity of research studies assessing the role of non-financial and organizational factors in capital budgeting reflects a research gap. Particularly, in India no systematic study in this respect could be traced. This work is dedicated to fill this gap.

1.6: Objective of the study

a) To examine the methods of normative financial appraisal used in corporate houses in India

b) To examine non-financial factors that affect capital budgeting decision in corporate houses

c) To make a review of multi-factor models of capital budgeting

d) To assess relative importance of financial and non-financial factors so that CFOs can objectively assign weights to various categories of factors to arrive at a well encompassed and effective capital budgeting decision

1.7: Methodology

The study is based on both primary data and secondary data. Secondary data have been collected from Reserve Bank of India Bulletin, Stock Price Data from NSE database and Annual Report of the respective companies. Primary data have been collected directly from the sample companies listed on NSE through questionnaires. The questionnaire was drafted with multiple-choice type objective questions. Questions in respect of size of investment, choice of appraisal method, importance assigned to corporate strategy, sources of fund for financing the investment proposal, people who take part in decision making, etc., have been the different points in the questionnaire.

At the pilot stage finance executives of two selected companies were visited with the questionnaire. On the basis of suggestions received from them, the questionnaire has been further modified and firmed up. Keeping in mind the low response level as experienced by previous researchers, the questionnaires were mailed to 500 randomly selected companies, of which only 8 companies responded in the first round. After

several reminders responses from additional 11 companies were obtained which made total responses equal to 15. Since the sample size still remained very low, personal visits were arranged. This helped in obtaining responses from another 16 companies. So, the total number of companies, from which responses were received, increased to 31. Since one of the questionnaire received from a company appeared inconsistence, it was dropped and excluded from analysis. This makes total valid responses equal to 30 only.

Thus, the analysis of the study is based on questionnaire responses obtained from 30 companies. The data being used in this study are original and made available to the investigators on the condition that information presented in the questionnaire will be strictly used for academic purpose and none of the information given by them will be divulged publicly. Statistical tools like descriptive statistics, charts, z –test, χ^2 test and sign test and Factor Analysis have been used in appropriate cases for arriving at valid conclusions scientifically.

1.8: Scope of the Study

Scope of the study is confined to assessing importance financial and non-financial factors in appraisal of long-term investments in capital assets. Study is based on samples of Indian companies listed on NSE. Period of study is defined to be 5 years from 2011 to 2015. As surveying the methods determining cost of capital and methods of handling risk are incidentally done in almost all studies, so, these aspects have been kept outside the scope of the study.

1.6: Limitations of the Study

Capital budgeting decision-making depends on many variables such as cost of capital, project risk, inflation, sources and availability of fund, technical feasibility, market feasibility, etc. This is difficult to include so many variables into the analysis. Thus, the focuses of the study is kept limited to assessing the weights of financial and non-financial factors in choosing an investment project. How financial and non-financial risks can be incorporated into the analysis has been avoided. Secondly, as the study is based on limited data of 30 companies listed on National Stock Exchange, hence the findings obtained from the study cannot be generalized. Choice of an investment depends

on economy fundamentals too. Many of the issues have not been handled in this study. It is expected that subsequent studies later will fill these gaps.

BOX:1

Role of Non-Financial Factors: Evidences from Indian Corporate Sector

Some of the very recent events that highlight the importance of non-financial factors have been enlisted below:

State-run Orissa Mining Corporation (OMC) and Vedanta Aluminium Ltd, a unit of billionaire Anil Agarwal's London-listed mining giant Vedanta Resources Plc, entered into a Joint venture for extracting bauxite form Niyamgiri hills. The project had to be abandoned due to objection of the Union Ministry of Environment and Forests for non-compliance of forest clearance as per the directives in August 2010. Subsequently, OMC challenged the ministry's denial in the Supreme Court, which instantly ordered the state government to organize Gram Sabhas under the Forest Rights Act of 2006 at Niyamgiri hills and seek mandates from Dongria Kondh tribals groups living in hamlets adjacent to Niyamgiri hills.

The tribal groups spoke about how the project threatens their religious rights and how it would destroy the pristine forests as well as their livelihoods. They voted strongly against the project on August 13, 2013, which rendered the company losing the right of extracting bauxite form Niyamgiri hills. This has created a pressure on the financial position of Vendata Aluminum, which had already invested Rs 5000 crore in installing a bauxite refinery plant at Lanjigarh in Kalahandi with capacity of producing 100 million tons of bauxite per annum.

BOX - 2

Indian car maker TATA Motors planned to assemble the world's cheapest car Nano at Singoor. Due to pure socio-economic reason, Tata Motors had to abandon ongoing construction of car factory at Singoor and shift its plants and machineries to Anand in Gujarat. Farmers at Singoor strongly protested construction of factory on multi-cropping land and created a deadlock at the factory gate.

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