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CAPITAL BUDGETING DECISION : A CASE FOR INVESTIGATING INVESTMENT BEHAVIOUR OF BUSINESS FIRMS IN INDIA

WITHIN recent years there has been a growing awareness of the questions of capital budgeting in India. (Capital budgeting consists of the techniques of analysis used to evaluate some proposed capital expenditure. These techniques essentially lead to a comparison of benefits with costs. Obviously, it does not pay a business to invest in a project which does not assure benefits more than the costs. When there are several investment opportunities and capital supply is limited, a decision will have to be made on the basis of highest or quickest returns. Several methods are in use in this area. The most common methods in use are the pay-back method and the accounting rate of return. However, the methods generally advocated by theoreticians are the internal rate of return (or the Discounted cash-flow technique) and the present-value method. [1]

Information is lacking to-day as to how managements take capital expenditure decisions in India. It is, however, doubtful if they are using any of the sophisticated methods of analysis. It is quite probable that most of such decisions are made on the basis of 'postponability', i.e., undertake a capital expenditure which cannot be postponed. Probably to some extent pay-back and (accounting) rate of return methods are also being used. However, each of these methods has its drawbacks. [2] The main drawback is that under these methods the time value of money is disregarded, i.e., a sum of money received at some time in the future is regarded as equivalent to a similar amount of money received to-day. In other words, the possibility of the sum being invested during the meantime, and therefore, earning something, is entirely ignored.

It is on account of the drawbacks of these methods that recently writers in India also have started advocating the use of the Discounted

cash-flow and Present-value techniques. [3] Indeed two writers in good managemenr positions have also emphasized the use of the D.C.F. technique, although they did not make it clear whether they were able to sell out the technique to their own managements. [4]

In the opinion of the present writer, the adoption of these sophisticated techniques is not so simple a matter as is generally supposed to be. There are some practical limitations to the use of these methods. An attempt is being made in this paper to focus attention on some of the conceptual and practical difficulties faced in the use of these techniques, and to plead for research ino the investment behaviour of business firms in India.

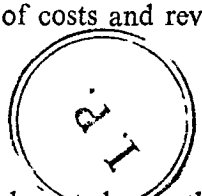
MANAGERIAL FUNCTIONS IN CAPITAL BUDGETING

The managerial functions involved in capital budgeting may broadly be classified into five categories :

1. A continuous search for investment opportunities ;
2. Estimation of cash flows and other benefits associated with individual investment projects ;
3. Forecasting the supply and cost of funds for investment purposes ;
4. Ranking the projects in some order of desirability and choosing among alternatives ;
5. Post-audit of committed investment, i.e., comparison of expected and realised rate of return.

The literature so far available in India has dealt mainly with the fourth of these functions, and to a very limited extent with the third. Important as these two functions are, they can only follow what has been done earlier. In other words, there should be a stronger emphasis on the search for investment opportunities and the correct estimation of cash flows associated with them. There is no doubt that the correct methods of evaluation and ranking are by themselves important, but if the figures over which these methods are employed are incorrect, no reliability of the final answer can be ensured. The need to place an emphasis on the continuous search for investment opportunities and the forecast of their cash flows can hardly be exaggerated.

Some satisfactory organizational arrangements will be necessary in every business desirous of making a scientific analysis of its capital expenditures. The neglect of other important managerial functions in capital budgeting and the exclusive emphasis on the use of refined methods of analysis appear to be misplaced and misdirected. We need to have more information from the 'insiders' as to how do they feel an urge towards incurring a capital expenditure, or, how is prospective profitability calculated and how is choice between projects exercised at different levels of management. Alternatively, an attempt might be made by some organization to look into the investment behaviour of the business firms in India. Some of the important facts worth investigating might relate to the organizational set-up for investment decisions, the process of estimation of costs and revenues and the choice of decision-criteria.



REFINED METHODS OF ANALYSIS

The two refined methods of analysis often advocated are the Discounted Cash Flow method and the Present value method.

The D.C.F. method is also referred to as the internal rate of return method or the investors' yield method. The central object of the D.C.F. method is to find a rate of return which equates the present value of outlay with the present value of future returns. "In operational terms, it is that rate at which the incremental cash benefits expected from a project (after taxes, but before an allowance for depreciation) have a discounted present value which is exactly equal to the discounted present value of all incremental outlays required for the project's implementation."[5] In other words, an attempt is made to find by trial and error a rate at which the algebraic sum of the discounted cash outflows and inflows is zero. The rate thus determined will be compared with the cost of capital. An investment decision which promises a rate of return higher than the cost of capital will be accepted.

Under the Present Value method (also know as the Net Present worth method), the cost of capital itself is used as a rate to discount the expected outflows and inflows associated with the proposed investment. The decision rule in this case would be to accept proposals which promise positive net present worth and among

several of such proposals to select the one with the highest net present worth.

LIMITATONS

Ordinarily a businessman is willing to try a new technique provided he is reasonably convinced of the benefits accruing to him by the use of such techniques. That the refined methods of analysis have not very much impressed the businessmen so far, both in India and in the West, is quite evident. The reason lies in the basic weaknesses which these methods have from the point of view of a practical businessman.

Three of such weaknesses may be highlighted :

1. *Conceptual difficulty* :

The conceptual difficulty arises in determining as to which out of the above two is the more correct method of analysis. Normally the D.C.F. and the P.V. methods provide identical answers to the problem of selection among alternative opportunities. However, there are situations when the ranking given by these methods would be different, and even contradictory. [6] This might be the case when proposals are 'mutually exclusive', i.e., a selection has to be made among the two alternatives of doing the same thing. The contradiction in the answers provided by the two theoretically correct methods is due to the difference in the implicit assumptions about the reinvestment of returns from the projects.

Under the D.C.F. method it is assumed that the reinvestment rate is the same as the internal rate of return, that is to say, the capital recovered is reinvested at the same rate as that earned by a project within its original economic life. As a result, the higher internal rate of return will lead to a higher accumulated terminal value and hence the greater investment worth. [7]

The implicit assumption made in the P.V. method is that the reinvestment rate is equal to the cost of capital. Given the assumption, the terminal values obtained will always rank the same way as present values. [7]

Solomon in his brilliant treatise discusses the problem of choice between these two methods and points out that the question as to

which method is correct can be resolved by deciding which assumption is more appropriate. He, however, generalises that 'in all *but a few exceptional cases*, the generally accepted answer is that (cost of capital) is the best available estimate of the reinvestment rate" and again, "*apart from special instances*, the general assumption used by the present worth approach is the logically defensible one, and the criterion of net present worth contributed by a course of action provides a universally correct basis for investment decisions." [8]

The fact that there can be 'few exceptional cases' or 'special instances' where net present worth method would not lead to a proper selection of investment opportunities would be sufficient to complicate the understanding of the methods and make proper selection difficult. Practical businessmen may regard the whole exercise as too abstract and complex.

2. *The problem of uncertainty*

A business has to work under conditions of uncertainty. This uncertainty about future conditions affects all aspects of managerial decision variables, e.g., incremental cost and revenues, the opportunity cost of retained earnings, cost of new funds and the reinvestment opportunities. Capital budgeting decision under conditions of uncertainty requires an answer to two related questions :

i. What is the addition to the profitability of the enterprise as a result of such decision ?
ii. What is the 'probability' of such profits being realised ?

The answer to the first question will be based upon a large number of operational factors, both internal and external. In any actual situation, however, there are likely to be several possible answers. This naturally calls for the assignment of probabilities to possible answers, based upon past experience, current conditions and future expectations. It has been suggested that analysis should be based upon the 'expected' profits rather than the 'most probable' profits, where 'expected' profits refer to the weighted average of the probable levels of profits and their respective probabilities.

The executive knows well and feels that an estimation of earnings

for a longer period of time is a matter of conjecture, and even if mathematical refinements are introduced in the calculations, the resultant answer may not be very much away from a mere conjecture. With a feeling like this, he is more likely to depend upon a method like pay-back, which does not require him to tax his mind in making an estimate of earnings for a longer period of time. He may consider a three-year pay-back period as a satisfactory 'cut-off' criterion and take a decision on that basis. It has been observed that as a hedge against uncertainty, executives tend to assume either a very conservative income stream, or, a very short pay-back period, or require a very high rate of return. In fact, it has been suggested that 'because of the need for generating more real resources in an underdeveloped economy, projects with a faster pay-back should be preferred to other projects, even if the expected rate of return may be somewhat lower." [9]

3. *The problem of investment falling outside the perimeters of analysis*

Decisions regarding capital expenditure are not always based upon the purely financial criterion of benefits exceeding costs. It is possible to categorize investments as those the expected results of which can be expressed in terms of financial yield, or those that are expected to yield financial benefit but of a long-term strategic type not easily quantifiable (e.g., expenditure on research), or, those that arise from social or legal obligations. It has been stated that 'Westinghouse requires satisfaction of the rate of return criterion by those projects which are intended for expansion, for new products and for cost reduction, but 'necessity' projects (health, safety, employee relations outlay or legally required expenditure) are not subjected to the rate of return test. Similarly, 'product improvement projects' aiming at improving the quality of the product or changing its design, which does not add to the profits but avoids their reduction, are outside the purview of rate of return test. [10]

It seems that a large number of capital expenditure decisions would necessarily be made on the basis of either purely subjective considerations or an inadequate analysis of benefits and costs.

NEED FOR RESEARCH

An investigation of decision-making processes in capital investment which have become common in the Western countries need to be made in India also. The corporate sector in India today invests more than Rs. 300 crores in fixed assets every year.[11] An enquiry as to why and how it decides to make use of this amount would throw light on the important question of growth of the corporate enterprise in India. It would be interesting to know what pressures lead to investment and why investment levels vary among industries.

Further, more complex questions regarding capital investment decisions could possibly find answers. For instance, what factors do the decision-makers take into account ? How are expectations about future formed ? What provision is made for the uncertainty about future events ? And finally, how do the companies organize to identify or create investment opportunities ?

It may be useful to note that an enquiry of this type was conducted in several European countries by the European Productivity Agency (now merged with the Organization for Economic Cooperation and Development) towards the end of the 1950s. The information was obtained from a large number of companies spread over a number of industries and the results were subsequently published in the form of a report.[12] The Report suggests a questionnaire which might be adapted for making a similar enquiry in India.

CONCLUSION

Very little is known as to how capital expenditure decisions are made by business enterprises in India. From the point of view of the enterprise these decisions involve considerable sums of money and are almost irreversible. It might be useful to know what motivates business enterprises to undertake capital expenditure. Their motivation exercises considerable influence on the way an enterprise develops. For instance, if the motivation comes from the technological change, investment in research and development is likely to predominate ; or, if the motivation is the opportunity to meet increased demand, investment is likely to be made in expansion schemes. If, however, competition is the spur, investment is likely to be made in

cost-saving activities ; and, if the 'fear of market saturation' is the motivation, investment is likely to take the form of the acquisition of competing firms. [13] From the point of view of the economy as a whole, these decisions determine the allocation of resources as between different industries and different uses. In the long run such decisions mould the pattern of industrialization of the country.

The extant literature in India in this area largely deals with the question of relative superiority of the D.C.F. and P.V. methods over each other. The fact that the use of the D.C.F. or P.V. methods is only a part of the whole process of capital budgeting has not been sufficiently appreciated. In particular, there is a total lack of any factual material as to what decision-criteria are used by managements in India ; what organizational arrangements have been made in the different industrial units to appraise capital expenditure and how are estimates of costs and revenues made in India. A study of the investment behaviour of business firms in India is suggested which would throw light on this neglected but important aspect of financial management of business concerns in India.

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[7] SOLOMON, The Theory of Financial Management, p. 134.

[8] SOLOMON, Ibid., p. 135.

[9] MALKANI, Ibid., p. 308.

[10] WHITE, The Changing Criteria in Investment Planning, Brookings Institution, 1962, p. 17.

[11] This figure is based on the sources and uses of funds data relating to 1333 public limited companies, published in the R.B.I. Bulletin, December 1967. The average of the Gross Fixed asset investment for the five years from 1961-62 to 1965-66 has been blown up proportionately to represent the whole public companies sector. This figure, of course, does not take into account the investment in fixed assets made by private limited companies.

[12] O.E.E.C., International Report on Factors in Investment Behaviour.

[13] *Ibid.*, p. V. 14.