Chapter 2
Design of the Study

Introduction

Cooperative spinning mills have been established primarily to safeguard the legitimate economic interests of the small and scattered handloom and powerloom weavers of the decentralised textile sector and of the cotton growers. To meaningfully realise these objectives, the areas of operation of the individual mills are carved out with the beneficiaries identified for collection of a part of the mills’ equity keeping in view, the loomage of the members in the case of weavers' mill, and the acreage under cultivation in the case of growers' mills. This captive nature of these mills made them different from the other mills in the private and public sectors in respect of structure, financing, and so on.

The textile industry was largely under private sector ownership prior to Independence. The Fact Finding Committee on Handloom Industry, suggested in 1942 itself that it would be desirable to set up spinning nulls with the help of state government under some sort of official control to supply yarn to the handloom industry. This idea was concretised and ultimately resulted in the establishment of spinning mills in cooperative sector. The first cooperative spinning mill was set up at Guntakkal in 1951.1 The system of organisation of spinning mills in cooperative sector gained momentum especially during the third five year plan. This is clear from the fact that the number of spinning mills which stood at 2 with a spindleage of 24000 in 1960 shot up to 12 with a spindleage of 173684 in 1984.2 In the subsequent period there was a substantial progress in the growth of the spinning industry in the cooperative sector. The number of mills increased to 279 in 1995 with a spindleage of 5.67 millions.
The spindleage of cooperative spinning mills account for 11.2 per cent of the country's total spindleage. Tamil Nadu occupies a prominent place in the map of cooperative spinning industry in the country. In Tamil Nadu there are 18 spinning mills in the cooperative sector with a spindleage of 4.69 lakhs which account for 16 per cent of the total spindleage of 279.20 lakhs in the cooperative sector of the country. Thus, spinning mills in the cooperative sector have been playing a key role in textile industry of the country.

Statement of the Problem

The cooperative spinning industry functions under competitive conditions and does not enjoy any kind of protection. As such, the cooperatives cannot sacrifice their commercial interest. Therefore, they have to fall in line and continuously adopt modern technology and update techniques of management. In other words, cooperatives should not suffer from any handicaps that would adversely affect their competitive position. And yet, these mills established by the people of small means with local initiative are expected to function as catalysts for the socio-economic development of rural areas to which they belong. It cannot, therefore, confine itself to the field of commercial profits. The accountability of the cooperative spinning industry is thus multi-dimensional.

Their multi-dimensional accountability is related to the effective and efficient functioning of cooperative spinning mills. But then, many of the cooperative spinning mills are financially weak and incur huge losses. For instance, the cumulative losses of 18 cooperative spinning mills in Tamil Nadu alone touched a whopping amount of Rs.310 crores in 1999.\(^3\) The reasons for such a huge loss are many. Prominent among them are: i) shortage of raw materials and finance due to financial mismanagement and financial indiscipline;\(^4\) ii) heavy burden of interest due to excessive dependence on debt financing and particularly
on short-term borrowings; iii) default in repayment due to managerial inadequacies; iv) delay in completion of projects and cost overruns due to improper evaluation of the investment projects\(^3\) which has led to financial failure in some cooperative spinning mills; v) low productivity of investments;\(^6\) and vi) excessive or inadequate investment in working capital, resulting in improper working capital management.

The reasons cited above are, by and large, related to financial management. As stated, the financial management takes care of four important functions, viz., Capital Budgeting Decision, Capital Structure Decision, Working Capital Decision and Dividend Decision. Dividend decision in cooperative spinning mills is governed by the bye-laws. Hence, their influence on the financial performance cannot be manipulated. But the remaining three decisions strongly influence the financial performance of the mills.

Of all the decision areas of financial management, investment decision occupies a prominent position, especially in larger cooperatives like the spinning mills because all the other decisions largely revolve around the capital investment decisions. The mills need to invest a sizable proportion of the capital in the fixed assets for their establishment. Around 30 to 40 per cent of the total assets is constituted by the fixed assets.\(^7\) Decisions relating to replacement, expansion, modernisation, introduction of new product lines etc., need heavy outlay of money. And this amount cannot be totally funded out of equity capital. These mills have to depend on outside sources for meeting the major part of their requirements. The external liability arising out of financing of capital requirements has to be complied within a time frame. This depends on the timely completion of the project and the timely commencement of production. The installed capacity should be fully utilised, production has to be stepped up, sales have to be improved, receivables have to be collected on time and investments have to be
managed effectively. All these would smoothen the operations of the mills. Any snag or sluggishness in any of these operations would seriously impair the operations of the mills.

The aim of Capital Budgeting Decision (CBD) should be to minimise the cost of capital as well as risk. This depends on proper selection, screening, appraisal, execution and monitoring of capital expenditure proposals. How do mills take CBDs? What type of investment decisions have they taken over the years? How and where are the proposals selected? What are the prime factors considered by the mills while making CBDs? What are the determinants of CBDs? From where do capital expenditure proposals emanate? What methods do they follow in evaluating capital expenditure proposals? Do they follow traditional or modem methods? Do they adopt one method or more than one method for evaluating proposals? What are the reasons for following such methods? Are there trained personnel to appraise the proposals? Is there any correlation between methods and types of investments? How do they define the discount rate? How and from where do they get funds for implementing CBDs? Have they been executed as per schedule? If not, what are the hurdles? How did the delayed execution of the proposals affect the working of the mills? What are the post-evaluation practices followed in the mills? These are pertinent issues which need a scientific investigation and, hence this study.

Review of Related Studies

Several studies on capital budgeting decisions have been undertaken both in India and abroad. Some of the widely quoted studies are reviewed here. They are presented in the following order: i) studies undertaken abroad in the corporate sector, ii) studies done in the corporate sector in India, and iii) studies undertaken in the cooperative sector in India. The studies are arranged in a chronological order.
James M. Fremgen (1973). The study had the prime objective of analysing the capital budgeting methods used by the firms in the United States of America. Questionnaires were sent to 250 business firms, to which 177 responded. The sample firms were engaged in a variety of economic activities like manufacturing, retailing, transporting, land development and others.

The study revealed that there was a significant relationship between the size of the annual capital budget and capital budgeting methods. Discounted rate of return was the single most popular method used by the firms as it recognises the time value of money (60 per cent). Next in the order of popularity were payback period (46 per cent) and Average Rate of Return (40 per cent). Firms with larger capital budgets consistently used a variety of methods than those with smaller budgets.

Twenty-nine per cent of firms indicated that they have explicit assumption about the rate of return to be earned on reinvestment of cash receipts. The reinvestment rate would be equal to either the rate of return on current investment or the average cost of capital.

Sixty-seven per cent of the firms considered risk and uncertainty explicitly in the analysis of individual capital investment proposals. The popular methods used by the respondent firms to allow for risk and uncertainty in investment analysis are: "Requirement of a higher-than-normal index or profitability"; "requirement of a shorter-than-normal payback period"; and "adjustment of estimated cash flows by use of quantitative probability factors". However, many of the firms used two or more methods for allowing risk and uncertainty. Seventy three per cent of the films in the survey reported that they did experience capital rationing.
Lawrence D. Schall, et. a), (1978) in their study on "Survey and Analysis of Capital Budgeting Methods," have made an attempt to inquire about the capital budgeting techniques employed, the computation of the discount rate and cash flows and the method of estimating and adjusting for project risk. Questionnaires were sent to 407 firms. 189 responses were received and the response rate was 46.4 per cent.

The findings of the study are: i) Almost 86 per cent of the firms used more than one Capital Budgeting Technique (CBT) with 17 per cent using all four popular techniques. The most popular technique was Pay Back period (used by 74 per cent of the firms), but only 2 per cent used it as the only CBT. Accounting Rate of Return was used by 58 per cent (4 per cent used it as the only CBT), and Net Present Value was used by 56 per cent (2 per cent used it as the only CBT). ii) Among the firms, where discount rate was applied, 46 per cent employed the weighted average cost of capital, and only 8 per cent used a risk free rate plus a premium for their risk clause, iii) The most common practice of predicting cash flow was to first predict net income and then adjust this for non-cash flow items such as depreciation, iv) Over 36 per cent of the responding firms used a quantitative assessment of risk. Only four per cent did not assess risk and the remaining 60 per cent assessed risk only subjectively.

David J. Oblak and Roy J. Helm (1980) in their study on "Survey and Analysis of Capital Budgeting Methods used by Multi-nationals" have made an analysis of capital budgeting methods with reference to capital budgeting techniques, determination of discount rate and risk analysis. Questionnaires were sent to 226 'fortune 500' firms. There were 58 completed questionnaires, a 26 per cent response rate.
The findings of the study are: i) Almost 76 per cent of the respondents indicated that their primary CBT was one of the Discounted Cash Flow (DCF) methods, and 94 per cent reported that they used one of the DCF methods. ii) On determination of the discount rate, 54 per cent of the firms reported that they used the weighted average cost of capital either exclusively or in combination with other discount rates. A discount rate arising from the expected growth in dividends was given in 16 per cent of the cases, the cost of debt was noticed in 13 per cent, the risk free rate plus a risk premium was given in 9 per cent and a measure based on past experience was noticed in the case of 5 per cent of the respondent firms. iii) Over 72 per cent of the firms reported that they explicitly considered the risk of capital projects. In the majority of the firms, the risk adjustment was quantitatively determined.

Suk H. Kim and Edward J. Faragher (1981). Their study on "Current Capital Budgeting Practices" have made an attempt to discern whether there is any difference in the practices employed by companies with different risk characteristics. The data for this study was derived from responses to a questionnaire sent to the chief financial officers of all firms in the 1979 list of "fortune 1000," the largest industrial corporations list. Two hundred questionnaires were completed and returned and were used for analysis.

The findings of the study indicated that there appeared to be a continuing tend towards greater usage of IRR/NPV as the primary evaluation technique. Payback was still considered important, but mainly as a secondary evaluation technique. It also appealed that large industrial companies were becoming increasingly more sophisticated in their use of quantitative tools in the capital budgeting process. The degree of sophistication was increasingly felt in all areas, especially in project evaluation. In the areas of risk assessment and risk adjustment the study suggested less sophistication.
The most important finding of this study was that use of long-range capital budget, sophisticated capital budgeting techniques, risk assessment techniques, and risk adjustment techniques are inversely associated with the overall riskiness of the firm. This finding is particularly important because business people and investors are basically risk averters.

Irvine Lapsley (1986) has studied the investment appraisal practices in public service organisations. The results of the study were compared with the findings of the previous studies of investment appraisals by private sector companies. The organisations included in the survey were 10 regional water authorities, 88 local authorities and 68 health authorities and the overall response rate was 58 percent.

The findings of this study demonstrated that accountants in public service organisations were grappling with the difficulties of investment appraisals. Some of these problems, notably the formidable risk of measuring benefits and the reliance on central government finance are peculiar to the public sector. While this study signalled a level of sophistication in terms of investment appraisals by these organisations, there are evidently areas which needed improvement.

These included the treatment of risk and uncertainty and capital rationing. However, these observations have also been made about the investment appraisal practices of private sector firms. But with regard to the search process for identifying and evaluation of project possibilities, it is possible that public sector accountants may have something novel to offer to the private sector.

Stephen W. Pruitt and Lawrence J. Gitman (1987) in their study on "Capital budgeting forecast biases: evidence from the Fortune 500" attempted to find out answers and insights to a variety of forecasting biases based on a
comprehensive mailed survey. They conducted the study among the Fortune 500 of 1986. The response rate was 24.2 per cent. It was found that nearly 80 per cent of the respondents felt that the revenue forecast of capital budgeting proposals were typically overstated; 37 per cent of firms reported that biases were intentionally introduced; and 36 per cent felt that at least some portion of the bias was due to lack of experience.

Leonore K. Ken and U. Mao Cherukuri (1991) have done a study on "Current practices in capital budgeting: cost of capital and risk adjustment", with a focus on evaluation techniques. The results of the study were compared with the studies of Farragher Kim (1981), Walker Klammer (1984), Mckeon Hassan (1982) and, Schall et.al. (1978).

The samples for the study were chosen from "forbes 500" issue of April 1986. Questionnaires were mailed to 389 organisations; 126 firms responded, of which 101 were usable responses (26 per cent).

The study found out that Internal Rate of Return remained to be the favourite capital budgeting method (66 per cent) followed by Net Present Value (33 per cent). The least preferred methods were ARR (25 per cent) and, Pay Back Period (13 per cent) and these two were considered as supplementary decision criteria.

Capital rationing was employed by 33 firms. The weighted average cost of capital continued to be the most widely applied discount rate (78 per cent). Risk and uncertainty were considered by 73 per cent of the firms while evaluating the capital investment projects. To adjust risk, the required rate of return was increased by 42 per cent of the firms followed by shortening the payback period by 21 per cent firms.
Alan Sangster (1993) made a study on "Capital Investment Appraisal Techniques: A Survey of Current Usage" among the 500 largest Scottish Companies (on the basis of turnover). The response rate was 22 per cent. The results of the study were compared with the earlier studies conducted by Mchityre and Coulthurst (1984), Mills and Herbert (1987) and Pike's two studies (1975 and 1981). It was noted that 24 per cent of the firms surveyed were found to use a single evaluation method. The main method, as in Pike's 1981 study, was the payback method. The IRE. was a more popular method than NPV despite the theoretical superiority of the latter. Over 40 per cent of the companies surveyed used three or four methods which are not very different from the previous studies. Among the DCF techniques, NPV is increasing in popularity at a faster rate than IRR. The study also revealed that there was some association between the size of the company and the use of DCF techniques.

V. Rao Cherukuri (1996) made a study on "Capital Budgeting Practices: A Comparative study of India and select South East Asian Countries". The sample for the study was chosen from the list of the top 300 non-government companies based on assets in India (1990). Questionnaires were sent to 280 firms, of which 86 responded. The study covered 20 major industry groups. It was found that IRR was the favourite capital project evaluation method preferred by 51 per cent of the respondents. In contrast to the Indian experience, PB and ARR were the most preferred project appraisal methods in Malaysia, Singapore and Hong Kong. Indian companies used the multiple evaluation techniques (92 per cent). ARR and PB were widely considered as supplementary decision criteria. The weighted average cost of capital was the discount rate used by 35 per cent of the firms. About three-fifth of the respondents explicitly considered risk in capital budget analysis and mostly used sensitivity analysis.
The most popular method for adjusting risk was to shorten the payback period followed by increasing the required rate of return.

Pttsimsia Chandra (1973) has undertaken a study on "Capital Budgeting in Indian Industries" with a sample of 15 large-sized industrial undertakings, with the purpose of finding out capital budgeting practices, problems and experiences of industrial undertakings. The study found that the search for large investment opportunities placed at the highest levels of management, namely, divisional head/chief executive, while investment proposals concerned with immediate requirements involving less expenditures mostly emanated from the lower levels of organisations. Only two companies carried out a systematic review of physical facilities to identify profitable additions, modifications, rearrangements and deletions.

The majority of the firms have a formalised procedure for submission of investment proposals and only in three cases it was highly informal and non-standard. The investment proposal, once formally submitted, was reviewed at three or four levels. A proposal rejected at some level is not sent for further review. The reasons for multiple reviewing were to obtain comments of experienced executives on the validity of justification claimed by the sponsor, and also to examine a proposal from several angles. The criteria used in selecting investment proposals varied at different levels within the organisation and across different companies.

The capital budgeting committee consisting of executives of functional areas of management coordinated the investment proposals prior to finalisation of capital expenditure budget. In practice, there are two categories of investments needed for: i) maintaining and extending existing productive capacity and other facilities; and ii) creating a distinct unit of business with large outlays.
For the first category, multiple review system served as a screening device and detailed analysis was rarely carried out, and for the second category a special group was set up. Capital budgets for one year were done in detail and as the period was extended the budget became indicative and sketchy in nature. The budgeting experience indicated that the actual aggregate capital expenditure was very often lower than the planned expenditure, because several sanctioned items were not acquired.

In general, capital budgeting practice varies among the industries due to the organisational context. Capital expenditure management is inextricably related to the nature of business, the size of the firm, the style of management, and the dedication and competence of managerial personnel. The review of capital investments appears to be the weakest area of capital expenditure management.

Prasanna Chandra (1975)\textsuperscript{18} in his study on "Capital Expenditure Analysis in Practice" has covered twenty firms, varying in industry category, size, financial performance and capital intensity. The issues addressed were: How much importance is assigned to economic analysis of capital expenditures? What methods are used in analysing capital expenditure proposals and then rationale? In what ways could economic analysis of capital expenditures be improved in practice? The findings of the study revealed that the analysis of capital expenditures was found to be sketchy in many cases as many of the capital expenditure proposals belonged either to the category of replacement or expansion.

The most commonly used method\textsuperscript{1} for evaluating investments of small size is the payback period, while for investments of large size, the average rate of return is used. Discounted cash flow technique, though not commonly used, is gaining importance, particularly in the evaluation of large investments.
Other criteria used for evaluating investments are profit per rupee of investment, cost saving per unit of product and investment required to replace a worker.

Only four firms (20 per cent) have a well defined policy for accepting investment projects. Others, by and large, do not use fixed standards for the acceptance or rejection of projects. Funds are not a serious constraint for the prosperous concern but in the case of less prosperous concern scarcity of funds is a serious issue.

L.S. Porwa! (1976)\textsuperscript{19} made a comprehensive empirical study of the planning, organisational, quantitative, qualitative, behavioural and control aspects of capital budgeting programme in large manufacturing public limited companies in the private sector in India. The objective of the study was to have an insight into the current practices of capital expenditure decision-making in large industrial concerns. The study included all the non-finance, non-private, non-government manufacturing public limited companies in India whose total net tangible assets were Rs.10 crore or more in 1969-70. There were 118 such companies. Questionnaires were sent to the finance directors and managers of all the 118 companies. 52 companies (44 per cent) responded. The study was based on the hypothesis that adoption of theoretically correct techniques of economic evaluation and economic justification should lead to higher profitability in a business concern.

The important findings of the study were: The objective of CBD is profit maximisation and it is not maximising the wealth of the shareholders. In general the large companies in India, plan for a period of two to five years. They are gradually becoming plan-conscious. However, unprecedented price rise, scarcity of inputs, power shortage and credit squeeze have forced some of them to loose their faith in planning.
The authority to 'accept' or 'reject' a capital expenditure proposal mostly rests with the board of directors in case of 80 per cent of companies. Strategic decisions are mostly taken at the central office and thus capital budgeting process in India is 'top-down'.

Accounting rate of return continues to be the most popular method of appraising the capital expenditure proposals in India followed by the payback period method. The reasons for non-adoption of die DCF techniques are: existence of sellers' market, too much of government restrictions, and uncertainty in estimating cash flows. The competitive position is the main non-financial factor that is given primary consideration by the high profitability companies. This fits in very well with the financial objectives that are given greater importance by the business concerns in India.

The weighted average cost of capital is the most favoured method used to determine the cut-off point among the low profitability companies in India. The high profitability companies do not give relatively much importance to this method. They favour the cost of funds used to finance the expenditure more than any other method.

The sources of funds for existing lines and new product lines are both internal and external. In many cases, it is the combination of both sources. Capital is not much of a problem for the Indian companies. The techniques adopted for adjusting risk are shorter payback period and higher cut-off rate. The main forms of anticipated project risk are uncertainty in availability of inputs, government policy, and inability to predict the key factors accurately.
Priorities and a higher rate of return are the two main criteria for minimizing disagreement among the various departments. About two-thirds of the companies adopt post-audit to control capital expenditure, but the quality of post-audit needs to be improved.

The welcome feature in the capital budgeting process in India during the past one decade is the replacement of rule of thumb practice by a detailed analysis of the capital expenditure proposals.

Besant C. Raj (1977)\textsuperscript{20} in his study on "Public enterprise investment decision in India" has made an attempt to understand the dynamics of capital budgeting decision process in public enterprises with an insight into the procedures adopted for capital budgeting decisions, the deficiencies in the organisational set-up for taking such decisions. The study has attempted to offer suggestions for improving the current practices for better investment decisions in public sector undertakings. The study has covered ten companies and interviewed senior executives from a few other public enterprises.

Till 1965, no directives were issued either by the Government of India or the Planning Commission on the need for and the method by which feasibility studies and project reports could be prepared by the administrative ministries and the public sector units. Foreign experts studying the public enterprises commented on the inadequacy of economic analysis made for CBD. In the case of many projects, the initial plans and estimates were incompletely conceived. The other defect that was highlighted in CBD process of public enterprises was the poor analysis of the demand for products resulting in underutilisation of capacity.

Many of the executives were not aware of the manual of "feasibility studies for public sector projects". DCF techniques were rarely employed. CBD practices did not conform to the guidelines set in the manual. For better CBD, the study has
suggested that much emphasis should be given to selection procedure, classification of projects, organisational structure, reporting of performance of public enterprises and training to financial executives. The study has dealt with more about external organisational aspects of CBD than the internal process of CBD.

N.P. Aganval (1979)\textsuperscript{21} in his study has made an attempt to find out the return on long-term investments in Aluminium Industry in India. The study was concerned with a sample of five units and it covered a period of ten years (1963-64 to 1973-74). To find out the return on long-term investment, the net profit before interest and after tax was divided by long-term investments. It indicated the earning capacity of the long-term investment which facilitates the management in taking decisions relating to capital expenditure. The study found out that, while the long-term rate of return and the amount of net profit registered a fluctuating trend, the amount of long-term investment registered an increasing trend, except in 1973-74.

The author has also compared the return on long-term investments with other selected industries and found that the return on long-term investments was greater in aluminium than textiles, chemicals and rubber industries.

Guruprasad Mfurthy (1985)\textsuperscript{22} came out with a comprehensive study on capital investment decisions in Indian industry. The objective was confined to the modus operandi of the investment decision-making practices with reference to two parameters, viz., i) the administration of investment decision process, and ii) the economic evaluation model concerning investment decision process.

A sample of 50 private and public limited companies, predominantly Bombay-based, were chosen at random for the study. The study revealed that strategic investment proposals originated from the top, while tactical or routine
investment proposals emanated from the bottom. 70 per cent of the companies had a prescribed time schedule for preparing proposals.

The screening and review of proposals in 68 per cent of the firms was undertaken by special committees. In the rest of the firms the finance department did the task of screening and review. The decision to appoint the screening and review committee is vested with the boards, while the authority to approve the capital expenditure is vested with the board or managing directors (72 per cent).

The time lag between initiation and approval of proposal was up to six months in 50 per cent of the cases. But it varied from proposal to proposal in 38 per cent of cases and no prescribed time was fixed in 12 per cent of cases. The unapproved investment proposals were, by and large, abandoned. The reasons for abandonment were: change of original objective, alteration of environmental parameters and others. 88 per cent of the companies had formal expenditure control. Budget and variance analysis seemed to be the most popular control techniques.

Agarwal (1988) in his study on "Capital Budgeting Decisions and Multiple Objectives: Some Empirical Observations" has analysed the behaviour of selected firms with regard to their objectives. The sample belonging to different industries groups with different paid up capital size and sales turnover categories was selected and studied.

The survey covered 51 firms consisting of basic industries (7 firms), intermediary industries (28 firms) and consumer industries (16 firms). Thirteen of the surveyed firms belonged to foreign subsidiaries operating in India. All the survey firms included in the analysis have a paid up capital of above Rs.10 million but below Rs.500 million and a sales volume of above Rs.10 million but below Rs.2000 million.
In an aggregate analysis it was observed that only 8 per cent firms reported that they considered a single goal in their capital budgeting decision, while 92 per cent firms reported that they considered postulating multiple goals simultaneously. It was further observed that all the 8 per cent firms pursuing a single goal were found to be belonging to intermediary group of industries. None of the firms belonging to the basic industries group and the consumer industries group reported to be pursuing a single goal.

The firms belonging to basic industries group and consumer industries group in India have a tendency to pursue multiple goals simultaneously while evaluating capital projects. The firms belonging to foreign subsidiary group have accounted for 26 per cent of the total surveyed firms. As high as 92 per cent of these firms have aimed at attaining multiple goals in their capital budgeting decisions. Only 8 per cent of the firms were operating for the attainment of a single goal.

The objectives include maximisation of per cent return on investment in assets, maximisation of aggregate earnings, achieving a desired growth rate in earnings and maximisation of equity share prices.

Among the organisations favouring non-financial objectives, competitive position was at the top of the list (57 per cent) followed by community relations (38 per cent) and employee relations (32 per cent).

I. M. Pandey (1989) has done a study on capital budgeting practices of Indian Companies. The objectives of the study were: i) documenting the capital budgeting policies and practices of companies in India; and ii) ascertaining how business executives looked upon the linkage between corporate strategy and investment making.
Fourteen different companies engaged in the manufacturing of plastic products, drugs and chemicals, cables and wires, consumer products, polyester filament, auto-ancillary, industrial raw materials, and others were studied.

The findings of the study are: More than 50 per cent of the investment ideas were generated at the plant level in six sample units. The contribution of the board of management in investment ideas was relatively insignificant. Only 20 per cent of the investment idea (i.e. in eight companies) came from the board of management.

Most Indian companies in the survey chose an arbitrary period of 5 or 10 years for forecasting cash flows. This was because companies in India largely depend on Government-owned financial institutions for financing their projects and these institutions require 5 to 10 years' forecast of the project cash flows. Half of the companies did not include additional working capital requirements while estimating the investment project cash flows.

A formal financial evaluation of proposed capital expenditures has become a common practice among companies in India. Six companies in the survey had a formal financial evaluation of more than three-fourth of their investment projects. About three-fourth of the companies subjected more than 50 per cent of their projects to some kind of formal evaluation. As many as eleven companies stated that projects such as replacement of worn-out equipments, welfare and statutorily required projects below a certain limit, office equipment or furniture and, replacement of assets of immediate requirements were not formally evaluated.

With regard to methods of evaluation, payback was the most popular as all the sample units except one used it. In addition to payback period, nine sample units also used internal rate of return and six units used net present value methods.
The reason for DCF techniques being not as popular as payback was the lack of familiarity with DCF on the part of the executives.

As regards the cut-off rate, nine sample companies specified the minimum required rate of return and four of them computed the weighted average cost of capital. Business executives in India are becoming increasingly aware of the importance of the cost of capital, but they lack clarity while computing it.

Eleven of the sample companies considered risk and uncertainty while evaluating their investment proposals. The four most important factors contributing to investment risk as stated by the sample units are: selling price, product demand, technological changes and government policies. Sensitivity analysis and conservative forecasts are two equally important and widely used methods of handling investment risk in India. Most Indian companies practice control of capital expenditure through the use of regular project reports.

I.M. Pamley (1991) has done a case study on the capital budgeting practice of the Iata Iron and Steel Company (TISCO), Jamshedpur. TISCO has a planning horizon for five years. It has a rolling plan for its capital expenditures, that is, the estimates of capital expenditures for the next five years are made every year. A review of expenditure and budget shortfall or excess is made in December-January every year. This comes under carry over items and new projects.

The capital expenditure projects were divided into two categories, viz. minor schemes involving outlays of less than Rs.25 lakhs and major schemes involving outlays of more than Rs.25 lakhs. An amount of Rs. 7 crore is allocated to the above schemes every year. *CUD* lies to pass through four stages; i) conception, ii) formulation, iii) coordination and iv) evaluation.
As regards the conception of projects, the ideas for minor schemes come from departmental heads. Major schemes are largely conceived based on the experiences of steel plants abroad, research and development and top management. A concrete shape to the ideas conceived in terms of operational details, estimated life of the project, essentiality of project, details of the existing facilities, the likely date of stalling the project, list of various alternatives available, expenditure and financial benefits is given at the formulation stage.

There is a special cell called capital expenditure development division (Project Division) to coordinate all the departments involved in the project proposal and convene periodical meetings of all the officials concerned in this respect.

The formal proposal is submitted to a study group for analysing the viability of the project for the system as a whole. The study group consists of the Chief Engineer, the Controller of Budgets and the Controller of Accounts and representatives from works. If the group is satisfied, the proposal is put forward to the Capital Expenditure Control Committee for selecting the projects according to their priority.

All the proposals cleared by the cell go in for the formal budget. The budget is prepared on an annual basis with phasing over years. Once in three months the proposals are sent to the head office to be approved by the Board of Directors. Once the schemes are approved, the Controller of Budget disburses the funds to the departments concerned.

Performance appraisal is done to analyse the actual performance vis-a-vis the estimated performance. A few projects are chosen on a random basis for investigation of their performance.
Badri Narayan Purohil, et al., (1994) in their study on capital budgeting in India examined how far the management of fixed assets has been achieved in a relatively backward eastern region (West Bengal, Bihar and Orissa). The study has covered a sample of 100 companies drawn from 183 companies listed in the official directory and which have continuous and uniform data throughout the period of study (1976-77 to 1987-88). The sample companies have been classified in terms of age, size and industry and analysis was made with reference to each of the variables. The types of investments were broadly grouped under i) routine investments for replacement and maintenance; and ii) investments for growth and expansion. The internal factors influencing capital budgeting decision were growth and profitability, sales forecasts, depreciation policy, sources of financing and risk and uncertainty. The external factors were government economic policies, taxation policies, availability of funds, and inflationary price changes. Different methods like payback, accounting rate of return, internal rate of return and net present value were used for evaluating these proposals. The payback period method of evaluation is understood by all and is practiced by many.

P.K. Jain, et al., (1995) made a study on "Capital Budgeting Practices of Private Corporate Sector in India: Some Empirical Evidence". The objective of the study was to understand the capital budgeting practices followed by the business firms in private corporate sector. The scope of the study was limited to non-financial, non-governmental, manufacturing, public limited companies listed in the Bombay Stock Exchange (1989) which have their investment in total assets amounting to nearly Rs. 5 crores in 1989. Of the sample 160 companies, 81 companies responded, out of these, 64 responses were found to be consistent and usable.
Maximising the return on assets was the most important objective of the sample companies (more than 50 per cent). Capital budgets were formulated well in advance. For instance, 45 per cent of the companies had planned Capital Budgeting Proposals 5 years in advance and 42 per cent of the companies had planned one year in advance.

Capital budgeting decisions were generally taken at the central/head office level indicating predominance of top-down approach in capital budgeting decisions. Very few proposals originated at lower levels.

Regarding appraisal techniques, 45 per cent of the companies exclusively relied on traditional techniques (ARR and PB), while 12.5 per cent of the sample units preferred DCF techniques. 42 per cent of sample units went in for a combination of traditional and DCF techniques. Payback period was most popular method (53 per cent). The reason for this choice was that less time and cost were involved and it was easily explainable to the top management. The lower inclination for DCF was because it was very highly sophisticated.

Cost of capital is the useful cut-off point for the purpose of capital investment proposals. Nearly one-third (31 per cent) of the sample companies considered cost of capital as 'absolute source' followed by primary rate of return available to the investors on securities (19 per cent). 22 per cent of the companies considered 'no cost' for funds used to finance the project from equity capital. Retained earnings is an important component of capital used to finance the capital expenditure proposals. With regard to calculation of cost of retained earnings, 19 per cent of the companies did not consider any cost; only two of the sample companies reported considering of opportunity cost of using funds by equity holders as cost of retained earnings. One-third of the companies did not differentiate between cost of existing equity capital and anticipated earnings, thereby equalising the cost of retained earnings to cost of equity capital.
Two-third of the sample companies did not use the same required rate of retain for all types of projects. Three-fourth of these companies indicated project risk as the basis for determining the rate of return required for the projects. Shorter payback for risky projects was the most preferred approach for incorporating risk followed by sensitivity analysis.

Another significant finding of the survey was that paucity of funds was not a major constraint for capital budgeting decisions (77 per cent companies). This is in sharp contrast to the popular belief that finance is the major impediment for corporate firms in India.

Prabhakara Babu C. and Aradhana Sharma (1995) studied capital budgeting practices in Indian industry. The survey covered 73 companies (61 private and 12 public) in and around Delhi and Chandigarh. The main findings of the study have been compared with the earlier studies of L.S. Porwal (1976), Prasanna Chandra (1975), Ken and Rao Cherukuri (1991). It was found out that 90 per cent of companies have been using CBDs. The types of investment undertaken were largely expansion of production capacity (26 per cent) followed by replacement of assets (23 per cent). This was confirmed by Prasanna Chandra. In the private sector, the most popular discount rate was the term lending rate of financial institutions, and in the public sector it was the bank rate. Though 58 per cent of public sector units and 20 per cent of private sector units did not consider the uncertainty involved, changes in cash flow were considered by 33 per cent and 36 per cent of public and private sector units respectively for adjusting the uncertainty factor. The final authority for approving investments was vested with the top management or Board of Directors. Most of the executives appreciated the suitability of DCF techniques.
Raj S. Dhankar (1995) has done a research study on, "An appraisal of Capital Budgeting Decision Mechanism in Indian Corporations". The study, according to the author, is different from similar studies because most of the studies conducted in India so far have examined the capital budgeting practices used by the companies in general and not in terms of the companies’ specific characteristics. The study addressed two issues: i) what are the kinds of capital budgeting methods used by the various industries? and ii) Do the companies incorporate uncertainty in evaluating projects?

A sample of 75 large-scale manufacturing companies in the private sector whose paid-up capital was over one crore was selected. The sample companies were drawn from chemical and pharmaceutical, steel, vanaspathi, tyre, cement, textiles, engineering, plastics and other companies. The hypothesis was that well-established, high-sales, high paid-up capital companies do use more appropriate capital budgeting approaches than the small and newly established companies.

The majority of the firms used a combination of DCF and non-DCF techniques (51 per cent). 33 per cent of the sample firms used traditional methods for evaluating capital expenditure proposals. Among the firms which used traditional methods for evaluating proposals, payback period was found to be the most popular method (67 per cent) followed by ARR. 16 per cent of the firms employed discounting techniques. Net present value was found to be a widely used method under discounting techniques categories (67 per cent) followed by IRR (33 per cent).

The sample companies were quite aware of the phenomenon of uncertainty and they incorporated uncertainty in CBP either by shortening the payback period or by adjusting the discount rate.
Michael Johnson (1992) in his study on "Capital Investment Controls Among Manufacturing Cooperatives", made an attempt to understand the capital budgeting practices in cooperatives. The samples included cooperatives engaged in manufacturing activities like Sugar, Spinning, Weaving, Dairy, Rubber, Coconut, Beedi, and Arecanuts at different levels. Questionnaires and interview methods were adopted.

As in the private sector, cooperatives also have different types of investment proposals like product diversification (9 per cent), cost reduction (9 per cent), modernisation (18 per cent), and expansion (10 per cent).

The size of the investments varied from Rs.15 lakhs to Rs. 300 lakhs. However, the majority of the investment proposals had a financial outlay of less than Rs.15 lakhs.

The major sources of funds for the investments were loan from financial institutions and the firms' own funds. The members' direct contribution to investments was less than 10 per cent of the investment outlay in many of the cases and the finance from federation or apex society was negligible. Most of the cooperatives (79 per cent) took nearly two years for initiating, evaluating and commissioning the proposal.

The capital investment proposals were mostly mooted by financial institutions (22 per cent) and the chief executive officer (21 per cent). The proposals were appraised mostly by the chief executive of the board (53 per cent) and by the funding agencies (40 per cent). Appraisals included oral discussions, individual level assessments, meetings and documented appraisals. Investments by cooperatives were only on the basis of several appraisals by the relevant agencies.
The objectives of investment decision centred around better price to members (25 per cent), profitability (23 per cent) and excess procurement from members (17 per cent).

The cooperatives employed both traditional and modern methods for evaluating the proposals. More specifically, payback period (28 per cent) and break-even point (28 per cent) were the two most widely used methods for evaluating the proposal.

Rationale for the Present Study

The research studies reviewed so far are mostly confined to the corporate sector. These studies mostly examined the capital budgeting practices in corporate sector enterprises with a specific focus on appraisal methods, income measurement, determination of discount rate and risk analysis. Almost all the studies used mailed questionnaires as the main method of getting information. The analysis in many of the studies was sketchy. The authors have not made an indepth analysis of the capital expenditure practices which were obtained from the corporate firms. Johnson's study for instance, covered a wide range of cooperatives of heterogeneous nature highlighting various issues in CBD, but it is not a very comprehensive study encompassing all the essential aspects of capital budgeting practices. Hence capital budgeting decision is relatively an unresearched area as far as the cooperative sector is concerned.

Further, the cooperatives are placed in a fiercely competitive environment in the wake of privitisation, liberalisation and globalisation. The success or even the survival of cooperatives primarily depends on the adjustments and adaptations they make in their operations to match the external competitive environment. Quick reaction to the changing business environment is ensured only when the organisation is effective in decision making in all its operational areas.
The cooperative spinning mills are placed in such a situation. For instance, the cooperative spinning mills in the country in general and Tamil Nadu in particular are in a very critical situation of revival. The revival involves a huge capital outlay. The state government has come out with a revival package of Rs.185 crores with a large component of investment in fixed assets. Even a slight hitch in the decision making process of fixed investment is likely to place the spinning mills in a highly vulnerable position from which the mills can never redeem themselves. It is against this backdrop that the present study should be viewed.

Scope of the Study

The study has been undertaken to examine the capital budgeting practices with reference to different phases of capital budgeting decisions, namely, origination of investment idea, formulation of projects, screening and appraisal of project proposals, implementation and post-investment review. The study has its focus on the current practices adopted in each phase of capital budgeting decision, the problems faced in each phase and their effect on the performance of the spinning mills. The scope of the study is, therefore, confined to different phases of the capital budgeting decisions. The study also makes a modest attempt to offer suggestions for effective decision making in the area of capital investment.

Objectives of the Study

The primary objective of the study is to have an insight into the practices related to capital expenditure decision making in cooperative spinning mills in Tamil Nadu. The specific objectives of the study are:

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ii) to review the practices followed in the formulation of capital expenditure proposals;
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i) to study the origination pattern of capital expenditure proposals;
ii) to review the practices followed in the formulation of capital expenditure proposals;
iii) to study the methods followed to appraise the proposals and the reasons thereof for adoption and/or non-adoption of certain methods; and

iv) to make a comparative analysis of the capital expenditure projected and the actuals, to find out the deviations and their effect on the performance of the mills.

Definition of the Concepts

Capital Budgeting Decision; The terms capital budgeting decision and capital expenditure proposal are interchangeably used in this study. Capital budgeting decision in this study refers to any project investment decision which involves the outlay of cash in return for an anticipated flow of future benefits.

Cooperative Spiawing Mills: A cooperative spinning mill is a manufacturing unit registered under the Cooperative Societies Act. It produces cotton and synthetic yarn and supplies the same to the member weavers' cooperative societies within the area of operation.

Practices: Practices in this study refer to systems, procedures, and methods followed at different phases/stages of capital budgeting decisions.

Methodology

The study is a descriptive research with a focus on capital budgeting practices in the cooperative textile (spinning) industry. Case study method has been adopted here.

The case study method has been found suitable for the present exercise because it enables the researcher to get an overall and ind depth picture of the problem identified. The cooperative form of organisation selected for the study allows a considerable scope for meaningful generalisation of the results and findings.
The reasons for the choice of the case study method are: firstly, cooperation in India is a state-sponsored movement. It is the product of the government policy rather than voluntary effort, and it exists without operational autonomy in any true sense. Secondly, as consequence of the reason stated above, the government has unlimited powers to direct and control the cooperatives in every aspect and this affects the functioning of the cooperatives. Thirdly, as a policy measures any decision taken by the State has to be followed by all the cooperatives in the particular sector. Hence, the case study method.

Selection of Sample Cases for the Study

The universe of the study is cooperative spinning mills in Tamil Nadu. There were 18 cooperative spinning mills at the time of the study, of which four were defunct and dormant. They were the cooperative spinning mills of South Arcot, North Arcot, Pudukkottai and Madurai Districts in Tamil Nadu. These dormant mills were not considered while choosing the cases as data could not be collected from these mills.

Three mills from among the remaining fourteen mills have been selected for the study. The criteria and the procedure followed in selecting these three mills may briefly be stated.

The choice of the capital budgeting decision largely influenced the selection of samples. We have considered only strategic investment decisions such as establishment of a new mill, expansion of the existing capacity and modernisation programme which involve huge capital outlay, and the benefits of which spread over a longer period of time. Such decisions, we assume, would warrant scientific formulation and execution of proposals, deployment of more sophisticated techniques for appraising the proposals, scientific calculation of cash flows, rational fixation of discount rate, diligent analysis of risk and so on.
All these, in turn, would help in a meaningful analysis of practices adopted by the mills in capital expenditure decisions.

The investment decisions considered for the study are: i) establishment of a new mill; ii) expansion of existing spindle capacity; and iii) modernisation of outdated machines. For analysing the capital expenditure practices, we have categorised the mills on the basis of the above investment decisions. The mills, thus, chosen are: i) Anna cooperative spinning mill (establishment); ii) Misereor cooperative spinning mills (expansion); and iii) Salem cooperative spinning mills (modernisation). It must be noted here that the mills chosen have gone in for many such strategic investment decisions.

However, the decisions which were taken in the recent past were considered for the study because the data would be readily forthcoming, and the problem of recall would not arise.

Tools for Data Collection

A structured interview schedule was prepared and administered for collecting the required data and information for the study. The schedule covered questions relating to the different aspects of capital budgeting practices such as origination of investment ideas, methods followed for formulating projects, factors considered in the project formulation, ways and means adopted to screen the project proposals, techniques employed to appraise the proposals, strategies adopted to implement the proposals, the effect of timely/delayed implementation of capital budgeting proposals on the performance of the mills, and problems faced in the different phases of capital budgeting decisions.
Sources of Date

The study has used both primary and secondary data. The researcher has systematically gone through the financial statements, books of accounts, minutes, audit reports, annual reports, investment project reports, bylaws, circulars and orders received from apex level organisations and financing institutions, and other related documents. Officials in different departments have also been interviewed through interview schedule for eliciting first-hand information. In the process of data collection, necessary clarifications were made through discussions with officials and authorities concerned.

Framework of Analysis

The objective of the study is exploration of the practices followed at different stages of CBDs in cooperative spinning mills. The study has adopted a framework of analysis with two stages. In the first stage, a detailed description of the CBD practices with reference to the establishment of the mill, expansion of the existing capacity and modernisation programme prevalent in cooperative spinning mills was prepared. The second stage involved chawing inferences from the cases and collating them to present a comprehensive picture of capital budgeting practices in cooperative spinning mills.

Structure of the Report

The study is presented in six chapters.

> The first chapter provides an introduction of CBD and thus provides a backdrop to the study.

> The second chapter presents the design of the study.

> The third chapter deals with practices related to origination of investment idea and formulation of projects.
> The fourth chapter analyses the screening, appraisal techniques and implementation process of investment decisions.

> The fifth chapter makes a performance evaluation of capital investment decisions.

> The final chapter provides a summary of findings, conclusions and suggestions.

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