CHAPTER-VI
CAPITAL BUDGETING
The term capital budgeting contains two words - capital, the relatively scarce, non-human resource of production enterprise, and budgeting. Indicating a detailed, quantified planning which guides future activities of an enterprise towards the achievement of its profit goals. "Capital" relates to total funds employed in an enterprise as a whole. The capital fund is increased by an inward flow of cash and decreased by an outward flow of cash and as such it is important for an enterprise to plan and arrange cash flows properly. The power of the financial planning package lies in enabling borrowings to be arranged sufficiently in advance to reduce the danger of a liquidity crisis as also to provide substantiating document for loan negotiations. Capital budgeting, then, consists in planning the deployment of available capital for the purpose of maximising the long-term profitability (return on investment) of a firm. It refers to the process by which a firm determines where it should apply its comparatively limited financial resources.¹

Capital budgeting may be defined as the decision-making process by which a firm evaluates the purchase of major fixed assets, including buildings, machinery and equipment. It deals exclusively with major investment proposals which are essentially long-term projects and is concerned with the allocation of firm's scarce financial resources among the available market opportunities. It is a many-sided activity which includes a search for a new and more profitable investment proposal and the making of an economic analysis to determine the profit potential of each investment proposal. Capital budgeting involves a long-term planning for making and financing proposed capital outlays. Most expenditures for long-lived assets affects a firm's operations over a period of years. They are large, permanent commitments which influence its long-run flexibility and earning power. It is a process by which available cash and credit resources are allocated among competitive long-term investment opportunities so as to promote the greatest profitability of company over a period of time. It refers to the total process of generating, evaluating, selecting and following up on capital expenditure alternatives.²
Kinds of Capital Budgeting Proposals

- Replace
- Expansion
- Modernisation of Investment Expenditures
- Strategic Investment Proposals
- Diversification
- Research & Development

Ranking of Capital Budgeting Proposals

Obviously the small firm will not encounter as many of these reasons as the larger and more complex firm; nevertheless, managements of the smallest companies find that they, too, invest for a variety of reasons.

While the classification of investments according to reasons is important, it is believed that a classification of "projects" according to priority is of greater benefit to smaller companies, since they usually have a constant capital rationing problem. That is, most smaller companies have more projects than financial resources; therefore, a grouping according to priority would assist management in allocating funds to the areas of greatest need.

At least two groupings according to priority are possible. First, projects may be classified as those that are (1) No postponable, (2) Postponable without deterioration, and (3) Postponable but with some loss of opportunity. It is readily apparent that such a classification system will greatly aid management in selecting investments that will provide continuity to the firm's life. It should be pointed out that the use of this system may permit an investment that will produce lower yields in the short-run, but if management has effectively classified projects, investment in the long-run should be optimized.
A second grouping recognising priority is related to profits. The first category would include those investments that affect profits directly; the second grouping would include only those that affect profits indirectly. Illustrative of the first grouping would be projects in which costs are reduced or sales are enhanced or both. Projects that affect profits indirectly are those that cause productivity to increase (i.e. labour saving investments).

We recommend the first grouping system since it is believed that most of the managers of small firms experience a shortage of investment funds; therefore, projects that cannot be postponed should be given the first consideration, even though other opportunities may show a greater profit in the short-run.

ORGANISATION FOR PLANNING AND CONTROLLING INVESTMENTS

While we generally associate capital budgets with large firms since they have longer lines of internal communication and larger amounts of capital to invest, small businesses can also utilize capital funds more effectively by adopting a formalized capital budgeting procedure. Because of their highly individual nature, it is vital that each small business firm develop its own budgeting procedure. In formulating these procedures, there are certain common elements that must be taken into consideration. These factors are discussed next.

The Planning Period

The planning period for the investment process should encompass sufficient time that the future course of a firm will be orderly and to some degree predictable. It is true that due to the nature of the small business, its planning period cannot equal the five-to ten-year span usually covered by large firms; nevertheless, it should be long enough to include the majority of replaceable assets. In some cases this may very well extend to five or more years.

The budget period for projects designed to improve operating efficiency should be shorter, since it is imperative that management consider all equipment that will give it a competitive advantage. Since such equipment is constantly being introduced, the capital budget should not be of such length and nature that management would be prevented

158
from considering these newer inventions. In summary, the budgetary planning period should be of such lengths as to permit flexibility.

The Level at which Decisions are made

To assure the greatest degree of return from each rupee invested, it is suggested that all proposals be judged within the same framework and that the same criteria be used as the basis for each decision. In a large business such as a multination firm, this suggestion is not possible; such firms find it necessary to decentralize the decision-making process so that several groups, some of which may be on different scalar levels, arrive at the final decision. Since most small businesses operate in a much less complex environment, it is recommended that their major investment decisions be made at the highest possible level — that is, a budgeting committee made up of the president, the major finance officer, the major officer in charge of distribution (marketing), and the major production officer. Many of these functions are often combined, thus making the decision-making process less complicated.

In some cases investment decisions may be “pushed” down into the organisation; however, this authority should be carefully granted and clearly defined. For example, (1) there should be a limitation on the total amount could be committed to one project, (2) the total amount available to be spent during a given period should be designated, and (3) the types of expenditures to be considered should be defined in precise language. In other words, not only the amount but the purpose of each expenditure should be well defined and controlled by “top” administrative officials. The centralized control of the budgeting process cannot be overstated. This necessity must be satisfied because in many cases it takes only one poor investment by the small firm to cause “total” failure.5

Project Generation

Small companies often conduct their search for potential investments in a rather unsophisticated way; yet, this procedure is probably one of the most important aspects of their capital budgeting programme, primarily since most of small firms are constantly faced with capital rationing. First priority should be given to projects that cannot be postponed. To illustrate, suppose that a firm is producing an important product insofar as
survival is concerned, yet the product is not as profitable as some of the firm's other products. If the machines used in the production of this product are either worn out or obsolete, management should list this investment at the "top" of the investment programme. Information relating to this type of project flows up to management from operating personnel. Since the number of scalar levels in the management hierarchy is much smaller in the small company than in the larger company, the investment process can be less formal. It should be emphasised however, that if the process is too informal, effective evaluation may be impaired and poor investment decisions will result.

Projects designed to improve operation efficiency through (1) decreasing direct and indirect costs and (2) increasing profits directly or indirectly may originate at any level of the firm and should be placed in the second category of priority. In fact, some of these projects should be considered on a par with the non-postponable projects. This is particularly true when the firm is changing its image.

It is emphasised that if a firm does not generate enough investment proposals to keep it at "the head of its class", it will surely suffer by becoming stagnant and losing its competitive position. With this as a warning, management of small firms should develop a system by which investment proposals can reach top management. This system does not need to be complicated, but it is imperative that it posses three characteristics: (1) it should be made known to all individuals in the firm, (2) the lines of communication through which the investment proposal is to flow must be constantly kept open, and (3) each investment should be evaluated in accordance to its priority and evaluation made known to the originator of the proposal. Remember, simplicity, not complexity, is an absolutely essential characteristic of any investment generation system.

The timing of project generation should be continuous; that is, employees should be allowed to submit projects for consideration at any time. However, to avoid decisions that may not be optimal, it is best that evaluation process be done at specific times throughout the year (i.e. quarterly, semi-annually, or annually). The only exceptions would be projects that fall into the category of improving profitability and those considered to be emergencies.
PROJECT EVALUATION

It has been suggested by some writers that small businesses cannot formulate an effective evaluation system since they do not have the time, money, or expertise to establish such a programme. This assertion, in our opinion, is completely untrue. It is our belief that it is as important for small firms to develop a formalised programme of evaluation as for larger firms. The principal reason for this statement is that characteristically the small firm is more risky than its large cousin; therefore, any mistake, either of commission or omission, would probably have greater impact on the future welfare of the company than it would have in a large company.

Criteria for Investment Decision Making

It has been stated previously that there is only theory of finance – and that theory holds for all firms regardless of size or type. This being the case, managers should use the same criteria for investment in small firms as are used for investment in larger firms. Since there is no definitive work on investment criteria for small firms, it is necessary to look to the investment literature of large firms to arrive at acceptable investment criteria. The primary goal of a financial manager is to secure and employ capital resources in the amount and proportion necessary to increase the efficiency of the factors of production. Authors state this goal or criteria in various ways; for example Van Horne thinks that the investment criteria “should be the rate of return on a project that will leave unchanged the market price of the stock”. In this sense, the cost of capital is the required rate of return needed to justify the use of capital.6 Brigham and Smith differ slightly from Van Horne in stating that the “investment theory of the firm contends that management should adjust the level of capital expenditure to the point where the marginal rate of return for investment projects is equal to the marginal cost of capital.”7 Many other writers could be quoted, but for the most part they all refers to the concept of maintaining the value of the firm, and many use cost of capital as the criterion simply because it has been defined as investors’ expectations. It is extremely difficult to use cost of capital as a criterion in either small or large companies, since it is extremely difficult to calculate. While there are those who say that they can compute an acceptable cost of capital for middle-sized and large firms, it must be concluded that it cannot be done with any degree of accuracy for
smaller firms. In the light of this conclusion, it is necessary to approach the criterion problem from a different viewpoint. Criterion problem from a different viewpoint.

The predominant reason why businesses invest funds in assets is to increase the present value of the firm's equity capital. This objective is achieved only if the return on all invested funds equals or exceeds the returns desired by the suppliers of both debt and equity capital. If the return is equal to these expectations, then there probably will be no change in the value of the firm; however, if it is above or below, a change in value may be expected.

One way in which management can achieve its objective of maintaining or increasing the present value of its equity capital is to average the returns "expected" on debt and equity capital and use this rate as the minimum acceptable rate of return on investment. In the event that the average return is not realized, the equity investor would "realise a loss in expectations" and would probably reduce the estimated value of the stock. On the other hand, if expectations were exceeded, the opposite would occur.

The investment decision would be greatly simplified if management could calculate its expectations prior to the time an investment is made. In our opinion such a computation is impractical since adequate information is not available; therefore, another approach must be employed that will yield the same results. The adjusted internal rate of return technique is the method recommended.

TECHNIQUES OF VALUATION

Any of several methods may be employed when choosing among alternative investment proposals. Each method is designed with a particular purpose in mind – to determine the rate of return that each project may be expected to yield as well as ascertain the degree of risk associated with the investment. The most common evaluation methods are:

- Payback method
- Average Rate of Return
- Internal Rate of Return
- Net Present Value
To be effective, the last two methods require knowledge of a firm’s cost of capital and since this is extremely difficult if not impossible for the small firm to calculate accurately, we will adjust the internal rate of return in such a manner that it will assist in informing owner-managers when their required rate of return is obtained.

If any or all of the preceding techniques are to be effective, it is imperative that management be able to ascertain the firm’s cash flow. Since the payback, internal rate of return, net present value methods, and adjusted internal return employ different cash flows in their calculations, it is necessary to define the type of flow that each uses. First, the cash flow used in the payback process includes cash that is available to repay the investment (principal but not return); it is defined as follows:

\[
\text{Cash flow} = \text{earnings} + \text{depreciation} + \text{working capital} + \text{scrap value (if any)}
\]

The cash flow that is used in NPV, IRR, and adjusted IRR calculations includes an amount that permits the investors to ascertain whether they will receive their original investment plus an expected return commensurate with the risk of the investment, for example, the creditors are able to calculate whether they will receive the contracted interest rate plus principal. The equity investors, on the other hand, use the cash flow in calculating whether they will receive their principal plus a return commensurate with the risk involved. To accomplish these goals, the cash flow is defined as follows:

\[
\text{Cash flow} = \text{earnings} + \text{interest (adjusted by the tax rate)} + \text{depreciation} + \text{Working Capital} + \text{scrap value (if any)}
\]

This method of calculating cash flows is agreed to by Weston and Brigham. For example, they define cash flow (CF) in the following three ways:

\[
\text{CF} = \text{EBIT} + \text{depreciation}
\]

\[
\text{CF} = \text{EBIT} + \text{depreciation (T)}
\]

\[
\text{CF} = \text{NIC (Sales} - \text{Operating Expenses} + \text{Depreciation + Interest Expenses} - \text{Taxes)} + \text{Interest (I-TR) + Depreciation.}
\]

They say each method produces the same results.
(a) Payback Method

The payback method is based on the assumption that the degree of risk associated with the fixed asset is the length of time required to recover the investment from the firm's cash flow. The payback period is defined as the length of time required for the stream of cash proceeds produced by an investment to equal the original cash outlay required by the investment. This method is also known as the payout method.

\[
\text{Payback period} = \frac{\text{Investment}}{\text{Net Annual Cash Flow}}
\]

Thus, the payback period is the length of time required to recover an initial fixed investment through returning cash flow. This flow includes both the depreciation recoveries and the net income after taxes. The recovery of invested principal as rapidly as possible reduces the amount of capital devoted to a project. It also reduces the risk of possible loss of the capital.\(^8\)

(b) Average Rate of Return on Average Investments

The payback method of computation does not take into consideration the relative profitability of the project. The average rate of return is designed with the purpose in mind and is computed by adding the total of all earnings after depreciation and taxes and dividing this amount by the number of years the project will last. After average "earnings" is determined, the average rate of return may be calculated by dividing average earnings by the average investment of the project.

\[
\text{Average Rate of Return} = \frac{\text{Average Earnings}}{\text{Average Investment}}
\]

(c) Internal Rate of Return

In determining which investments to accept by ascertaining the discounted rate of various investment opportunities, the owner should, first, estimate the cash flow, which includes the "return" on all types of investors for each investment during its economic life, and, second ascertain a rate that equates the present value of these cash flows to the present value of the cost of the investment. If this rate equals or exceeds the required
rates of return, the project is acceptable. As mentioned elsewhere, these required rates of return are equal to the firm’s cost of capital of the various kinds of capital. If these costs can be calculated and weighted and summed together, the weighted average cost of capital may be compared to the internal rate of return. If the latter is equal to or greater than the former, the project will either sustain or increase the value of the firm.

The IRR is determined by solving the following equation:\(^9\)

\[
\sum_{t=0}^{n} \frac{CF_t}{(1+r)^t} - \sum_{t=0}^{n-1} \frac{CO_t}{(1+r)^t} = 0
\]

where \(CF\) is the cash flow received in period \(t\); \(n\) is the last period in which cash flow is expected; \(CO_t\) is the cost of the investment in period \(t\); and \(r\) is the interest rate that equates the present value of the expected future cash flows to the investment regardless of when it is made (i.e. \(r\) is the internal rate of return).

Since \(r\) is the only unknown element in the equation, it must be ascertained by trial and error. If the cash flows are the same in each year, the process is quite simple; that is, the rate may be found by simply dividing the cash flow into total investment and determining the rate from the present value of an Annuity of Re. 1 Table.

If the cash flows are unequal, \(r\) must be ascertain by trial and error. To accomplish this requires several steps.\(^10\) First, the manager estimates the interest rate he or she believes will equate the present value of the expected cash flows to the present value of the investment. Second, the manager ascertain the present value interest factors of the estimated rate and multiplies these factors by the expected cash flows. Third, these products are summed and compared to the present value of the investment. If the sum is less than the present value of the investment, the manager should select a higher present value interest factor (derived from a lower interest rate) that, when multiplied by the expected cash flows, will produce a value that will either equal or exceed the present value of the investment. If greater, the exact interest rate lies somewhere between these two rates and can be determined by interpolation.
(d) Net Present Value Method

A business firm has a positive preference for the time factor. It prefers present
goods to the same quantity of commodities in the future. The present is here and now,
and is more retain than the future. To quote a simple proverb: “A bird in hand is better
than two in the bush”. The financial manager places a greater value on present funds than
on future funds because (i) The additional income is available now rather than in the
future; (ii) There is a greater certainty associated with the present assets, (iii) Future
receipts are only current estimates, (iv) A risk is involved in future receipts. There are
two aspects of this problem. One is the annuity principal and the other is the present
value of future income. According to the annuity principle:

\[ FV = P(1+r)^n \]

where
- \( FV \) is the future value.
- \( P \) is the principle value.
- \( R \) is rate of expected return.

According to this formula, the present value of future income is:

\[ Pv = \frac{Fv}{(1+r)^n} \]

where
- \( Pv \) is the present value
- \( Fv \) is the future value
- \( r \) is the rate of expected return
- \( n \) is the number of years.

This method calculates the net present value of the expected net cash flows of
each project, which is obtained by discounting the net cash flows of each project by a
discount rate which equals the firm’s cost of capital.11 The net present value method is a
classic economic method of investment appraisal. While it is favoured by a majority of
economists, it has not found much support elsewhere. In business, the discounted cash
flow method is generally preferred. Net cash flows are the incremental cash receipts, less
the incremental expenditures solely attributable to the decision to proceed with an investment. If the present value of the discounted flows are equal to or greater than the investment, the investment, should be made, since the investors will receive their expectation (return plus principal).

The following formula may be used to calculate the net present value of various projects:

\[ NPV = \sum_{t=1}^{n} \frac{CF_t}{(1 + r)^t} - \sum_{t=0}^{n-1} \frac{CO_t}{(1 + r)^t} \]

where

- \( CF_t \) is the net cash flow received by all investors in year \( t \);
- \( r \) is the firm's required rate of return (usually the firm's weighted cost capital);
- \( CO_t \) is the cost of the investment in period \( t \);
- \( n \) is the last period in which a cash flow is expected or proposal's life in years.

**ADJUSTING FOR RISK IN INVESTMENTS**

It has been stated earlier that small firms have greater business and financial risk than do large firms and are usually more vulnerable to "poor" decisions than their counterparts. As a general rule, the large firm accepts projects that have the highest expected value provided that the discounted value of the future cash flows exceeds the cost of capital or a "hurdle" rate if the cost of capital is not known. Second, given several investment opportunities with approximately the same expected value, the large firm usually accepts the projects with the smallest relative dispersion of net operating income. That is, if projects are mutually exclusive, the large firm will accept those investment opportunities whose cash flows have the smallest standard deviation and coefficient of variation. The logic behind this strategy of risk evaluation is that the market value of the firm's stock is subjected to this risk, and all other things being equal, the greater the variation in net operating income, the smaller the price-earnings ratio (i.e. the greater the risk, the smaller will be the value of the firm).
Risk: The Small Firm’s Perspective

Small businesses are concerned with variations in cash flows and return on equity, but they are much more concerned with insolvency. The risk associated with dispersion is relatively inconsequential to the small firm, since the “price” of its stock is usually not affected by variations in earnings. They are very sensitive to losses since they (1) have less equity to serve as a buffer against losses, (2) do not generally have the same credit status or assets to offset losses, and (3) are not very well diversified; therefore, losses may cause failure. To avoid insolvency as well as fluctuations in cash flows, small-business managers should carefully evaluate the risk associated with each project under consideration.

The owner of small business has available three methods that are fairly easy to use in adjusting for the risk that may present in an investment. First, he may adjust upward the rate used to discount the firm’s cash flows. Second, the manager may adjust the cash flows (numerator) through the use of probability distributions. Finally, they may determine the certainty equivalents of projects with varying risk levels and then calculate the net present value of the projects. If the NPVs of the flows are equal to or greater than the present value of costs, they can accept them without fear of losing value.

REVIEW AND CONTROL

Unlike the large firm that may have several reviews of the decision resulting from one or more of the evaluation methods mentioned before a final decision is made, projects in the smaller firm will more than likely not have any reviews. That is, the group doing the evaluation will also be the “reviewing” group. In the case of “larger” small firms, projects usually go before the board of directors for final review and action.

In a large firm, capital expenditure projects are combined into what is generally called the capital expenditure budget. This budget not only serves as the planning document but also acts as the control device. For example, any changes in this budget can be made only by the highest authority. Also

Reports are constantly prepared regarding the expenditures and progress toward completion. If deviations are noted, they must be explained and approved by the
appropriate authority. In some cases, requests for additional capital may be necessary, and occasionally projects may be “junked” even after the expenditures have been made.

The control process in the small firm, while much less complicated than in the large firm, is equally important. As in the large firm, the responsible person should follow the progress of the project from the time that it has been approved until its completion. Any deviations in costs should be noted and explained. If additional funds are required, it is necessary for the “controlling” officer to reevaluate the project to see if it continues to be justified. If it is justified, necessary corrections are made and the project is continued. However, if the existing and predicted “overages” are not justified and it is deemed excessive to the total welfare of the firm, it is better to take these early losses rather than create a situation that may cause the entire firm to fail.

After the project has been completed and placed in production, it is necessary for management to measure actual performance with expected results. The primary reason for this post-audit is to improve future capital budgeting processes so as to improve operating efficiency.

**CAPITAL BUDGETING IN SMALL-SCALE INDUSTRIES**

The decisions on capital expenditure are very important for every firm whether it is small-scale industry or large firm because their impact is more or less permanent on the well being and economic health of the enterprise. But in small-scale industries this important technique is used by a very limited number of industries. There are various reasons for not using this important technique for taking capital decisions. Among them the most important reasons are:

(a) In small firms comparatively less amount is invested in fixed assets;
(b) Most of all the decisions in small firms are taken by owners who do not have proper skill required for capital budgeting;
(c) Small firms cannot hire the services of experts for capital budgeting;
(d) Required funds are not easily available for capital investments.
Due to above reasons in small firms capital decisions are taken without proper exercise of capital budgeting. It may be one of the reason of sickness in small sector industries.

### Table 6.1
**CAPITAL BUDGETING IN SMALL-SCALE INDUSTRIES IN HARYANA**

<table>
<thead>
<tr>
<th>Name of Industry</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Garments</td>
<td>8</td>
<td>10.0</td>
<td>72</td>
<td>90.0</td>
<td>80</td>
</tr>
<tr>
<td>2. Auto-parts</td>
<td>8</td>
<td>20.0</td>
<td>32</td>
<td>80.0</td>
<td>40</td>
</tr>
<tr>
<td>3. Electronics</td>
<td>5</td>
<td>8.3</td>
<td>55</td>
<td>91.7</td>
<td>60</td>
</tr>
<tr>
<td>4. Metal Products</td>
<td>4</td>
<td>5.1</td>
<td>74</td>
<td>94.9</td>
<td>78</td>
</tr>
<tr>
<td>5. Rubber &amp; Plastics</td>
<td>7</td>
<td>12.5</td>
<td>49</td>
<td>87.5</td>
<td>56</td>
</tr>
<tr>
<td>6. Others</td>
<td>10</td>
<td>11.6</td>
<td>76</td>
<td>88.4</td>
<td>86</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>42</td>
<td>10.5</td>
<td>358</td>
<td>89.5</td>
<td>400</td>
</tr>
</tbody>
</table>

Now, with the help of Table 6.1, we can show that in small firms just 10.5 per cent units are preparing capital budgets for taking long-term investment decisions. In this category most of the units are bigger units which can afford the services of experts required for properly preparing capital budget. Table 6.1 shows that in Auto-parts industry maximum 20 per cent units are preparing capital budgets for taking decisions regarding capital investments. In addition to the size of the units other reason is intense competition in Auto-parts industry which requires new technology to be used to survive in the market. Next, in the category is Rubber & Plastics industry where 12.5 per cent units are using this capital budgeting technique. The main reason for this is the increasing demand of plastics items in the market and subsequently new innovations in techniques to make plastics items. In Others industry 11.6 per cent, followed by Garments industry 10 per cent, Electronics industry 8.3 per cent and Metal Products industry just 5.1 per cent are using capital budgeting techniques. The reason of least percentage in Metal Products industry is less number of bigger units in this industry.

On the other hand the table shows the percentages and number of industries not preparing capital budgets. It shows that 89.5 per cent are not preparing capital budgets. But it does not mean that these units take decisions without any consideration for capital investment. In this case maximum number is of those units which after starting business
do not invest much amount in fixed assets. And some units are considering some aspects of capital budgeting before capital investment but do not consider preparing capital budget properly. In this category the maximum percentage belongs to Metal Products industry where 94.9 per cent units are not preparing any capital budgets. The main reason for this is their small size and they do not make any major investment in fixed assets after establishing the unit. In other field 88.4 per cent to 91.7 per cent are not preparing any proper capital budgets. Lowest number of units which do not prepare capital budget belongs to Auto-parts industry and their percentage is 80.

WHO PREPARES CAPITAL BUDGETS IN SMALL-SCALE INDUSTRIES

The capital expenditure schemes of a business firm are largely determined by the investment decisions of the top management. The senior management must specify and clearly state the financial policy to be pursued. The policy should give general guidance about the minimum rate of return expected on capital projects. The minimum rate should reflect a realistic assessment of the firm's liquid and financial position. This will help the persons who are responsible for the financial analysis of the project.

A successful capital expenditure programme can only be planned when it is based on a logical allocation of authority and responsibility in an organisation. A comprehensive capital expenditure programme involves a number of steps in its procedure. Capital Budgeting involves the generation of investment proposals; the estimate of cash flows and their evaluation ranking of proposals on project evaluation methods basis, and finally continuous revaluation after their acceptance.

An investment proposal is the starting point in capital expenditure budgeting. Capital expenditure ideas flow into the enterprise through the various schemes or proposals put forward by workers, foremen, supervisors and development engineers. These ideas emerge from the creative instincts of their proposers. The management must provide enough incentives in the organisation so that all potential originators of idea may be conscious of the importance of these matters. The next step is the screening of such ideas. All such ideas received are initially screened at the executives level by the various executives who are likely to be involved. After such screening they are submitted to the capital expenditure sanction committee, for final analysis and approval.
Before a detailed analysis of the project proposal can be made by the capital expenditure sanction committee, or any other organisation, it is necessary to sort out the projects at the executive level on the basis of priority. For priority purposes, projects can be classified into those (a) requiring prompt and immediate attention; these can not be postponed, (b) which can be postponed without any loss or deterioration, (c) which can be postponed with some loss of opportunity.

After this screening, the projects may be submitted to the capital expenditure sanction committee or any other capital budgeting organisation for their evaluation in detail. The committee is furnished with the details regarding the cost, receipt and serviceable life of each asset proposed. The data is given in annexed tables. The committee analyses the projects and evaluates them in terms of their profitability. Before approving the project, the committee also considers the management policy concerning finance and risk.

Now the questions arised that whether it is necessary that all capital expenditure proposals should be submitted to a specific committee for final screening? Is it the only sanctioning authority in the entire organisational hierarchy? In fact it is not necessary that for all capital expenditure, the sanction authority should be centralised. There may be decentralisation of such an authority in the organisation with the objective of not overburdening the committee with significant items. The extent of decentralisation of the capital expenditure sanctioning authority depends upon various factors like geography, technical condition, size and amount of capital expenditure involved.

We now take up the personnel of this committee or any other capital expenditure budgeting organisation. It should include an economist, management accountant, financial expert, tax expert, mathematician and the marketing and technical executives. In the small firms it is financially not viable to have all these personnel in the organisation as permanent employees. But when the need of capital budgeting arises their services may be hired.
Table 6.2
RESPONSIBILITY FOR PREPARING CAPITAL BUDGETS IN SMALL-SCALE INDUSTRIES IN HARYANA

<table>
<thead>
<tr>
<th>Name of Industry</th>
<th>Self/Owners</th>
<th>Experts</th>
<th>Committee including both</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>1. Garments</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2. Auto-parts</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3. Electronics</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4. Metal Products</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5. Rubber &amp; Plastics</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6. Others</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

As explained earlier in Table 6.1 in Small-scale Industries only 10.5 per cent industries are preparing capital budgets. In Small-scale industries under study, the Table 6.2 shows that for preparing capital budgets services of experts are utilised by all the industries which are preparing capital budgets for capital expenditure. In all industries a committee comprising owner(s) as well as experts is constituted when the need arise. On the other hand in industries which are not preparing proper capital budgets for capital investment decisions mostly are taken by the owners based on their knowledge about the project. And in some industries experts are consulted but no normal capital budgeting process is exercised.

PRIORITY OF THE PROJECTS FIXED OR NOT IN SMALL-SCALE INDUSTRIES

Obviously the small scale industries will not encounter as many of these reasons as the larger and more complex firm; nevertheless, managements of the smallest firms find that they, too, invest for a variety of reasons.

While the classification of investments according to reasons is important, it is believed that a classification of “projects” according to priority is of greater benefit to smaller companies, since they usually have a constant capital rationing problem.
Projects can be grouped in terms of their impact on the broad components of the firm. The broad components may be the (I) market, (ii) personnel, (iii) plant facilities, and (iv) equipment and processes.

For priority purposes projects can be classified into: (a) projects which are necessary to continue in the business, (b) projects which are necessary to maintain the current level of activity, (c) highly productive projects, (d) productive projects, and (e) projects of doubtful utility. From this classification certain projects can be selected on the basis of the availability of funds.

The degree of priority of projects can be further determined by their impact on the profit position. Investment proposals can be classified into those which affect profits directly and those which affect them indirectly. The former category will include projects which save costs and enhance sales. The latter class will include projects that lead to overall improvement.

In most of small firms there is a scarcity of funds. Therefore, grouping according to priority would assist management in allocating funds to the areas of greatest need. Projects may be classified as (1) Not postponable, (2) Postponable without deterioration, and (3) Postponable but with some loss of opportunity. Such a classification system will greatly aid management in selecting investments that will provide continuity to the firm's life. It should be pointed out that the use of this system may permit an investment that will produce lower yields in the short-run, but if management has effectively classified projects, investment in the long run should be optimized.

<table>
<thead>
<tr>
<th>Name of Industry</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Garments</td>
<td>6</td>
<td>75.0</td>
<td>2</td>
<td>25.0</td>
<td>8</td>
</tr>
<tr>
<td>2. Auto-parts</td>
<td>5</td>
<td>62.5</td>
<td>3</td>
<td>37.5</td>
<td>8</td>
</tr>
<tr>
<td>3. Electronics</td>
<td>4</td>
<td>80.0</td>
<td>1</td>
<td>20.0</td>
<td>5</td>
</tr>
<tr>
<td>4. Metal Products</td>
<td>2</td>
<td>50.0</td>
<td>1</td>
<td>50.0</td>
<td>4</td>
</tr>
<tr>
<td>5. Rubber &amp; Plastics</td>
<td>4</td>
<td>57.1</td>
<td>2</td>
<td>20.0</td>
<td>7</td>
</tr>
<tr>
<td>6. Others</td>
<td>8</td>
<td>80.0</td>
<td>2</td>
<td>20.0</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>29</td>
<td>69</td>
<td>13</td>
<td>31</td>
<td>42</td>
</tr>
</tbody>
</table>
Table 6.3 shows that in small-scale industries which are preparing capital budgets 69 per cent are fixing priority of the projects on the basis of postponable or not postponable categorisation of projects. In this category the maximum percentage is of Others industry and Electronics Industry 80 per cent, followed by Garments industry 75 per cent, Auto-parts industry 62.5 per cent, Rubber & Plastics industry 57.1 per cent, and Metal Products industry 50 per cent. The reason put forth by the industries, classified into the group of non-fixing priority, was that they consider only one project at a time to take a decision whether it would be profitable or not. In this category 31 per cent industries are there out of which the maximum percentage is of Metal Products industry 50 per cent. In Rubber & Plastics industry 42.9 per cent units and in Auto-parts industry 37.5 per cent units followed by Garments industry 25 per cent units and Others industry 20 per cent units are also not fixing any priority of the projects.

PROJECTS EVALUATION IN SMALL-SCALE INDUSTRIES

A number of alternative capital expenditure proposals compete for allocation of funds. The main task is to rank the different proposals, delineate the funds for each and then take the decision. The problem of ranking different proposals depends upon the availability of systematic statistical data. The management accountant uses his judgement and skill to analyse this data and on the basis of such analysis often tenders his opinion to the top management.

Two broader categories of decisions are taken: Screening decisions which identify projects, which meet some predetermined criterion of acceptance; and preference decision which involve selecting from amongst several courses of action. Preference decisions are choice decisions. The capital expenditure analysis has a time period focus and at the same time an individual programme or project focus.

The capital budgeting exercise is basically a matching exercise of cost of capital and expected future returns from investments of capital. Funds invested in the capital expenditure are procured at certain costs which are known as cost of funds/capital. The cost of funds is taken as a ‘cut off rate’, ‘hurdle rate’, ‘discount rate’, which a capital expenditure project should clear. It is also known as minimum rate, target rate, and screening rate. As a screening rate, it forms part of the acceptance criterion. In the net present value analysis of a
project, it can be taken as the discounting rate for discounting future cash flows, inflow/outflow. If internal rate of return is ascertained it can be compared with the cost of capital to make it acceptable. If rate of return concept is affected to evaluate a project, the project ROI must be higher than the cost of capital or at least should be equal to the cost of capital for the time being to make the capital project acceptable.

There are various methods of project evaluation developed on several basis. These methods can be grouped into the following two categories:

1. Traditional Methods: (i) Payback period, and (ii) Accounting rate of return,
2. Time-Adjusted Methods: (i) Net present value, (ii) Internal rate of return, and (iii) Cost-benefit ratio or profitability Index.

It should be realised that different firms may use different methods. Which method is appropriate for a particular purpose of the firm will depend upon the circumstances. A large company may use more than one technique to appraise each of its investment projects, while a small firm may contend with using only one technique which involves minimum funds and time. However, to avoid confusion, same method or methods should be used uniformly for every project throughout the firm. Though these appraisal techniques will help management in making decisions objectively, but they must still exercise their common sense and judgement in making the decisions.

<table>
<thead>
<tr>
<th>Name of Industry</th>
<th>Traditional Methods</th>
<th>Total</th>
<th>Other Method</th>
<th>Total No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Payback Method</td>
<td>ARR Method</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>1. Garments</td>
<td>2</td>
<td>25.0</td>
<td>6</td>
<td>75.0</td>
</tr>
<tr>
<td>2. Auto-parts</td>
<td>1</td>
<td>12.5</td>
<td>7</td>
<td>87.5</td>
</tr>
<tr>
<td>3. Electronics</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>100.0</td>
</tr>
<tr>
<td>4. Metal Products</td>
<td>1</td>
<td>25.0</td>
<td>3</td>
<td>75.0</td>
</tr>
<tr>
<td>5. Rubber &amp; Plastics</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>100.0</td>
</tr>
<tr>
<td>6. Others</td>
<td>2</td>
<td>20.0</td>
<td>8</td>
<td>80.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6</td>
<td>14.3</td>
<td>36</td>
<td>85.7</td>
</tr>
</tbody>
</table>
Table 6.4 shows the methods of project evaluation used by small-scale industries. It is clear from the table that all industries in small-scale sector are using traditional methods for appraisal of the projects. As discussed earlier in traditional methods category two methods are there: Payback Method and Average Rate of Return. In small-scale industries Average Rate of Return technique is most popular for evaluating proposed capital expenditure. That is why 85.7 per cent industries are using this technique while making capital budgets for evaluation of projects. In the Electronics industry and Rubber & Plastics industry 100 per cent units are using this method. While in Auto-parts Industry 87.5 per cent units followed by Others Industry 80 per cent, and Garments as well as Metal Products industries 75 per cent are using this method of project evaluation. The main reason of using this method by most of the industries in small-sector is its simplicity to understand and use. In Time-Adjusted Techniques there exist tedious calculations which are difficult to understand by the management of small firms.

On the other hand the remaining 14.3 per cent small-scale industries are using Payback Method, 25 per cent Garments and Metal Products industries are using it. Whereas in Others industry 20 per cent and in Auto-parts industry 12.5 per cent are using the same method. This method is also simple to understand and easy to calculate but some people think that it is better in comparison to ARR method due to the fact that it is based on cash flows analysis. But it has a major shortcoming. It completely ignores all cash inflows after the payback period. ARR method is based on the familiar accounting measure of profit. It is also regarded useful because it take into the calculation all the profits expected over the project life (in contrast to the payback method which ignores all cash flows beyond the payback date). That is why 85.7 per cent units in small sector are using ARR Method for project evaluation.

THE POST-AUDIT IN SMALL-SCALE INDUSTRIES

An important aspect of the capital budgeting process is the post-audit, which involves (i) comparing actual results with those predicted by the project’s sponsors, and (ii) explaining why any differences occurred. The post-audit has several purposes, including the following:
1. **Improve forecasts**

When decision makers are forced to compare their projections to actual outcomes, there is a tendency for estimates to improve. Conscious or unconscious biases are observed and eliminated; new forecasting methods are sought as the need for them becomes apparent; and people simply tend to do everything better, including forecasting, if they know that their actions are being monitored.

2. **Improve Operations**

Businesses are run by people, and people can perform at higher or lower levels of efficiency. When a divisional team has made a forecast about an investment, its members are, in a sense, putting their reputations on the line. If costs are above predicted levels, sales below expectations, and so on, executives in production, sales, and other areas will strive to improve operations and to bring results into line with forecasts.

3. **Identify abandonment/termination Opportunities**

Although the decision to undertake a project may be the correct one based on information at hand, things do not always turn out as expected. If initial operating results indicate that a project is not likely to achieve its expected profitability, it may be best for the firm to abandon rather than continue the project. Furthermore, most projects, at some point in their lives, lose their economic viability and should be terminated. Both the post-audit and continuing review of ongoing operations help identify the optimal point for abandonment or termination of a project.

The post audit is not a simple process, and a number of factors can cause complications. First, we must recognize that each element of cash flow forecast is subject to uncertainty, so a percentage of all projects undertaken by any reasonably venturesome firm will necessarily go away. This fact must be considered when appraising the performances of the operating executives who submit capital expenditure request. Second, projects sometimes fail to meet expectations for reasons beyond the control of the operating executives and for reasons that no one could realistically be expected to anticipate. Third it is often difficult to separate the operating results of one investment from those of a large system. Because of these difficulties, some firms tend to play down
the importance of the post-audit. But, the post-audit is regarded as one of the most important elements in a good capital budgeting system.

Table 6.5
POST-AUDIT OF PROJECTS IN SMALL-SCALE INDUSTRIES IN HARYANA

<table>
<thead>
<tr>
<th>Name of Industry</th>
<th>Yes No.</th>
<th>%</th>
<th>No.</th>
<th>%</th>
<th>Total No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Garments</td>
<td>1</td>
<td>12.5</td>
<td>7</td>
<td>87.5</td>
<td>8</td>
</tr>
<tr>
<td>2. Auto-parts</td>
<td>1</td>
<td>12.5</td>
<td>7</td>
<td>87.5</td>
<td>8</td>
</tr>
<tr>
<td>3. Electronics</td>
<td>–</td>
<td>–</td>
<td>5</td>
<td>100.0</td>
<td>5</td>
</tr>
<tr>
<td>4. Metal Products</td>
<td>–</td>
<td>–</td>
<td>4</td>
<td>100.0</td>
<td>4</td>
</tr>
<tr>
<td>5. Rubber &amp; Plastics</td>
<td>–</td>
<td>–</td>
<td>7</td>
<td>100.0</td>
<td>7</td>
</tr>
<tr>
<td>6. Others</td>
<td>1</td>
<td>10.0</td>
<td>8</td>
<td>90.0</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4</td>
<td>9.5</td>
<td>38</td>
<td>90.5</td>
<td>42</td>
</tr>
</tbody>
</table>

Post-audit is not very common in small firms which are using capital budgeting technique for long-term investment decisions. Table 6.5 shows that only 9.5 per cent of the industries preparing capital budgets are using post-audit technique to compare the actual results with those predicted by the project’s sponsors. Because it requires the operating divisions to send a monthly report for the first six months after a project goes into operation, and a quarterly report thereafter, until the project’s results are upto the expectations. From then on, reports on the project are reviewed on a regular basis like those of other operations. All this require sufficient amount of funds to be spent on the experts of the area which is not possible in small-scale industries. Only 12.5 per cent industries in Garments and Auto-parts industries are reviewing their projects and 10 per cent in Others industries are doing the same. In Electronics, Metal Products and Rubber & Plastics industries no one is doing post audit of the projects.

**Summing Up**

In small-scale industries most of the industries take investment decisions without preparing proper capital budgets. Only large units having company organisation in particular prepare capital budgets. And these are prepared with the help of experts. Priority of the projects is fixed by majority of the industries which are preparing capital budgets. For projects evaluation mainly traditional method is used by these industries. Post audit technique is used for comparing the actual results with those predicted by the project’s sponsors only by one-tenth of the above units.
REFERENCES

5. Ibid., p. 247.