Chapter - II

RESEARCH DESIGN AND METHODOLOGY
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Capital Budgeting in Large Industries of Kanpur is a serious academic work for Ph.D. thesis. There has been plethora of literature both by Indian and continental authors dealing with problems of long term investments. As a matter of fact, the existing literature does not spell out the logic to grapple with the issues which the global operations of the corporations have raised. The literature provided in 50's deal with equity as a means of raising fund for long term investment. In the decades of 60's and 70's the concept of merger and amalgamation has been prominently discussed by authors as a solution to generating resources for long term investments. In 80's the financial leverage was offered as a way out to reduce the high cost of equity capital. The existing literature does not deal with risk-relation and cost having their origin in global market, monopolised technology and monopolised funds. It requires review of the existing thoughts in a bid to forge new tools to deal with the problem of minimum cost and maximum value of the firm by serving the customers efficiently in the global market. The parameters of sound capital budgeting has to be reshuffled and readjusted to focus on the efficient management of long term funds for projects for new markets in anticipation of ever-higher returns.
The present thesis is the outcome of the serious efforts of the part of the Research Scholar to study the ongoing large industries of Kanpur in the light of modern logical framework. The results would have extensive application to any incorporation operating in the domestic and global market.

**Problem Areas:**

The thesis makes approach to deal with the following three fold problems:

1. Market Related: Demand long term
2. Technology Related: Cost Effectiveness

Market related issues under the capacity which has to be installed to satisfy the demand over a series of years in future. Of course the capacity to be generated has to be phased out as the capital budgeting, proceeds for projects in order of priority reflecting the Net Present Value (NPV).

The technological issues are being probed in the light of financial cost and the return to be realised in the future. Either the technology must be cost saving or high return yielding or both. The main deterrent now is the constraints of monopoly of technology. It is expected that mutual benefits to the technological exporters and finished product consumers would have the sobering effect before the inception of 21st century.
The financial related issues are more of the nature of managing the funds than the supply constraints. The attitude of the Financial Institutions must change to precede the global onslaught of foreign companies. The rigidity must give way to flexibility. The financial institution must provide cheaper funds for a longer period of time. The Financial Institutions should share the risk in place of fixed charge on loans. Hopefully the firms would make better use of the funds in their global operations.

**Review of Literature - Large Industries of Kanpur:**

With the advent of liberalisation and globalisation, the Indian Industries have undergone sea change in their overall modes operandi - ownership, areas of activities, product mix, strategies and planning etc. The entry of MNCs, and TNCs in Indian economic arena has posed yet another challenging task to the domestic industries to grapple with. However, in the changing economic milieu, the role of large scale industries in India has assumed ever greater significance.

The present study has been undertaken to study the varied aspects of long-terms investment (capital budgeting) in large industries of Kanpur. The study is novel perse as there is dearth of related literature on the subject. However, in the succeeding paragraphs, literature related to studies on large industries of Kanpur has been made.
A prominent study on the large industry of India was made by Pearse. S. Arno\(^1\) way back in 1930 even before independence. The theme of the work was mainly focused on the different aspects of cotton Industry of India. In this study, the author has talked about historical existence of cotton manufacturers in India who were chiefly confined to the spinning and weaving activities for centuries. The author, however, has also talked about a particular castes who were united together into guilds. These guilds were organised on an occupational pattern characterised in hereditary occupations.


Mehta. S.D.'s book entitled "The Cotton Mills of India"\(^3\) gave a detailed account as regards the cotton mills established in India in the early decades of 19th century. The Mehta's book has very rightly pointed out that the focal points of attraction to set up the cotton mills in India were cheap labour, low freight charges and the availability of raw materials on the spot.

An I.L.O's publication\(^4\) in 1960 presented a comprehensive analytical study with regard to the varied aspects and dimensions of cotton Textile in India. The publication gave vent to the fact that at the close of the 19th century, there were 36000 looms with over 4 million spindles. The ILO's publication inference that
during the two world wars, the position of cotton textile mills consolidated seem to have had sound logic. The study has also brought forth that these mills continuously made steady progress till the partition of the country in 1947.

A publication of planning Commission in 1966 has emphasised the role of plans (First and Second) in the growth, development and promotion of Industries.


Irfan Ahmed in his Ph.D. thesis (AMU 1994) made a critical evaluation of Indian Industrial Policy and development since 1981. He has outlined as to how the industries have progressed with changing industrial policies— from protectionist economy to market friendly economy. Khan, Mohd. Mohsin in his book on "Entrepreneurial Problems and Performance in U.P.s Agro-based has given a thread-base details about almost all the aspects of industries specially large industries of India engaged in agro-based activities. Zillur Rehman in his Ph.D. thesis (AMU-1996) entitled "Computerised Management Information System In Large Scale Private Sector Indian Manufacturing companies" has elaborately discussed regarding prevalence of computerisation and its percolating benefits adding to the efficiency and productivity of organisation.

However, all these above mentioned studies have generally concentrated to the evolution, growth and development of industries and also other aspects such as, entrepreneurial problems, computerisation, trade relations, labour relations etc. of large industries. None of these studies have dealt with the financial aspects, e.g. productivity, efficiency or functional aspects of financial management like capital budgeting decisions etc. of the large industries of India. In the present study the Research Scholar has undertaken to critically study the varied dimensions of capital
budgeting decisions of large industries with special reference to Kanpur (U.P.). In the succeeding paragraphs, discussion regarding the conceptual frameworks of capital budgeting decision is made.

**Capital Budgeting – Conceptual Framework:**

Investment decision is an important aspect of capital budgeting decision. It can be defined as a process which involves the investment of current funds into a long term investment projects which will in the long term yield benefits over a series of time. It generally includes the expansion, diversification, modernisation and replacement of plants and machinery. Even the kind of sales distribution, method of advertisement etc. also have long term implication on the value of firm. Thus, it is a very crucial aspect of financial decision, as large amount of funds are invested in a project.

The capital budgeting refers to Assets which are in operation and yield return over a period of time usually exceeding one year.

The system of capital budgeting is employed to evaluate expenditure decisions which involve current outlays but are likely to produce benefits over a period of time longer than one year. These benefits may be either in the form of increase in revenues or reductions in costs.
Capital expenditure management includes addition, disposition, modification and the placement of fixed assets.

**Features of Capital Budgeting:**

1. Potentially larger anticipated benefits.
2. A relatively high degree of risk.
3. A relatively long time period between the initial outlay and the anticipated return.

**Importance of Capital Budgeting:**

Capital budgeting decision are of paramount importance in financial decision making in the first place such decision affects the profitability of a firm. These also have a bearing on the competitive position of the enterprises. The fixed Asset represent the true earning assets of the firm however current assets are not generally earning assets. Thus capital budgeting decision determine the future destiny of the company. An opportune investment decision can yield spectacular returns. A few wrong decision and the firm may be forced into bankruptcy.

Secondly a capital expenditure decision has its effect over along time span and inevitably affects the company future cost structure to sport a new product, the company... commits itself to a sizable amount of fixed costs in term of labour, supervisors' salary, insurance, rent of building and so on. If the investment
in future turns out to be on successful or yields less profit than anticipated the firm will have to bear the burden of fixed costs unless it writes off the investment completely.

Thirdly capital investments decision once made are not easily reversible without much financial loss to the firm.

Finally Capital investment involves costs and the majority of the firm have scarce capital resources. This underlines the need for wise and correct investments decision as an incorrect decision would not only result in losses but also prevent the firm from earning profits from other investment which could not be undertaken for want of funds. The benefits out of the long term investment is expected to be derived from a project in terms of cash flows rather than in terms of income. Cash is central to all decisions of the firm.\(^\text{15}\)

Capital expenditure decisions are not easy to take for the following reasons; first the benefits from the investment are received in some future which is uncertain, therefore, element of risk is involved the uncertainties on the possibilities of shifts in consumer preferences the action of competitor, technological development and change in the economic or political environment. Is not to calculate strictly?\(^\text{16}\)

Capital bugeting refers to the total process of generating, evaluating, selecting and following up on capitla expenditure
alternatives, the firm allocation or budget financial resources to new investment proposals.

**Technique of Capital Budgeting:**

There are two broad-based methods of capital budgeting, i.e. traditional method and discounted cash flow method.

The traditional method consists of average rate of return and payback. The discounted cash flow method includes net present value, internal rate of return and profitability index.

**Traditional Method:**

**Average Rate of Return:**

The Average Rate of Return (ARR) method of evaluating proposed capital expenditure is also known as the Accounting Rate of Return method. There are a number of alternative methods for accounting the ARR. The most common usage of the Average Rate of Return (ARR) is as follows:

\[
ARR = \frac{\text{Average Annual Profit After Taxes}}{\text{Average Investment Over the Life of the Project}} \times 100
\]

The average annual profit after taxes are determined by adding up the after tax profit expected for each year of the project life and dividing the result by number of years.
The average investment is determined by dividing the net investment by two.

Average investment = Networking Capital + Salvage Value + 1/2 (Initial Cost of Machine - Salvage Value).

\[
\text{ARR} = \frac{\text{Average Income}}{\text{Average Investment}} \times 100
\]

**Accept - Reject Rule:**

With the help of the financial decision maker one can decide whether to accept or reject the investment proposal according to the ARR as an accept-reject criterion. The actual ARR would be compared with a pre-determined or a minimum required rate of return or cut-off rate. A project would equality to be accepted if the actual ARR is higher than the minimum desired ARR.

**Evaluation of Average Rate of Return (ARR):**

The most favourable attribute of the ARR method is easy calculation. moreover, it is simple to understand and use.

However, this method of evaluation investment proposals suffers from serious deficiencies. The principal shortcoming of the ARR approach arises from the use of accounting income instead of cash flows. The second shortcoming of ARR is that it does not take into account the time value of money. that the ARR method
treats these benefits at par and fails to take account of the differences in the time value of money. Thirdly it does not differentiate between the size of investment required for each project. ARR method in such situation will leave the firm in an indeterminate position. Finally, this method does not take into consideration any benefits, which accrue to the firm from the sale or abandonment of equipment.

Pay Back Method:

The Pay Back Method is the second traditional approach method of capital budgeting. It is the simplest and perhaps, the most widely employed method. This method answers the question as to how many years will take for the cash benefits to pay the original cost of an investment, normally disregarding salvage value. There are two ways of calculating the Pay Back period. The first method can be applied when the cash flows stream in the nature of annuity for years of the project life.

\[
PBP = \frac{\text{Investment}}{\text{Constant Annual Cash Flow}}
\]

The second method is applicable when a project cash flows are not equal. Under this method, the ineven cashflows are added till it equals the cost of capital.
Accept — Reject Criterion:

The Pay Back period can be used as a decision criterion to accept or reject investment proposal. If the actual pay back period is less than the pre-determined pay back, the project would be accepted, if not, it would be rejected\(^\text{19}\).

Evaluation of Pay Back Method:

Its most outstanding merit is that it is easy to calculate and simple to understand. Moreover the pay back method is an improvement over the ARR approach, its superiority arises due to the fact that it is based on cash flow analysis.

The demerits of pay back method is that it completely ignores all cash inflows after the pay back period. This could be very misleading in capital budgeting. It also ignores the time value of money. It does not take into consideration the entire life of the project during which cash flows are generated. Nevertheless, the pay back method continues to be in use, frequently as a supplement to other more sophisticated methods. It does afford management limited insight into the risk and liquidity of a project.\(^\text{20}\)

Here, it would be sufficient to define the cost of capital \((K)\) as the minimum discount rate that must be earned on a project that leaves the firm market value unchanged. The second
commendable feature of these techniques is that they take into consideration all benefits and costs accruing during the entire life of the project.

The two discounted cash flow techniques of capital budgeting which are very important and helpful in appraisal of projects are the Net Present value i.e. the NPV approach and the Internal Rate of Return (the IRR approach).

**Net Present Value (NPV):**

The Net Present Value (NPV) approach is based on the rate of return which is external to the project and is the cost of capital. It includes the cash flows of the project which are expected to be earned by the project. It includes the cash inflows as well as out-flows. According to this method the net present value of cash flows are taken into account. This method is superior to the techniques such as Average Rate of Return (ARR) and the Pay Back Method since it involves the cash flow throughout the life of the project.\(^2\)

There are two methods of calculating NPV of a project

1. Conventional Method - which includes initial investment outlay only.
2. Unconventional Method - which includes initial as well as the investments made time and again within the life span of the project.

i. Conventional Method - NPV is calculated by

\[
\text{NPV} = \frac{\text{CF}_1}{(1+K)^1} + \frac{\text{CF}_2}{(1+K)^2} + \frac{\text{CF}_n}{(1+K)^n} + \frac{S_n}{(1+K)^n} + \frac{W_n}{(1+K)^n} - C
\]

ii. Unconventional Method - NPV is calculated by

\[
\text{NPV} = \frac{\text{CF}_1}{(1+K)^1} + \frac{\text{CF}_2}{(1+K)^2} + \frac{\text{CF}_n}{(1+K)^n} + \frac{S_n}{(1+K)^n} + \frac{W_n}{(1+K)^n} + \left(\frac{\text{C}_0}{(1+K)^0} + \frac{\text{C}_n}{(1+K)^n}\right)
\]

where.

CF$_2$ is cash inflow within the life time of the project i.e.t.
C$_i$ is investments within the life time of the project i.e. t.
K is cost of capital or discount rate
S$_n$ is salvage cost
W$_n$ is working capital adjustments

NPV can be 0, more than 0 or less than zero. If NPV = 0 then there is indifference between whether to accept or reject the project.
If NPV > 0 then we accept the project

If NPV < 0 then we reject it

**Internal Rate of Return (IRR):**

IRR involves the rate of return which is internal to the firm and not on the cost of capital which is the main difference between the two. IRR can be defined as the NPV where NPV is equal to zero. So under the conventional and unconventional methods, IRR can be calculated as follows:

1. \[ 0 = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \ldots + \frac{CF_n}{(1+r)^n} + \frac{S_n}{(1+r)^n} + \frac{W_n}{(1+r)^n} - C_0 \]

Thus, we can say that the basic difference between NPV and IRR method is that NPV involves a predetermined rate of return which is external to the firm while IRR involves rate of return which is internal to the firm.

Cost of capital is predetermined in NPV method while rate of return in IRR method is found by hit and trial method.
IRR can be said to be found where the rate of return i.e. NPV at \( r \) is equal to zero.

IRR is more realistic since it has to be calculated by the following formula:

\[
IRR = r_2 + \frac{PV_{\text{CFAT}} - PV_C}{DPV} \times \Delta r
\]

\( r \) = lower rate of return  
\( Dr \) = different in \( r \)  
\( DPV \) = difference in present value  
\( PV_{\text{CFAT}} \) = Present value of cash flow after Tax  
\( PVC \) = present value of initial investment. So the internal rate of return \( r \) is more realistic than \( K \) i.e. cost of capital which is predetermined.

It should be remembered that if NPV is positive, project should be accepted. If negative, project should be rejected. It is also helpful in selecting the mutually exclusive projects by ranking them according to NPV.

**Advantages:**
1. It considers the time value of money  
2. It considers the entire return over the life time of project.  
3. It helps in wealth maximum of shareholders.  
4. It helps in selecting the mutually exclusive projects.
**Limitation:**

1. It is an absolute measure and does not even consider the large initial outlays.

2. It considers the rate of return if it is conventional that it will lead to confusion because of multiple rates.

3. It ignores the intermediate cash flows and reinvest in the IRR which usually is not practiced as firm reinvest in different rates.

Thus, Discounted Cash Flow Method (DCF) is more practical than traditional approach.

**Profitability Index:**

Profitability Index (PI) is a time adjusted capital budgeting technique. PI approach measures the present value of returns per rupee invested. It is observed that a major shortcoming of the NPV method is that, being an absolute measure, it is not reliable method to evaluate projects requiring different initial investments. The PI method provides a solution to this kind of problem. It is, in other words, a relative measure, it may be defined as the ratio which is obtained by dividing the present value of future cash inflows by the present value of cash outflows.
Mathematically,

\[ PI = \frac{\text{Present value of cash inflows}}{\text{Present value of cash outflow}} \]

This method is also known as the benefit-cost ratio (B/C ratio), because the numerator measures benefits and the denominator costs.

**Accept - Reject Rule:**

Using the PI, a project will qualify for acceptance if its PI exceeds one. When PI equals 1, the firm is indifferent to project.

The selection of projects with the PI method can also be done on the basis of ranking. The highest rank will be given to the project with the highest PI, followed by others in the same order.

\[ PI > 1 \text{ accepted} \]

\[ PI < 1 \text{ rejected} \]

**Ex:** Here we take an example of this accept and reject rule. We have got two machines A and B. The present value of cash inflows for machines A and B are Rs. 68,645 and Rs. 71,521 respectively. On the other hand the present value of cash outflows for the machines A and B are Rs. 56,125 and Rs. 56,125 respectively.
Then we take the profitability Index of the two machines.

\[
\begin{align*}
\text{PI (Machine A)} &= \frac{\text{Rs. 68,645}}{\text{Rs. 56,125}} = 1.22 \\
\text{PI (Machine B)} &= \frac{\text{Rs. 71,521}}{\text{Rs. 56,125}} = 1.27
\end{align*}
\]

Since the PI for both the machines is greater than 1, both the machines are acceptable.

**Calculation of PI:**

Though it is common to define PI as the ratio of the PV of the cash inflows divided by the PV of cash outflows, the PI may also be measured on the basis of the net benefits of a project; its gross benefits against its total cost over the life of the project. This aspect becomes very important in situation of capital rationing.

\[
\begin{align*}
\text{PI} &= \frac{\text{Present value of cash inflows}}{\text{Present value of cash outflows}} \\
\text{Or}
\end{align*}
\]

\[
\begin{align*}
\text{PI} &= \frac{\text{Net benefits of the Project}}{\text{Current cash outlay}} \\
\text{Or}
\end{align*}
\]

\[
\begin{align*}
\text{PI} &= \frac{\text{Gross Benefits}}{\text{Total Cost over the Life of the Project}}
\end{align*}
\]

**Net Present Value (NPV) Vs. Profitability Index:**
In most situations, the NPV and PI as investment criteria provide the same accept and reject decision, because both the methods are closely related to each other. It may be recalled that under PI method the investment proposal will be acceptable if the PI is greater than one, it will be greater than one only when the proposal has a positive net present value likewise PI will be less than one when the investment proposal has negative net present value under the NPV method.

In other words we can say that IP is greater than, equal to or less than 1; the net present value is greater than, equal to or less than 0, respectively. In other words, the NPV will be positive, when the PI is greater than 1; will be negative when the PI is less than 1, thus, the NPV and PI approaches give the same results regarding the investment proposals.

While evaluating mutually exclusive investments proposals, these methods may give different rankings. Following example take such a case.

**Example:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Project A (Rs.)</th>
<th>Project B (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-50,000</td>
<td>-35,000</td>
</tr>
<tr>
<td>1</td>
<td>40,000</td>
<td>30,000</td>
</tr>
<tr>
<td>2</td>
<td>40,000</td>
<td>30,000</td>
</tr>
<tr>
<td><strong>Present Value of Cash inflow at 19%</strong></td>
<td><strong>69,440</strong></td>
<td><strong>52,080</strong></td>
</tr>
<tr>
<td><strong>NPV</strong></td>
<td><strong>19,440</strong></td>
<td><strong>17,080</strong></td>
</tr>
<tr>
<td><strong>PI</strong></td>
<td><strong>69,440</strong></td>
<td><strong>52,080</strong></td>
</tr>
</tbody>
</table>
Thus, project A is acceptable under the NPV method, while project B under the PI method. Here we took the NPV technique, as NPV technique is the superior technique, therefore project A should be accepted. The best project is the one which adds the most among available alternatives to the shareholders wealth. The NPV method by its very definition will always select such projects. Therefore we can say that the NPV method gives a better mutually exclusively choice than PI. The NPV method guarantees the choice of the best alternative.

**Approach To the Study:**

The existing techniques have been divided into these major groups: The conservative for safety, the moderate in which safety is somewhat compromised with minimum risk and aggressive approach which follows the philosophy that nothing can beat the return and they are all out for return. no matter how risky it is. Our approach is global risk for investment to service new markets for maximum returns. The thesis combines the cost as the base to earn maximum return which should justify the risk that the suppliers of funds are called upon to assume.

Large industries Kanpur are selected as the area to test the hypothesis because industries of all times of financial philosophy are investing in a state which is traditionally agriculture.
Nevertheless the Research Scholar is that the conceptual framework of this thesis would have extensive application to deal with challenges of 21st century.

**Parameters Adopted:**

It includes cost of capital—cost of equity (ke), cost of debenture (kd) and overall cost of capital (ko) at constant rate for the period under review (1990-97).

The ko is used as the capitalising rate to determine the market value of the equity and the firms.

Risk is measured in terms of time, in terms of changes, in the rate of interest over time and in terms of changes in the dividends rate. The cumulative impact of the risk is measured in terms of the changes in capital gains over time. The approach is made to fuse together the risk which management assumes in capital budgeting with the risk perception of investors.

The traditional method to measure return is simple because they calculate book profit as a ratio to capital. The moderate method is also not different except their method excludes reserves to compute the return. The aggressive method is quite different because they include the net worth and borrowing to calculate the returns in terms of profit before interest and taxes as a ratio to funds employed. The approach of the Research Scholar in the
budgeting.

However, there are constraints of inadequate informations and red-rapism in the Directorate of Industries (DIC). The Research Scholar has made some modifications in the technique of capital budgeting to overcome them like additional funds are assumed to reflect financing of projects, expenditure of computerisation of some firms is considered as a step to modernise the plants and heavy financial leverage considered as aggressive approach. The aggregate earnings are assumed to grow at constant rate in the absence of categorical informations about earnings. Net profit is assumed as net earnings of the owners from investment in the absence of cash flow and fund flow statements.

The Research Scholar thinks that assumptions to overcome limitations would not jeopardize the results. The Balance Sheet reveals the break up between working capital and fixed capital. The distinction between the two funds is used by the Research Scholar to determine the extent to which the permanent funds are used to finance the permanent working capital.

The scope covers all the issues with results of far reaching significance for management of long term funds and capital budgeting of inspite of the assumption.

Objectives of Study:
present thesis is to calculate the NPV which is the real addition to the value of owner's wealth. The earnings are capitalized at opportunity cost which is the expected rate of return of investors. It is a departure from the established practices of computing return.

The NPV method is scientific and appropriate to global application of the funds. The other methods like pay-back, ARR, PI, IRR etc. are handicapped by the assumptions on which they are formulated. All of them failed to incorporate the investors' attitudes.

Scope And Limitations of the Study:

The thesis is the study of capital budgeting in large industries of Kanpur. It begins with an enquiry into factors leading to development of Industries in Kanpur. It makes an extensive study of the existing literature and raises the fingers at the limitations of the notions which the existing literature offers to resolve the problems of capital budgeting. The thesis breaks from the established notions and practices. It evolves its own strategy to make the capital, budgeting flexible and adjustable to global challenges of the business world. It makes a probe into the cost of capital. Risk and Return. The method most suitable to deal with the vast issues of variegated nature are reduced into the present value of earning. A critical summary of the conclusion throws light on issues of financial right management capital
The objectives of the thesis is to device means of sound management of funds, to finance projects for operation in global markets. The existing literature is inadequate to answer the questions as to segment the project for new markets, manage free flow of capital, manage the cost of capital, manage the risk for money market, capital market, consumer market and monopoly of the technology.

Kanpur is selected for study because it is one of the major industrial city of U.P. with substantial contribution to state's income. The logic and reasoning of this thesis hopefully would apply to industries having to face the challenges of 21st century.

**Hypothesis:**

The thesis is hypothesised as follows:

In the first stance it makes an enquiry into the industrial development of Kanpur to highlight its importance. It is true if Kanpur fails, the UP state fails. The historical study throws open both positive and negative features of the growth of industries in general. From the study of industrial history of Kanpur it becomes clear that errors in capital budgeting is the root cause of industrial sickness generally. The study of existing literature up to 80's furnishes answer to problems which are not longer significant in the context of challenges in 21st century.

Capital budgeting in global context has to be base don
divergent perception of MNCs/MNIs and Global Financial Institutions (GFIs).

The hypothesis evolved by the Research Scholar is based on cost return-risk trade off in global context. The Research Scholar has come to the conclusion that none of the existing financial philosophy is adequate to solve the problems. The present hypothesis is the fusion of perceptions of global management and of corporation and global financial investors. The hypothesis is the fusion of perceptions of global financial investors. The hypothesis makes maximisation of investors wealth as the goal of capital budgeting.

**Research Methodology Adopted:**

The facts and figures present analysed in the thesis are based on scientific method in consonance with principles of thesis writing. The statistical data have been gathered and collected from different sources i.e. primary and secondary sources. However, the Research Scholar has depended more on secondary sources of information than the primary on account of unwillingness on the part of the organisations to part with the requisite data.

Annual Reports of the large industries of Kanpur under reference have been utilised to prepare the tabular formate as
regards the capital budgeting. Directorate of Industries (DIC) Centre has been of great help in getting required statistical material.

Informations from the articles and the U.P. State Government reports appeared in various journals, periodicals have also been made good use of.

The statistics so collected have been framed in a tabular form in accordance with the requirements for studying capital budgeting in large industries of Kanpur. Analysis has been done by collating and interpreting the data to put the discussion in logical and sound footing to arrive at the conclusion for offering the suggestions for sound and viable capital budgeting in large industries of Kanpur.

Sample Study of Large Industries of Kanpur:

In all, the following six large industries of Kanpur have been studied viz- LML Ltd, JK Jute Mills Co., Kanpur Plastipack Ltd., Kothari Products Ltd., J.K. Synthetic and Duncan Industries Ltd. (Fertilizer Division).

Brief history of these industries along with their product profile is discussed in the succeeding paragraphs.

History — LML Limited

The company incorporated in 1972 as a Private Company called Lohia Machines Private Limited, started manufacturing of
Synthetic Yarn Manufacturing Machnies in technical collaboration with ARCT. FRANCE. In terms of companies Act, 1956, the company was converted into Public Limited Company. The activities were diversified by putting up Synthetic Yarn processing unit in 1978. Nylon-6-Chips manufacturing unit and another unit for manufacturing of LML VESPA SCOOTERS in technical collaboration with "PIAGGIO" & CSPA, ITALY.

The activity of entineering unti was phased out & Fibre Unit was de-linked. As such the company is now manufacturing only scooter under the Brand name of LML VESPA PIAGGIO became a financial partner in 1990 through a Joint Venture agreement with a share capital of 25% of the paid up capital. This joint venture agreement has since been renewed in February 1995 for a period of 10 years.

During the last 11 years the company has produced and sold over 12 lacs Scooters which is a remarkable achievements inspite of formidable competitors. When LML entered the scooter industry in 1982 in technical collaboration with PIAGGIO it was essentially operating in a seller's market which had huge unmet demand. It was able to gain substantial volume and market share approached 20 per cent by 1990. In 1991 the sales lumped from 14000 a month in 1990 to 5000 a month in 1992. Overall sales in 1991 were half that of 1990. It introduced a new vehicle LML T-5 in
early 1992 which was priced higher than LML NV. In September 1992 both the vehicles were restyled and relaunched as the NV - SPECIAL & T-5 SPECIAL. There was no immediate impact on sales. Total sales in 1992 was within the existing demand with the higher price T-5 rapidly wresting a 35 percent share of LML's SALES by end 1992, the company had managed to fix its niggling quality problems, which had been preventing it from attaining a premium status in the eyes of the consumer. It also started spending heavily on advertising.

Innovative marketing, such as exchanging any old scooter for a new LML one & paying the difference in easy installments helped inbooming up the market share of LML considerably. LML also enthused its dealer with more generous margins whichrange from Rs. 725 to Rs. 1100.

By 1993 it introduced a new model. LML. VESPA-SELECT, which proved to be an instant success. By mid 1993, as much as 60 per cent of LML SALES were of the SELECT. The older NV accounted for 15 per cent while the T-5 slid to 5 per cnet. By 1993 sales had increased to 15000 per month. It stayed at that level till about mid 1994, after sales spurted to around 20000 per month. by the year end. At present the company offers 5 different models of scooter namely NV. SELECT. SELECT-II. STAR &aa SENSATION to cater to the different section of customers.
The severe demand recession during October 1990 to September 1992 upset the working of company resulting into heavy losses. As a result of inhouse R & D activities, the company could introduce a new range of scooters with lots of added features, like a better fuel efficient engine & attractive metallic colors etc. With the easing of recession, the sales of company picked up a level of about 5000 scooters to 20000 scooters per month. During the year ended 30/09/94 the company has achieved a remarkable turnaround by earning a net profit of Rs. 2640 lacks as compared to net loss of 607 lacs during the year has improved further and the company has earned a net profit of Rs. 30.84 crores during the period ended on 30.09.1995. The turnover of the company has also gone up from Rs. 345.39 crores during 1993-94 to Rs. 512.28 crores during 1994-95.

The company from a mere 7 percent market share in 1991-92. has today made significant strides and commands an impressive market share of about 23 per cent. The existing plant capacity is fully utilised and the company debottlenecking the plant at various levels to reach a production capacity of over 250,000 vehicles per annum in the first phase, which will be further increased in 300,000 vehicles per annum during the current year.

From the beginning of 1996, the company proposes to launch new models of vehicles providing an increased choice with better
performance and aesthetics to customers. The company’s marketing and distribution network which comprises approx. 350 dealers, is also being upgraded to the level of world class show rooms and the overall network is being strengthened by increase of service and spare parts distribution. The distribution network is supported by 21 stock yards and 11 Regional officers.

Recently company launched the diversification-cum-expansion project involving a capital expenditure of Rs. 204 crores as appraised by IFCI, which will be funded by term loans from Banks and Financial institutions, Lease finance and increase in share capital through public & rights issue and interest accruals. This will increase the production capacity of the plant to 6,00,000 vehicles and the turnover would cross Rs. 1400 crores. This will enable the company of cater to the increasing demand for its products in the expanding market.

The project will be implemented at the existing site which covers 75 acres of land, including additional land of about 49000 sqr. meters acquired for this purpose. The plant layout is being revamped for more easier, more efficient and smooth material management for the wide range of Products, which will be manufactured. Upon completion the company is likely to become the largest scooter manufacturing plant in the world. LML employs about 7000 employees in which 1000 are officers. It has a separate
Industrial Electronics Unit to manufacture Auto Electronics Components for captive consumption.

The corporate mission of the company is to become a very significant player in the two wheeler industry and to increase the networth of shareholders equity.

Operations:

Project and its Funding:

The expansion -cum-diversification project involving an outlay of Rs. 204 crores, will scale up the capacity of the plant to 6000.000 vehicles per annum. This would enable the company to offer a very wide range of products to cater to the fast emerging consumer segments. This project will be funded with a combination of capital, debt, internal accruals, leasing etc. Upon completion, the gross block turnaround would cross Rs. 1400 crores.

Industrial:

While we have been consistently improving the manufacturing facilities, this is being further strengthened with a more rationalized layout of the plant and processes in order to set up a world class facility. During the current year, the company would install about 750 component manufacturing machinery and process equipment.

Ancillarisation:
To take care of the rapid expanding need of bought-out components, the ancillary network in and around Kanpur is being expanded. New ancillaries are being established to enhance capacity for a wide range of products. To ensure efficiency and cost effectiveness, these are being located as close to the plant as possible.

**Marketing & Sales:**

The company achieved a significant increase in its sales from 157,455 scooters in the previous year, to 227,700 scooters in the current year, surpassing the growth rate of the industry. The present constraints are expected to decrease during the current year with progressive expansion. An additional 200 world class showrooms would be operational by the end of 1996 and a large part of the network would be connected throughout an integrated computer system for the first time in India for more efficient distribution and quick consumer feedback. The company will add a host of products to its range, including vehicles in 2 stroke and 4 stroke engines, having geared/combinations of metal and plastic bodies.

**Research and Development:**

Since the growth in future years would be determined by the quantum of research and development, the company is making
substantial investments in this area, including installation of laboratories and testing equipment, prototype production machinery etc. Contemporary technology is being assimilated and adapted to Indian need and conditions.

**Quality Assurance:**

While cost efficiency and a comprehensive product line will ensure the company's leadership in the market, it will be quality, which will determine the rate and potential of its growth. Keeping this in mind, quality standards and processes are being revamped incorporating most modern day methods to ensure international levels of quality.

**Human Resource Development:**

The company is strengthening its human resource development department with a special emphasis on the area of inhouse training and participation in organised workshop for all levels and cadres.

**Exports:**

Until now, there has been a constraint on exports primarily due to limitation of capacity and the company being able to offer only a single product in the export market. With the completion of the expansion project when a variety of new models would be added to the production line, the company would have a range
of products to offer as well as would not be constrained by capacity. The company aims to export about 15% of its production by way of components, assemblies and finished vehicles in the global market.

2. J.K. Jute Mills Co. Ltd. (Jute Division):

J.K. Jute Mills, Co. Ltd., Public Limited Company was incorporated 7.2.1931, Commencing business from 7.2.1931. It falls in the Private sector. The name of the business House/Group to which the concern belong to and the list of other companies in the same group is J.K. Group. The Regd. Office of J.K. Group is Kamla Tower, Kanpur and Controlling Office (Head Office) Kamla Tower, Kanpur.

The other concerns of J.K. Organisation is the following:-

a. Manufacturing Companies:
   i. J.K. Synthetic Companies

b. Investment Companies:
   i. J.K. Traders Ltd.
   ii. J.K. Capital Finance Ltd.
   iii. J.K. Investment Ltd.

3. Kanpur Plastipack Limited:

Registered Office & Works of Kanpur Plastipack Ltd is D-
19/20. Panki Industrial Area, Kanpur-208 022

**Objectives and Activities:**

Manufacture of fabric, sacks and paper lined bags, jute, Bituminised bags etc.

**Capital:**

Authorised Equity (Rs. 10 per sh.) Rs. 5,00,00,000

Paid up: Equity (Rs. 10 per sh.) Rs. 3,19,72000

4. **J.K. Synthetics Limited (1943):**


**Objects and Activities:**

Nylon Filament Yarn, Polyesters filament yarn. Polyester staple fibre. Nylon tyrecord. frey cement, white cement etc.

M/s J.K. Satoh Agricultural Machines Ltd., M/s Jaykay Tech Ltd. are the subsidiary companies.

5. **Kothari Products Limited:**

Register Office of Kothari Products Ltd. is at Pan Parag House.
Objects and Activities:

Manufacture and sale of Pan masala & Gutkha, Zarda and Coconut oil.

Capital:

Authorised equity (Rs. 10 per sh.) Rs. 11,00,00,000

Paid up: equity (10 per sh.) Rs. 5,00,00,000

6. Duncans Industries Ltd. (Fertiliser Division)

Panki, Kanpur.

The company was incorporated on 30th July, 1993 as Chand Chhap Fertilizers and Chemicals Ltd. (CCFCL) and took over from ICI India Ltd its fertilizer Business as a going concern with effect from 11th December, 1993.

Utility And Significance of the Study:

In presenting capital budgeting of large industries of Kanpur, the Research Scholar is well aware of its utility and significance. The plethora of existing literature on the topic is scanty and inadequate to resolve the problem of 21st century. The world is turning the point of homogenous political and economic systems with global trading and financial institutions. The world is
segmented into market for investments. The number of the corporations is getting smaller. The problem is not supply of natural resources or the size of the market. The real problem is management of capital budgeting for project in new market for ever higher profit.

**Conclusion**

The objective of the thesis is implementation of capital budgeting with new parameters by fusing together the divergent perceptions of management of MNCs and suppliers of funds. The new approach and hypothesis make the study significant contribution to the existing stock of knowledge in changing socio-economic global milieu.

The forthcoming chapter entitled "Cost of Capital Budgeting" brings forth the incisive analysis of the cost of equity capital, loans and overall cost of capital and impact on the value of share of the firm.

**References:**


17. Robert N. Anthony, "The Trouble with Profit Maximisation".

