CHAPTER - II.

REVIEW OF LITERATURE.

2.1 Introduction:

This chapter surveys literature in two related areas of regional development, both in terms of features of backwardness and the locational theories that have been put forward to guide economic development. Primarily literature on Backward Area Development in some developed countries as well as those in India are summarised, from the point of view of whether or not they help to bring about a faster and more balanced pattern of economic growth. The chapter highlights the main issues from a methodological angle and presents an assessment of the literature surveyed.

2.2 Review of Literature in Backward Area Development:

It has been observed that all the countries of the world irrespective of the level of economic development have their own backward regions and suffer from the problem of regional disparities. The Appalachian region of the U.S.A., South Wales, North East England, Cumberland regions of the U.K., the Mazzogior of Italy, Solvak region
of Czechoslovakia, the Montenegrin region of Yugoslavia, and South West France are some examples. The backward regions also exist in developing countries of the third world.\(^{(1)}\)

Incentives are commonly used to attract industries to backward areas. In some countries like Britain regional policy is based on "the carrot and stick" (or incentives and control) methods. While in a country like Italy only incentives have been used to promote/attract industries to backward regions, Great Britain, France and India are using both incentives as well as disincentives and control in order to reduce regional disparity. While Britain used financial incentives to create more employment in the depressed regions and attract new industries in special development areas, it used Industrial Development Certificate in order to control further growth of existing industries and location of new industries in the congested regions. France imposed a penalty tax for further expansion of any industry in congested regions. For the development of backward areas India uses positive incentives i.e. concessional finance, capital subsidy and other incentives. Licensing policy and
No Objection Certificates (NOC) are used in order to control the further expansion of Industry in congested areas. Thus these positive and negative instruments of incentives and control are used both by developed and developing countries.

2.3 Studies in Backward Area Development in Developed Countries.

Williamson (1965)\(^{(2)}\) is an empirical investigation into the nature of Spatial inequality within national borders. The empirical study is based on an international cross-section analysis for twenty four countries for the decade of the fifties. Second the cross-section approach is applied to the United States Census data (1950 and 1960) and national time series analysis is applied to these few countries for which data is available.

In this paper regional income differentials are measured in terms of the average national income per capita. Regions within nations do not typically possess equal capacity for growth, at the initial stages of development. Regional barriers may be too great to transfer the growth stimulus to other regions. As long as the barriers to trade and factor flows persist regional inequality will clearly increase.
According to this author migration of Capital and labour in the early stages of growth generate further spatial inequalities rather than reduce them. Even the national or federal Government's unconscious intention to maximise national development may tend to increase the degree of national inequality.

But the working hypothesis of this study, however, is not that inter-regional divergence of income, per capita levels will persist indefinitely into the mature stages of national growth. On the contrary, there are a number of reasons why we should expect the elements which tend to cause divergence to diminish over time, allowing the more classical equilibrating effects to make themselves felt. The spread effects of the labour, Capital and factor markets would become efficient. Regional inequality will diminish once the process of regional convergence begins. However, with the forces tending towards regional equality mutually strengthening each other speed of adjustment would be cumulative in nature.

The study by W. Molle (1983)\(^3\) covers three dates (1950, 1960, 1970) Seventy six 'Programming regions' and fifty three economic activities in the agricultural, manufacturing and service sectors. For most of these
activities the attempt is made to understand temporal and spatial development by means of linear modelling techniques. While the dependent variable is employment, the independent variables are interregional demand and supply, labour, costs, labour availability, urbanization and regional policy. Most of these are composite variables based on several criteria. Discussion of the problems involved in constructing, elaborating and estimating the model forms the core of the book, while the opening chapters are designed to set the detailed research in the broader contexts of economic development through time, regional development theory and policy evolution, it is more in the nature of delineating a progress report of the regions under study.

After dealing with the theories of spatial inequality Hadjimichelis et al (1983) conduct empirical investigations into the origins and development of spatial inequalities in southern Europe, using the specific cases of Spain, Italy and Greece. Despite the radical rhetoric of the Socialist Governments of Southern Europe they are yet to devise an effective regional development plan. They have always attempted to create strong natural national economies in order to compete for international investment. High unemployment and need for regional capital restructuring seem to call for alternative analytical models.
The study by Jean Renand et al (1985) contains nine studies from France, Switzerland, the U. K. and the U.S.A. which are organised around four main themes, the role of public purchasing in economic and regional policy, short term regional effects on employment and income effects on technology, innovation and regional growth and the stimulation of the revenues by Public spending operations. Examples deal with many aspects of Government spending in Switzerland the spatial incidence of Government spending Policies in the U.S.A. the impact of purchases linked to Civil Engineering Projects in Normandy, the economic impact of contracts concluded by European Space Agency, and the possible role of a procurement policy to stimulate innovation in individual firms to overcome the insufficiencies of traditional regional policies (e.g. in the U.K.)

The purchase of goods and services by government agencies plays an important role in the economy of many countries for example, in Switzerland spending by federal and local administration for materials, services, building and Civil Engineering Projects amounts to almost 10 percent of the G.D.P. comparable proportions are involved in other countries of Western Europe and in the U.S.A. The volume and regularity of Public purchasing makes it important not only for individual firms but also for the economy of whole regions. Public procurement offers a significant policy
option to governments seeking to influence industrial development or to modify the spatial distribution of productive activities.

Hamilton's et al (1986) book is a collection of papers presented at the International Geographical Union Commission on Industrial Systems Symposium in 1984. The papers are concerned with the problems of Industrialization in a wide range of both developing and peripheral regions. In particular, attention is paid to the question of the adaptation, adjustment and response of regions to the crisis conditions of the last decade.

Discussion provides a broad perspective on the question of development and some common problems are identified. For example, the choice between national growth and balanced regional development, the appropriate form of technology for developing regions and the potential conflict between the interests of international financial institutions and multi-national corporations on the one hand and national regional development on the other are interpreted.
While it may be argued that the practice of regional development planning in Great Britain in recent years has been somewhat overshadowed by other spatial forms of planning, regional planning has become the focus of attention in many less developed countries, as such countries have sought approaches to stimulate development and reduce regional inequalities in welfare.

Dealing with regional strategies in South Africa, the major approaches to development are discussed by Dewar et al (1986) and the linkages between interventionist development theory and settlement explored. The use of settlement policies in national and regional development is assessed.

One of the attractive features of this study is the extent to which it critically examines the relevance of the theory and practice of regional planning in developed countries for less developed ones.

Major growth theories of regional development are reviewed by the authors as to their implications on settlement policy. Redistribution through growth, basic needs and agropolitan growth theories are discussed in
relation to settlement policy, with reference to growth of metropolises in developing countries, and role of small urban centres in promoting rural development.

The book undoubtedly fills a gap in the regional development planning literature. It provides a critical review of wide range of literature on regional development theory and policy. It also illustrates the care which needs to be taken in applying the theory and practice of more developed countries to less developed ones.

An analysis of growth rates of U.S. per capita income and its regional distribution by Burns (1986) shows that spatial integration is inversely related to the rate of national economic growth. The issue of spatial balance dominates the regional literature. Achieving 'balance' or reducing income inequality, ranks among the leading goals of regional development policy, whether the topic is polarization, dualism, core-periphery, spread of backwash, dependency, regional trade and comparative advantage, metropolitan growth or decentralization, or the territorial distribution of income and power and other resources, balance constantly recurs as a research theme and policy objective.
It is argued in this paper that the spatial transfer of benefits is a cyclical phenomenon driven by national growth, and is in an opposite thrust from the hypothesis adopted by Williamson for the nation, States and regions as its chief descriptive measure. The data estimated by the Bureau of Economic Analysis, U.S. Department of Commerce reported annually since 1948 have been used. To remove erratic annual fluctuations, the data was smoothened to five-year moving averages yielding a continuous twenty-eight years' series running from 1950 to 1978. From this time series, five year growth rates were calculated spanning the period for each territorial unit. The concept of balance is explored using the adjusted data which, when arranged over time, displays cycles.

The idea of cyclical income growth has been evaluated in the regional context, neglecting the causes of the cyclical fluctuations of per capita income. Rather than examining income growth and its consequences, the analysis has focussed on the factors producing income.

Further, income growth rather than income levels are highlighted in assessing balanced development of regions which is inadequate for a complete picture.
Great deal of attention has been paid to the ways in which the European Community (EC) attempts to stimulate economic development. The experience of the European Investment Bank (EIB) in the U.K. casts serious doubts upon its effectiveness as an agent for regional development. However, as shown by Campbell (1987)\textsuperscript{(9)} this is not entirely the Bank's own fault. The EIB can only be as effective as the British Government allows it to be. In many instances, particularly with regard to the provision of exchange rate cover the government has been rather obstructive. Furthermore, it is debatable whether an international investment bank is the best way to promote regional development. The provision of capital is obviously an essential prerequisite if regional regeneration is to take place. However, there needs to be some direction and planning in terms of the types of activities supported. An Investment Bank which operates along the same lines as a Commercial Bank does not appear to be the most appropriate vehicle for this task.

2.4 Studies in Backward Area Development in India:

Having surveyed some salient features of Backward Area studies referring to developed countries, some of the Indian studies on regional disparity and backward area development, are critically presented here.
The study of backward area development has assumed increasing contemporary concern as a key element in our planning. The immensity of the problem and the support in terms of resources required for this nationwide task is so staggering that "The progress made in this behalf has been far from adequate.\(^{10}\).

Before redressals and interventions can be planned and implemented for the development of backward areas, some identification criteria would appear necessary as a benchmark for analysis.\(^{11}\) The planning commission set up two working groups in November 1968, one group was asked to recommened the objective criteria to be followed in identifying less developed regions known as the Pande Working Group \(^{12}\), while the other group headed by Wanchoo \(^{13}\) was to consider, the nature of the concessions to be given, and, in particular, to examine procedural, financial and fiscal incentives and the role of State Governments and financial institutions in the development of industries in the less developed regions. The Pande Working Group recommended the following criteria to be applied in aggregate for the purpose of identifying industrially backward states and Union territories.
1. Total per capita income,
2. Per capita income from industry and mining,
3. Number of workers in registered factories,
4. Per capita annual consumption of electricity,
5. Length of surfaced roads in relation to population and the areas of the state,
6. Railway mileage in relation to the population and the area of the state,

Wanchoo Committee recommended the following incentives for attracting entrepreneurs for setting up industries in selected backward areas:

1. Grant of higher development rebate to industries located in backward areas;
2. Grant of exemption from Income Tax including Corporate tax, for five years after providing for the development rebate;
3. Exemption from the payment of import duties on plant and machinery components etc; imported by units set up in backward areas;
4. Exemption from excise duties for a period of five years;
5. Exemption from sales tax both on raw materials and finished products to units set up in specified backward areas for a period of five years from the date of their going into production.

6. Transport subsidy up to 400 miles the distance should be considered as normal and beyond that the transport cost for finished products should be subsidised for such backward areas as may be selected in the states of Assam, Nagaland, Manipur, Tripura, NFFA and Andamans. The transport subsidy should be equivalent to 50 per cent of the cost of the transportation in case of the backward areas specified in Jammu and Kashmir.

In order to examine the backward area programmes in depth the Planning Commission set up a committee headed by Sri B. Shivaraman in 1978 known as National Committee on the Development of Backward areas, it adopted the problem area approach for identification of backward areas and identified six types of problem areas as chronically drought prone, desert, tribal, hill, chronically flood affected and coastal areas affected by salinity.
Apart from government studies, many studies were undertaken by individual researchers also in the past two decades to assess the impact of plan efforts aimed at the reduction of regional disparities.

The study by Murarilal (1973) seeks to assess the impact of these financial institutions on the industrial development of Bihar. The thesis begins with the description of the economy of Bihar which is a paradox of poverty amidst plenty, on the basis of the various indicators of poverty, a comparative analysis has been attempted with regard to other states of the Indian union viz-a-viz Bihar. The purpose of this comparison has been to bring the industrial development of Bihar to the fore. Again, the problems of industrialization have been highlighted and it is observed that the state lacks financial facilities, entrepreneurship and infrastructural amenities. A brief review of plan outlays for industrial growth has been made and the progress of industries is reviewed both on the large and small scale sectors. Assistance provided by the financial institutions such as IFCI, NIDC, ICICI, SBI, LIC IDBI and IRCI has been critically examined in the context of findings of
industries in Bihar. Further, a case has been made out to form a 'Consortium' of these institutions for the selection of viable projects and financing the large and risky enterprises which entail huge investment beyond the reach of a single institution.

Godbole (1976) presents an evaluation of the impact of efficiency of the Industrial dispersal policies and measures with particular reference to Maharashtra. The study makes a critical appraisal of the policies which have been assessed in terms of increase in employment, investment, consumption of electricity for industrial use, growth of small scale units in developing areas, etc. The study has further examined impact of incentives on the profitability of industrial units, particularly in relation to the development of own funds. For this purpose, four case studies have been presented.

Analysis of the impact of incentives on investment priorities has shown how incentives have not led to any distortions or bias in investment in Maharashtra.

The cost-benefit analysis of six selected industrial areas set up by the Maharashtra Industrial Development Corporation and located in the developed and developing
areas of the state shows, that though industrial areas in
developing parts have a larger social benefit content, they
are not commercially attractive to the Maharashtra
Industrial Development Corporation. However the individual
units are beneficiaries and there is an increase in
employment and investment in developing areas.

The main sectors of the economy such as agriculture,
industry, power, transport, and communication and total
per capita income of the different regions of Madhya Pradesh
are taken into consideration by Kurthy (1976). In this
work, developed and underdeveloped regions within the
state, are based on per capita income and 51 indicators of
regional development categorised under the main groups like
agricultural development, industrial development, transport
development, social development etc. In the indicator of
every group, the state average for the same year is taken
as base and is put equal to 100. The respective indicators
of every region have been calculated on the basis of this
base and placed by order of merit according to their
magnitude which shows the place of every region in respect
of a particular field. The fundamental drawbacks of an
average as a measure affect this approach and does not help
to unravel the absolute levels of backwardness which are
hidden implicitly in the relative measures.
Dr. Menon (1979) examines the impact of incentives with a focus on central investment subsidy and concessional finance on the development of backward areas. The rationale behind the package of incentives has been examined with the framework of the Rosenstein-Rodan thesis of 'induced development' besides a critical appreciation of the theoretical basis for cash subsidy and income tax benefits. A quantitative assessment of the financial assistance granted by All India Finance Institutions was made. The trend of assistance from these institutions to units in less developed districts/areas have been traced and the impact of financial assistance rendered by IDBI and State financial corporation critically analysed.

Dr. Menon's study tends to suggest that the benefits of various assistance schemes appear to have been disproportionately distributed and most important beneficiaries are found to be in developed states. The developed states accounted for 71 percent of the assistance granted by IDBI as on 30th June, 1977. According to Dr. Menon the criteria adopted and resultant selection of backward areas for development with fiscal and other incentives had been inappropriate and indiscriminate.
He suggests the selection of backward district/areas be reviewed periodically. This period should preferably be a five year plan period and at any rate should not be more than a decade. In his view a total package of incentives without a supporting theoretical and conceptual frame is unlikely to succeed. What is administratively convenient need not necessarily be socially desirable and economically justifiable. Reduction of wide disparities in the resources to be provided and the programme to be taken up in each area or each community should be determined on the basis of a specific and local assessment of problems, resources and productive potential.

The main object of Mahajan's (1982) study is to measure and, in particular, to explain the differentials in the growth rates of income in the fourteen states of India over the period of 15 years covering the first three five year plans. The analytical frame work adopted for the explanation of the growth differentials centres on the behaviour of income, net output per worker, and of investment. The study examines the comparative growth behaviour of state incomes and changes in the sectoral distribution of income.
It follows from the above analysis that investment is crucial to the development of states, but not the sole determining factor. It seems that adequate investment has not been made in the states which have lagged behind, and more importantly, not in the form of modern, more productive means of production.

Study by Hemlata Rao (1984) suggests a methodology for identification of differentially developed regions, analysis of dimensions and typology of backwardness, causes of backwardness and formulation of homogeneous groups of regions for purposes of planning at the micro level.

Her study bridges the gap in the sphere of not only block level planning but also in various other strategies of backward area development. The main objective of this study is to identify backward talukas and present the typology of backwardness in development. Data has been collected on land utilisation pattern, cropping pattern, industrial structure and 85 development indicators for 175 Talukas of Karnataka from 1975-76 to 1979-80. The 85 indicators were reduced to ten sectoral indices of development and finally to one composite index of
development. Inter-relationship of various sectoral indices were examined. The structural variables and typology of backwardness have been studied intensively.

Dr. Sadhak (1986)\(^{[21]}\) has tried to examine the efficiency of the incentives and subsidies to promote industries in backward regions after studying the issues relating to the policy incentives of the central and state governments. The importance of the study lies in assessing the impact of the various incentives, particularly financial incentives on employment, income and socio-economic life in backward regions, with industrial growth in Aurangabad district as a core study.

The origin and expansion of regional disparities and the need for intervention and incentives to remove regional disparities in the light of some important location theories is discussed.

Further the extent of growth of institutional assistance, and its impact on industrial growth in terms of number of industries, industrial investment and employment is assessed. The efficiency of incentives is then examined to promote/attract industries in backward regions. The spread effect has been discussed in terms of emerging patterns of linkages and growth of entrepreneurship.
Sarma (1986) reflects on the regional disparities and levels of industrial development in different states in the country. An overview of the aggregate assistance of all-India Financial Institutions to different states and to backward areas in the country is presented. A sector-wise and scheme-wise analysis of IDBI assistance is undertaken with special references to Andhra Pradesh. Two important aspects namely, that of Cost overruns in projects set up in backward areas and the performance of IDBI assisted units in backward areas are also dealt with.

Surendar (1986) attempts an empirical examination of growth, structure and location of Indian Industries. The five fold objectives of this study are:

1) to study the nature and extent of industrial growth that took place in India during 1961 to 1978-79.

2) to examine the structural changes that were brought about from time to time.

3) to know how far the benefits of industrial growth have percolated to the different regions of the country.

4) to analyse the localisation and dispersal of industries and to examine the impact of industrial growth on industrial base/structure of different states in the country.
5) to critically evaluate the industrial dispersal policies in India in terms of their effectiveness in bringing about greater dispersal of Industries.

He has highlighted the importance of industry in the national economy and examined the nature and extent of industrial growth, both period-wise and industry-wise. He has shown the changing importance of different types of industries and the role of public sector in bringing about the structural changes. Regional aspects of industrial growth are presented, and the industrial dispersal policies and programmes in India are evaluated with respect to their effectiveness in bringing about greater dispersal of industries.

Dr. Satyanarayana's (1989) work is a study of industrial development of Anantapur district in Rayalseema region, one of the 23 districts of Andhra Pradesh. He has discussed the problems and prospects of the Industrial development of a draught prone district, like Anantpur, one of the six chronically draught prone districts in India. He has analysed industries of all sizes, that is, large, medium, small and village and cottage industries. He has outlined the industrial development before and after the establishment of District Industries Centre (DIC) and impact of DIC on Industrial development.
Krishnmurthy (1990) attempts an empirical analysis of regional industrial development of those areas experiencing faster industrial growth in recent years. Assessing the impact of official programmes and institutional support in bringing about regional balance through industrial development, the study is based on a wide range of primary and secondary data.

Development of Industries, such as small scale, medium and large scale have been analysed in terms of number of units, workers employed, investment made, gross value of output and net value added by manufacture. It broadly reflects the changing pattern of industrial development and provides an insight into the process of industrialization in Andhra Pradesh and its constituent regions over a period of time.

It outlines region/district-wise status of existing industries and examines the pattern of industrial dispersal within and between regions of the state with the help of statistical measures such as location quotient, coefficient of localization and specialisation coefficient.
Dr. Awasthi's (1991)\(^{(26)}\) is an important contribution to the much vexed question of optional policies for regional diversification. His contribution is analytical and goes a long way in exploring the structural determinants of the regional spread of industrialisation in India. An attempt has been made to identify the more important industries in the national economy which, in turn have bearing on regional growth profiles. The growth profile of various states has been discussed in the backdrop of this analysis. An attempt has also been made to gauge the extent of inter regional inequalities in industrial development. A shift in share of the manufacturing sector of the various states has also been carried out. The impact of inter industry linkages on the growth profiles of the state, in an Input Output frame work is examined. The role of various factors in explaining inter regional variations is examined with the help of multiple regression models.

Dr. Awasthi finds that regional inequality in industrialisation in India is decreasing. But the absolute distance between the industrial and other states
is still large. He observes that the spread and growth of unorganised industry is independent of the organised sector, atleast the regional matrix and that agricultural and industrial growth are not always interrelated at the state level.

The more interesting part of his work is the use of an analytical framework which uses demand and supply side factors to explore the regional spread of industrialisation. He finds that demand and supply side factors are more important and are getting to be more so as India's economy diversifies. He finds only agglomeration economies and power supply important on the supply side.

Dr. Awasthi argues that competitive incentive policies do not necessarily help as finance is not the only input. Direct and indirect government policies towards industrialization must, to be effective, rely on an understanding of the basic structural factors at play. This is the major plank for take off in our study wherein attempt is made to formulate a macro economic model with the informal sector as a crucial catalyst.
Aggrawal (1991) examines the cost of the backward area development allowance and assesses the impact of the incentive on development of industrially backward areas.

The evaluation of the role of the Backward Area Development Allowance (BADA) in the Scheme of incentives in India has been undertaken in this study. An evaluation of the Government's policy of industrial dispersal to backward areas and the various related incentive scheme's including BADA is attempted. Aggarwal discusses the criteria used in identifying industrially backward areas in the different states and Union territories. It enumerates the various incentives which are available from the government and point out their merits and demerits. He presents an estimate of the cost of backward and development allowance. The tax revenue forgone by the exchequer due to the tax incentive is taken as the cost of the incentive and is estimated on the basis of a sample of beneficiary companies. It analyses the impact of BADA on the development of backward areas. This is done in three steps - First inferences are drawn about the impact of BADA from the combined impact of the various incentive schemes on industrial dispersal. Second the impact of
BADA is isolated from the combined impact of the incentive schemes and a statistical test of the effectiveness of BADA is conducted. Third, the extent to which the trend of industrial dispersal may have influenced development of the backward areas is examined. It also deals with the administrative aspects of the scheme, such as problems of enforcement, litigation and misuse of the provisions of the incentive.

According to this study BADA and other dispersal incentives of the 1970s successfully promoted industrial dispersal and this in turn contributed significantly to the development and structural transformation of backward areas. During 1971 to 1981, development was faster in backward areas than in the developed areas. But in relative terms, backward areas of the identified backward states remained industrially stagnant in comparison with backward areas of the developed states. This suggests that to mitigate regional imbalances in development, backward areas need to be identified on the basis of modified norms and dispersal incentives should be positively related to the backwardness of different areas.
2.5 STUDIES ON TIME AND COST OVERRUNS.

Some of the time overrun and cost overrun studies are as under:

STUDIES BY THE RESERVE BANK OF INDIA:

The Reserve Bank of India has conducted a series of studies on time lags in the implementation of Industrial Projects. The first of these studies analysed a sample of 91 companies which were registered in the second plan period. This study is divided into four parts. In the first part some salient features of the companies covered in the implementation of projects are presented. The second part deals with the analysis of time lags involved in the implementation of projects. The third part of the study examines financial aspects of the time lags and delays in project implementation as reflected in the actual project cost and cost overrun in relation to estimated project cost and in the results of financial working of companies after commencement of commercial production. Finally, in the fourth part the main conclusions emerging from this study regarding time lags in project implementation and profitability of investment are given.
Out of 91 companies covered in this study, 47 projects (or 60% of the companies) completed their projects involving a time-lag of 3 to 4 years between the date of incorporation and commencement of production. More than one-third of the companies took periods exceeding 4 years to complete their projects. Only 4 projects were completed within 2 years. Thus a period of 3 to 4 years would appear to be a normal time-lag from the incorporation of a company to commencement of production.

The study concludes that the normal construction period for the project was of 18 to 36 months between the acquisition of land and commencement of production depending on the type of industry, size of project etc. The main reasons for delay in implementation of these projects were delays in finalising financial arrangements, financial difficulties, locational disadvantages, inadequate irregular supply of power, materials and machinery or indifferent and inefficient management.

The study also indicates that the time-lag involved in the implementation of a project from the date of obtaining an industrial license to the stage of
commencement of commercial production for a majority of companies exceeded 3 years, nearly 36% of the companies took 3 to 4 years for completing the projects.

The delay in the execution of projects caused overrun in capital cost of projects and imposed a heavy burden of financial overheads and pre-operative costs on these companies even before commencement of production. In case of 73 companies which were covered, the average cost overrun was 26%.

The main causes of cost overrun were selection of wrong technology, uneconomic size of the production unit, locational problems which were responsible for a elongation of time-lags and consequent losses.

The second study\(^{(29)}\) by Reserve Bank of India on time lags in implementation of industrial projects and return on investment covers 63 medium sized public limited companies incorporated during the Third Plan period with paid up capital not exceeding Rs. 50 Lakhs and project cost not exceeding Rs. 1 core. The progress of implementation of projects of the companies in the Second study has been traced and analysed upto April 1967.
Considering the time-lag between incorporation of companies and commencement of production, of the 63 companies, 37 companies or above 60% of the selected companies had completed their projects by April 1967. 29 companies took about 3 to 4 years. In the earlier study of large sized companies also, this lag was of 3 to 4 years. There were 26 companies whose projects were incomplete out of these 23 companies had already taken up a period exceeding three years from the date of incorporation and still could not complete their projects. Thus the time lag of 3 to 4 years appears to be the usual lag between incorporation of a company and commencement of production in respect of small sized projects covered this study and in the case of large projects covered in the earlier study.

The various reasons for long delays in the progress of projects were some basic weaknesses in the selection and formulation of promoters, quality of management and level of its technical competence.
In the analysis of project cost overrun in the second RBI study, 35 companies were covered. There were wide variations from company to company. In respect of 9 companies cost of project did not exceed estimated cost and it was less than 10% in case of 4 more companies. On the other hand, projects of 13 companies had cost overrun of 25% and more.

The third study by Reserve Bank of India deals with the finance of companies under construction and time lags on commencement of production for the period 1971-72 to 1975-76. The study discusses the financial structure of non financial, non-government Public Limited Companies which were in construction stage for any two successive years for the period 1971-72 to 1975-76 in the first part. The second part deals with aspects of time lags in the project completion, in respect of companies which have gone into production.

Analysis of time lags covers, 134 companies which were registered during 1970-71 to 1975-76 and which went under operation, during this period. Out of 134 companies, 53 companies (or 40%) had gestation period of 1-2 years while 42 companies took 2-3 years to start commercial production. The time-lag was 3-4 years for 29 companies, 4-5 years for 9 companies and 5-6 years
for one company. Thus the average time-lag from the year of incorporation of a company till its going into production was 2-5 years for the present sample, while it was 3-4 years in the earlier studies, so time lags during 1971-72 to 1975-76 was smaller compared to the earlier studies.

Industry-wise classification shows that the average time-lag in the case of non-manufacturing industries like agriculture and allied activities, mining and quarrying, trading etc the average time-lag was 2.2 years.

Size-wise analysis of projects in terms of total net assets indicated that companies with comparatively small capital outlay took less time to pass through the construction stage.

The pattern of assets and liabilities of companies with different gestation lags did not show much variation over the years. Share capital and borrowings accounted for over three-fourths of the total liabilities and showed a declining trend with the implementation of projects. Thus the results of the study show that companies relied on borrowed funds for
completing the construction work at later stages. Cash and bank balances, particularly in the case of companies with larger gestation periods depicted a rapidly diminishing trend with the progress of construction work. V.P.Chitale (31) in his study attempts to evaluate the impact of sharp escalations in investment costs, since the mid-sixties, on viability of over 200 industrial projects which have gone into commercial production or were under implementation in the seventies. He has made an analysis of trends in project cost over the decade 1966-76. He points out that overruns are a peculiar phenomenon of the seventies. In his study out of 88 industrial projects with cost overruns, 68 projects were in 1973-74 to 1977-78, while 4 projects reported overruns in late sixties. Thirty-seven projects had overruns of less than 25 percent, 27 within the range of 50 percent to 75 percent and the rest by over 75 percent. If we see the industry-wise picture we find that engineering chemicals, textiles, paper, fertilizers, sugar, tyres and tubes industries had high overruns.
According to Chitale's opinion rise in prices of plant and machinery, exchange rate fluctuations, project delays, under estimation of cost, uneconomic size of plants are mainly responsible for cost overruns. Further, according to him, strong preference for capital intensive production, under-estimation of cost, defective project planning and implementation are equally responsible for over-shooting of costs.

Project cost overruns is closely related to the problem of time overruns. More implementation delay can result in lower economic return than previously anticipated. The delays on later stages of project implementation may be more costly, as larger quantum of capital is tied up in a project yielding no benefits. He also stressed that the various controls and regulations hitherto imposed by government and the sanctions and approvals which have to be obtained from institutions and other agencies are responsible for the delay in the implementation of project, gestation and teething troubles at installation and production stages cause further delays in the execution of projects. He opines that industrial projects have lost their viability and survival capability under the impact of sharp escalations in investment cost at the grass root level.
Mehta and Sekhar try to assess the efficiency of the private corporate Sector as well as the past record of development finance institutions in terms of their operations.

The sample consists of companies assisted by the IDBI, IFCI and ICICI, confined to private sector units excluding those projects which were being modernised or rehabilitated. Projects sanctioned assistance during 1965-66 to 1974-75 were considered. This resulted in 139 projects being selected as Sample-I, Sample II consists of all private sector units, irrespective of size, which were sanctioned direct assistance by IDBI during 1965-75 and numbering 152.

The average delay for projects in Sample I, was observed to be 9 months while it was 14 months in Sample II, cost overrun in Sample - I was 19% while it was 26% in Sample II.

Industry-wise, Sample - I reveals that time and cost overruns are the least for the consumer goods industry followed by capital goods, chemical and fertilisers and metal products. Time and cost overruns
for Sample II revealed the same picture. Projects set up by new entrepreneurs experienced substantially higher delays and cost overruns compared to existing ones in Sample I. For sample II though delays were larger in case of new entrepreneurs, the cost overrun was almost the same for both types of projects. According to location, projects situated in backward areas had significantly lower cost overruns for both samples.

The evaluation of the operational performance of the corporate sector has focussed attention on three performance indicators viz. Gross operating surplus/Sales, Gross operating surplus/Total assets and Gross value added/Total assets. The projections and actuals for these ratios have been calculated as the average value of each ratio over a certain period of operations of the company revealing that achievements have been significantly lower than projected ones.

Another study was done by IDBI (33) of the time and cost overruns in projects assisted by IDBI during 1964-65 to 1979-80. This study covers 289 IDBI assisted private sector projects. The study has revealed that 76% of the assisted projects had cost overrun while 85% of the projects had time overrun. The average cost
overrun for all the projects was 23.3% of the total initial project costs and average delay in implementation was 10 months. Time and cost overruns were high in case of projects which were sanctioned assistance during 1970-71 to 1974-75.

Industries like glass manufacturing, rubber products, metal products, basic metals and basic chemicals had relatively high cost overrun while cement and fertiliser projects had lower cost overrun.

A component-wise analysis of cost overrun has revealed that the highest overrun was in respect of working capital. Other components which shared relatively high cost overruns were land and buildings, miscellaneous fixed assets and preliminary and pre-operative expenses. About 40% of the projects were affected by escalation in construction cost while rise in price of indigenous machinery affected 35.3% of the projects.
The analysis of cost overrun done in this study brings out two categories of causes which were mainly responsible for cost overrun. Under the first category, there were causes like price rise, enhancement of import duty, change in parity rate of rupee etc. which were beyond the control of the promoter and financial institutions. Under the second category were the causes which resulted from lapses on the part of the promoters and, to some extent, on the part of appraisal teams.

There are a number of factors, on account of which delays occur in the implementation of projects. These could be external, managerial, technical and financial. External factors are normally beyond the control of the promoters or the Development Financial Institutions (DFIs) like natural calamities, strikes or lock-outs in factories
of equipment suppliers etc. Some managerial problems such as inexperience of promoters, lack of knowledge of procedures, inefficiency in coordination and implementation call for greater attention. Technical problems relate to lack of proper collaboration arrangements, failures to get detailed engineering data in time, change of technology or project concept etc. Project delays appear to have become too common and overwhelming in India, because time as an element of cost is often ignored. According to the report, as many as 85% of the projects could not be completed on time.

The most important reason for time overrun was delay in delivery/receipt of machinery. This could happen owing to delay at the promoters’ end, such as delay in placing order for machinery etc. or arranging for finance or delay at the suppliers and resulting from selection of wrong supplier or strikes/lockouts at suppliers factories etc. Next important cause was the delay in the tying up of financial arrangements/getting govt. consents/finalising technical collaborations, about 30% of the projects were
faced with these problems. It may be mentioned that the procedures involved in getting requisite approvals from various departments of central and state governments and local authorities considerably contributed to the delay. Other important causes were change in location/layout/technology, shortage of construction materials, power shortage, improper project planning and poor implementation.

Mrs Chugh's study (1986) (34) evaluates the effective uses of project appraisal techniques. In order to assess the effectiveness of project appraisal technique, a comparison of the financial institutions' ex-ante data at the appraisal stage with the ex-post actual data when the project has been completed and has been in operation has been made to indicate how realistic are the assumptions made at the time of appraisal.

The operation performance in this study is examined in terms of seven ratios, namely Gross profit/Sales, operating, profit/sales, Return on capital employed, current ratio, Debt/Equity Ratio, Dividend Rate and capacity utilisation. The operating performance in this study relates to the individual years as well as to the simple average of the ratios over years.
The sample for the above study, comprising of 145 projects, was chosen from private sector projects sanctioned assistance during the calendar years 1970 to 1975, either by ICICI alone or jointly with IDBI and IFCI. The operational performance of projects for which assistance was sanctioned during 1970 to 1975 has been analysed using information even upto 1982-83.

The evaluation of the techniques of appraisal has been done at two levels (1) for the establishment of projects and (2) for operational performance of the projects. The establishment of projects has been studied from the aspect of time overrun of a project and its cost overrun. For evaluation of the operating performance, the analysis has been made by comparing the appraisal estimates of the various financial ratios mentioned earlier with the actual magnitudes of these ratios. The analysis of the seven different ratios have been done for each year of operation for a period of five years and for the average of five years.

The time overrun, cost overrun and evaluation of operating performance of projects has also been analysed by categorising projects on the basis of various relevant
aspects such as the year of assistance sanctioned, industry, size, new or expansion purposes, new or existing entrepreneur, located in backward or non-backward areas, set up by MRTP or non-MRTP companies and those with or without foreign collaboration.

Ministry of Programme Implementation-Report-I

Cost and time overruns continue to plague the central government projects with as many as 39 projects being affected by it. According to the Ministry of Programme Implementation's report all the 11 projects of the Department of steel have been delayed for periods varying from 3 months to 18 months, and the cost overruns vary from 36% to 231%, in the case of individual projects. From the original approved commissioning dates, the time over-runs vary from 19% to 345%, and the cost-run is estimated to be varying between Rs. 4650 crores to Rs.12700 Crores.

Major reasons reported for time overruns in the steel projects include the delay in the supply of indigenous and imported equipment and slow progress of work by public sector Contracting agencies for Civil
construction works. Delays are also attributed to slow pace of getting clearances at different levels in the government and poor project management. The report says that major reasons for cost overruns are frequent change in scope and design leading to consequent delay in completion of detailed engineering work uncertainty of costing, rise in interest rates during construction and inflation.

A brief analysis of the three projects of the Department of Mines has shown time overruns varying from 28% to 67%. The overall cost overruns, of these projects is anticipated to be 79.5%.

So also a number of hydro electric power projects have suffered heavy change in scope, project content and other related technical parameters mainly due to the fact that these projects were initially started by the State Government without adequate preliminary survey.

In respect of the super Thermal Power Projects the delays were mainly during the initial periods, requiring various Government clearances and funding arrangements with agencies like the World Bank. In the case of transmission lines, delays are anticipated on account of want of forest clearances for the stripping of forest land required to provide the safety corridor.
for the high voltage lines and for meeting the requirements of providing an acceptable compensatory afforestation programme.

In case of railways, 20 projects have been delayed by 3 to 132 months. The delay is attributed to the thin spread of available funds over several projects. The railway projects monitored by the Programme Implementation Ministry have shown cost overruns ranging from 20% to 470%.

All the six projects of Department of Public Enterprises Costing over Rs. 100/- Crores have shown time overruns ranging from 9.3% to 167%. Except in case of Maruti Udyog Ltd., all projects have shown cost overruns ranging from 60.4% to 169.8%.

The two cement expansion projects of the Department; Nayagaon and Erranguntla have shown delays since January 1985 as a result of rescheduling due to inadequate funds.

Four captive power projects of the fertilizer plants have been delayed because of the delay in erection as well as late delivery of equipment by indigenous manufacturers.
Of the 62 projects of the Department of coal only 32 projects were on schedule. The overall anticipated cost overrun of these projects ranged from nil to 440% with an average of 52%. The time overrun varied from nil to 205%.

Ministry of Programme Implementation Report-II

The report's main emphasis is in the area of monitoring the implementation of projects. The Ministry believes that monitoring of production performance in the industrial infrastructure sectors and the monitoring of the projects are two facets of the same industry. According to its reasoning "whenever a project is completed, production starts. Thus, monitoring of project implementation logically precedes the monitoring of production performance. Similarly, without infrastructure support, project implementation is hardly possible". From here it proceeded to examine the progress made in 13 infrastructure sectors where the Seventh Five Year Plan made a financial allocation of Rs. 95040 Crores.

Projects which are picked up by the ministry for scrutiny and monitoring have an approved capital expenditure in excess of Rs.20 Crores. The Ministry
had 290 projects in 13 sectors under its purview - an increase of 104 projects over the year 1985-86. The total cost of projects covered is now an estimated Rs. 69317 crores. For effective handling of these projects it has classified projects into three categories - mega, major and medium. In the mega category, where each project costs Rs. 1000 crores or more, there are about 12 projects under implementation, with a total cost of Rs. 25,026. As for major projects, each costing between Rs. 100 crores and Rs. 1000 crores, there are 108 under implementation, costing in all Rs. 35,553 crores. Finally, there are 170 medium projects - each with a cost between Rs. 20 crores and Rs. 100 crores - under implementation, with a total cost of Rs. 8738 crores.

The monitoring of projects involves two methods. All projects costing more than Rs. 100 crores are assessed through a monthly flash report focusing on project management. The Ministry is of the view that the flash reports help to create a great deal of consciousness about achieving monthly targets, but the monitoring in itself would not be able to solve the problems unless the suggestions are expedited. Then there is quarterly monitoring of medium sized projects between Rs. 20 crores and Rs. 100 crores.
During the year 1986-87 there were 15 major projects which were completed and 12 projects were found to have cost overruns varying from 38% to 282%. However, some savings against the original capital cost were recorded in the case of two developmental projects of the Oil and Natural Gas Commission, and the acquisition of four product tankers. Five medium projects costing over Rs. 20 crores but less than Rs. 100 crores were completed during the year.

One of the Ministry's most important tasks was bringing out notes on mega projects which are placed before the Committee of Secretaries. It noticed endemic time and cost overruns in the majority of the projects. Out of the projects under the flash report system, 58 projects had been delayed with reference to the original time Schedule. The escalation in capital cost in these 58 projects shot up from Rs. 21221,54 crores to Rs. 37119,44 crores and stood at an average of 75%. Even in projects which were completed on time, there were cost overruns of an average of 15.6%.

In its examination of the causes leading to time and cost overruns the report pointed out that from the pre-investment and project preparation stages to the final
stage there were innumerable flaws hindering progress at every stage of implementation beginning with delays in acquiring land to organisational weaknesses which often brought projects to a halt. According to the Ministry, "rigorous discipline and accountability for commissioning of projects by the forecast dates is still woefully lacking.'

The subsequent sector by sector analysis of the report has in detail revealed the specific problems responsible for cost escalation and time delays. In the Department of Atomic Energy the long gestation period involved in assimilating foreign technology, have hindered the completion of atomic power projects. A mega project in chemicals and petrochemicals sector, the Maharashtra Gas Cracker Complex, according to the report did not pick up momentum till recently despite its approval in 1984, because of change in design due to revision in basic technology package and delays by the World Bank in giving approvals.

Many of the mega projects involvig expansion in some steel plants and the construction of the Vishakhapatnam Steel Plant have been a major source for cost escalation in the public sector. The same is the case for coal, petroleum and natural gas and power.
Additional investment of over Rs. 95000 crores in the public sector during the Seventh Plan represents the faith placed in public sector investment as an engine of growth with a social purpose. Sources and extent of information on the Public Sector are Limited. The Bureau of Public Enterprise (BPE) and the Parliamentary Committee on public undertakings (COPU) have hitherto been the two main sources of published data and information on the performance of the public sector units (PSU). A third source is the Annual Report of the Ministry of Programme Implementation (MPI).

In a short span of three years, MPI reports have matured as by far the richest source of information and insight into the working of PSUs. The MPI reports do not duplicate the ground covered by BPE reports which provide mainly financial figures and ratios about investment/output/profitability, etc, of individual PSUs as well as for groups of them by broad industrial category.

MPI gives us a view of the two most significant aspects of development endeavour, namely, cost and time
overruns. In many projects, overruns of time are even more critical than those of cost, because of the disruption they cause in inter-sectoral balances which affects the economy as a whole. MPI’s important contribution is that it traces the journey of each project from the date of approval till its commissioning and provides an estimate of and reasons behind, the extent of variation in cost and time; this formative stage of a project is crucial to the particular project itself because it substantially determines its competitive and survival prospects in its subsequent production career.

As on September 30, 1987, there were 14 mega projects with a combined investment of Rs. 27,799 Crores, 110 major projects with Rs. 38,560 crores and 187 medium ones with Rs. 9351 crores. The Share of each category i.e. mega, major and medium, in total investment of Rs. 75,610 crores was 14%, 36% and 52% respectively.

MPI points out that not only is the state-of-the-art of project management in several sectors unsatisfactory, but the monitoring system "has not been able to make a dent in containing the time over-runs in the projects. In fact the number of projects reporting implemented delay in the first nine months of 1987-88 has shown an upward trend, which is rather disturbing. Vigorous discipline and accountability......... is still woefully lacking." It is
the first time that a public document has taken the courage to serve the public with some estimate of the cost of delay to the national economy. The cost of delay in implementing is Rs. 14,550 crores. It is, as MPI says, "truly enormous" and would "seriously vitiate the initial appraisal of a project with regard to its financial viability."

Monitoring is only a means to an end, says MPI, and that the aim is to ensure completion of a project on time. The foremost delaying factor is the rapid turnover of project co-ordinators at the top. Based on a survey of projects each costing more than Rs. 50 crores, it was recommended that "appointment of the project Co-ordinator in future should be made in a manner that his or her tenure covers not only the implementation period of the project but also a couple of years beyond."

A relatively new factor to which delays have been attributed at the pre-investment and project preparation stage is the 'Forest & Environment Clearance; and it is evident from the MPI report that even where such 'Clearance' has been obtained from the concerned Governmental agencies, there are objections/obstructions by tribal and other groups who are affected and face displacement. Without a clearance from below, delays on
this account would continue to dog the huge projects in the same proportion as environmental awareness increases.

Delays on account of environmental clearances take place mainly due to the reason that the coal companies are not yet equipped to prepare environmental Management Plans as per existing standards prescribed by the Department of Environment.

Another source of delay is the requirement of obtaining the equipment from indigenous suppliers. Ironically, most projects set up in the cause of 'Import Substitution' themselves harbour inhibitions against indigenous supplies. Reading of the MPI report shows that there is a lack of firm and in-depth planning of procurement and keeping in close touch with suppliers at different stages of production.

Projects which are allowed access to imports have their own tale of woeful sorrows - "delay in DGTD/Import license/Foreign Exchange release/other clearances" and delay on supply of critical equipment, much of which the New Economic Reforms has sought to rectify.
The strongest impression the reading of the MPI report leaves on the mind is that today the prime question is not whether public sector, but how much public sector we can successfully manage, the report lists "organisationed weakness in project management" including non-availability of managerial talent of a high order" as one of the main causes for time and cost overruns. If good managers are scarce then the scope for public sector will be limited not so much by policy as by practicality; since the situation calls for selectivity in areas of public investment rather than spreading it thin.

2.6 CONCLUSION:

The above mentioned foreign and Indian studies clearly show that current pattern of capital investment has tended to promote large and capital intensive industries, therefore the basic objective of employment generation through industrial development could not be achieved to any significant extent. It is therefore necessary that an alternative strategy is to be thought of including industrial investment in backward regions, simultaneously permitting the optimal utilisation of local resources and full employment of manpower.
In India present economic policies of government, low interest rates, investment-allowance and its labour laws encourage capital intensive technologies, though capital is scarce in developing backward economies. These factors distort the factor prices and result in a pressure on the relatively scarce factor-capital and an inadequate demand for the under-utilised or abundantly available factor-labour. Since labour is the under-employed factor in backward areas, development will continue to be slow unless it is utilised fully. To ensure an effective utilisation of labour, a payroll subsidy, i.e. subsidy as a proportion of total wage bill paid, has been suggested by Dr. Swaminathan, while Dr. Sadhak suggested the introduction of 'Resource linked employment subsidy' in place of capital investment linked subsidy.

Speaking from a methodological point of view, it is observed that the studies under review, even the ones which were theoretical in nature did not propose a macro framework which would handle disparities in economic development in a consistent manner. The reason is obvious, being that, there can be no such macro view unless the intrinsic features of the backward and
developed areas are woven into an analytical model. Thus most of the studies have confined themselves to the identification of causes for backwardness. When it comes to development financial institutions, it is seen that they stress more on the viability of projects rather than from the point of view of ameliorating conditions of backwardness in the regions. It is also found that in the matter of cost and time overruns industrial units located in backward areas depict a lower cost overrun profile. What however is left out in this process is an estimate of the actual impact made by the setting up of industrial units in the backward areas in terms of employment generation, poverty removal and elevating standards of living.

The next chapter deals with another angle from which theorists have looked at the problem of regional backwardness by formulating location theories. It must be observed that it is a moot point as to whether location of industries is determined by the state of regional economic development or whether economic development of the region is determined by the location of industrial units!
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