

2904-

**INDUSTRIAL GROWTH IN  
MADHYA PRADESH: STRUCTURE AND  
ECONOMIC BACKWARDNESS**

*Thesis submitted to the*  
**COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY**

*for the award of the degree of*

**Doctor of Philosophy**

**IN**

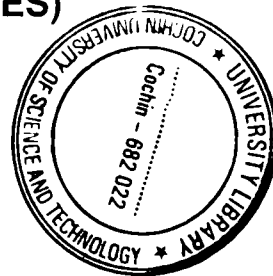
**ECONOMICS**

**(FACULTY OF SOCIAL SCIENCES)**

*by*

**JALAJA N. R.**

**Reg. No. 1549**



*Under the Supervision and Guidance of*

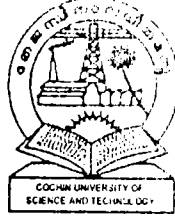
**Dr. M. K. SUKUMARAN NAIR**

*Professor*

**DEPARTMENT OF APPLIED ECONOMICS  
COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY  
KOCHI - 682 016, KERALA**

**NOVEMBER 2004**

**DEPARTMENT OF APPLIED ECONOMICS**  
**COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**KOCHI - 682 022, KERALA, S. INDIA**



Phone : 0484 - 576030, 575943  
Fax : 0484 - 576030, 575943  
E-mail : [appliedeconomics@cusat.ac.in](mailto:appliedeconomics@cusat.ac.in)

Date ...9...11...04.....

**Certificate**

Certified that this thesis "*Industrial Growth in Madhya Pradesh : Structure and Economic Backwardness*" is the record of bonafide research work done by **Ms. JALAJA N.R** under my supervision and guidance. The thesis has not previously formed the basis for the award of any degree, diploma, associate ship, fellowship or other similar title of recognition.

Dr. M.K Sukumaran Nair  
Professor  
(Supervising Guide)

# CONTENTS

	<i>Page</i>
List of Tables	
List of Figures	
<b>Chapter I INTRODUCTION</b> .....	1
1.1 Introduction .....	1
1.2 Significance of MP as a case study .....	3
1.3 Statement of the problem .....	5
1.4 Review of literature.....	6
1.4.1 A Review- regional disparities and development.....	7
1.4.2 Studies showing industrial growth .....	14
1.5 Objectives.....	18
1.6 Methodology .....	18
1.7 Period of Analysis .....	20
1.8 Limitations of the study .....	21
1.9 Organization of the study .....	22
<b>Chapter II DEVELOPMENT OF MADHYA PRADESH ECONOMY-A COMPARATIVE ASSESSMENT</b> .....	27
2.1 Growth performance of the States.....	27
2.2 Comparative profile of poverty .....	38
2.3 Backwardness of Madhya Pradesh-The evidence.....	42
<b>Chapter III PACE AND PATTERN OF INDUSTRIAL GROWTH</b> .....	57
3.1 Methodology .....	58
3.2 Industrial Profile of Madhya Pradesh .....	58
3.2.1 Large and Medium Industries in MP .....	62
3.2.2 Small Scale Industries .....	68

3.3	Inter State Disparities in Levels of Industrialisation.....	71
3.4	Growth Trends in SDP by manufacture in MP .....	73
3.5	Growth Trends in manufacturing registered vs un registered... ..	75
3.6	Macro Growth Trends in the Factory Sector.....	76
3.7	Growth Trends: industries at 2 digits NIC .....	81
<b>Chapter IV INDUSTRIAL STRUCTURE OF MADHYA PRADESH.....</b>		<b>90</b>
4.1	Structural Diversification of the Growth Pattern .....	93
4.1.1	Changes in Sectoral Distribution of workers .....	95
4.2	Changing industrial Structure of Madhya Pradesh .....	98
4.3	Structural ratios and technical coefficients .....	107
4.4	Infrastructure penetration in MP .....	114
4.5	Cost Structure and Profit pattern.....	117
<b>Chapter V CONCLUDING OBSERVATIONS.....</b>		<b>127</b>
<b>BIBLIOGRAPHY.....</b>		<b>139</b>

## LIST OF TABLES

<i>Table No</i>	<i>Title of Tables</i>	<i>Page No</i>
2.1	Changing share of the major states in the all-India economy.....	29
2.2	Index of Per Capita State Domestic Product at constant prices 3 year averages.....	31
2.3	Ranking of States on the basis of Per Capita State Domestic Product ....	32
2.4	Rates of Growth of Gross State Domestic Product .....	33
2.5	Sectoral GSDP growth rates in Madhya Pradesh and all India .....	36
2.6	Percentage of people below poverty line in rural areas.....	38
3.1	Year wise details of LMIs established in Madhya Pradesh.....	63
3.2	Product group wise summary report of LMI units established in MP.....	64
3.3	District wise report of LMI units established in MP .....	65
3.4	Information of small scale industries registered in MP .....	69
3.5	Inter state disparities in levels of industrialization 1960-61 to 1997-98 .....	72
3.6	Annual growth rates of NSDP by manufacture .....	74
3.7	Annual growth rates of registered and unregistered segments .....	76
3.8	Annual Compound growth rates of key variables in aggregate manufacturing in Factory sector.....	78
3.9	Relative share of MP in all India totals of key variables.....	80
3.10	Percentage contribution of different industries in total manufacturing sector in M.P .....	81
3.11	Growth rate of key variables of NIC 2 digit in the factory sector in MP .....	82
3.12	Annual growth rate of fixed capital in MP and all India- 2 digits.....	84
4.1	Percentage distribution of different sectors in MP and India to the total income at Constant prices.....	94
4.2	Broad sectoral distribution of workers in rural MP and India .....	96

4.3	Relative position of six major industries in MP .....	101
4.4	Coefficient of localization of major industry groups.....	103
4.5	Industrial contribution of MP 1984-85 and 1997-98.....	104
4.6	Industrial base of Madhya Pradesh.....	105
4.7	Structural Ratios and Technical Coefficients in industries for factory sector. ....	110
4.8	Some Structural ratios and Technical Coefficients in Major States.....	112
4.9	Pattern of Cost of Production and Profitability in Major industries.....	118
4.10	Industrial Cost Structure of Major States .....	120
<b>Annexure</b>		
II a	Capital Flows to States .....	54
II b	Selected Socio economic indicators of MP and All India.....	55
III a	Percentage shares of selected states in Employment Value added and Fixed capital.....	88
IV a	Net State Domestic Product of MP by industry of origin.....	126

## LIST OF GRAPHS

<i>Graph No</i>	<i>Title of Tables</i>	<i>Page No</i>
Fig 2 A	Movement in GSDP indices .....	30
Fig 2 B	Index of per capita 3 year averages .....	31
Fig 2 C	Trend rates of growth of per capita income.....	35
Fig 2 D (i)	Percentage of people below poverty line in rural areas.....	39
Fig 2 D (ii)	Population below poverty line in 1999-2000.....	40
Fig 2 E	Decadal growth rate.....	43
Fig 2 F	Yield of rice in India/MP.....	44
Fig 2 G	Yield of wheat in India/MP .....	45
Fig 2 H	Yield of total food grains in India/MP.....	45
Fig 2 I	Net irrigated area .....	46
Fig 2 J	Fertilizer consumption per hectare .....	47
Fig 2 K	Relative infrastructure index.....	49
Fig 2 L	Literacy rate .....	50
Fig 3 A	Indices of manufacturing .....	73
Fig 4 A	Generation and consumption of electricity .....	115

# CHAPTER I

## INTRODUCTION

### 1.1 INTRODUCTION

The industrial evolution of India under the British Regime during the second half of the Nineteenth Century had taken a very unsymmetrical shape, concentrating industries mainly in coastal regions. The industrial structure that we inherited from Britishers at the time of independence was purposely restricted to a few selected industries like textiles, sugar and steel including some limited development of engineering in railway workshops and assembly plants. The pace and pattern of industrialisation exhibited a distorted scenario owing to mainly articulated bias of colonial rules to expansion of raw material production, smallness of the domestic market, lack of investment climate, absence of entrepreneurship, lack of banking institutions and inadequacy of transport infrastructure. A drive for diversification of economy through rapid industrialisation was, therefore, considered necessary to ameliorate the basic conditions of providing employment to growing population, raising the standard of living of the people, improving the balance of payment situations and attaining self-sufficiency in the economy, besides reducing inter-regional disparities and creating employment opportunities to the surplus workforce over-burdening the agriculture sector.

It is also widely observed that almost all countries are trying to industrialise as far as possible. For, industrialisation is considered as sine qua non of the economic development and a panacea for the vicious problem of economic backwardness. However, the indiscriminate struggle for industrialisation in many countries has resulted into a regionally unbalanced



and lopsided economic growth, which manifests through a few islands of prosperity amidst the sea of pauperised regions. This unevenness arise several backwardness and poverty.

The pattern of industrial development observed from the historical experience shows that it gets concentrated in some urban centres leading to economic development of surrounding regions. To illustrate, Myrdal (1957) and Hirschman (1958) have given powerful concepts like “backwash vs. spread effects” or “polarization vs. trickling-down effects” to explain regional disparities. Given the cumulative causation hypothesis, Myrdal has argued that the play of market forces normally tends to increase rather than decrease inequalities between competing regions. Regions vary considerably in size and population density and these differences may have some effect on growth. Larger regions, for example, may benefit from agglomeration economies, but as the density of population increases and economic activity intensifies, congestion will occur and the land cost will increase. Therefore, the disparities have cropped up between the regions of a country while some regions have become prosperous and developed; others remained either backward or depressed. Hirschman underlined the tendency of ‘polarization’ of free market forces to increase inter-regional inequalities and propagated for government intervention. The theoretical formulations and empirical works of Kuznet (1955) and Williamson (1965) tell us that economic growth is associated with a sharp increase in inequality initially to be followed by a decrease later. Their notion of relationship between economic growth and inter regional inequality paved the way for convergence in per capita income. Convergence occurs when poor regions grow faster than rich regions. This implies a negative

relationship between the growth of per capita income (over several decades) and the level of per capita income at the start of the period.

Interestingly, the studies in the context of developed countries lead to a broad consensus on the 'convergence' thesis, whereas the conclusions emerging from most studies on India point towards the tendency of 'divergence'. In the absence of any systematic policy of location and regional planning, industrial development became concentrated. While, typical backward regions of the country, continued to lag behind, deprived of industrial investment and skilled manpower. Thus industrial development in India is concentrated only in a few centres like, Maharashtra, W. Bengal, Tamil Nadu, Gujarat and Andhra Pradesh.

If the dynamics of correlation between industrial growth and regional development is recognised in theory, there emerges an empirical question of the contemporary relevance in Indian context. Does the ongoing economic liberalization policy based on free market and open economy principles help industrial growth of the backward state-regions in such a way that the process reduces 'regional differentiation' and ensures a more balanced regional development across the state-regions as compared to the erstwhile industrialisation process based on the state-led command planning? An answer lies in the rationale and relevance of pro-market economic liberalizations for accelerated growth of industry in the context of structural, institutional and historical specificity of the concerned regions.

## **1.2 SIGNIFICANCE OF MADHYA PRADESH AS A CASE STUDY**

The economy of Madhya Pradesh is mainly agrarian, it is also characterised as one of the industrially backward states. According to Annual Survey of Industries (ASI) report, the total capital invested in the organised

sector of MP during 1997-98 was Rs 21445 crores and the total employment was of the order of approximately 4640 crores. The total state income during the same year at current prices was Rs 53435 crores out of which the total share of secondary sector was 21.94 per cent. Apart from the industrial backwardness, the state also suffered from alarming nature of inter-regional disparities in level of industrial development. This made the study more relevant in the context of Madhya Pradesh

It is well known that the Indian economy and society show tremendous regional variations and hence picking up a particular state or particular region may appear problematic in an a priori sense. However, undivided Madhya Pradesh (hereafter MP) happens to be one among the backward regions in India and its selection was primarily done because we preferred to assess the growth performance of undivided Madhya Pradesh in the context of ongoing liberalisation policy. The formation of a separate state of Madhya Pradesh will bring about a whole lot of changes in the present scenario especially as the mineral base of MP will go to Chhattisgarh. There is a vast gulf of difference between the undivided and divided Madhya Pradesh a keen study into the status of undivided Madhya Pradesh becomes inevitable as far as regional disparities in industrial development are concerned. The selection of the region was motivated by our understanding that the region symbolises the key strengths and weaknesses of some of the significant elements of India's development strategy-in particular the heavy industry-led economic transformation drive that unfolded after independence. Moreover, the region has a fair share of Scheduled Caste (SC) and Scheduled Tribe (ST) population, sections which were among the most neglected during the pre-NEP period, and who may be among the worst hit in the wake of NEP.

Moreover, looking to the past literature, there had hardly been any study carried out on this theme in the context of Madhya Pradesh. To bridge this gap, it was therefore, decided to undertake the study of 'industrial growth and structure of Madhya Pradesh'.

### **1.3 STATEMENT OF THE PROBLEM**

India adopted a development strategy based on central planning after independence. The industrial sector was highly controlled and was regulated through licensing mechanism. While the country achieved considerable progress in creating a sound and broad based industrial structure, its growth rate was modest. There has been a feeling since the 1980s that the country needs to be liberalised for achieving a high growth. A concrete shift in the policy towards liberalization has been introduced in 1990-91. There has been growth buoyancy in the general economy including industrial sector of many state-regions and the country as a whole, but inter state disparities continued to persist. And among such state-regions MP is one, which has lagged behind many other state regions. What explains the relatively poor performance of Madhya Pradesh state? This is the basic question that remains to be explored in this study. The other issues dealing with this study are: What is the effect of liberalisation policy on industry? Has it helped in accelerating industrial growth? This study is an attempt to address these issues in the context of Madhya Pradesh.

The growth theories generally hold the view that intra-sector as well as inter-sector relations are vital ingredients in economic growth, which is the outcome of a set of inter-related changes in the economic structure. Thus viewed, the nature of structural transformation in the economy has a central

role in guiding the growth trajectory of a state-region. On the basis of received theories it can be argued that industrialisation of a region has correlation with its overall development defined in its broader connotation of economic; social and human development dimensions. It can also be argued that industrial growth of a backward state-region of a country is conditioned by institutional and structural changes including infrastructure in that region. There should not be a dichotomous relationship between industrial growth and social development; both should reinforce each other. Other things remaining the same, a region with higher social and human development should have higher level of industrial development and the vice-versa. Industrial growth helps to strengthen the spread of literacy, education, health and other social and human development through its employment generation and income expansion ability. The case study of MP state is of particular significance to understand the relationship between industrialisation and economic development. In a sense MP is a normal example of a region with low industrialisation having the conventional norms of low per capita income and low social development.

#### **1.4 REVIEW OF LITERATURE**

A number of studies have been made in India and abroad about the economic development and inter-regional disparities in industrial development. They are individual studies in the form of books, articles and institutional studies in the form of reports of national and international agencies. But, for convenience, they are broadly classified into two groups.

- (a) Studies which have shown regional disparities and development
- (b) Studies showing deceleration in industrial growth

It has been realised that there is no alternative to eliminate poverty except rapid economic development. (Mishan, 1977) The important question about a country, state or region development is, 'what is happening to poverty, unemployment and inequality?' The problem of regional disparities in development is taken as in consistent with the concept of development. It is endemic to the development process contains empirical as well as theoretical formulation. Therefore, it would be a quite fruitful exercise to explore into the theoretical expositions and actual position in regard to regional disparities at the various scales of spatial units.

#### **1.4.1 A Review- regional disparities and development**

Disparities in the development has been a theme of great academic interest and practical significance during the post World War Second period when a large number of colonies attained political independence and became conscious of the distressing disparities that existed between those colonies and their erstwhile colonial master. The contemporary world consisted of two different realms; one that of the west, immensely rich, industrialised, urbanised and with a history steady development since the industrial revolution, the other of newly independent countries, abysmally poor, agricultural, rural and with an equally long history of exploitation and stagnation. This dualism could not escape the concern of academicians, politicians and administrators.

Several studies were undertaken and numerous theories were postulated to explain the global duality of development and underdevelopment. Theories emphasising intra-regional factors assign importance to factors relating to natural resources, technical advancement and

social institutions, which widened the acceleration process of development in any areas. Nurkse's (1958) 'vicious cycle theory' presented an attractive idea that underdeveloped countries were trapped in a series of interlocking problems of poverty and stagnation.

Boeke (1953) attributed underdevelopment in the oriental world to limited needs, backward sloping supply curves of effort and risk taking, and an absence of profit seeking attitude. He stressed that the eastern society was moulded by fatalism and resignation. His gloomy analysis was rightly questioned by a number of scholars including Lewis, Baner and Yarney. (See Higgins, 1976 p.284)

McClelland (1961) found a high association between a country's level of achievement motivation and rate of its economic development. Hagen (1962) postulated 'authoritarian theory' holding feudal bringing up of the children responsible for the economic development of a country.

Theories reviewed above explained development and underdevelopment in an area and regional disparities accruing to their intrinsic conditions. Role of social, psychological and spatial factors were emphasised. The historical perspective was strong in most of them.

Theories emphasising spatial interaction viewed development and underdevelopment as the two facets of the same coin. Development in one region was at the cost of underdevelopment in some other due to operation of 'backwash effect'. The spatial interaction theories derived their meaning from three different contexts of an economy. These are free market mechanism, colonial setting and neoclassical situation. Free market mechanism was always

biased in favour of developed areas. 'Centre-periphery theory' by Friedman (1966), 'Core periphery theory' by Hirschman (1958), and 'Circular and Cumulative causation theory by Myrdal (1957), represented in this context. These theories are well known and need no elaboration. The second was colonial setting; this was well illustrated by Kundu and Raza (1982) and in the writing of Marxist scholars such as Davey (1975) and Pavlov et al., (1975). The third context was postcolonial situation in which the newly independent developing countries remained dependent on developed countries and found it difficult to extricate them from the network of exploitation. Amin (1974, pp.136-302) called this process 'peripheral capitalism'. (See Hinderink and Sterkenburg, 1978, p.10) The other exponents of this idea were Potekin (1962), Fanon (1963), Baram (1970) and Frank (1972).

Most of the scholars referred to above tried to explain multifaceted and multi casual phenomenon of development and regional disparities in development by a one-dimensional theory. This accounted to some distortion of the fact. Therefore, to reach on a conclusive result an in depth analysis of ground realities in regard to development disparities in different regions and various countries of the world is needed.

A large number of studies carried out at different scale of spatial units namely, states (See Mishra ed, 1985; Bhat et al., eds, 1982); districts (Pal, 1975; Bhalla and Alagh, 1979; Krishnan, 1984; Bhalla and Tyagi, 1989) and Tehsils or Talukas (Mitra, 1967; Alam, 1974; Gosal and Krishnan, 1979 and Dubey, 1981) showed that regional disparities in India were very high. Most of the scholars of regional disparities in India agreed that regional distortion created during colonial days was exacerbated on post independence period.



(See Baghi, 1976; Mathur, 1978; Kumar and Krishnamurthy, 1980; Bharadwaj, 1982; Kundu and Raza, 1982; Nair, 1982; Krishnan, 1984). But this postulation was based mostly on theoretical understanding and disjointed linkages of development disparities of various periods of time and relating to various parts of the country.

In many countries, industrial or economic activity gets started at some point in space owing to natural, political or historical reasons, and tends to get concentrated in and around that point. Though natural resources do play a crucial role in determining the location of economic activity, the historical forces often assume a more strategic role in the pattern of economic development of this region. The problem of development and regional disparities has aroused lots of interest among researchers in India, which has resulted into several studies. Another stream of research efforts has gone into analysing the industrial structure of various regional economies at inter state as well as intra state levels. Alagh *et al.* (1971a) portrayed the industrial base of 16 major states of India, using employment data. The study observed that the industrial scene of most of the states is still dominated by resource-based industries.

In another study, using the input-output technique, Lakdawala *et al.* (1974) attempted to identify 'technological clusters' and 'empirical spatial clusters' of industries to examine the degree of technological interdependence of industries with each another across space. While comparing these two clusters, the study observed that, in general, empirical clusters were smaller than the technological clusters. It implies that in the regional context of India, full-scale development of technologically interrelated industries has yet not

taken place, apart from a few highly developed regions. This is perhaps to be expected in the initial phase of industrialisation.

Though these studies provide a valuable insight into the nature of spatial distribution of industries across states in India, they do not offer any explanation for the emerging patterns and their dynamics over time. In India, not much work has so far been done from a theoretical point of view. However, the empirical work conducted in India in the field of regional economics has been considerable. The first such attempt related to identification or delimitation of agricultural area or backward area. Thorner (1957) studied delimitation of agricultural regions; Mitra (1964) identified natural regions, while Sengupta and Sdasyuk (1968) discussed in detail the element of agricultural regionalisation. In recent times studies by Kundu (1980), Mishra (1985) Dholakia (1985) and Hem lata Rao (1984) should be considered as important contributions in the field.

In the recent period, a number of studies (for instance, Ahluwalia 2000 and 2002; Nagraj, Varoudakis and Vegenzous 1998; Rao, Shand and Kalirajan 1999; Shand and Bhide 2000) have observed that the regional disparity in India has widened, especially during the 1990's. Dr M.J Kurian of the planning Commission has made an extensive study of the 'widening regional disparities in India'. He has indicated that more than two thirds of investment proposals (69.2%) in the post reform period were concentrated in the forward states and a similar situation prevailed in terms of financial assistance distributed by all-India financial institutions as well as State Financial Corporations.

The review of various studies on industrial development provides a broad spectrum about its regional aspects and helps in the formulation of an appropriate methodology and base to the present study.

Nath and Sastry (1970) examined regional disparities in economic development and growth in India at the state and district levels. The analysis showed that per capita income was the most important factor in explaining inter-state variations in industry in India in 1961 as compared to 1951.

Pathak (1975) studied the problem of small scale entrepreneurs and the study was restricted to five major industrial groups, viz., textiles, chemicals, metal-based, machinery manufacture and miscellaneous industries located in the 15 out of 19 districts in the state of Gujarat. It was found that the more important problem areas were raw materials, finance and market, followed by Central and state Government policies along with labour and competition faced by small entrepreneurs.

Hem Lata Rao (1977) used factor analysis to develop the composite index by considering 24 variables for the 14 major states, and identified the backward states. During the study period it was found in the industrial sector the variations decreased though it continues to be very glaring.

Awasthi (1981) studied industrial diversifications and spatial pattern of industrial development in Gujarat, during the period 1969 to 1978. He grouped the districts into backward, developing and developed regions: and found that the developed regions showed higher growth in terms of number of factories, while high growth in employment was observed in the backward regions as compared to other two regions.

Papola (1981) empirically examined the traditional theoretical propositions of industrial location and the impact of official and institutional efforts to bring about regional balance in industrial development. Specifically locational structure of industries in U.P has been examined in detail on the basis of secondary as well as primary data and policy implications, particularly concerning industrial development of backward areas, have been brought out. It was found that industrial structure of most of the districts was of a highly specialised nature and industrial backwardness and lack of diversified structure were closely associated. It was also found that incentives, fiscal or financial, play only a marginal role in the diversification of industries.

Alagh et al. (1982) have analysed Indian industrialisation during the seventies. Industry-wise growth rate had been calculated to show India's industrial performance whereas the states industrial structure was analysed with the help of coefficient of specialisation for 1960, 1965 and 1978. During 1965 to 1978, it was found that the states of Tamil Nadu, Karnataka, Punjab, Haryana, Gujarat and Maharashtra have shown remarkable increase in industrial diversifications. Like Rajasthan, Madhya Pradesh, U.P and Kerala have shown high growth rate in output and employment, but their industrial economies were not diversified.

In Madhya Pradesh, not much work has so far been done from an analytical point of view. The 'Techno-Economic Survey of Madhya Pradesh' (1960) published by the National Council of Applied Economic Research (NCAER), as the very title suggests, gives us the resource inventory of the State. Similar surveys were also conducted by the NCAER of other states of the Indian Union.

A study by Ganesh Kawadia (1992) on industrial diversification in MP with help of weighted Mean and Standard Deviation method concluded that disparities, and diversities, though still high, show a declining trend in MP and calls for their effective removal through uniform distribution of capital and vast country like India, a state level approach to industrial development with out losing sight of the national perspective is required. In this context, the examination of industrial development at the region as well as local level assumes importance. Balanced and sustained development of the state's economy requires that the industrial sector should also grow along with other sectors of the economy.

#### **1.4.2 Studies showing deceleration in industrial growth**

Nagaraj (1990) found that total GDP and GVA in the major sectors including the industrial sector grew much faster between 1980-81 and 1987-88 than in the earlier three decades. Bhargava and Joshi (1990) documented that growth in Value added (VA) in the registered manufacturing sector between 1980-81 and 1986-87 was significantly higher than that during the preceding two decades. Ahluwalia (1991), after a systematic search using data on VA in the registered manufacturing sector for the years 1965-66 to 1985-86, concluded that significant revival in growth began in 1980-81.

Ahluwalia (1985) documented with meticulous care the facts about deceleration in the various branches of industry. She presented average annual growth rates in value added and value of output in constant (1970-71) prices at different levels of industrial aggregation for the entire period 1959-65 and 1966-80. On the strength of careful painstaking research, Ahluwalia drew attention to the shortcomings of the industrial production. Her results for the

2-digit level industries showed that significant deceleration in growth occurred only among industries, which had grown at an annual rate of 5 per cent or more during 1959-65. It is important to note that earlier studies using production data came to the conclusion that deceleration in growth was across the board. Ahluwalia's results using National Accounts data showed that deceleration was concentrated in heavy industries and in high or medium growth industries. This finding has important implications for the empirical plausibility of the alternative explanations offered to account for the decelerations.

Rangarajan (1982) estimated a model from data for the period 1960-72 to study the impact of agricultural growth on industrial growth and showed that a 1.0 per cent growth rate in agriculture could by itself generate a rate of growth of 0.5 per cent in industry. The effects of agricultural growth on the output of capital and basic goods industries are found to be less strong than the effects on the output of consumer goods industries.

Lahiri et al (1984) estimated an econometric model of the price-quantity adjustment mechanism in the factory sector of Indian industry with specific attention to the role of government policies and international trade in the determination of output and prices. The study provided evidence in support of the hypothesis emphasized by Raj (1976) and Chakravarty (1979) about real income of the agricultural primary sector as a source of demand for the industrial sector.

Ray (1991) made a useful contribution in testing the different explanatory hypotheses. He examined the supply demand linkages between agriculture and industry and also availability of power as determinants of the

rate of growth of manufacturing output during 1951-84. Ray's empirical results suggest that increase in food availability stimulated manufacturing output growth with a two-year lag by relaxing the wage goods constraint. Increase in agricultural income had an immediate impact through demand stimulation. Slow growth in power supply had been a serious impediment in the growth of manufacturing output.

It would be worthwhile to apply Ray's methodology to the analysis of output growth in individual sectors such as capital goods, consumer goods and intermediate goods. The role of public investment should be explored in the same methodological framework.

Mukhopadhyay (1992) estimated a demand-supply model for the industrial sector and found that industrial stagnation was due to the demand constraint. However, the relative importance of the different demand side factors could not be assessed. Mukhopadhyay carried out a separate analysis of the capital goods sector and concluded that slowdown in public investment was the cause of deceleration.

Kavita Rao (1993) attempted a study of industrial output determination over the four decades 1951-1990 in the dual economy framework. The reduced form of a model of output determination was estimated separately for consumer goods group, capital goods group and intermediate goods group of industries. On the basis of the empirical results, the author concluded that demand side variables, namely, public expenditure and income accruing to agricultural sector, provided a reasonably satisfactory explanation. The omission of infrastructure, which was found to be relevant factor in Ray's (1991) study, is a limitation of the Kavita Rao study.

Balakrishnan (1995) applied the new time series methodology to analyse the determinants of industrial output in India during 1952-80. His results indicated that three variables namely, agricultural production, public investment and domestic terms of trade, together explained the short run variations in industrial output.

Econometric models of the kind estimated by Rangarajan (1982), Lahiri et al. (1984), Ray (1991) Mukhopadhyay (1992), Kavita Rao ((1995) and Balakrishnan (1995) provided useful empirical evidence as to what were the causal factors behind slowdown in industrial growth. One or more of the factors, public investment, agricultural performance, and infrastructure, the policy of import substitution and domestic terms of trade turned out to be significant for the different industry groups. On the whole, demand side factors were found to be more important than supply side factors.

It is obvious from the foregoing abstract discussion that any generalization on industrial growth of a particular state-region and balanced regional development across the states in the country is a hazardous task. To a large extent, the actual impact will have much to do with the specificity of the region is regard to the industrial structure, factor endowment, technological dynamism, entrepreneurs outlook and above all the states market friendly policies. And empirical studies dealing with the industrial growth and structure in the state regions and disparities across the states in India after the economic reforms are rare. Especially manufacturing sector in Madhya Pradesh in post liberalization era has not probed so far. It is in this context that we propose to analyse the growth and structure of manufacturing sector of Madhya Pradesh giving more stress on its economic backwardness.



## 1.5 OBJECTIVES

There has been a feeling since the 1980s that the economy needs to be liberalised for achieving a high growth. Has it achieved a high growth rate? With this as a background the industrial growth and structure of Madhya Pradesh will be examined in this study. It examines those aspects of Madhya Pradesh's industrial structure which throw light on the development, viability and the efficiency of not only the over all industrial sector but also of some of the selected industries of the state.

The major objectives are :

1. To examine the nature and characteristics of economic backwardness in Madhya Pradesh in an inter.state comparative framework
2. To analyse the pace and pattern of industrial growth in Madhya Pradesh against the backdrop of liberalization
3. To explore the industrial structure of Madhya Pradesh using the major structural ratios and industry mix.

It must be stated as a methodological limitation rather advantage that the study does not start with any hypothesis as such to carry out the analysis to meet the above objectives. The study is not an exercise in empirical testing by a set of hypothesis but it is in the nature of fact finding in an individual state region- Undivided Madhya Pradesh.

## 1.6 METHODOLOGY

There is nothing specific to say about the research methodology. In essence, the study is based on the method of descriptive analysis in a

comparative framework. The study mainly relies upon secondary sources. The main sources are the public agencies like Central Statistical Organisation, Directorate of Economics and Statistics, <sup>and</sup> State Planning Board. The publications and web sites of Economic and Political weekly (EPW), Centre for Monitoring Indian Economy (CMIE) and Confederation of Indian Industries (CII) also were made use of in the collection of data for the study.

Although the study is about the industry, the scope is delimited to the organised manufacturing sector only. In other words, it is confined to the large scale and small scale-manufacturing units registered under the Factory Act and covered under the annual report of the Annual Survey of Industries (ASI).

Sources of data used and analysed are, besides these sources, the reports and statements of individual researchers giving data overtime are supplemented. For the purpose of temporal assessment of the performance of the manufacturing sector, we have used simple statistical measures like percentage shares, Average annual Growth Rate, Annual Compound Growth Rate, Location Quotient etc when the data lent themselves to such application and when it was felt appropriate.

### **Location Quotient**

The location quotient indicates the degree of concentration of a particular industry at a particular place or a particular region. It is defined as

$$L.Q = [(v_{ij} / v_j) / (v_i / v_N)]$$

Where V = Value-added

i = ith industry

j = jth region

n = all India

The method is similar to the method used by K.K Subramanian and Mohanan Pillai in their study “Kerala’s industrial backwardness”

### **Growth rates**

The annual average growth rate shows the average percentage change from base year to current year

The formula is

$$AGR = \rho_1 - \rho_0 \div \rho_0 \times 1/n \times 100$$

To analyse the growth pattern of MP over a period of time semi log model have been used

$$\ln \gamma_t = \ln \gamma_o + t \ln(1+r)$$

$$r = \text{the compundrate of growth of } \gamma$$

Now let  $\beta_1 = \ln \gamma_o$

$$\beta_2 = \ln(1+r)$$

$$r = \text{anti log}(\beta_2) - 1$$

$$\ln \gamma_t = \beta_1 + \beta_2 t$$

Now if add the error term  $\mu_t$  to model we will get

$$\ln \gamma_t = \beta_1 + \beta_2 t + \mu_t$$

### **1.7 PERIOD OF ANALYSIS**

The study broadly covers 1980-81 to 1999-00. Depending upon the availability of comparable data and information, the period of study of many

aspects fall within this range. Considering the homogeneity of data over a period of time and the availability of the latest data to keep abreast of the recent trends have guided the decision regarding the period of the study of different aspects. Hence, uniformity in the period of analysis could not be adhered to. The period of study for chapter II is 1960-2000. The reason for covering this period is to assess the economic changes of MP over a long period of time. As regards chapter III and IV the period of analysis begins with 1980-81 and ends with 1997-98, the last year before the bifurcation of MP, since our study is confined to Undivided Madhya Pradesh. Although the study suffers from one basic limitation of not utilising the latest ASI data of the year, the emerging conclusions and recommendations appear to have remained as revealing and rewarding as would have been after using such data.

## **1.8 LIMITATIONS OF THE STUDY**

A study of this kind needs a vast amount of factual and up-to-date data. Some of the data are not available at all, others are inadequate and some are irregular. As for the case of district wise data, the analysis ends with early 80s. Madhya Pradesh is not publishing district wise ASI data thereafter. This is a serious limitation of the study.

Since the analysis depends on ASI data, the limitations of the data due to collection and compilation procedures of ASI will automatically affect our analysis. As data in respect of less than three units in an industry cannot be shown separately, the details in respect of such units have been combined with other industries (category 38). In respect of non-responding factories, no estimates have been made and incorporated in this report.

Yet another important drawback in this study is not being able to capture the growth of modern hi-technology industries like computer and information technology industries. These industries, unfortunately in ASI data are clubbed with other industries (category 38). Unless we get disaggregated data we may not be able to analyse growth of this sector, which has been showing phenomenal growth from the mid 80s in the state. The performance of 'other industries' in this analysis may be taken as a proxy for the above observation. The industries 30 and 31 have been interchanged on account of adoption of NIC-87. With appropriate adjustments in the data we used new NIC groups 30 and 31. Un-registered sector have a prominent place in moulding the manufacturing sector of Madhya Pradesh. But here we take only registered sector. This is yet another serious limitation of the study.

## **1.9 ORGANISATION OF THE STUDY**

The presentation of the study is organised in five chapters, inclusive of summary and conclusions. The first chapter is introductory in nature and presents the background of the study, review of literature, objectives, the methodology adopted, and sources of data and period of analysis. The other chapters follow the order of three objectives listed in the first chapter. Chapter II gives a broad spectrum of regional disparities in development and evidence for Madhya Pradesh's backwardness is also portrayed. Chapter III on industrial growth in Madhya Pradesh: 1980-1998 the pre and post liberalisation period. Chapter IV reflects the changing industrial structure of Madhya Pradesh. The final chapter is devoted for summary, conclusions and suggestions.

## REFERENCES:

1. Ahluwalia, I J (1991): productivity and Growth in Indian Manufacturing, Oxford University Press, New Delhi.
2. Alagh, YK, Bhalla, GS and Kashyap, S P, (1980): 'Structural Analysis of Gujarat Punjab and Haryana Economies' Delhi
3. Atkinson, A.B, (1983): 'The economics of inequalities', Oxford University Press New Delhi
4. Alice Albin (1990): 'Manufacturing sector in Kerala: comparative study of its Growth and Structure', Economic and Political Weekly September 15
5. Alexander P C (1963): 'Industrial estates in India', Asia Publishing House, New Delhi
6. Bagchi, A K, (1988): ed, Economy Society and Policy: Essays in the political economy of planning, Calcutta
7. Burdhan (1983): 'Regional Variations in the rural economy' EPW July 30
8. Bandopadhyaya, K (1969): 'Industrialisation through industrial estates', Bookland Pvt ltd Calcutta.
9. Basu, Kaushik, (1993): 'Structural reforms in India, 1991-93: EPW November 27.
10. Bhagavati Jagadish and Srinivasan T N, (1993): 'India's economic reforms' Ministry of Finance New Delhi.

11. Bhalla, G S and Tyagi D. S, (1989): 'Patterns in India Agricultural Development' New Delhi.
12. Bhalla, G S and Alagh Y.K, (1979): Performance of Indian Agriculture: A District wise study', New Delhi.
13. Bharati, R K, (1978): 'Industrial estates in Developing Economies', National Publishing House New Delhi.
14. Bardhan D (1990): Op. cit p 180
15. Chhatopadhyaya B, and Moonis, Raza, (1975): 'Regional development, Analytical framework and indicators Indian journal of regional science, Vol.VII, No 1
16. Chodhary, b, (1983): "Agrarian relations: Eastern India" in Kumar D and Desai M (eds). The Cambridge Economic History of India, Vol, II, 1757-1970, Cambridge.
17. Dasgupta, B, (1977): "The new agrarian technology and India", Delhi
18. Dev, Mahendra, S., (1985): "Direction of Change in performance of all crops in Indian agriculture in the late 1970s, EPW 21-28 December. pp A 130-A136
19. Dholakia B.H, (1974): "Sources of economic growth in India", Delhi
20. Dholakia R.H, (1985): "Regional disparity in Economic Growth in India", Bombay.
21. Kapila, Uma, (1994): ed "Recent development in Indian economy: The ongoing economic reforms", Academic foundation Delhi

22. Krishna K.L, (1992): "Industrial growth and productivity in India, lesson 35 in Indian economy since independence edited by "Uma Kapila 4<sup>th</sup> revised ed.
23. Krishnaji, N (1975): "Inter regional disparities in per capita production and productivity of food grains: A preliminary note on trends" EPW Special Number pp 1377-1385
24. Kundu, A. and Raza, Moonis, (1982): "Indian Economy, Regional Dimensions" JNU New Delhi.
25. Kavita Rao, R (1993): "Evaluating in a dual economy framework, The Indian industrial performance during 1951-52 to 1989-90", Ph.D dissertation Indian Statistical Institute Calcutta.
26. Kelker, V.L and Kumar R (1990): "Industrial growth in the eighties: emerging Policy issues" EPW January 27.
27. Kurian C T (1989): "Indian economy in the 1980a and on to 1990s" EPW April 15.
28. Lahiri, A.K et al (1984): "The industrial sector in India a quantitative analysis" EPW Annual Number August
29. Mukhopadhyaya H. (1992): "An analysis of industrial deceleration from the mid sixties" Ph.D dissertation JNU
30. Nagraj R (1989): "Growth in manufacturing output since 1980: Some preliminary findings" EPW July 1
31. ----- (1990): "Industrial Growth: Further evidence and towards an explanation and issues" EPW October 13



32. Nayyar D (1978): "Industrial development in India some reflections on growth and stagnation" EPW Special Number.
33. -----(ed) (1994): "Industrial growth and stagnation: The debate in India" Delhi Oxford.
34. Parikh, Kirit, S, (1992): "Fertiliser pricing" Times of India April 5
35. Patnaik, P (1985): "On the political economy of economic liberalisation" Social Scientist July –August
36. Raj K.N (1976): "Growth and stagnation in Indian industrial development" EPW Annual Number.
37. Ray S.C (1991): "Growth of manufacturing production in India; A time series analysis" Journal of quantitative economics vol 7 No 1
38. Rangarajan, C (1982): "Agricultural Growth and Industrial performance", Washington. TFPPRI
39. Rao, Hemlata, (1977): "Identification of backward regions and trends in regional disparities in India' Arth Vijanana Vol XIX, No 2, June
40. Sandesara J.C (1992): "Industrial policy and planning: 1947-91" Delhi Sage.
41. Shetty S.L (1978): "Structural retrogression in the Indian economy since the mid sixties", EPW Annual Number.
42. Srinivasan and Narayana, N.S (1977): "Economic performance in India since the third plan and its implications for policy", EPW Annual Number February.

## **CHAPTER II**

### **DEVELOPMENT OF MADHYA PRADESH**

### **ECONOMY-A COMPARATIVE ASSESSMENT**

The main concern of the study as stated in the introduction is to analyse the industrial structure and growth pattern of Madhya Pradesh economy during the liberalisation era. The first step in this issue is to draw the profile of industrial growth against the backdrop of the overall economic growth. There has a close correspondence between the overall economic growth of an economy and industrial growth. Needless to say, a review of the trends in the economic growth in Madhya Pradesh as compared to other states provides an appropriate perspective for evaluation of its industrial growth. For this purpose, a number of indicators such as demographic factors, SDP, social and economic infrastructure indicators have been used. The data for the purpose have been culled out from the population census of 1991 and 2001 as well as Basic Statistics published by the CMIE, for various issues.

#### **2.1 Growth performance of the States**

The growth performance of states can be tracked by the data on State Domestic Product (SDP), which is reported by State governments and compiled by Central Statistical Organisation (CSO). CSO does not standardize the data or attempt to make them consistent with each other or the national accounts. However, while there exists this lack of consistency in the SDP data across states and in respect of the national accounts of the country, it is nevertheless used to analyse the growth of states. There have been recent studies on the subject by Ahluwalia (2000), Kurian (2000), Mahendradev (2003) and Bhattacharya (2004). Similarly, development economists have

been comparing growth across different countries despite the data not being always fully comparable. The caveat is that while broad conclusions can be drawn from these data, too much significance should not be accorded to relatively small changes in indicators.

Further, while Gross State Domestic Product (GSDP) is considered standard for making per capita income comparisons in the current period, in the period before 1979-80, estimates of state income were available only in terms of Net State Domestic Product (NSDP). Accordingly, following the analysis of Ahluwalia (2001), NSDP is used for the pre-1980-81 period while GSDP is used for the post- 1980-81 periods.

The state of Madhya Pradesh was formed in 1956 pursuant to the States Reorganisation Commission recommendations. In the year 2000, this state was divided into the states of Madhya Pradesh and Chhattisgarh. In tracking the long run trends of growth, and a number of other indicators, it is the undivided state that is used as a basis of inter-state comparison, since data is available only for the undivided state in the period 1956-2000. Where subsequent comparisons are possible e.g. as from the Census 2001 data, these have been used. However, since the essential features of the present state remain similar to that of the undivided state, the comparison is valid.

Very shortly after the formation of the state in 1960-61; the economy of Madhya Pradesh represented a proportion of 5.6 per cent of the economy of India as a whole. Four decades later, in 1998-99, the undivided Madhya Pradesh still represented a share of 5.6 per cent of the economy of India. Table 2.1 indicates the changing share of the major states in the all-India economy over time.

**Table 2.1****Changing share of the major states in the All-India Economy (in percentage)**

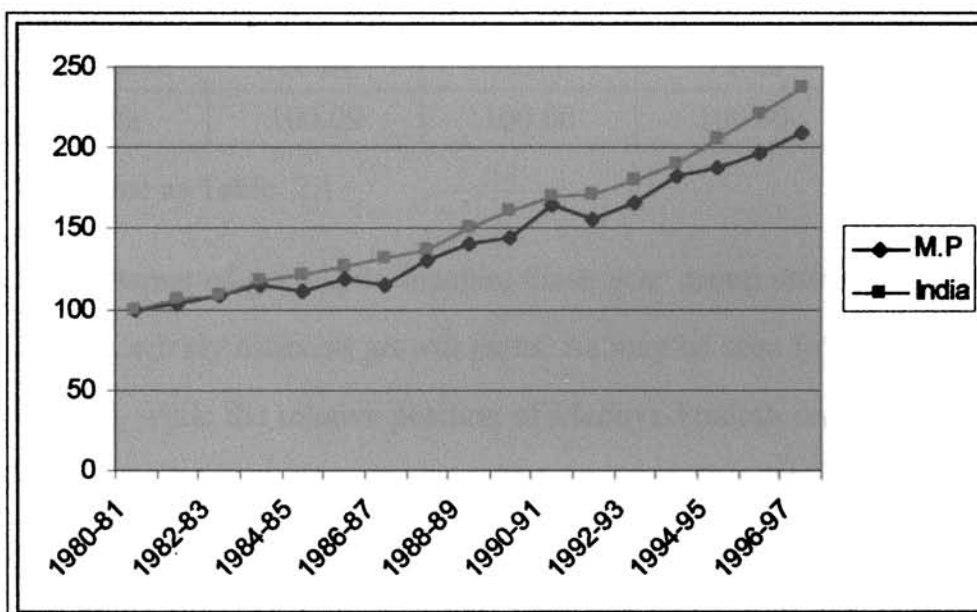
States	1960-61		1998-99	
	NSDP (current prices) Proportion to all India level	Per capita NSDP (1960-61)	GSDP at current prices Proportion to all India level	Per capita GSDP in Rs-1998-99
Maharashtra	11.2	410	15.6	27996
U.P	12.9	253	10.7	10416
T.N	7.8	333	7.3	19488
A.P	6.9	278	7.1	15372
W.Bengal	9.4	392	6.8	14191
Gujarat	9.2	364	6.3	21623
M.P	5.6	254	5.6	11863
Karnataka	4.9	298	5.6	17860
Bihar	6.9	217	4.1	6803
Kerala	3.0	260	3.9	19753
Rajasthan	3.9	282	3.9	12010
Punjab	2.8	368	3.4	23491
Haryana	1.7	330	2.7	22488
Orissa	2.6	216	2.2	10125
All-India	100	331	100	18537

*Source:* Census data on population and mid-year projections, CSO, State Income Data

The first observation on the undivided State of Madhya Pradesh is the relative constancy in the share of its economy in the national economy, right from its formation as a state till very close to its division. The comparative

picture of the movement of GSDP at 1980-1 prices for Madhya Pradesh and All India is given in FIG 2A. It is seen that Madhya Pradesh has moved along with all India on a stagnant growth path in the seventies. After 80s they got momentum in growth.

**FIG 2 A Movement in GSDP Indices (1980-81=100)**



More instructive is to look at the long-term trend in per capita income of the states. Per capita income levels, while not taking into account intra- state individual differences in income levels, do represent a standardized measure of income. Just as in the eighties and nineties, the acronym BIMARU indicated a peer group of low-income states with low levels of human development. It is possible to identify a peer group of states to which the state of Madhya Pradesh belonged in the early sixties, in terms of income levels. There was a group of states in 1960-61 with per capita incomes (at current prices) fairly close to each other. These were: Uttar Pradesh with Rs. 253, Madhya Pradesh with Rs.254, Andhra Pradesh Rs.276 and Rajasthan Rs.282. The all-India per capita income level then was Rs.331. The Per Capita income of Madhya Pradesh as a proportion of all-India per capita income was about 75%.

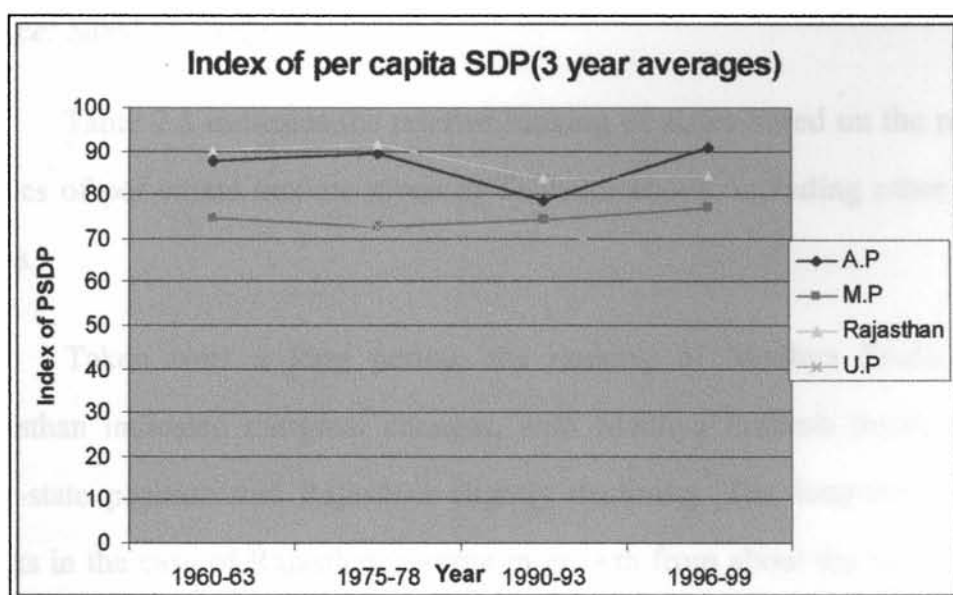
**Table 2.2**  
**Index of Per Capita State Domestic Product (SDP) at (constant prices)**  
**Three Year Averages**

State	1960-63	1975-78	1990-93	1996-99
A.P	87.84	89.61	78.85	90.84
M P	74.59	72.60	74.20	77.12
Rajasthan	90.15	91.44	83.90	84.30
Uttar Pradesh	76.84	72.71	72.22	62.14
All-India	100.00	100.00	100.00	100.00

Source: Same as Table 2.1

In terms of per capita income, these peer group states of the sixties followed relatively different growth paths. As may be seen from Table 2.2, of these states, while the relative position of Madhya Pradesh remained stable in relation to national per capita income. Uttar Pradesh experienced a continuous relative decline vis-à-vis the all-India level over the next four decades, and even Rajasthan declined in the 1990s. Madhya Pradesh on the other hand registered a mild increase. (FIG 2B)

**FIG 2B Index of Per capita 3-year averages**



**FIG 2 B**

**Table 2.3**  
**Ranking of states on the basis of Per Capita State Domestic**  
**Product- (At constant prices)**

State	1960-63	1996-99
Andhra Pradesh	9	8
Bihar	14	14
Gujarat	3	3
Haryana	6	4
Karnataka	7	6
Kerala	10	7
Madhya Pradesh	13	11
Maharashtra	1	1
Orissa	12	13
Punjab	4	2
Rajasthan	8	10
Tamil Nadu	5	5
Uttar Pradesh	11	12
W.Bengal	2	9

*Source: Same as Table 2.2*

Table 2.3 indicates the relative ranking of states based on the relative indices of per capita income given in Table 2.2 above, including other major states.

Taken over a long period, the ranking of Madhya Pradesh and Rajasthan indicated marginal changes, with Madhya Pradesh improving its inter-state position and Rajasthan slightly declining. The long-term picture masks in the case of Rajasthan a surge in growth from about the mid-eighties onwards, which has enabled it to steadily improve its relative position since.

It may be seen that notable declines in relative all-India rankings have taken place in the major states of eastern India, most notably West Bengal, but also in the case of Bihar, Orissa and Assam.

**Table 2.4**  
**Rates of Growth of Gross State Domestic Product**

State	1980-1 to 1990-1	1991-2 to 1997-8
Gujarat	5.08	9.57
Maharashtra	6.02	8.01
W.Bengal	4.71	6.91
Rajasthan	6.80	6.54
Tamil Nadu	5.38	6.22
Madhya Pradesh	4.56	6.17
Kerala	3.57	5.83
Karnataka	5.29	5.29
Andhra Pradesh	5.65	5.03
Haryana	6.43	5.02
Punjab	5.32	4.71
Uttar Pradesh	4.95	3.58
Orissa	4.29	3.25
Bihar	4.66	2.69
All 14 states	5.24	5.92
All India	5.55	6.89

*Source: Ahluwalia (2001)*

To round off the picture of income growth, we take a look at the recent trends in growth of GSDP per capita between two periods in Table 2.4. From the Table we can make a conclusion like this, the more industrialized and richer states showed more growth rates during the post liberalization period. As



regards Madhya Pradesh the state grew at moderate rates in the 1980s, the pace of growth accelerated in the 1990s. Madhya Pradesh's growth in the 1980s was below the averages for the 14 states but it accelerated significantly in the 1990s. The growth performance of Madhya Pradesh economy has shown marked improvement in the nineties as compared to the eighties. If the year of acute drought is excluded, Madhya Pradesh became one of the faster growing states in India. Among the states in the north, Rajasthan and Madhya Pradesh have been seen as faster growing states but while Rajasthan has had this high growth since eighties; it is in the nineties that MP has begun to register this high growth rate. Seven states showed acceleration of growth in the nineties as reported in the Mid-Term Appraisal of Ninth Five Year Plan by the Planning Commission. To quote the report "Seven states showed an acceleration of growth in the 1990s. They are fairly well distributed regionally i.e. Gujarat (9.6%), Maharashtra (8.0%), W.Bengal (6.9%), Tamil Nadu (6.2%), Madhya Pradesh (6.2%), Rajasthan (5.9%) and Kerala (5.8%)". Per capita income has also grown over the period through at a slower rate on account of slow pace of population reduction. However, there has been a tendency towards the slow-down in economic growth since the later part of the nineties (4.33 %). The Per capita income of Madhya Pradesh, which was Rs. 6577 in 1993-94, has gone up to Rs. 7088 in 1996-97 and Rs 7947 by 1999-00.

Public policy has consistently attempted to reduce regional disparities and bring about balanced regional development. The long-term trends seem to indicate that these efforts in public policy at national level have not been particularly effective in reducing regional disparities. Growth of all India per capita income has accelerated in the eighties and nineties relative to earlier period, and growth rates of most of the states have risen, in inter temporal

terms. For example, in the case of Madhya Pradesh negative growth rates of per capita incomes in the sixties and seventies have been replaced by growth rates in excess of 2 % per annum in the nineties, but the all India growth rate has shot up by more than proportionately from around 1 % per annum in the sixties and seventies to nearly 5 % per annum in the nineties (See FIG 2C). For all states, the range of growth rates has widened, and if this persists, then economic disparities between states will continue to widen. Or regional disparities increased with the process of development.

Trend rates of growth of per capita income (% p.a.) MP vs. All India  
1960-1/1969-70 to 1993-4/1998-99

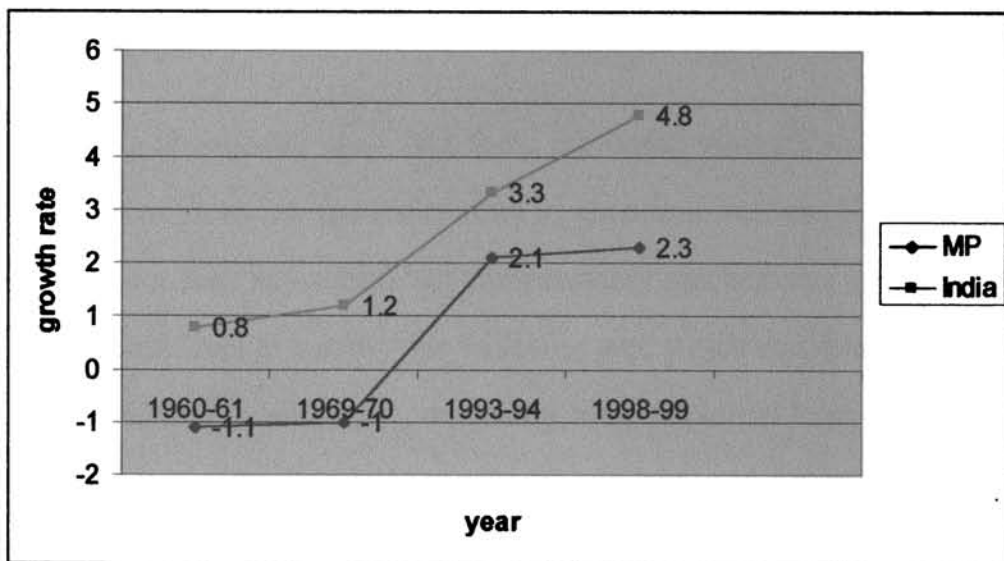


FIG 2C

Table 2.5 gives growth rates for three major sectors for Madhya Pradesh and all India. In the case MP, the growth rate for agriculture and allied sector decreased by 0.64 percentage point in the 1990s. The same way, industry and service also showed a declined growth rate of 1.08 per cent and 0.14 per cent respectively. As compared to all India, the growth rates in three sectors were lower in MP in both the time periods. Thus, the main reason for

the lower GSDP growth in MP as compared to all India seems to be the lower performance of these sectors in MP.

**Table 2.5**  
**Sectoral GSDP growth rates in Madhya Pradesh and All India**

Period	Agriculture & allied	Industry	Services	Total
<b>Madhya Pradesh</b>				
1980-1-1990-1	2.22	6.24	6.33	4.48
1993-4-2000-1	1.58	5.21	6.19	4.33
<b>All India</b>				
1980-1-1990-1	3.12	6.60	6.48	5.37
1993-4-2000-1	2.73	6.25	8.13	6.13

*Source: Calculated from Directorate of Economics and Statistics (DES) Data*

It is abundantly clear that there are initial winners and initial losers among Indian states on the rocky road to economic reform. However as yet there have not been any significant compensatory mechanisms in public policy at the national level to narrow this widening gap, which could have a negative impact on human development, especially since the initial loser states are also the same states with historical burdens of low human development. The Mid Term Appraisal of the Ninth Plan has highlighted this as a serious issue. The Eleventh finance Commission has noted that states with good infrastructure attracting private investment in much larger measure than states where infrastructure is weak, and suggested that Central investment should be directed taking this into view.

In the wake of economic reforms initiated in 1991, the role of private investment has acquired a special significance in the context of economic development of various states of the Indian union. Indeed there has been an

element of competition among states for attracting private investment, both domestic and foreign. Some of the states have been offering various tax concessions and other special facilities to new investors on a competitive basis. The Table on Capital flows (See Annexure II a) shows capital flows to states substantiating the inherent inequity in the situation that is getting accentuated. Just looking at the figure of the per capita plan outlay and the per capita institutional investments, states like Madhya Pradesh fall well below developed states. The fact that our central planning systems has not been able to address this increasing gap can be seen from the data on agreed outlays of the Tenth Plan and its comparison with Ninth Plan. States like Madhya Pradesh, Bihar, UP, and Rajasthan fail poorly in terms of Tenth Plan Outlays (negative growth) while many other states including states with better economic and infrastructure indicators such as Andhra Pradesh, Tamil Nadu, Maharashtra, fare much better. Increasingly a case of winner takes all seems to prevail as the sharpest increases are in those states which have much higher levels of private investment, developed infrastructure and better human development indicators.

A sensitive reform-based finding would actually focus on softening the immediate adverse impact of reform on these states and instead the current thinking seems to be to reward to those with initial advantages on the grounds of moving faster on the reform track. While, Madhya Pradesh is seen as a reforming state for such assistance. Its larger case rests on the backlog in infrastructure and human development, which requires additional resource support. It will also not be correct to highlight inadequacies in human development without reference to the possible relation this has with the strategy of growth being pursued and its impacts on the resources available for social policies.

## 2.2 Comparative profile of Poverty

The Planning Commission has been estimating the incidence of poverty at National and State level using the methodology contained in the report of the Expert Group on Estimation of Proportion and Number of Poor (Lakhdawala Committee) and applying it to consumption expenditure data from the large sample surveys on consumer expenditure, conducted periodically by the National Sample Survey Organisation (NSSO). Official poverty estimates are accordingly available for the years 1973-74, 1977-78, and 1983, 1987-88, 1993-94 and 1999-2000.

Since the analysis is with reference to Madhya Pradesh, we have taken for comparison estimates of six major states comparable in size to Madhya Pradesh and its basic characteristics. Further, with Madhya Pradesh being a largely rural state, we have taken the figures for rural poverty as a better comparison of the poverty profile. The estimates of six major comparative states for rural poverty are presented in the Table 2.6

**Table 2.6**

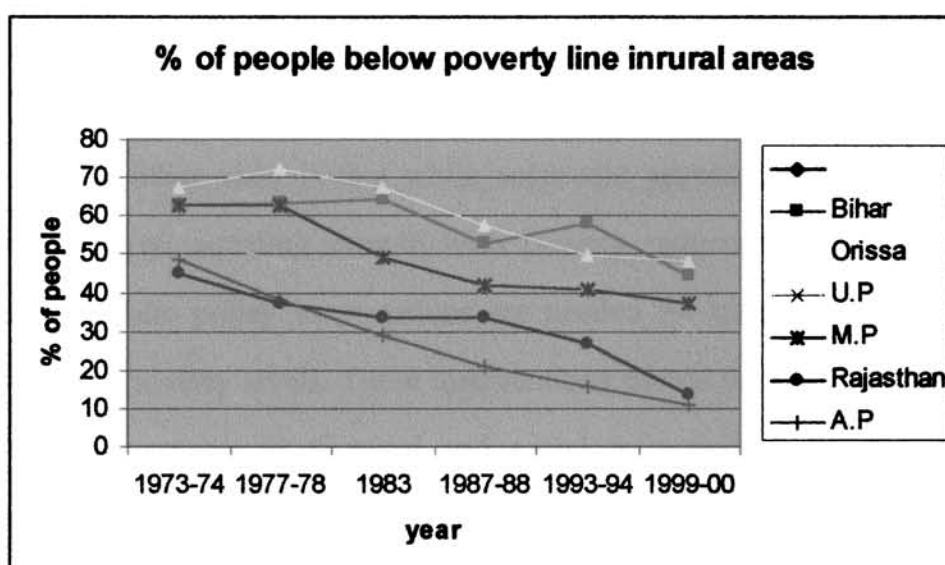
**Percentage of people below poverty line in rural areas**

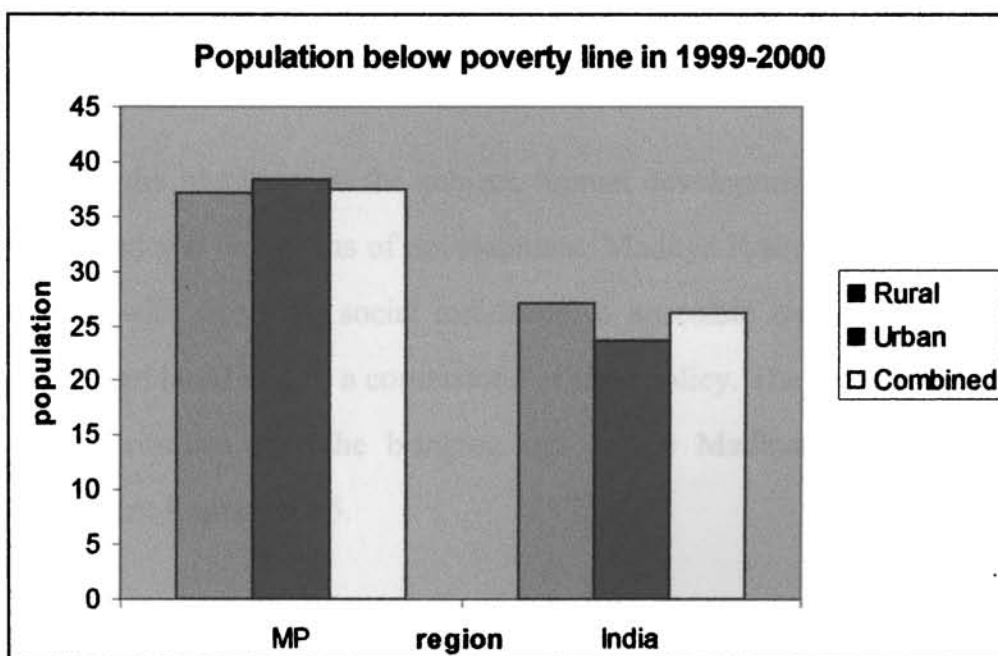
States	%of persons 1973-74	%of persons 1977-78	%of persons 1983	%of persons 1987-88	%of persons 1993-94	% of Persons 1999-00
Bihar	62.99	63.25	64.37	52.83	58.21	44.30
Orissa	67.28	72.38	67.53	57.64	49.72	48.01
U.P	56.53	47.8	48.45	41.10	42.28	31.22
M.P	62.66	62.52	48.90	41.92	40.64	37.06
Rajasthan	44.76	36.89	33.50	33.21	26.46	13.74
A.P	48.41	38.11	28.53	20.92	15.92	11.05

*Source: Planning Commission*

There are two schools of thought on the impact of economic growth on poverty reduction. One view is that growth per se has a poverty reducing impact, and accordingly one would expect to find poverty decline more rapidly in the faster growing states and less rapidly in the others. According to this view, only a substantial higher rate of growth can bring about the expansion in productive income earning opportunities needed to bring about a significant reduction in poverty.

**FIG 2 D (i) Percentage of people below poverty line in rural areas**





**FIG 2D (ii)**

The other view is that while economic growth has the potential to reduce poverty, equating growth with poverty reduction is too simplistic. Effective public policy interventions are needed for translating growth into reduction in poverty levels. These interventions should be such that they bring about improvements in physical and social infrastructure leading both to expansion of social opportunities as well as more equitable access to productive assets. Otherwise, growth per se would not have a trickle down effect, and may instead, in all likelihood lead to worsening of inequalities.

In the long run trends of States, there does appear to be a positive linkage between growth and poverty reduction in the case of some states. Significant declines of between 33 and 40 percentage points in rural poverty as a whole have been recorded in the period in question by the faster growing states of Maharashtra, Tamil Nadu, Karnataka, Gujarat, and Andhra Pradesh. In the case of MP, moderate growth has been accompanied by moderate declines in poverty over a long period (FIG 2D i & ii). Both Bihar and Orissa

have recorded relatively poor economic growth, and there seems to have been correspondingly little impact on poverty reduction.

In the literature on the subject, human development is referred to as both the end and the means of development. Madhya Pradesh was the first of the states with very low social indicators to articulate human development concerns and build it in as a cornerstone of state policy. The visible expression of these priorities was the bringing out of the Madhya Pradesh Human Development Report, 1995.

The low level of human development in the state have in the past was one of the factors that have acted as a drag in the improvement in both economic growth performance as well as rural poverty reduction. With the recent developments, especially in education, and innovative programmes that focus around decentralisation on the one hand and a rights based framework on the other, the coming years would undoubtedly improve the levels of human development in Madhya Pradesh.

The trends presented above indicate, in sum, that the state of Madhya Pradesh recorded rising but moderate levels of growth during the period of its existence as an undivided state, neither increasing nor decreasing its share in the national economy. The proportion of rural poverty in the state has declined. The goal of population stabilisation is a long way away. In terms of human development indicators, while significant progress has been made on the literacy front in the last decade, the overall relative position continues to bracket the state in the group of heartland states with relatively poorer indicators. Wide infrastructure differentials remain between Madhya Pradesh and most other states. The Eleventh Finance Commission noted, “States with good infrastructure are attracting private investments”.

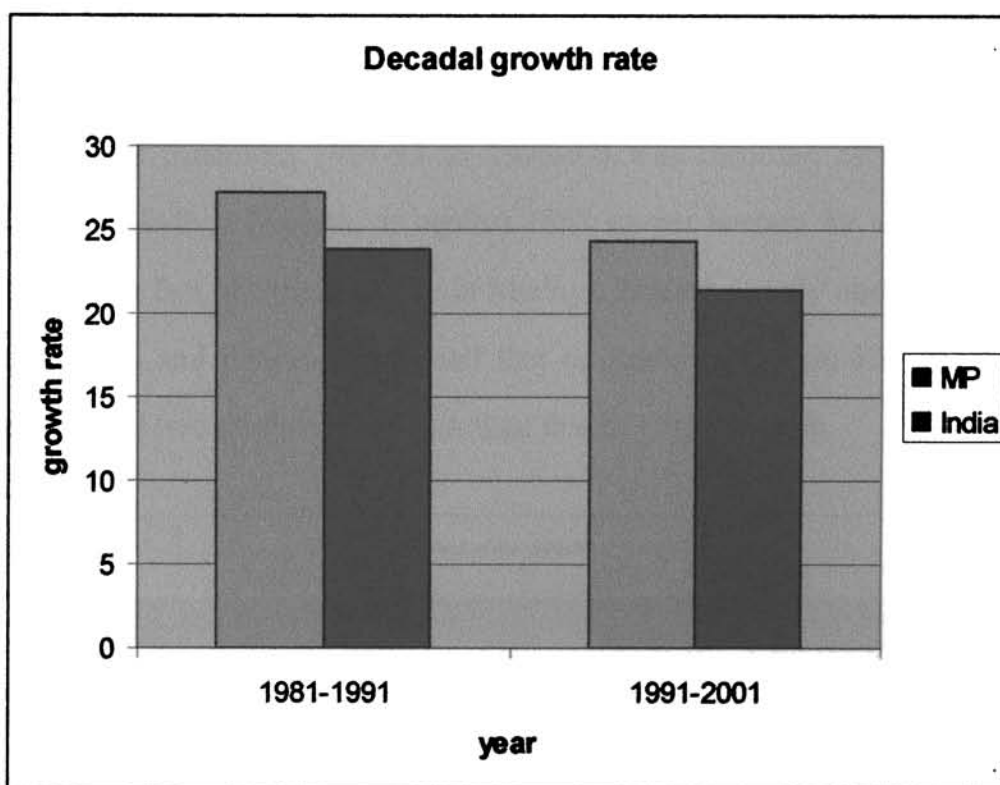


The reasons as to why the gap between the leading states and states like Madhya Pradesh is growing should be a concern for national policy. It would not be possible for the country as a whole to realise the high growth rates projected for the Tenth Plan and beyond unless the relatively lower growth rates in major states like MP are stepped up. Increasing the rate of growth of the economy of the state is thus not only an imperative for the state, but also for the country as a whole. There is a need to focus on ways and means to increase the rates of growth of the State significantly, aiming perhaps at a rate double the current one.

### **2.3 Backwardness of Madhya Pradesh- The Evidence**

With 13.5 per cent of the total geographical area, Madhya Pradesh is the largest state of the country. Its density of population at 149 is, however only 54 per cent of the all-India density of 274. (Annexure II b) In fact, after Rajasthan (129 persons per sq.km area), Madhya Pradesh has the lowest density of population among the 14 non-special category states. As compared with West Bengal (767 persons per sq.km), Madhya Pradesh has five times less density per sq.km.

The population of Madhya Pradesh is growing at a faster pace. The decadal growth of population during the period 1981-91 at 26.8 per cent is significantly higher than the all-India rate of 23.9 per cent during the same period (See FIG 2E). As compared with Kerala (14.3 per cent) and Tamil Nadu (15.4 per cent), the population growth rate in Madhya Pradesh is too high, though as compared to Haryana (27.4 per cent and Rajasthan (28.4 per cent) it is lower.

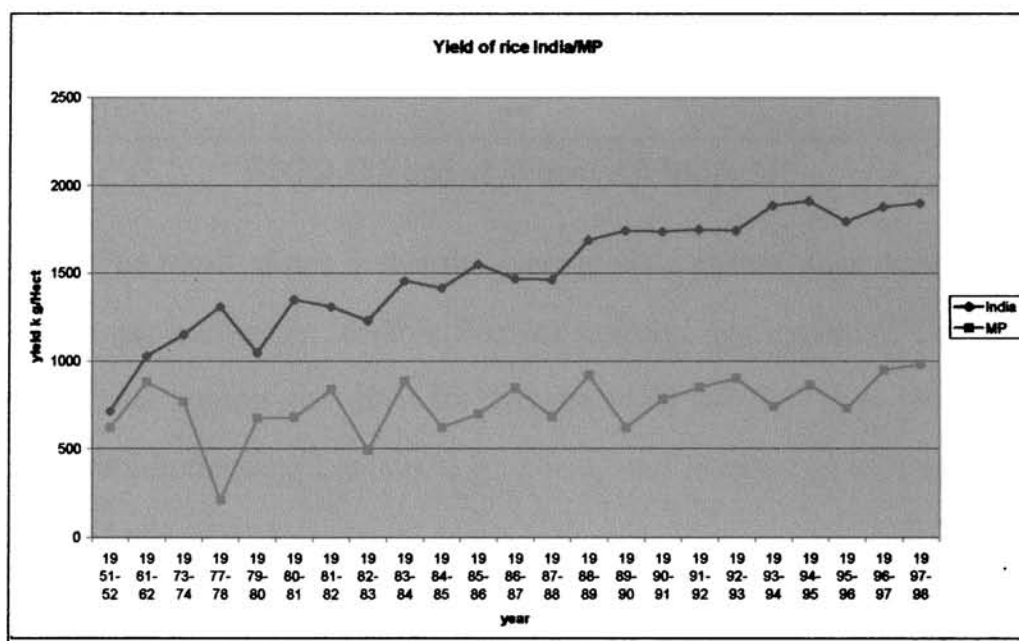


**FIG 2 E**

Madhya Pradesh has a combined scheduled caste and scheduled tribes population percentage of 37.8, which is far greater than the all-India percentage of 24.6. Among 14 non-special category states only Orissa has a slightly higher percentage of 38.4 of scheduled castes and scheduled tribes population.

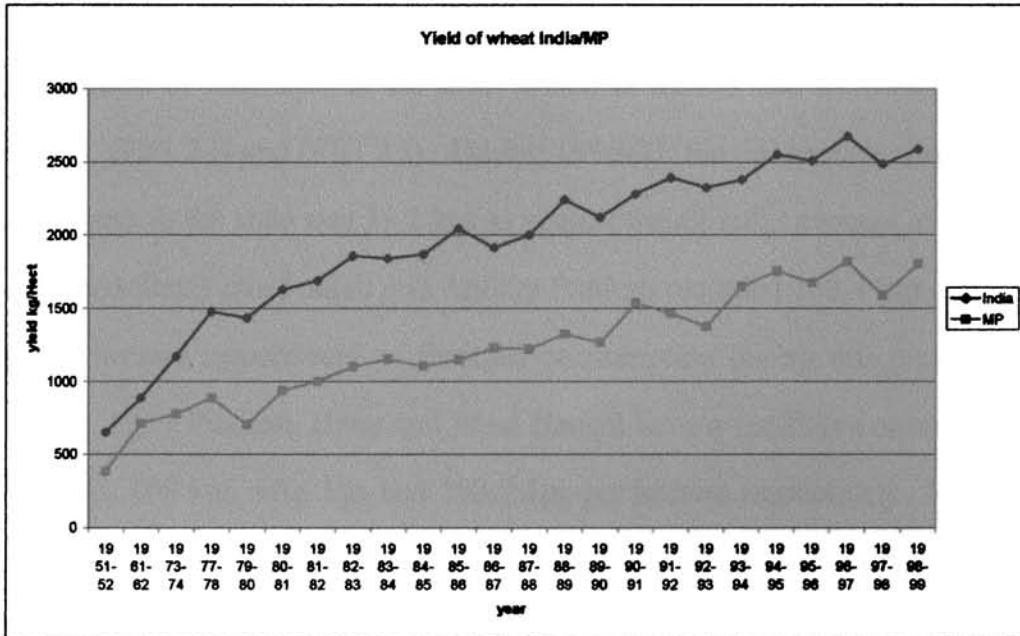
Per capita income is the single most comprehensive indicator of the level of the state's economy. The per capita income of Madhya Pradesh in 1996-97 at current prices, increased to Rs. 7571, which is only 70 per cent of all-India per capita income of Rs, 10771 for that year. Madhya Pradesh is thus still classified as a low-income state in company with Uttar Pradesh, Orissa, Rajasthan and Bihar. In fact, the per capita income of some of the high income states like Punjab, Haryana and Maharashtra is more than twice that of Madhya Pradesh. The per capita income of Andhra Pradesh, Karnataka and Tamil Nadu, are also much higher than that of Madhya Pradesh.

In spite of making some strides in the agricultural sector, the yield rates of major crops in the state are low. The average yield rate of rice (average for triennium 1994-95 to 1996-97) was recorded as 1158 kg per hectare in Madhya Pradesh, as against 1862 kg per hectare for all-India (See FIG 2F). In fact, the yield of rice in Madhya Pradesh is only one third that of Tamil Nadu and Punjab, about half that of Andhra Pradesh, Karnataka and Haryana and two thirds or even less than that of Uttar Pradesh.



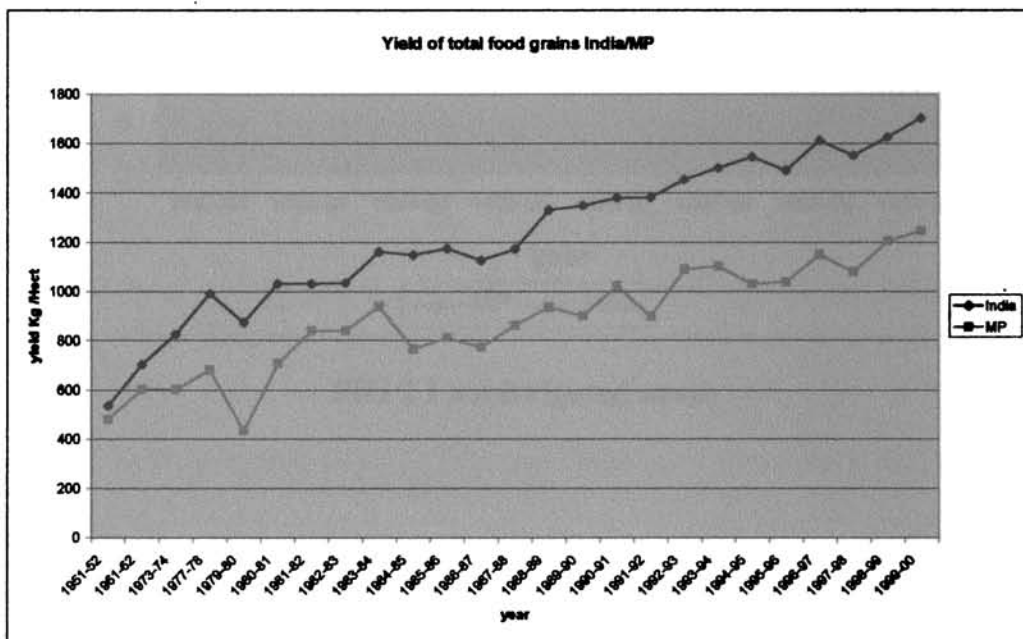
**FIG 2 F Yield of Rice in India/MP**

The average yield of wheat during the same period was 1715 kgs per hectare, which is only 67 per cent of the all-India average yield of 2571 kgs per hectare. During this period the average yield of wheat in Punjab was 3889 kgs per hectare and in Haryana 3932 kgs per hectare. Leaving aside these states, the yield in the State is 67.6 per cent less than that in even Uttar Pradesh and about 20.9 per cent less than that of Bihar. (See FIG 2 G)



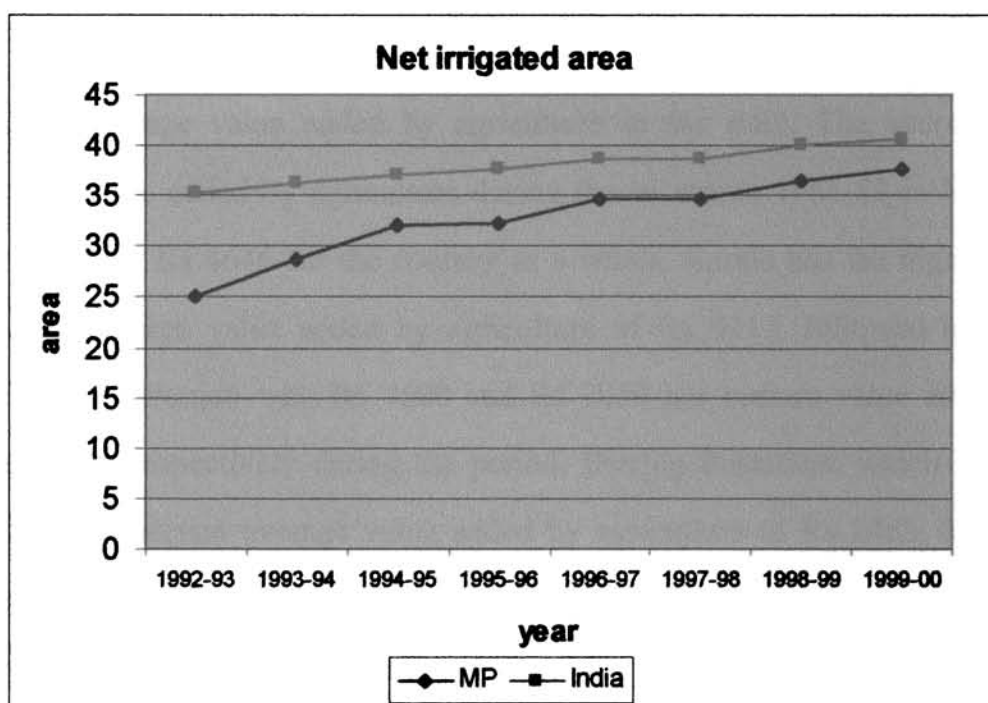
**FIG 2 G Yield of Wheat All India/MP**

The result of this is that the average yield of total food grains is only 1075kgs per hectare in Madhya Pradesh (average for triennium 1994-95 to 1996-97) as against the all-India average yield of 1547 kgs per hectare. Agriculture in the state has thus to go a long way to catch up with at least the all-India level. (FIG 2H)

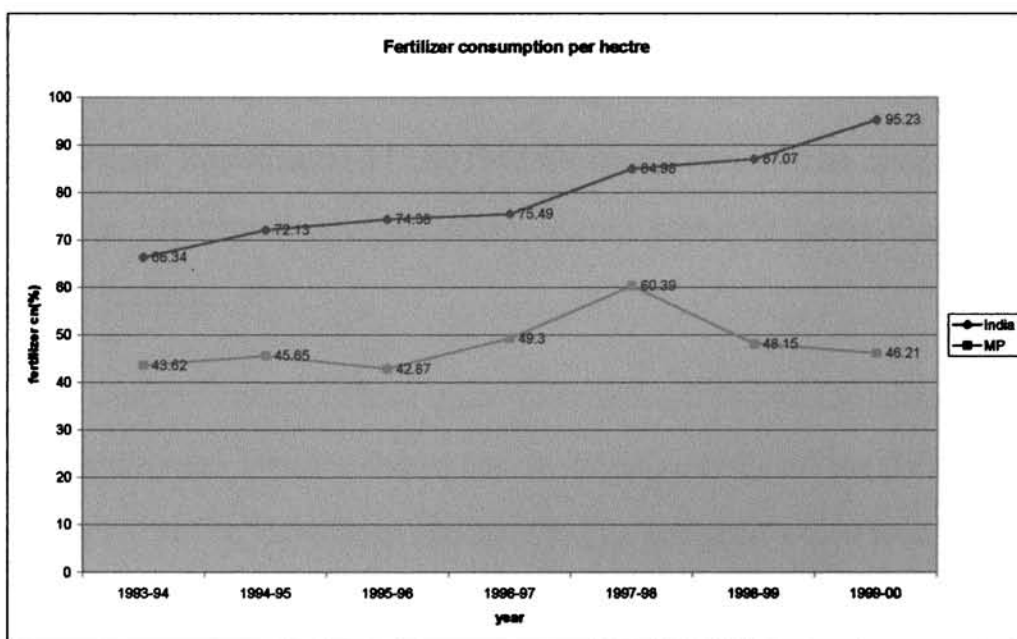


**FIG 2 H Yield of total food grains All India/MP**

The lower agricultural yields in the state are partly due to lower consumption of fertilizers in the state, which in turn is due to lower irrigation facilities. (FIG 2 I) and (FIG 2 J). During 1996-97, the per hectare consumption of fertilizers in the state was 39.2 kgs as against the all India average of 76.8 kgs. Developed States like Punjab and Andhra Pradesh recorded 158.4 kgs and 139.4 kgs per hectare respectively of fertilizer consumption during this period. Even Haryana, Uttar Pradesh, Bihar and West Bengal have a fertilizer consumption of 131.0 kgs, 108 kgs, 80.6 kgs and 103.2 kgs per hectare respectively. Among 14 non-special category states only Rajasthan and Orissa have a per hectare fertilizer consumption which was below Madhya Pradesh in that year.



**FIG 2 I net irrigated areas**



**(FIG 2 J) Fertiliser consumption per hectare**

The lower yield rates of major crops are reflected in the lower per hectare average value added by agriculture in the state. The average per hectare value added by agriculture during the triennium 1986-89 in Madhya Pradesh was Rs 4646 for the country as a whole. Kerala has the highest per hectare average value added by agriculture of Rs 9417, followed by west Bengal and Punjab with Rs 7600 and Rs 7050 per hectare value added by agriculture respectively during the period. Barring Rajasthan, which has the lowest per hectare average value added by agriculture of Rs 2485; Madhya Pradesh was the lowest State in this regard. In 1996-97, the per hectare income generated from agriculture was Rs.8443 in MP, while the national average was Rs 14178.

There is a vast scope for industrialization in the state. Efforts made in the recent past have also started bearing fruit, though much still needs to be done. According to the Annual Survey of Industries, 1995-96, the per capita net value added in the factory sector in Madhya Pradesh was Rs.1455 as

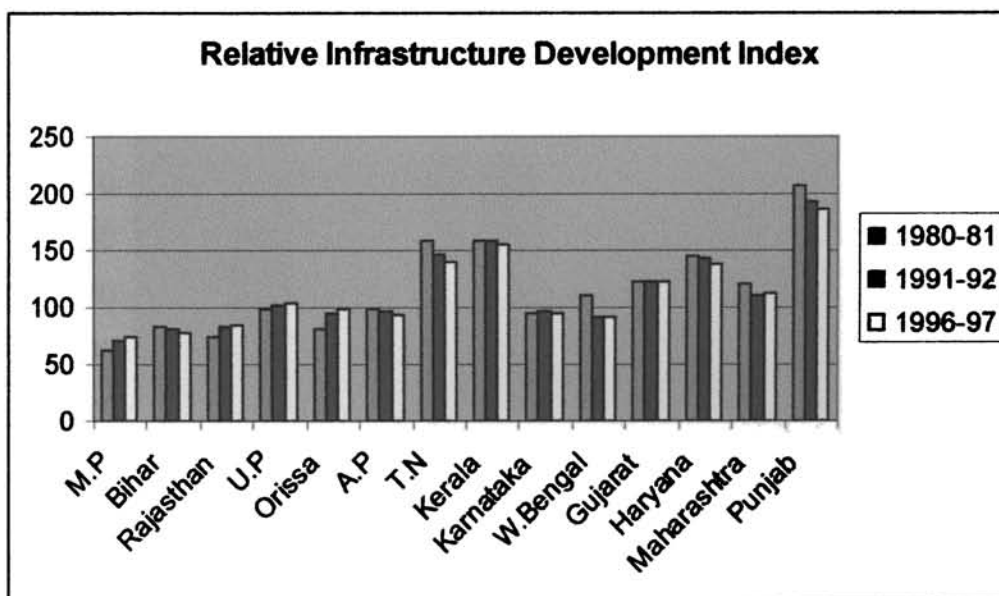
against Rs. 1647 for all-India. During the same period Maharashtra and Gujarat have per capita net value added of Rs. 4177 and Rs. 4266 respectively. Bihar, Orissa, Rajasthan and Uttar Pradesh are the non-special category states where the per capita value added in factory sector is lower than that of Madhya Pradesh.

Due to vastness of area it has been difficult to provide adequate road length in the state. Besides, due to paucity of resources, even the present road-length could not be maintained adequately. The State had a total road length of 449 kms per thousand sq. kms of area in 1995-96, as against the all-India average of 730 kms. In contrast, Kerala had a road length of 3650 kms per thousand sq. kms of area, while Tamil Nadu and Orissa have road lengths of 1582 and 1350 kms per thousand sq kms of area. Even Uttar Pradesh and Bihar have 806 and 492 kms of road length per 1000 sq kms of area.

About 28 per cent of the villages in the State were connected by all-weather roads in 1993-94, as against 48 per cent for the country as a whole. In Kerala cent per cent and in Punjab and Haryana 99 per cent of the villages have been connected by all-weather roads the percentage for Uttar Pradesh and Bihar being 44 and 35 respectively.

Although lying in the middle of India, Madhya Pradesh has a railway route length of only 13 kms per thousand sq kms of area in 1990-91, the all-India average being 19 kms. Among 14 non-special category states, only Orissa has 13 kms of railway route length per thousand sq kms of area, which is equal to Madhya Pradesh. Among other States, Punjab and West Bengal have 43 kms each, Haryana has 34 kms, Bihar and Tamil Nadu have 31 kms each and Uttar Pradesh has 30 kms of railway route length per thousand sq

kms of area. As many places in Madhya Pradesh are still not connected by rail, urgent augmentation of railway route length in the State is necessary.



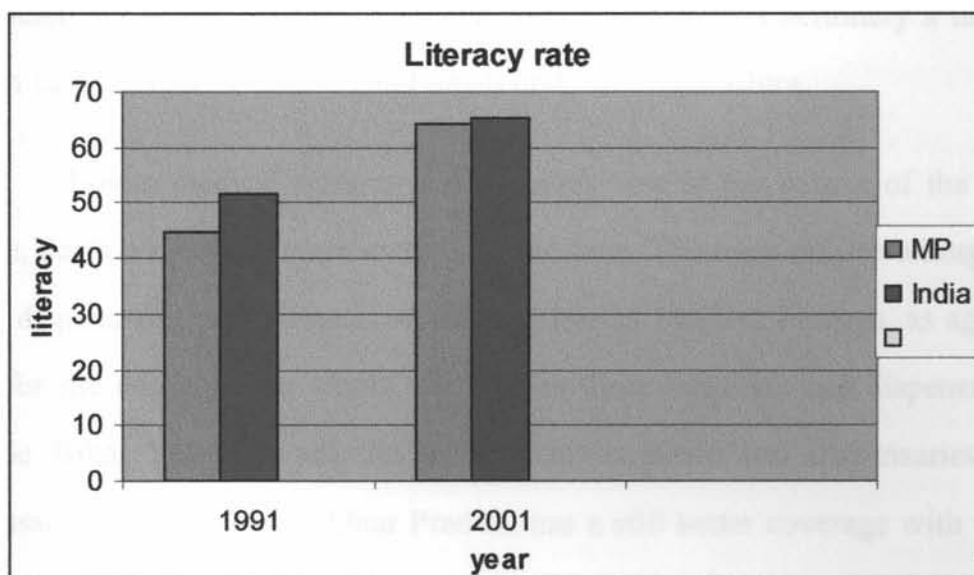
**FIG 2 K Relative infrastructure development index**

The Infrastructure Development Index, keeping the all-India average at 100, is 72 for Madhya Pradesh, as against 85 for Rajasthan, 86 for Orissa, 97 for Bihar and 111 for Uttar Pradesh. For proper development of backward states like Madhya Pradesh, infrastructure facilities have to be upgraded in order that it may not prove an impediment to its economic growth (FIG 2 K). It is clear from the FIG 2 K that higher the social and economic infrastructure higher will be the development (except Kerala).

Literacy rate in Madhya Pradesh according to 1991 Census is 44 per cent, as against the all-India average of 51 (See FIG 2 L). In 2001 it rose to 64.11 per cent in M.P and 65.38 per cent in India. The low-income states invariably have a low literacy rate. Thus, the literacy rate in Bihar is 38 per cent, in Rajasthan 39 per cent, in Uttar Pradesh 42 per cent, in Madhya Pradesh 44 per cent and in Orissa 49 per cent. Among developed states, Maharashtra,



Gujarat, Punjab and Haryana have literacy rates of 65, 61, 59 and 56 per cent respectively. Besides, Kerala had attained 90 per cent literacy rate accordingly to 1991 census and Tamil Nadu had a 63 per cent literacy rate.



**FIG 2 L**

The female literacy rate in rural areas of Madhya Pradesh is only 20, as against 31 for all-India, while in urban areas female literacy rate is 59 per cent, against 64 per cent for all-India. The performance of Madhya Pradesh, in case of female literacy in rural areas, is slightly better than that of Rajasthan, in case of female literacy in rural areas, is slightly better than that of Rajasthan (12 per cent), Bihar (18 per cent) and Uttar Pradesh (19 per cent).

The crude birth rate in Madhya Pradesh during 1997 at 31.9 is the third highest after Uttar Pradesh (33.5) and Rajasthan (32.1). It is much higher than the all-India average of 27.2 in that year. The crude birth rate in rural areas is still higher at 33.6 in Madhya Pradesh, as against 28.9 for all-India.

The crude death rate at 11.0 in Madhya Pradesh is the highest amongst 14 non-special category states. Even Uttar Pradesh has a slightly lower crude

death rate of 10.3. The crude death rate in rural areas of Madhya Pradesh is still higher at 11.7, as against the all-India average of 9.6. The infant mortality rate in Madhya Pradesh is 94 in 1997, which is lower than 96 of Orissa, but substantially higher than the all-India average of 71. It is definitely a far cry from 12 in Kerala, or even 51 in Punjab or 47 in Maharashtra.

Lower medical coverage is definitely one of the causes of the high birth, death and infant mortality rates in the state. There are only two hospitals and dispensaries per thousand sq. kms of area in Madhya Pradesh, as against 13 for the country as a whole. Orissa has three hospitals and dispensaries, while Bihar has four and Rajasthan two hospitals and dispensaries per thousand sq. kms of area. Uttar Pradesh has a still better coverage with eight hospitals and dispensaries, while Punjab have 33 and Maharashtra have 37 hospitals and dispensaries per thousand sq kms of area Kerala has the highest number of 103 hospitals and dispensaries per thousand sq kms of area.

The same is the case with hospital beds. Madhya Pradesh has 43 hospital beds per lakh of population, while the all-India average is 99. In Punjab there are 123 hospital beds per lakh of population, whereas in Maharashtra and Kerala the number of hospital beds per lakh of population is 191 and 299 respectively.

How to reduce these economic imbalances? The way out for these disparities is vague. But some solutions are there. Public investment has to be substantially increased in productive enterprises in order to increase employment and reduce the level of poverty. In a labour abundant and scarce capital economy, enterprises like agriculture, agro-based industries and infrastructure should be developed so as to provide more employment with

less cost per unit of production. Economic growth alone may not increase employment nor reduce poverty.

## **Conclusion**

The foregoing analysis clearly established that Madhya Pradesh state grew at a moderate rate in the 80s, showed an accelerated growth in 90s or pro market liberalisation period. However, there has been a tendency to slow down the economic growth in the later part of the periods. In other words, the post liberalisation period has witnessed a remarkable revival of growth trend in the general economy of MP, but the growth acceleration has slowed down after the first phase of liberalisation period. After looking the changing share of the Madhya Pradesh economy we feel a relative stagnation in the share of its economy compared to national economy. The data presented in the earlier sections and the analysis so far clearly established that there were considerable disparities in socio economic development across the Indian states, even after the New Economic Policy. Instead of reducing the regional disparities, it increased over a period of time. There is no evidence of 'convergence' but only 'divergence' we can see in Indian states. Therefore, the pressing requirement of a backward state like Madhya Pradesh is more investment in social and infrastructure sectors. To improve the level of social services, massive investment in primary education and primary health services is required. Improvement in literacy, especially female literacy, and health indicators like infant mortality and expectation of life at birth will bring down the rate of growth of population. Stabilisation of population is an important pre condition for the sustained economic growth of Madhya Pradesh region. The experience of Kerala and to some extent that of Tamil Nadu clearly indicate that even at comparatively lower levels of economic development

measured in terms of per capita income, a state can enjoy comparatively higher level of social development.

Improvement in basic infrastructure facilities like power, irrigation, transport and communication is a pre-condition to improve the quality of life of the people and to usher in sustainable economic development in a backward state like Madhya Pradesh. Availability of assured power supply; developed transport system and modern telecommunication facilities are important factors to attract private investment into these states. The backward states are unable to attract private investments because of poor infrastructure and unfavourable investment climate. They are unable to improve the investment climate by improving the existing poor infrastructural facilities due to lack of resources. Their lack of resources is linked to their poor development. Thus, they are truly in a vicious circle. The solution lies in breaking this vicious circle.

**Annexure II a**  
**Capital Flows to States**

States	Credit Deposit Ratio	Public & Pvt Invest: per capita (Rs)	Cumulative share of financial assistance by all India financial institutions	Cumulative financial assistance by state financial institutions (up to March 1997)
Andhra Pradesh	64.9	21447.42	7.2	7.8
Bihar	20.7	2851.63	1.4	2.0
Gujarat	53.5	33875.33	13.5	9.3
Haryana	54.0	9201.26	2.5	4.8
Karnataka	61.8	24775.50	6.1	15.5
Kerala	42.3	12235.14	1.7	4.4
Madhya Pradesh	52.5	7286.73	5.1	3.2
Maharashtra	83.5	17555.66	21.0	11.5
Orissa	41.6	25524.89	1.8	3.7
Punjab	42.3	12687.99	2.4	3.6
Rajasthan	49.8	6763.22	4.5	6.1
Tamil Nadu	90.6	26292.19	9.0	10.6
Uttar Pradesh	31.9	3303.71	7.9	11.1
W. Bengal	43.4	7112.59	3.9	2.5

*Source: Various Publications of Planning Commission*

**Annexure II b**  
**Selected socio-economic indicators of Madhya Pradesh and All-India**

Item	Unit	Madhya Pradesh	All-India
Population		Census, 1991	Census, 1991
Density of Population	Per.sq.km	158 (196)**	274 (324)**
Total Population	In lakh	485.66 (603.85)**	8463.03 (10270.15)**
Male	In lakh	253.94 (314.57)**	4392.31 (5312.77)**
Female	In lakh	231.72 (289.28)**	4070.72 (4957.38)**
Population growth rate (1981-91)	Percent	27.2 (24.34)**	23.8 (21.34)**
Male-female ratio	Females /000 males	912 (920)**	927 (933)**
Rural population in total population	Percent	74.7	74.3
Main workers in total population	Percent	36.1	34.1
Female main workers in total main workers	Percent	26.3	22.5
Schedule caste population in total population	Percent	15.4	16.5
Schedule tribe population in total population	Percent	19.9	8.1
Per Capita Income		1999-2000	1998-99
At current prices	Rupees	11244	14682
At constant (1993-94) prices	Rupees	7876	9739
Agriculture & Irrigation		1999-2000	1999-2000(*)
Average per hectare production of food grains	Kilograms	1155	1633
		1998-99	1996-97
Agricultural intensity	Percent	136	133
Net cropped area as percentage of Gross Cropped area	Percent	79.0	75.3
Net area irrigated as percentage of net area sown	Percent	36.7	38.6
		1998-99	1998-99
Use of fertilizers per hectare of gross cropped area	Kilograms	48	90
Electricity		1998-99	1997-98
Per capita consumption	Kwh	358	349

Percentage of villages electrified (1991 census)	Percent	97	85
Transport & communication		1998-99	1996-97
Total road length per 100 sq.kms of area	K.M	22 (xx)	75 (x)
Surfaced road length per 100 sq.kms of area	K.M	19 (xx)	42 (x)
			1997-98
No.of registered vechiles per 000 population	No.s	45	40
			1998-99
Population served per post office	No.s	7163	6323
No. of telephones per 000 population	No.s	13	19
Literacy		1991	1991
Total literacy	Percent	44.7 (64.11)**	52.2 (65.38)**
Male literacy	Percent	58.5 (76.80)**	64.1 (75.85)**
Female literacy	Percent	29.4 (50.28)**	39.2 (54.16)**
Vital Statistics#		1999	1999
Birth Rate	Per'000	30.7	26.1
Death Rate	Per'000	10.6	8.7
Infant Mortality Rate	Per'000 live birth	91	70
Health		1998-99	1996-97
No. of government allopathic hospitals, dispensaries and primary health centres per lakh of population	No.s	3	5
No .of beds ( all types) in government allopathic hospitals and dispensaries per lakh of hospitals.	No.s	35	97
Banking		1999-2000	1999-2000
Area served per banks/branches	Sq.km	89	50
Per capita deposits	Rupees	4078	8333
Per capita advances	Rupees	2108	4754
Credit/Deposit Ratio	Percent	51.7	57.1
* = March, 2000			
** = data related to 2001 census			
# Data indicates old Madhya Pradesh			
x Length of all types road (excluding JRY roads)			
xx Road constructed under PWD only.			

Source: Directorate of Economic and Statistic, Madhya Pradesh

### **CHAPTER III**

#### **PACE AND PATTERN OF INDUSTRIAL GROWTH**

The modern economic growth stems from industrialisation. Industrialisation gives rise to high rates of growth in per capita real income and this observed relationship is summed up in the maxim of 'manufacturing as the engine of growth'. Modernisation, urbanisation, technological progress, improvement in standard of living etc. all go along with industrialisation and the speed of their occurrences is associated by a faster growth of industrial sector. We attempt a comparative review of the growth performance of manufacturing industry in Madhya Pradesh by analysing growth rates in some key variables like value-added, output and employment by manufacture since the eighties.

There is a common belief that Madhya Pradesh is industrially backward and the growth of its manufacturing sector is slow. Although the structure of the economy has undergone some transformation marked by decline of the primary sector and an increase in the share of the secondary and tertiary sectors, it is not a process of industrialisation that has acted as a springboard to stimulate growth in the secondary and tertiary sectors. To give some details, in 1980, the state accounted for 3.61 per cent of registered factories, 7.04 per cent of fixed capital, 4.21 per cent of total industrial employment, 4.01 per cent of gross output and 5.09 per cent of value-added by manufacture in the country as a whole. There has been some increase since then but not large enough to constitute a significant improvement; the share at present stands only 3.12 per cent for number of factories, 5.09 per cent for fixed capital, 4.67 per cent for employment, 5.36 per cent for output and 5.49 per cent for value-added in the factory sector. Madhya Pradesh industrial performance measured by any parameter has been on the low side. In this



chapter we have made an expository analysis of the industrial growth in Madhya Pradesh using the conventional tools of empirical study and an inter-regional framework during the post liberalisation era. The basic objective of the study is to evaluate the effectiveness of liberalization policy to promote industrial growth in a backward state like Madhya Pradesh.

### **3.1 METHODOLOGY**

The analysis of growth trend is mainly carried out by the sources of Annual Survey of Industries. The alternative method used has been the data on State Domestic Product (SDP) published by the Central Statistical Organisation (CSO). There are different sources of data and hence different growth rates of the same variables leading to somewhat different conclusions on the growth behaviour. There are problems in drawing a clear inference on the growth behaviour as different methods, ranging from average annual growth rate, and compound growth rate to exponential fit can be used for growth rate calculation. All these methods are tried the analysis depending upon the nature of data.

The analysis, as stated earlier, is carried out in a comparative framework. The growth rate of Madhya Pradesh is compared with the national level. The growth profile is portrayed against the background of inter state variations in industrial development.

### **3.2 INDUSTRIAL PROFILE OF MADHYA PRADESH.**

The marked rate of positive change and inspired growth in the recent times in India, has brought about encouraging changes in many states, among them Madhya Pradesh. Development in Madhya Pradesh is poised to bloom.

Madhya Pradesh is known as one of the largest states of the country. It covers an area of 308000 sq.km and houses over 60 million people with a rich cultural heritage, peace and communal harmony. Though more than 64 % of the population is literate (2001 census), a larger chunk of it, is living below poverty line. It was unfortunate that the industrial growth in the state failed to register a rapid progress during the past ten years and that has put the state among “Bimaru” or sick states, despite the fact that it has more than 811 heavy & medium industry and 308665 small-scale units (with an investment of Rs 176892.91 lakh) to employ 847248 persons.

A major part of the state is still backward both in terms of magnitude and quality of industrial units, employment and investment. In the undivided Madhya Pradesh out of the 45 districts, only 13 districts are having good concentration of industrial units. These 13 districts are: Bhopal, Gwalior, Indore, Dewas, Hoshangabad, Khandwa, Ujjain, Jabalpur, Durg, Raipur, Satna, Shadol and Bilaspur. Industrial estates in these 13 districts are providing diversification of industries but the concentration is getting increased (Jalaja, M.Phil thesis, 1993). Out of the 45 districts in the state, 35 have less than 1 per cent shares each in total employment and 32 have less than 1 per cent share each in total value added in the state. In some districts, the transportation and other infrastructural diseconomies are so overwhelming that locational advantages, if any, will be more than offset. Only those industries, of which raw materials require weight shedding, can be located in these districts. Though agglomeration should be reduced and there should be balanced regional development, yet it does not seem possible that all districts will be almost equally well developed industrially.

The over all cost competitiveness of a region arises from the cumulative advantage accruing from the growth and structure of industry itself increasing returns to scale, inter-industry linkages, development of skill and know how, agglomeration economies, differentiation process, etc of various factors summed up by the term 'resource endowment'. But the theories which explain riches or poverty in terms of 'resource endowment' do not really have anything much to offer by way of explanation. In particular, when we move away from land-based activities and come to comparative advantage.

In relation to manufacturing activities this kind of approach more often would yield question-begging results. For instance, we cannot say that industries will be located in regions which are well endowed with capital resources (human skills, entrepreneurship etc) for reasons other than industrial development it self. It seems that analytical approaches that take into consideration with Myrdal called the principle of 'Circular and Cumulative Causation' may be more logical than the 'resource endowment' approach to explain the 'regional problem' and in particular, why certain regions have grown fast while others have remained backward in industrial development.

With a view to promote and foster balanced development of industries, MP has adopted the growth centre approach. At present there are 19 industrial growth centres under different levels of development. Some of these growth centres like Pithampur near Indore, Malanpur near Gwalior, and Mandideep near Bhopal have become nationally known. Madhya Pradesh today offers myriad opportunities for industries whether it is resource based or foot loose. The state is today the largest producer of cement, Soya bean products and optic fibres.

On the background of development of industrial financing institutions, Madhya Pradesh Audyogik Kendra Vikas Nigam (MPAKVN) is really a history of industrial development in Madhya Pradesh in the medium and large-scale sector. It also represents the opening up for MP for private sector initiatives both from within the state and from other parts of the country. During the 60s the state continued to occupy the last place in the industrial rung in the country. The 70s witnessed determined efforts by the state government to improve the level of industrialisation. During the 80s MP registered impressive growth rates in industry related activities

The industrial base has diversified considerably creating unprecedented opportunities for further industrialisation sectors like automobiles, electronics, telecommunications, petro-chemicals, diamond cutting pharmaceuticals, biotechnology and nitrogenous fertilisers which had no presence ten years back have become attractive position. The exodus to Madhya Pradesh has already materialised.

The State is endowed with rich mineral resources like, Manganese, Bauxite, Coal, Iron, Copper, Mica, Diamond, Dolomite, and Limestone etc. The Major industries during the 80's were Electricity, Iron and Steel, Electrical machinery paper & Board, Cement and Textiles. These industries accounted for 76 percent of fixed capital, 64 percent of total employment in industries, 66.4 percent of total output and 78.73 percent of the total value added by manufacture in the State. Expansion in MPEB, Bhilai Steel Plant and BHEL has been responsible for the manufacturing activities to coming to the forefront. But these industries are the most lumpy investment industrial units, and highly capital- intensive and as such the employment generation by

them is naturally low. These big projects have not changed the socio economic face of the villages nearby. People in villages, which are within the periphery, continue to have no basic facilities. Culturally and socially they are as backward as people of interior areas. These big projects and industrial units are lonely outposts of development in a sea of stagnation. Horizontal and Vertical linkages are either absent or are very weak

### **3.2.1 Large and medium industries in M.P**

‘Industrialisation’ generally refers to the growth of large, medium and small-scale industries. It is true that backward areas cannot sustain large-scale industries in big number because essential backward and forward linkages for their growth are not found. Here, medium and small scales industries have built in flexibility are best suited to these areas. There is tremendous potential for these industries to take Madhya Pradesh into the ranks of the industrially advanced states of the country. The state has become a top producer of cement and Soya processed products now. It is worth mentioning that as on date there are 810 Medium and Large Scale units having a total investment of Rs.169541 crores offering employment to 2.42 lakh persons, where as in the year 1965 there were only 76 Medium and Large Scale units. A financial year wise details of large and medium industries in MP during the economic reform period is given in Table 3.1.

**Table 3.1****YEAR WISE DETAILS OF LMIs ESTABLISHED IN MP**

Year	No. of LMIs Established	Investment (Rs. In lakhs)	Employment
Up to 1990-1991	484	943799.52	187717
1991-1992	36	117863.13	11197
1992-1993	49	98536.95	8820
1993-1994	49	72883.91	6870
1994-1995	43	52873.94	5724
1995-1996	30	96270.00	4851
1996-1997	42	110037.96	7337
1997-1998	32	140856.94	5319
1998-1999	14	31702.33	1416
1999-2000	12	11006.46	1087
2000-2001	11	14071.12	1232
2001-2002	6	4168.09	345
2002-2003	2	1346.28	54
Total	810	1695416.63	241969

*Source- Directorate of Economics and Statistics-Bhopal.*

On the basis of product wise classification, 112 Agro- based LMIs units are working in Madhya Pradesh with an investment of Rs.901001 lakhs, employing 16548 workers. Agricultural processing industries like, rice mills, oil mills, sugar factories, flourmills and dal mills are some of this type. In the case of oil mills the main products and by products have a wide demand. The confectioneries bakeries and dairy units are market oriented. Most of the

factories falling in these groups are seasonal. Cotton textiles have a due share in Madhya Pradesh industrial sector. There were 104 units working up to 2003 by giving employment to 84975 workers (Table 3.2)

**Table 3.2**

**PRODUCT GROUP WISE SUMMARY REPORT OF LMI UNITS  
ESTABLISHED IN MADHYA PRADESH**

Product Group	No. of LMIs Established	Investment (Rs. In Lacs)	Employment
Agro Based	112	90100.20	16548
Automobile	22	22350.99	3979
Cement & Cement Product	37	311549.64	17981
Chemicals	81	556359.04	10508
Cotton/Jute/Man-Made Fibres & Textiles	104	187220.39	84975
Drugs/Pharmaceuticals/Medical	41	17745.50	4121
Electronics	30	54846.42	5859
Engineering	52	78293.43	12129
Food/Beverages	45	22954.53	5216
Forest Based	35	23235.00	12353
Heavy Electrical & Electrical	29	36611.78	22329
Iron & Steel/Ferro Alloys	81	99190.64	13713
Leather & Live Stock	9	3139.74	2391
Mineral (Non-Metallic)	17	13712.12	4843
Non-Ferrous Metal/Alloys	16	5487.84	1861
Other Misc. Products	29	37682.37	8590
Plastic & Petrochemicals	46	74972.60	4297
Rubber	12	42161.81	2964
Sugar	12	17802.59	7312
<b>Total</b>	<b>810</b>	<b>1695416.63</b>	<b>241969</b>

*Source- DES, Bhopal*

From the table it is clear that Agro-based industries Cotton Jute, Fibres & Textiles, and Iron and Steel Industries are the dominant industries in LMI Units. Besides these, Engineering Industries are also flourishing by establishing 52 units in M.P. District wise report of LMI units showed the spread of different industries. The “Trickle down effect” of these industries can assist the state economy in increased wealth creation and better quality of life for its people. Since the early eighties, the concept of Growth Centre has come up with the theme of rapid industrialization at selected centers. Growth Centre has been selected keeping in view the potential for development and locational advantages. Provision of the requisite infra-structure in phases and well organized attempts of state level agencies to expedite procedural aspects, has played major role in accelerating pace of industrialization in the state. A large number of automobile units set up at Pilhampur have earned the growth center the acronym of “Detroit of India”. In Pilhampur, 135 large and medium scale units established, up to March 2003. The district-wise distribution of large and medium scale industries in new MP is depicted in Table 3.3.

**Table 3.3**  
**DTIC – WISE REPORT OF LMI UNITS ESTABLISHED IN**  
**MADHYA PRADESH (Up to March 2003)**

Sl. No.	DTIC's	No. of LMI Units	Investment (Rs. in lacs)	Employment
(1)	(2)	(3)	(4)	(5)
1.	Badwani	4	34817.85	754
2.	Balaghat	8	1794.54	660
3.	Betul	6	1968.41	1263
4.	Bhind	-	-	-
5.	Bhopal	26	21195.61	26919
6.	Chhatarpur	-	-	-



7.	Chhindwara	18	20678.03	8576
8.	Damoh	4	14647.33	935
9.	Datia	4	1338.77	215
10.	Dewas	93	77594.65	21077
11.	Dhar	22	12564.80	1630
12.	Dindori	-	-	-
13.	Guna	6	530440.45	1972
14.	Gwalior	14	62867.72	21928
15.	Harda	2	2049.14	342
16.	Hoshangabad	15	8775.92	3950
17.	Indore	50	54013.54	20400
18.	Jabalpur	15	6254.69	8678
19.	Jhabua	7	4562.15	632
20.	Katni	6	51554.14	4546
21.	Khandwa	16	13714.94	10055
22.	Khargone	13	41225.85	5905
23.	Malanpur	61	134421.57	8602
24.	Mandideep	74	69134.16	8091
25.	Mandla	8	4470.78	855
26.	Mandsaur	7	2165.35	1403
27.	Morena	17	26380.95	3327
28.	Narsinghpur	7	2625.68	689
29.	Neemuch	6	12568.00	2904
30.	Panna	2	1120.60	401
31.	Pithampur	135	105869.35	16371
32.	Raisen	6	5515.00	369
33.	Rajgarh	20	9799.93	3605
34.	Ratlam	23	10177.66	9440
35.	Rewa	12	70633.99	2420
36.	Sagar	8	1008.72	605
37.	Satna	9	194910.85	7909
38.	Sehore	11	5162.82	1781

39.	Seoni	2	1600.00	200
40.	Shahdol	4	7892.00	2195
41.	Shajapur	14	18759.20	1953
42.	Sheopur	-	-	-
43.	Shivpuri	4	2028.10	667
44.	Sidhi	11	3091.46	761
45.	Tikamgarh	6	2222.96	570
46.	Ujjain	27	38887.37	25195
47.	Umaria	-	-	-
48.	Vidisha	7	2911.60	1219
	Total	810	1695416.63	241969

*Source: Directorate of Economics and Statistics-M.P*

It is evident from the Table 3.3 that there is concentration of industrial units in Growth Centres of Pithampur (16.67 per cent), Dewas (11.48 per cent), Mandideep (9.14 percent), Malanpur (7.53 percent) and Indore (6.17 per cent). In the case of industrial investment Guna (31.29 per cent), Satna (11.50 per cent), Malanpur (7.93 per cent) accounted for a large share. In the undivided MP, out of the 45 districts only 13 districts were relatively industrialized districts. (Raipur, Durg, Bilaspur, Indore, Gwalior Hoshangabad, Dewas, Ujjain, Jabalpur, Khandwa, Satna, Shahdol, and Bhopal). In Jabalpur district, the most dominant industry is the generation and distribution of power. In Bhopal district, manufacture of electrical machinery, in Ujjain, textiles industry Durg district is for iron and steel industry. Like way, the industrial development became concentrated in a few districts and few industries. This leads us to comment that the process of industrialization in MP is its initial stages, when industries get concentrated only in a few metropolitan centers.

### 3.2.2 Small Scale Industries

During the last two decades, the pace of industrial development has accelerated due to the formation of District Industries Centre for guiding and offering facilities to the entrepreneurs of the small-scale sector. New Industrial Policy announced on 24<sup>th</sup> July 1991 has reiterated the importance of the small-scale sector. Government has announced policy measures for promoting and strengthening small, tiny and village enterprises on 6<sup>th</sup> of August 1991, to provide further growth to small-scale sector. As per the policy, the primary object of the small-scale sector is to enable it to contribute to the economy particularly in terms of growth of output, employment and export. Promotion of small enterprises remains the crucial mechanism not only to generate large scale employment and ensure a high degree of self sufficiency but also to actually help reducing inter district disparities in growth.

It is important to note that due to the policy efforts during the eighties, substantial growth had occurred in the small scale sector, as can be gauged from Table 3.4. In fact, the state ranked first in the country in terms of number of units (12.69 % in 1996-97), the growth rate in enterprises in rural areas of Madhya Pradesh during the period of 1990-98 was the lowest (0.57%). The nineties, however, seemed failed to pay proper attention to this vital sector of industrial development. The neglect is obvious from Table 3.4. Where as during the 1980s the growth record of small firms was remarkably impressive, the much hyped reforms era witnessed an insipid growth. The neglect of the small enterprises is one of the most unfortunate features of Madhya Pradesh industrialisation during the 1990's especially at a time when even industrially advanced nations have realised the tremendous potential of this sector. For

enlarging employment, it would not be desirable to depend on the corporate sector or organised medium and large-scale sector. The operation of the market mechanism in a labour surplus economy shall hardly be able to humanise the private sector. The emphasis shall have to be shifted to the small scale industries sector. This calls for a positive role of the state. Up to 2003 there are about 318632 small scale units in the state having total investment of Rs.1828 crores and providing employment to about 9 lakh persons. The details are given in Table 3.4

**Table – 3.4**

**Information of Small Scale Industries Registered in M.P.**

Sl.No.	Financial year	Number of SSIs Registered	Investment (Rs. In lakhs)	Employment
1.	Up to 1979-1980	20934	5431.68	94298
2.	1980-1981	10325	1690.62	31062
3.	1981-1982	11796	2082.65	33787
4.	1982-1983	14425	2277.55	40581
5.	1983-1984	11152	3627.41	37197
6.	1984-1985	11007	2849.95	27104
7.	1985-1986	11456	4478.64	32266
8.	1986-1987	11782	6369.41	32223
9.	1987-1988	14548	5097.62	34697
10.	1988-1989	15656	5683.92	36572
11.	1989-1990	14960	6458.82	34064
12.	1990-1991	16503	6561.23	42492
13.	1991-1992	18502	5911.20	47334
14.	1992-1993	18595	5615.22	43668
15.	1993-1994	12907	5570.78	32226
16.	1994-1995	13201	22530.42	33535
17.	1995-1996	12855	10140.65	32699
18.	1996-1997	13001	10093.33	35038

19.	1997-1998	14787	14172.81	38250
20.	1998-1999	11592	14498.04	29747
21.	1999-2000	9312	11591.83	27122
22.	2000-2001	8734	7744.38	21805
23.	2001-2002	6338	10697.03	17371
24.	2002-2003	4297	5717.83	12110
25.	2003-2004 (up to February 2004)	9967	5975.67	21932
	Total	318632	182868.69	869180
A AGR (%)				
	1980-1 -1990-1	5.43	26.19	3.34
	1991-2-1997-8	- 1.83	12.71	-1.74

*Source: Same as Table 2.4*

The industrial units facing the challenges of globalization could be large as well as small. In Madhya Pradesh context, the impact of globalization on Small Scale Units is of critical concern because the SSI sector is the source of the bulk of employment in the modern industrial sector. One of the vital objectives behind fostering SSI development in the country is to initiate regional economic balance by counteracting or neutralizing as far as possible polarization of industrial activities within developed regions. Encouraging SSI development in backward areas ensures maximum utilization of local resources both human and material and in consequence helps to bridge inter regional gaps. This sector facilitates the generation of relatively more employment with relatively less capital investment. The interesting question is its capability to grow under the influence of the ongoing economic reforms. As the economic reforms are introduced to promote efficiency reduce the biases in favour of excessive capital intensity and encourage employment-oriented pattern of industrialization, the promotion of modern small-scale

industries has special significance. However, as the economic reforms given room for the greater play of market forces and for the large-scale units to enter into some of the areas earlier reserved for the small-scale sector, there is erosion of the advantages earlier enjoyed by the SSI sector. Besides, the spirit of ongoing economic reforms lies in the reduction of government subsidies. This works against the interest of the small-scale units living under protection. More significantly, the liberalization of foreign-trade and foreign investment policies has put the SSI units to struggle for survival in the vortex of global competition.

### **3.3 INTER STATE DISPARITY IN LEVELS OF INDUSTRIALISATION**

An inter-state comparison of levels of industrialisation in terms of the share of value added in factory sector is shown in Table 3.5. (See Annexure tables for more details) The predominance of only five states (Maharashtra, West Bengal, Gujarat, Tamil Nadu and Uttar Pradesh), which constituted over 55 per cent of national industrial income in 1960-61, has been maintained all through. The states, which had already high levels of industrialisation, continue to occupy the top ranks and the tendency of other states to catch up seems to be absent. The recent achievers have been Andhra Pradesh and Rajasthan, and Kerala a remarkable loser. With regard to Madhya Pradesh the rank remain stagnant over time and value-added has practically remained unchanged at about 5 per cent in 1980-81 onwards. It is particularly disappointing to note that with reference to its population base (about 8 per cent of national total) the state has failed to create a sustainable industrial base.

**Table 3.5****Inter-State Disparity in Levels of Industrialisation: 1960-61 to 1997-98**

States	Share (%) in value added in factory sector									
	1960-61		1970-71		1980-81		1986-87		1997-98	
	Share	Rank	Share	Rank	Share	Rank	Share	Rank	Share	Rank
Maharashtra	26.7	1	26.8	1	25.0	1	23.8	1	21.7	1
Tamil Nadu	7.9	4	9.8	4	10.3	3	10.4	2	8.7	4
Gujarat	10.5	3	9.1	3	9.5	4	10.2	3	9.2	2
West Bengal	20.5	2	13.6	2	11.5	2	7.8	5	6.2	6
Uttar Pradesh	6.3	6	6.6	5	6.3	5	9.1	4	9.2	3
Madhya Pradesh	2.4	12	3.6	9	5.0	7	4.3	9	5.5	9
Andhra Pradesh	3.1	8	4.0	8	4.9	8	5.4	7	7.4	5
Bihar	6.5	5	5.5	7	4.2	9	5.6	6	6.0	7
Karnataka	3.2	7	5.7	6	5.1	6	5.0	8	5.5	8
Punjab	3.0*	10*	2.3	11	3.2	11	3.1	11	3.0	12
Haryana	--	--	2.2	12	2.9	12	2.9	12	3.0	11
Kerala	2.7	11	2.9	10	3.3	10	2.7	13	2.1	14
Rajasthan	1.0	13	2.1	13	2.8	13	3.3	10	3.5	10
Assam	3.0	9	1.4	14	1.1	15	1.9	14	Neg.	15
Orissa	0.9	14	1.9	15	1.7	14	1.6	15	2.4	13

Source: CMIE (1990) and Annual Survey of Industries 1997-98: Summary Results of or Factory Sector.

Note: \* includes Haryana

Keeping the forgoing findings on inter-state variations in industrial development as the background we analyse growth trends in the manufacturing sector in Madhya Pradesh during the post liberalization period. The period of analysis is limited to 1997-98.

### 3.4 GROWTH TRENDS IN SDP BY MANUFACTURE IN MADHYA PRADESH

The trends in the level and growth of net domestic product by manufacture in Madhya Pradesh and all-India are depicted in FIG. 3A. It is seen that the growth movement was on a stagnant path till mid eighties both Madhya Pradesh and all-India. While, examining the trends, usually the numbers for the year 1987-88 are disregarded as that was a period of severe drought affecting most part of the country. The gap in the growth rates and levels of NDP (Net Domestic Product) by manufacture between Madhya Pradesh and all-India is marginal but widened over time.

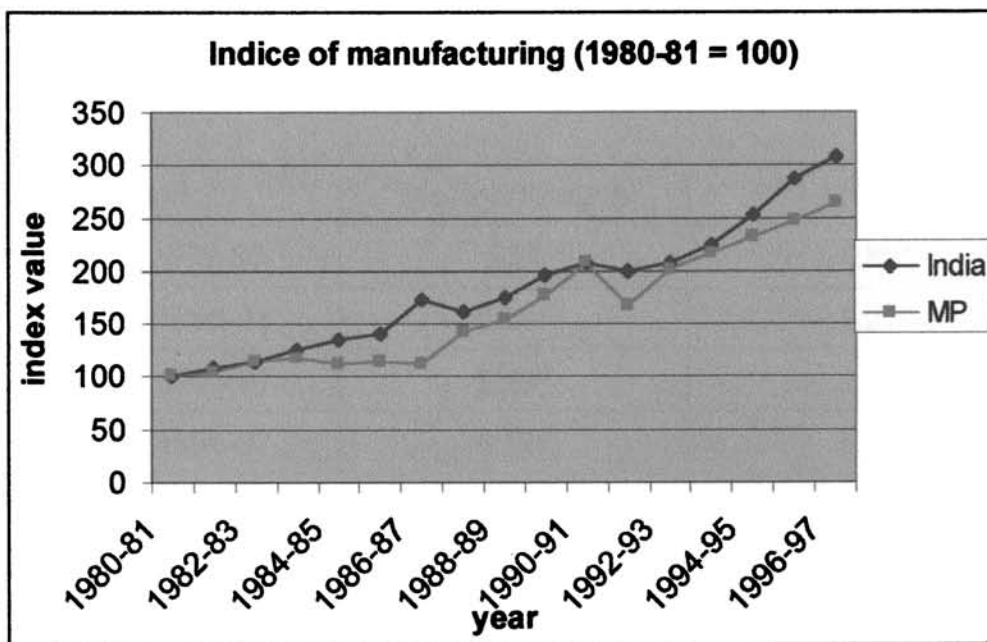


FIG 3A

The annual growth rates in net domestic product by manufacture at 1980-81 constant prices in Table 3.6 clearly shown that, Madhya Pradesh manufacturing was under stagnation as was the case with all-India. The growth performance improved in the eighties and it was marginally lower than all-India



rate. Madhya Pradesh showed further improvement during the nineties by recording annual growth rate more than to all-India average. However, the secular growth trend was found to be lower than all-India average

The picture of the pre-liberalization period was different. To generalise, the growth performance of Madhya Pradesh was clearly better during the post liberalization era as compared to the pre-liberalization. The empirical evidence from SDP portrayed undoubtedly a better growth rate of the initially poor Madhya Pradesh state region during post-liberalization period. But MP growth rate for manufacturing was always below the national average.

**Table 3.6**  
**Annual Growth Rates (exponential) of NSDP by manufacture**  
(Per cent)

Period	Madhya Pradesh	All-India
1970-71-1979-80	5.21	5.89*
1980-1 to 1990-91	6.38*	7.21*
1991-2 to 1996-97	8.68*	9.01*
1980-1 to 1996-97	6.57*	6.87*
1993-4 to 2000-01	7.42	5.35

Source: Calculation using CSO data.

Note: \* indicates significant at 5 per cent level.

The findings emerging from analysis of NSDP old (1980-81 prices) series indicate much improvement in the growth performance of manufacturing industry in Madhya Pradesh in the nineties representing the post liberalization as compared to the earlier decade representing the state-led planning period. However, the growth rate began to slow down towards the

end of the first phase of liberalization policy. May be there are some intrinsic shortcomings to the globalisation policy for promoting manufacturing industry in Madhya Pradesh. Madhya Pradesh did improve its growth performance during the post reform period, but taken as a whole it distinctly at a lower rate as compared to national rate. Now it is useful to know whether it is the registered or unregistered segment of the manufacturing sector that has been shaping the overall growth trend of manufacturing industry in Madhya Pradesh. Therefore, we analyse growth rates in NSDP by registered vs. unregistered segments of the manufacturing sector.

### **3.5 GROWTH TRENDS IN MANUFACTURING: REGISTERED VS. UNREGISTERED**

In India the manufacturing activity takes place in registered as well as unregistered sectors. The registered sector consists of units registered under the Factories Act, 1947. All other units are clubbed into the category of unregistered sector. Generally, units in the registered sector are relatively larger in size and use power in the manufacturing operation. And, the unorganized sector consists of a large number of small units. The relative importance of these sectors to a large measure depends upon the product-structure of the manufacturing industry.

In Madhya Pradesh the unregistered sector is seen to have recorded the highest growth rate during 1991-92 to 1996-97 as compared to earlier period record (Table 3.7)

**Table 3.7****Annual Growth rate of registered and unregistered Segments (per cent)**

Period	Registered		Un registered	
	MP	All India	MP	All India
1980-1-1990-1	7.71	8.29	4.27	6.14
1991-2-1996-7	8.60	10.63	9.24	8.31
1980-1-1996-7	7.02	7.63	5.87	5.70

*Source: Same as Table 3.6*

In Madhya Pradesh the unregistered sector is seen to have recorded the highest growth rate during 1991-92 to 1996-97 as compared to pre reform period. The relatively good growth performance of NSDP by manufacture in Madhya Pradesh in post reform period is due to the relatively good growth performance of unregistered sector during the reform period. However, we are not making any conclusion because the data on unregistered units are not available from the secondary sources and hence no detailed analysis on this sector is possible. At the same time the analysis of growth trends in the factory sector (registered) can be possible by using the selected variables like fixed capital, output, value-added and employment reported in the Annual Survey of Industries (ASI). In any case, further analysis is confined to factory sector.

### **3.6 MACRO GROWTH TRENDS IN THE FACTORY SECTOR**

The Annual Survey of Industries gives a comprehensive data relating to the units registered under the Factories Act and constitutes the major source of information on the factory sector in India and its state-regions. Until 1997-98 the data related to the large scale units and small-scale units engaged in manufacturing, electricity, gas, water supply, warehousing, repair services etc

spread over 25 two digit product groups. Strictly speaking, manufacturing is to be defined to refer to activities confined to the first 18 two-digit groups of ASI factory sector. On the basis of the data from ASI summary results for factory sector the data for manufacturing sector as defined above have been reconstructed by excluding such activities as electricity, gas water supply, repair services etc covered under the last seven two digit product groups is changed in the revised NIC and the ASI has adopted the revised classification in 1998-99 reports onwards.

We attempt a comparative review of the growth performance of manufacturing industry in Madhya Pradesh by analyzing growth rates in some key variables like employment, output, fixed capital, net value-added by manufacture since the eighties. The period of analysis is chosen in such a way that it would capture growth trends of the manufacturing industry operating the policy framework of liberalization and globalization introduced since 1991.

The basic objective of the analysis is to evaluate the growth behavior of a backward state in the light of liberalization. The analysis of the growth behavior of industrial income apparently seems to be a simple and straightforward issue. However, there is no unique way of examining the matter. For, there are different sources of data and hence there could be different rates of growth of the same phenomenon leading to somewhat different conclusions on the growth behavior.

**Table 3.8**  
**Annual Compound Growth Rates of Key variable in aggregate**  
**Manufacturing in factory sector**

(Per cent)

Period	M.P	All India
<b>Employment</b>		
1980-1 to 1990-1	1.53	0.27
1991-2 to 1997-8	2.67	2.62
1980-1 to 1997-8	2.40	1.58
<b>Fixed Capital</b>		
1980-1 to 1990-1	14.43	15.10
1991-2 to 1997-8	14.12	19.05
1980-1 to 1997-8	15.36	17.32
<b>Value of Out Put</b>		
1980-1 to 1990-1	18.33	15.15
1991-2 to 1997-8	19.25	18.53
1980-1 to 1997-8	19.22	16.71
<b>Net Value-added</b>		
1980-1 to 1990-1	14.69	14.36
1991-2 to 1997-8	21.15	19.49
1980-1 to 1997-8	17.74	16.83

*Source: Calculated from ASI various issues*

Table 3.8 gives the estimated growth rates of some major variables of manufacturing industry in the factory sector in Madhya Pradesh and all-India. The comparison of MP's growth record with all-India reveals that except capital investment, other variables record a moderate growth rate. To review

the growth performance of manufacturing sector in MP we note with concern. Anyway we are not jump into a conclusion that the new economic policy is promoting the growth stimuli to the manufacturing sector of Madhya Pradesh. In fact, the evidence from ASI clearly projected the relatively poor performance of investment in manufacturing industry in MP as compared to all-India. The reasons could be many include the differences in the commitment and capabilities for implementation of the respective state governments. The registered manufacturing segment of the factory sector during the decades of 80s and 90s grew at a higher rate than national level aided mainly by the public sector undertakings in iron and steel and electrical machinery. The share of public sector units is 50 per cent in output and is 80 per cent in net fixed capital. But in the nation's industrial income MP's share is around 5 per cent while MP's population is nearly 8 per cent of India's population and in area the largest one. The increasing share of the industry in the domestic product is not accompanied by increase in the share of employment. The employment multiplier of heavy and basic industries has not been very high and the trickle down effects very limited. One of the main reasons for the lower growth in organised employment is the slowdown in public sector employment in the 90s. Public sector employment has actually declined from 1990-91 to 1997-98 in the state, and impacts growth rates for organised employment, since its share has been around a third of all organised sector employment.

In this regard, we have shown in Table 3.9 the relative shares of major variables of manufacturing of Madhya Pradesh at all-India level. If a reasonable view is taken the overall picture shows the stagnancy in Madhya Pradesh position in the country's manufacturing industry.

**Table 3.9**  
**Relative share of Madhya Pradesh in all India totals of key**  
**variables of manufacture**

(Per cent)

Year	Fixed Capital	Employment	Out put	Net value-added
1980-81	7.04	4.21	4.01	5.05
1981-82	7.72	4.35	4.12	5.43
1982-83	8.14	4.52	4.19	5.73
1983-84	8.56	4.57	4.44	5.09
1984-85	9.23	4.99	5.05	5.09
1985-86	9.08	4.62	4.79	5.86
1986-87	9.01	4.78	4.82	4.30
1987-88	8.80	4.82	5.20	5.52
1988-89	5.19	4.10	4.76	4.95
1989-90	8.12	5.09	5.29	5.49
1990-91	7.72	5.11	5.25	5.84
1991-92	6.55	4.85	5.17	5.06
1992-93	7.87	5.23	5.82	5.45
1993-94	7.19	5.19	5.77	6.07
1994-95	7.50	4.90	5.56	5.67
1995-96	7.21	5.22	6.21	6.84
1996-97	6.33	4.98	5.77	5.55
1997-98	5.09	4.67	5.36	5.49

*Source: Calculated from various issues of Annual Survey of Industries*

It is revealed that Madhya Pradesh's share in the aggregate fixed capital at all India has declined over time. The movement in the shares of value added shows constancy. This is a discouraging finding.

The forgoing analysis has drawn a poor growth profile of the manufacturing industry in the factory sector in Madhya Pradesh. There could be variations in the growth stimuli across different industries. The analysis therefore, seeks to trace growth behaviour at two digit industries in the factory sector.

### 3.7 GROWTH TRENDS: INDUSTRIES AT TWO-DIGIT NIC

The analysis of growth trends in industries reveals the industrial base of an economy. The growth behaviour of specific industries could be used to explain the growth profile of the manufacturing industry.

**Table 3.10**  
**Percentage contribution of different industries in total manufacturing sector in MP (1997-98)**

Industry Group	No. of Factories	No. of Employees	Fixed Capital	Value Added	Output
20-21	23.64	9.46	3.22	0.45	11.65
22	2.95	2.99	1.03	2.14	1.53
23	10.89	10.71	5.54	5.29	7.34
24	1.06	4.94	4.05	9.07	5.28
25	0.09	0.41	0.02	0.07	0.06
26	0.75	0.36	0.06	0.11	0.08
27	2.03	0.56	0.51	0.45	0.33
28	4.06	3.71	1.25	0.96	1.19
29	0.18	0.38	0.06	0.41	0.45
30	5.57	3.88	8.64	9.85	7.29
31	5.22	2.26	5.61	2.83	3.59
32	11.19	7.20	13.64	6.08	6.97
33	8.90	18.34	27.70	47.05	28.19
34	5.99	2.44	0.93	1.03	1.41
35-36	7.79	7.87	2.95	6.21	6.29
37	2.59	3.68	1.73	1.77	2.79
38	0.66	0.38	0.11	0.07	0.08
39	0.87	1.42	0.35	0.99	0.54
40	1.91	17.11	20.72	2.01	11.76
42	0.68	0.58	1.50	4.89	2.06
74	0.33	0.06	0.03	0.02	0.01
97	2.69	1.14	0.24	2.19	1.10
Total	100.00	100.00	100.00	100.00	100.00

Source: ASI 1997-98



The annual growth rates in output, employment and net-value added in two digit NIC product groups in the factory sector for Madhya Pradesh is recorded in Table 3.11

**Table 3.11**  
**Growth rate of key variables of NIC 2-digit in the factory sector**  
**in Madhya Pradesh (per cent)**

NIC	Employment		Output		Net-value added	
	1980-1 to 1990-1	1991-2 to 1997-8	1980-1 to 1990-1	1991-2 to 1997-8	1980-1 to 1990-1	1991-2 to 1997-8
20-21	-1.36	1.67	23.03	15.09	28.27	-7.50
22	4.47	-8.05	21.25	-2.29	24.65	6.89
23	-3.69	4.92	6.92	45.06	1.40	38.37
24	6.61	6.30	22.94	20.62	23.86	31.15
25	X	X	X	X	X	X
26	X	X	X	X	X	X
27	X	X	X	X	X	X
28	1.70	3.97	12.41	9.15	15.07	4.85
29	X	X	X	X	X	X
30	0.34	0.35	13.33	15.75	21.80	23.19
31	22.97	7.37	59.66	38.33	49.48	35.68
32	5.65	-1.23	22.97	11.81	18.95	15.08
33	3.85	9.41	17.22	28.73	10.04	50.06
34	7.58	8.10	23.34	22.40	22.94	13.91
35-36	1.92	1.03	16.81	11.97	15.85	6.25
37	3.21	5.21	30.54	18.89	22.29	21.57
38	X	X	X	X	X	X
40	-9.39	0.09	7.18	21.16	-2.88	21.08
97	0.25	0.64	19.00	49.61	29.00	46.28

Note: X= negligible

Source: Calculation using data from ASI

*(\*2-digit industry codes- (20-21 Food products, 22 Beverages, tobacco etc, 23 Cotton textiles, 24, Wool, silk, manmade fibre etc, 25 Jute and other vegetable fibre, 26 Textile products, 27 manufacture of wood and wood products, 28, Paper and paper products, 29 Leather & products, 30 Basic chemicals, 31 Rubber plastic, petroleum etc, 32 Non-metallic minerals, 33 Basic metal and alloys, 34 Metal products and parts, 35+36 Machinery & equipment, 37 transport equipment, 38 Other manufacturing industries, 40 Electricity, 97 repair service )*

As regards Madhya Pradesh, the large number of 2- digit product groups did not record higher growth rate during the post liberalization period than pre liberalization period. Only five industries, viz cotton textiles, rubber plastic and petroleum etc. Basic metals and alloys, electricity and repair services recorded higher output growth rates in the nineties as compared to the eighties. And the relatively better growth rate in net-value added in the nineties is confined to six out of these five industries and wool, silk, manmade fibre etc. From the growth behaviour of output, net value added and employment observed in Table 3.10 a general conclusion can be made to the effect that the pro-market liberalization policy has not helped stimulating higher growth rate in a large number of industries.

The impugnable finding of significant improvement in the macro growth rate of manufacturing industry in the nineties could be due to the higher growth rates witnessing the limited range of industries growth buoyancy. It is also instructive to note that the better performing industries are mainly the ones producing resource-based metal industries, which do not have the benefit of providing inter-industry linkages and agglomeration essential for accelerating modern industrialisation. As for the relative growth rate in Madhya Pradesh compared to eighties the nineties shows that a few non resource-based metal and mineral industries have recorded better growth performance in nineties. While, the growth rate of capital goods industries and modern industries has been relatively high in eighties. Most industries doing well at eighties have been

growing slow in nineties in Madhya Pradesh. It could be due to the stiff competition from the liberal import and dumping by the multinational companies. In the post liberalisation era the local industries found difficult to survive and they have not been making adequate capital investment. To get some insights into this statement, the growth behaviour in fixed capital investment in Madhya Pradesh and all-India are analysed. (See Table 3.12)

**Table 3.12**

**Annual growth rate of fixed capital in Madhya Pradesh and all-India (2 digit NIC) (per cent)**

NIC 2 digit	Madhya Pradesh		All India	
	1980-1 to 1990-1	1991-2 to 1997-8	1980-1 to 1990-1	1991-2 to 1997-8
20-21	29.98	17.35	15.75	31.75
22	30.29	20.03	21.64	27.01
23	7.63	50.65	10.84	30.61
24	18.03	24.35	18.35	25.79
25	X	X	X	X
26	X	X	X	X
27	X	X	X	X
28	7.97	-7.87	12.59	22.65
29	X	X	X	X
30	16.18	17.91	13.07	26.47
31	74.87	30.72	23.95	26.98
32	24.44	17.79	24.18	23.34
33	10.13	30.64	14.08	15.05
34	21.89	39.96	16.70	26.45
35-36	15.80	13.53	16.45	18.38
37	25.25	16.17	12.38	23.38
40	1.56	0.68	14.24	12.53
97	15.92	37.90	3.14	25.59

*Notes and source as in Table 10*

It is observed that only four industry groups viz. 23 (Cotton textiles), 34 (Metal products and parts), 33 (Basic metals) and 97 (repair services) has had the benefit of higher growth rate in fixed capital investment in Madhya Pradesh relative to national averages. The growth rate of fixed capital in electricity was only 1.56%. This may be due to the disinvestments in power sector in 1987-88. While examining the trends if we omit that year the growth rate of power sector in fixed capital was 18.42 per cent. Because of the severe drought virtually state didn't made any investment during that period. By inference, the relatively poor growth rate of fixed capital could be an important factor for the slow growth profile of manufacturing industry in Madhya Pradesh. Madhya Pradesh could not attract sufficient capital investment and could not achieve a growth rate equal to or higher than all India in the manufacturing industry during the post liberalisation period.

What were the impediments for the growth of the state industrial sector? We will examine this elsewhere in the study. Meanwhile, we close here the discussion on the product wise growth performance of the manufacturing industry in Madhya Pradesh.

## **Conclusion**

This is not an exhaustive analysis aimed at looking at all aspects of industrial growth of the state. In order to arrive any conclusion, one needs to look into supply side constraints like infrastructure, power, credit etc and demand side factors are also to be considered. It is to be noted that MP's position in the industrial map of India come down, one reason is the decrease in the share of fixed capital, the other point to be noted here is that the share of value added from the state has remained stagnant (5 %) over two decades.

This is a matter of concern for policy makers. This may be some 'unfavourable' factor; specific to the state region must have relatively reduced the rate of capital accumulation, which in turn affects the relative growth of manufacturing industry.

On the whole, it seems that the industrial growth rate has been relatively high in the pro liberalisation period as compared to the command-planning environment in Madhya Pradesh. It is the net outcome of the remarkably high growth rates in a few and depressingly low growth rates in a large number of product groups in Madhya Pradesh. And other finding is that only two industries namely basic metal and alloys and repair services showed a high growth rates during the period of study. The growth stimulating effect of the pro liberalisation policy varies across industries and how the general growth profile of a particular state-region shaped would depend upon the types of industries in its industrial structure.

The registered manufacturing segment of the factory sector during the decades of 1980 and 1990 grew at higher rate than the country's factory sector aided mainly by the public sector undertaking in iron and steel and electrical machinery. The Bhilai Steel Plant at Bhilai, BHEL at Bhopal, is the very large unit accounting for a major chunk of output and capital investment. To put in a general growth perspective, region specific factors also exert a profound influence on the growth behaviour of manufacturing industry in a state region.

In a sense, the deficiencies of P in overhead facilities arise out of the very backwardness of the state; since the availability of transport skills and entrepreneurship is itself a function of the level of industrialisation. To break this vicious circle it is necessary to tackle both ends of the problems

simultaneously. Full advantage should be taken of the possibilities of major industrial expansion in existing activities as well as along new lines, for which the region has economically justifiable claims. Investment in overhead facilities to enable the state to benefit from the immediate opportunities should be accorded first priority and at the same time any surplus resources that may be available should be spent in increasing and strengthening similar facilities in other areas of potential development.

We will attempt the empirical verification of the above stated propositions, relating to structural and region specific factors affecting the growth behaviour of an industry, in the preceding chapter. Meanwhile, the discussion in this chapter is closed by reiterating the ambiguity in the findings on the development pattern of the manufacturing industry in MP reflected in different source of data and pleaded to find an alternative growth estimates presented in the study.

### Annexure III

**Table 4.B**

#### Percentage shares of selected States in Employment

Year	Madhya Pradesh	Maharashtra	Gujarat	Tamil Nadu	Andhra Pradesh
1980-81	4.21	17.33	9.06	2.66	8.63
1984-85	4.99	15.95	2.62	11.23	8.68
1990-91	5.11	15.18	8.27	11.79	10.19
1992-93	5.23	14.73	8.34	12.27	10.74
1993-94	5.19	15.11	8.73	12.72	10.03
1994-95	4.90	14.49	8.49	12.64	11.53
1995-96	5.22	15.11	9.52	12.32	11.84
1996-97	4.98	14.99	8.74	12.76	10.49
1997-98	4.69	14.89	8.72	12.89	11.91
1998-99	3.51	16.23	9.50	13.09	10.08
1999-2000	3.28	14.89	10.07	13.51	11.14
2000-01	3.17	14.68	9.41	14.22	11.36

*Source: Calculated from various issued of ASI*

**Table 4C**

#### Percentage shares of selected States in Fixed Capital

Year	Madhya Pradesh	Maharashtra	Gujarat	Tamil Nadu	Andhra Pradesh
1980-81	7.04	15.97	8.98	6.82	6.09
1984-85	9.23	16.00	8.98	7.19	5.76
1990-91	7.72	16.58	9.80	8.52	11.80
1992-93	7.87	16.56	10.07	8.06	10.35
1993-94	7.19	17.36	10.68	8.84	9.91
1994-95	7.50	15.63	10.05	10.00	8.99
1995-96	7.21	16.77	16.27	8.72	6.99
1996-97	6.33	18.75	12.83	8.90	6.74
1997-98	5.15	17.96	15.31	8.30	7.15
1998-99	4.48	14.53	17.76	9.02	6.60
1999-2000	4.14	17.52	16.57	9.33	6.75
2000-01	3.52	16.90	18.04	9.37	6.59

*Source: Calculated from various issued of ASI*

**Table 4D****Percentage shares of selected States in Value-added**

Year	Madhya Pradesh	Maharashtra	Gujarat	Tamil Nadu	Andhra Pradesh
1980-91	5.05	25.03	9.55	10.31	4.89
1984-85	5.09	23.01	10.30	11.38	6.92
1990-91	5.84	23.30	8.67	11.25	5.79
1992-93	5.48	22.75	11.28	10.25	6.03
1993-94	6.07	24.43	10.66	11.18	5.55
1994-95	5.67	22.00	11.39	10.78	7.01
1995-96	6.84	23.66	12.64	10.23	7.03
1996-97	5.55	21.21	12.27	10.20	5.81
1997-98	5.97	21.39	11.56	8.84	6.01
1998-99	3.05	21.52	12.99	9.38	5.50
1999-2000	3.75	22.32	12.44	9.55	5.88
2000-01	4.32	21.77	11.74	11.51	6.18

*Source: Calculated from various issued of ASI*



## CHAPTER IV

### INDUSTRIAL STRUCTURE OF MADHYA PRADESH

The Industrial Scenario of India underwent a drastic change in the mid- 1980s with the first phase of liberalization. The new economic policy introduced in 1991 is expected to provide a further boost to the industrial sector. After this crucial period, many state governments have come out with industrial promotional policies, especially through foreign direct investments. At no time in the past was there such competition among the states to attract investments from the private sector. The incentives were tax concessions, subsidies and special incentives for setting up industries in backward areas. To understand this new consensus of private industry led growth of the secondary sector; one has to analyze the past trends on the growth and structure of manufacturing sector at a disaggregated level. However, without discerning the trends over the years at industry level, any growth strategy, propelled by private investment, may be unduly optimistic.

Before understanding what an 'industrial structure' is, we have to find out the meaning of 'industry' and 'structure'. The term 'industry' refers to portmanteau containing assorted things. It contains mining, manufacturing electricity generation and other industrial activities of these, the major one is manufacturing. This conventionally implies the transmission of material objects with the help of technology, capital and labour in order to add utility or value. Others like mining and electricity aid the process of manufacturing or value addition. An industry is a location specific concept. The availability of only mineral resources, land, water and power will not ensure the right kind of people for industrial venture.

The growth performance of an industry has a close relationship with its structure. The industrial structure of national output and productive resources is a key aspect of an economy, in the process of growth. Because it permits as to observe the impacts of the advance in technological knowledge, the differential response of demand to increased productive capacity, and rise in per capita income and the shift in the size and location of groups in society association with the different industries.

The term 'structure' has different connotations. Generally, it refers to a system composed of various elements. Structure describes the characteristics and composition of markets and industries in an economy. At its most aggregated level, it relates to the relative importance of broadly defined sectors of the economy. Here the focus is on the relative size of the primary secondary and tertiary sectors. Secondly structure can refer to the number and size distribution of firms in the economy as a whole. Structure also relates to the importance and characteristics of individual markets within the economy. The industrial structure can be defined in another way i.e., "the relative importance of individual industries or groups of industries with in an economy". Industrial base of an economy can be derived from the concepts of location quotient and coefficient of specialization or statistical methods of central tendencies measuring concentration or dispersal of industries in the manufacturing sector of the states. It needs to emphasis that the policy regime has an impact on the industrial structure in its various dimensions. For example, the product structure of the industry under liberalization-policy is formed by the consumer's taste and market forces and could be different from under the command and controlled policy regime, which regulates the product and production capacities according to plan priorities. Similarly, the

liberalization implies privatisation leading to a reduction in the share of public sector in the industry structure. The structural changes being brought by a shift in the policy-regime towards economic liberalization could have different impact on the growth of the industry sector in different states, depending upon the difference in the historical sociological and economic conditions.

The industrialization in Madhya Pradesh started with setting up of public sector enterprises like Bhilai Steel Plant, Bharat aluminium Company Ltd, Korba, Bilaspur, Bharat Heavy Electrical Ltd Bhopal, Telecom Factory Jabalpur, security Paper Mill in Hoshangabad, Currency Printing Press at Dewas, News print Mill at Nepa nagar, Alkaloid factory at Neemuch, Indo-Burman Petroleum Company etc. In the context of the ongoing economic liberalization, this seeks the privatization and assigns a significant role to the free market forces and the private sector for industrial development. The dynamism of the state is reflected in the fact that it was the first state in the country to abolish Octroi first to go into fibre optics technology and the first to develop a toll road opening up infrastructure development to the non-government sector. In the industrialization pattern of Madhya Pradesh discussed in the previous chapter we have noted that industrial development of Madhya Pradesh has not been impressive enough even during the post-liberalization era. A logical question comes up here. What explains the relatively not high, more aptly the relatively poor performance of the manufacturing industry in Madhya Pradesh? This is the basic question that remains to be explored in the study.

Perhaps, there is no single answer to the question. The performance "failure" could be the result of the interaction of a complex set of external and

systematic constraints on demand and supply sides of the factors-structural as well as region specific-that influence industrial growth. Generally growth theories hold the view that intra-sector as well as inter-sector relations are vital ingredients in economic growth, which is the outcome of a set of inter-related changes in the economic structure. Thus, industrial growth and structure at the state level has to be analyzed at disaggregate level in order to evaluate industrial policies and potential for growth.

Under these circumstances, the biggest challenge for the government and industry is to mitigate if not avoid, the hardships caused due to the decline in production and yet make the industry resilient to face global challenges thrown upon due to the new policy framework. Despite major strides made in industrial development particularly during the last two decades, Madhya Pradesh continues remain a backward state.

Moreover the formation of Chhattisgarh on 1<sup>st</sup> November 2000 divided Madhya Pradesh into two parts. Madhya Pradesh lost its land area, but also its natural resources and revenue and this will have a negative effect on the growth of the state that had started moving on the path of economic reforms. It will affect the industry and thereby the income and output in the state.

#### **4.1 Structural Diversification of the Growth Pattern**

An important economic indicator for evaluating the over all growth of a state is the State Domestic Product. A study of the sectoral composition of the state income throws light on the relative position of different sectors like agriculture mining industry and services. It also provides a general frame of reference for studying changes in the contribution of various sectors to the total

state income. In other words, it enables us to measure the structural changes achieved and concurrently indicates the sectors that need to be given a fillip for further development. The importance of different sectors in the economic life of a country or region may be gauged by their contribution to the national income in industrially advanced countries; the contribution to the primary sector to the national income is relatively less than that of the secondary sectors and the tertiary sectors. On the other hand, the contribution of the primary sector is more than that of the other sectors in under developed countries.

Great changes in the industrial structure should normally get reflected in fundamental changes in the economy. To examine this it is useful to divide the economy into three sectors, primary secondary and tertiary, which are inter related and largely complementary to each other. The primary sector (agriculture, forestry, fishing, mining and quarrying) provides the basic supplier for all industrial activities in the form of food for all living being. A high contribution by the tertiary sector is generally taken as an indication of industrialization.

**Table 4.1**

**Percentage Distribution of Different Sectors in Madhya Pradesh and India to the Total Income at Constant prices: (1980-81)**

Year	Madhya Pradesh			India		
	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1980-81	55.63	18.36	26.01	41.30	23.00	35.70
1990-91	48.51	20.87	30.62	34.08	26.65	39.27
1996-97	46.32	21.24	32.44	28.69	27.72	43.59

Source: DES Bhopal

We begin by looking into the importance of primary, secondary and tertiary sector in total income of the State and the Country given in Table 4.1. The share of the primary sector in MP, which was 55.63 in 1980-81 declined to 46.32 in 1996-97. As compared to this, the share for India, over the same points of time, was 41.30 and 28.69 respectively. Thus, the importance of agriculture is getting reduced at a faster rate in Indian economy than Madhya Pradesh. However, both in India and MP, the primary sector still constitutes a significant proportion of the national income.

The secondary sector in MP contributed 18.36 per cent of SDP in 1980-81, 21.4 in 1996-97. The corresponding share in Indian economy was 23 and 27.72 per cent respectively. Over the period of 17 years, the 7.54 per cent annual average growth rate of the share of secondary sector was remarkably lower in MP than the 11.04 per cent growth rate of Indian economy. The share of tertiary sector in MP was 26.01 per cent in 1980-81 increased to, 32.44 per cent in 1996-97. As compared to this; the share was 35.70 per cent and 43.59 per cent respectively in India. Over the period of 17 years, the share of tertiary sector in MP increased at the annual rate of 8.59 per cent, which was below the growth rate of 11.26 per cent of Indian economy.

#### **4.1.1 Changes in sectoral distribution of workers**

From the view point of structural analysis in an inter-regional framework a noteworthy feature of Madhya Pradesh is that the proportion of work force engaged in agriculture is the highest in the country. Here we examine diversification in terms of shifts across broad sectors in rural areas for the period 1983 to 1999-00. Diversification of rural livelihoods is important for several reasons. At the economy level, the demographic pressures on land

have been increasing significantly in the state. With its share of around 35 per cent in GDP, agriculture and allied activities has to bear the burden of 75 per cent of rural workers. Therefore, labour productivity has been low in agriculture. Urban areas have their own problems of demographic pressures. As a result, rural non-farm sector becomes an escape route for agricultural workers. In order to increase wages in agriculture and to shift the workers to more productive areas, rural diversification is almost the only avenue open.

While examining the trends, the per cent of workers in primary sector in rural Madhya Pradesh has been much higher than that of all India rural in 1983 and for all subsequent years for which data is presented. The gap between the shares of primary sector workers in rural India to the share in rural Madhya Pradesh has also been higher in the 1990s than in the 1980s. This shows that the change in workforce diversification has been much faster in other parts of India than has happened in Madhya Pradesh.

**Table 4.2**

**Broad Sectoral Distribution of Workers in Rural MP and India**

Year	Rural Madhya Pradesh			Rural All India		
	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1983	90.7	4.8	4.6	81.6	9.0	9.4
1987-88	87.9	6.8	5.3	78.9	11.3	10.3
1993-94	90.4	4.5	5.1	78.2	10.2	11.6
1999-00	87.5	5.8	6.9	76.1	11.3	12.6

*Source:* NSS Rounds

There has been a gradual expansion of the tertiary or service sector in Madhya Pradesh, with manufacturing related activities growing very gradually

in rural Madhya Pradesh (See Table 4.2). In fact secondary sector share of employment even dropped between 1983 and 1993-94, only to pick up from then to 1999-2000. The per cent of workers in secondary sector in rural Madhya Pradesh was 4.8 per cent in 1983 and 5.8 per cent in 1999-00. That in all India it increased from 9 per cent to 11 per cent during the same period. In 1983, the tertiary sector's share in the state was half of that of all India and has remained so even today.

Although the structure of the economy has undergone some transformation marked by decline of the primary sector and an increase in the share of the secondary sector is largely accounted for by construction and manufacturing, the share of the power sector in the state SDP is relatively very small. (See Annexure Table 4A). But in the early 90s the picture was different. Madhya Pradesh has no power shortage in the early 90s. Due to the government policy and partition now Madhya Pradesh is facing an acute shortage of power. This in fact will affect the industrial sector. 35.66% of the total power generated in Madhya Pradesh comes from Chhattisgarh region. 23.86% of it is distributed in the region itself and the remaining 11.80% is distributed to the rest of the State. Madhya Pradesh now has to purchase this power from the State of Chattisgarh.

Hotel industry has also the same destiny. Hotel industry in Bhopal the capital of Madhya Pradesh has estimated a loss of about 40 percent of its business on account of the formation of Chhattisgarh State. We can see this impact from the Annexure Table 4.A clearly. Chhattisgarh is known as the "rice bowl of Madhya Pradesh". Now Madhya Pradesh has to buy rice from the new State. 27% of Madhya Pradesh's total production of tendu leaves



comes from the forest of Chhattisgarh and it brings to Madhya Pradesh, revenue to the tune of Rs 39 crores. Based on the rich forest resources, about 10,000 Small Industrial Units are functional in the area, are now in the new State. So after 1<sup>st</sup> of November 2000 Madhya Pradesh underwent a drastic change. The region with high potential investible resources, with low PQL index and poor human capital resource endowment provides the required market as well for the growth of manufacturing activities. The performance of the regions manufacturing sector is relatively poor. How does one explain this relative backwardness of the manufacturing sector in Madhya Pradesh?

#### **4.2 Changing Industrial Structure of Madhya Pradesh**

The industrial history of various countries reveals that regional inequalities tend to decline as development proceeds (Williamson, 1965). Logically it would happen if (a) developed regions stop growing and backward regions do grow, (b) developed regions grow at a slower pace than the backward regions and (c) developed regions encounter a declining phase, whereas undeveloped regions remain even stagnant.

These phases might be witnessed owing to a variety of reasons, such as industry mix of the regions, existing technological linkages and operation of some behavioral factors at regional levels. Government intervention with the market forces is also likely to influence the pattern of growth.

‘The set or sets of industries developed in a region’ may be defined as the industrial base of the region. This definition of an industrial base is useful for understanding the economic structure of a regional economy and for making inter-regional comparisons. In order to understand the industrial

G9043

structure of the state/regions we can use location quotients and specialization coefficient technique. Location quotient is a measure of relative regional concentration of a given industry compared to national magnitude, which provides the basis for a qualitative judgment about the 'structural base' of the regions industrial economy. The industry with high 'location quotient ( $LQ \geq 1$ ) constitute the industrial base of the region. If the quotient of industrialization in a region is greater than unity, it may be interpreted to mean that the region has a higher share of industrialization than it should have on the basis of its population. Conversely, the quotient value of less than unity in a region indicates a low level of industrialization i.e., the region has less than its due share on the basis of population.

To see whether the overall industrial system has a concentrated or a diversified pattern, the concept of coefficient of specialization can be made use of. If the given region has a proportionate mix of industrial identical with the national system, the value of specialization will be zero. In contrast, if all industrial employment of the region is concentrated in a single industry its value will be unity. Changes in the value of specialization coefficient across regions and between different times periods will reflect the degree of industrial diversification achieved in the given region. A less diversified structure in a region is likely to ease a growth rate pattern somewhat different from the nation. In the words of Professor Sargent Florence " Location of an industry may describe any one of four structural situations. The unequal density on the land of the total industrial population somewhere: the localization of particular industry anywhere measured by the coefficient of localization and the localization of particular industries somewhere measured by the location quotient of that industry in that place".



Since our analysis starts on 80s, here we briefly explain the industrial structure of Madhya Pradesh in the early 60s and 70s. In the early seventies six major industries namely, generation and distribution of electricity, iron and steel, electrical machinery paper and paper board, cement and textiles, accounted for 76 per cent of fixed capital, 64 percent of total employment in industries 66.4 per cent of total output and 78.73% of total value added by manufacture in the state (Table 4.3). Iron and Steel industry occupied first rank in respect of value added and total output and its relative share in the state total of fixed capital and employment increased appreciably. The industrial core of the economy of the state seems to consists of electric power, iron and steel, manufacture of electrical machinery and equipment, paper, cement and textile, with iron and steel occupying first rank in respect of value added and electrical machinery occupying second rank in terms of percentage of value added in the state. Textiles although has lost its relative position in respect of fixed capital, still occupies first rank in respect of its percentage share in total employment in industries of the state. Compared to 1960, the dominance of six major industries in the state has increased considerably. If we take only three of the six industries we find that in seventies iron and steel, generation and distribution of power, manufacture of electrical machinery and equipment, accounted for 66.77 per cent of fixed capital 34.25% of total industrial employment 42.7% of total output and 53.5% of total value – added by manufacture in the State. These three industries being capital intensive had lower share in total employment in the manufacturing sector. Thus there has been some reshuffling in the relative position of important industries in the state. The textile industry is one of the lagging industries in the state, registering a decline in employment per factory and slow growth of fixed

capital per factory. Even among the six dominant industries, the fast growing are three, namely, iron and steel, electrical machinery and equipment and power generation and distribution. These industries have increased their relative capital intensity on the basis of criteria of value added per employee and the share of wages in value – added.

**Table 4.3**  
**Relative position of six major industries in Madhya Pradesh in 1960 and 1974-75**

Industry	Fixed capital		Employment		Output		Value added	
	1960	1974-5	1960	1974-5	1960	1974-5	1960	1974-5
Electricity	16.7	34.38	1.8	14.28	2.8	5.6	4.3	9.09
Iron & Steel	.19	27.14	.5	12.60	0.51	26.29	.05	28.39
Electrical machinery	1.7	5.25	1.6	7.36	0.9	10.84	2.4	15.83
Paper & Paper board	0.9	4.50	2.39	2.84	0.8	5.03	0.8	6.20
Cement	7.9	2.39	3.0	3.09	4.3	4.36	4.6	4.26
Textiles	8.1	2.37	39.1	30.02	26.0	14.28	35.3	14.98
Total	36.2	76.03	48.3	64.62	35.3	66.40	47.15	78.37

*Source:* Calculated from ASI

An analysis of Madhya Pradesh's industrial base in relation to that of the nation as a whole can be identified; by using economic base study concepts and it may shed some light on the role of industrial structure in shaping its growth rate. The divergence in the growth rate between Madhya Pradesh and the whole country may be due to significant difference in the industrial mix. In a more common parlance, the industrial structure hypothesis can be advanced to explain regional differentiation process in the context of Madhya Pradesh.

Viewed in that framework, the slow pace of industrialization in Madhya Pradesh and its divergence from the national pattern may be due to weak inter-industry linkage and a lopsided industrial structure. An analysis of the industrial base in Madhya Pradesh in relation to all – India may therefore shed some light on the influence of the industrial structure in shaping the growth rate.

The study of regional growth patterns in India showed that the development of a capital goods and demand based industries (footloose) is confined either to developed states or where heavy central public sector investment has been made. Madhya Pradesh belongs to the second category. Analyzing the limited success of this second category a representative of the Ministry of Industry has stated before the Estimates Committee of Parliament; “it is a fact that despite large central investment, the industrial development of some of the states had not taken place. It appears to be a fact that the type of industries which have been taken up in the Central Sector have necessarily been of the kind which did not have the forward and backward linkages, like steel or coal or some of the heavy fertilizer projects etc”. Basic metal and alloys are the dominant industries in Madhya Pradesh. May be they are not making any linkage effect in industrial sector.

We have noted above the core industries of Madhya Pradesh in 1960s and 70s. The coefficient of localization, as stated earlier, is a measure, which gives a precise degree of the localization of any particular industry in a place/district/region. This statistical index of localization measures the local concentration of a given industry and compares it with the distribution of industries as a whole (Table 4.4).

**Table 4.4**

**Coefficient of localization of major industry groups 1961 1971 1981**

Industry groups	Coefficient of location		
	1961	1971	1981
Agro based	0.3983	0.4482	0.3815
Forest based	0.4141	0.6447	0.5523
Iron and steel and metal industries	0.4251	0.6995	0.7436
Cotton textiles	0.1694	0.4486	0.3927

It may be observed from the table that cotton textile industries had a lower coefficient than the other groups of industries in all the years, indicating that cotton textiles industries are more evenly distributed in the districts than the other type of industries. Iron and steel and metal industries have a highest coefficient indicating that these were confined to a few districts without being distributed fairly in the different districts of the state.

Here we trace the industrial structure of 80s and 90s of manufacturing sector in Madhya Pradesh. As structural changes do not take place every year, we limit the analysis to 2 digit product groups at two points of time say 1984-85 and 1997-98.

**Table 4.5**  
**Industrial contribution of Madhya Pradesh 1984-85 – 1997-98**  
**(Percentages to respective all industries total)**

Old NIC Code	Industry	Employment		Net Value-added	
		1984-85	1997-98	1984-95	1997-98
20-21	Food Products	7.99	9.46	2.63	0.45
22	Beverages	3.86	2.99	1.88	2.14
23	Cotton Textiles	13.35	10.71	3.86	5.29
24	Wool, Silk and Synthetic Fibre	2.98	4.94	2.72	9.07
25	Jute Textiles	0.49	0.42	0.19	0.07
26	Textile Products	0.30	0.36	0.02	0.11
27	Wood & Wood Products	0.79	0.56	0.57	0.45
28	Paper & Paper Products	3.29	3.71	3.82	0.96
29	Leather & Fur Products	0.34	0.38	0.11	0.41
30	Chemicals & Chemical Products	3.49	3.88	5.25	9.85
31	Rubber, Plastic Petroleum and Coal Products	0.49	2.26	1.29	2.83
32	Non-metallic mineral products	6.90	7.20	12.89	6.08
33	Basic Metal and alloys	25.07	18.34	32.35	47.05
34	Manufacture of Metal products and parts except machinery and Transport	1.17	2.44	1.36	1.03
35-36	Non-ele. Machinery Electric Machinery	7.69	7.87	16.02	6.21
37	Transport equipment	1.69	3.68	1.07	1.77
38	Other manufacturing Industries	0.07	0.38	0.04	0.07
40	Electricity	18.23	17.11	13.73	-2.01
97	Repair services	1.23	1.14	0.37	2.19

**Table 4.6****Industrial base of Madhya Pradesh 1984-85 – 1997-98**

Old NIC Code	Industry	Employment		Net Value-added	
		1984-85 LQ	1997-98 LQ	1984-95 LQ	1997-98 LQ
20-21	Food Products	0.63	0.70	0.33	0.06
22	Beverages	0.86	0.49	0.85	0.87
23	Cotton Textiles	1.10	1.24	0.59	1.56
24	Wool, Silk and Synthetic Fibre	0.86	1.38	0.80	3.00
25	Jute Textiles	0.13	0.19	-0.11	0.09
26	Textile Products	0.21	0.10	0.02	0.05
27	Wood & Wood Products	0.83	0.74	1.14	1.96
28	Paper & Paper Products	0.89	1.09	1.08	0.43
29	Leather & Fur Products	0.39	0.31	0.16	0.56
30	Chemical and products	0.21	0.49	0.43	0.70
31	Rubber, Plastic Petroleum and Coal Products	0.54	0.65	0.26	0.57
32	Non-metallic mineral products	1.32	1.61	2.70	1.71
33	Basic Metal and alloys	2.95	2.73	3.63	3.70
34	Manufacture of Metal products and parts except machinery and Transport	0.47	0.87	0.58	0.52
35-36	Non-ele. Machinery Electric Machinery	1.66	0.87	1.97	0.54
37	Transport equipment	0.26	0.66	0.15	0.28
38	Other manufacturing Industries	0.08	0.26	0.03	0.05
40	Electricity	1.59	1.57	1.07	-0.11
97	Repair services	0.54	0.73	0.26	4.47

*Source: Calculated from Annual Survey of Industries.*

Having identified the dominant industries the rest of the analysis will deal only with these industries. To begin with, let us examine the relative shares of the different industry groups in total industrial employment



originating in Madhya Pradesh's factory sector in 1984-85 (See Table 4.5). A major portion of the industrial employment in Madhya Pradesh is accounted for by Basic Metal and alloys (25.04 per cent), electricity (18.23 per cent) and textiles (13.35 per cent). Other sources of employment include food products, non metallic mineral products and electrical machinery. In 1997-98, the liberalization period major portion of the employment is accounted by basic metal and alloys (18.34 per cent), electricity (17.11 per cent) and cotton textiles (10.71 per cent) other industries are food products, electrical machinery and non metallic mineral products. After twenty-three years (1974-75 to 1997-98) the employment structure remains constant. The picture is different if industries are ranked on the basis of value added. The importance of cotton textiles declines (3.86 per cent) and that of non-metallic mineral products (12.89 per cent) and electrical machinery (14.25 per cent) increases significantly. Only the engineering industries give an impetus for improvement. The non-commodity sectors are contributing a major portion to the economy. The commodity producing sectors are contributing very less. In 1997-98, in terms of value added the core of industrial base consists of basic metal and alloys (47.07 per cent), chemical industries (9.87 per cent), wool silk and synthetic fibre (9.07 per cent) electrical machinery (6.21 per cent), non-metallic mineral products (6.08 per cent) and cotton textiles (5.29 per cent). The industrial base consisting of few engineering goods industries of the eighties have seen changed over time to few non-resource based industries in nineties. Electrical machinery and non-electrical machinery lost its location advantage in liberalization period, more than that electricity lost its value added advantage also. During the liberalization period, wool silk and synthetic and repair services got locational advantage. (Table 4.6)

In a multi-regional economy with mobility of factor inputs the industrial composition of a regional economy will have a tendency to specialize in certain activities depending upon its natural resource base, localization economics and the local demand base. Yet, inter-regional balance will require a diversified industrial base for each region in order to ensure the required growth stimuli through inter-industry linkages and agglomeration economies.

As the process of industrialization gains momentum one expects the industrial base of the region to get diversified, and the share of the agro-based industries to fall. In this context, the trend in Madhya Pradesh's industrial structure was not encouraging. In 90s we have seen a concentrated industrial structure with lack of a fair share in capital goods industries in MP. So we can conclude like this: one of the reasons for the industrial backwardness of Madhya Pradesh is lop-sided industrial structure. This is evidenced by the dominance of single industry; basic metal and alloys. Industries such as wool, silk and synthetic fibre, basic metal and alloys etc show a positive impact of economic reforms on their performance in the post liberalization period. Nonetheless, the performance of non-metallic minerals, electrical machinery and electricity deteriorated further during the post liberalization period.

### **4.3 Structural Ratios and Technical Coefficients.**

In order to comprehend the nature of industrial backwardness of the state it will be useful to examine some of the structural ratios and technical coefficients in the factory sector (2 digit level) at both state and national levels (Table 4.7). We begin with the capital labour ratio, (fixed capital per employee) which reflects the capital intensity and note that the industrial

system in Madhya Pradesh is dominated by capital-intensive industries as compared to all India. The capital output ratio (fixed capital per unit of value added) however is high in the overall industrial system and particularly in food products reflecting poor capital productivity in the region. Specialized industries in the region, (except non metallic mineral products) however, show lower capital output ratio indicating relatively higher capital productivity to their all India counter parts. The pattern is more or less same when capital productivity is measured by the ratio of fixed capital per unit of gross value of output. The differential between the state and the country however is narrow. The product-mix of the state perhaps explains the difference.

If capital output ratio is found high in a region as compared to all India in a given industry that region is generally regarded to have locational disadvantages for that industry. Based on that logic, the crucial industries, (20-21, 31, 32, 34, 37, 38) inadequate development can be explained in terms of region-specific factors. The last 3 industry groups are engineering goods industries. To the extent the engineering industries are foot-loose in character and that there is national freight equalization for major raw materials of the engineering industry, the inadequate development of these industries in the region is not easy to comprehend. Without a strong engineering base, inter industry linkages are minimal and hence capital productivity is poor. Further, the lower capital productivity reflected in the high fixed capital to value added ratio in the region may have been due to regional differences in technology levels and product-mix patterns. The cost of creating one job means the fixed capital per employee. This is the indicator of capital intensity of the industry. The capital labour ratio suggests that the state is dominated by more capital-

intensive industries as compared to all-India. The industries with high capital intensity include groups such as, 23, 27, 32, 42 and 97.

Generally, labour productivity gets reflected in the ratio of value added per employee. The food products and some engineering goods industries labour productivity is below the national level. In any case, labour productivity by itself is an incomplete-criterion unless it is related to wage rate. Overall, Madhya Pradesh's industrial system is placed high as compared to all-India in relation to average wages per worker. Lower wages per worker is seen textiles, rubber and petroleum products chemical products and some engineering goods industries. The wage rate is much higher than the national average if all industries are taken. In theory, some interesting relationship exists between the wage rate and labour productivity. In a comparison of regional structure with all-India, industries can be identified in the following typology of wage – productivity relationship.

- (a) Wage rate is higher and labour productivity is higher
- (b) Wage rate is lower and labour productivity is lower
- (c) Wage rate is higher but labour productivity is lower
- (d) Wage rate is lower but labour productivity is higher.

As far as the factory sector data show, Madhya Pradesh's industrial system overall is characterized by higher capital intensive higher labour productive and higher wages as compared to all India. A situation of higher wage rate is seen generally in the industries having higher labour productivity. The complex situation of higher wages coexisting with lower productivity is seen confined to food products, and paper and paper products. An exploitative situation of lower wage rate with higher labour productivity is found limited to

water supply and repairs. It must be emphasized that the general pattern of wage-productivity relationship in the region's engineering industry (basic metal and alloys, metal products, electrical machinery products) is characterized by higher wage rate with higher labour productivity or lower wage rate with lower productivity as compared to all India. All considered there is no clear cut evidence from the factory sector data to suggest that the industrial system in Madhya Pradesh is characterized by higher wage cost and higher labour productivity.

It may also be useful to put Madhya Pradesh in comparison with other major states in India. The analysis of key structural ratios and technical coefficients of all industries taken together in the ASI factory sector across major states reveals certain interesting features (**Table 4.8.**)

**Table 4.7**  
**Structural Ratios and Technical coefficients in industries for**  
**factory sector – 1997-98**

Industry Code		FK/E	NV/E	W/L	FK/NV	FK/O	NV/O	Eml/NV
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
20-21	M	157271	89314	23853	17.61	0.13	0.01	3.20
	I	159703	86818	22566	1.83	0.21	0.11	0.33
22	M	159083	131917	17964	1.21	0.33	0.27	0.21
	I	669484	640950	14471	1.04	0.27	0.26	0.27
23	M	239402	91210	17834	2.62	0.36	0.14	0.27
	I	220152	61657	32419	3.57	0.43	0.11	0.58
24	M	378946	338764	48387	1.12	0.37	0.33	0.17
	I	426427	133133	36112	3.20	0.52	0.16	0.32
25	M	29628	31515	22973	0.94	0.19	0.20	0.81
	I	37613	54589	46075	0.69	0.23	0.34	0.87
26	M	75698	55946	20971	1.35	0.36	0.27	0.44

	I	109438	84771	24400	1.29	0.23	0.18	0.35
27	M	426549	149273	20431	2.86	0.76	0.26	0.18
	I	104373	47846	18564	2.18	0.40	0.18	9.46
28	M	156495	47903	48937	3.27	0.51	0.16	0.99
	I	351274	104141	45185	3.37	0.63	0.19	0.52
29	M	72440	196513	44162	0.37	0.07	0.18	0.35
	I	98235	92905	26843	1.06	0.16	0.15	0.35
30	M	102921	468693	42740	2.20	0.57	0.26	0.13
	I	839629	293803	52613	2.86	0.56	0.20	0.24
31	M	114639	231234	38969	4.96	0.76	0.15	0.21
	I	677382	221122	47281	3.06	0.34	0.11	0.26
32	M	875209	155885	46126	5.61	0.95	0.17	0.37
	I	474460	125547	30216	3.78	0.83	0.22	0.31
33	M	698032	473602	66730	1.47	0.48	0.32	0.17
	I	909050	297504	61705	3.06	0.65	0.21	0.24
34	M	176007	78084	33743	2.25	0.32	0.14	0.52
	I	218978	110925	39235	1.97	0.33	0.17	0.44
35-36	M	173396	145768	55253	1.19	0.23	0.19	0.48
	I	250339	200615	56670	1.25	0.27	0.21	0.36
37	M	217167	88715	37309	2.45	0.30	0.12	0.55
	I	277519	179689	65149	1.54	0.31	0.20	0.43
38	M	143279	33854	24982	4.23	0.71	0.17	1.15
	I	205648	157510	43327	1.31	0.28	0.21	0.34
40	M	559657	-21696	76517	-25.80	0.85	-0.03	-3.73
	I	1118520	252536	62315	4.43	1.32	0.29	0.30
42	M	1186198	1542400	34833	0.77	0.35	0.46	0.03
	I	130162	94699	54693	1.37	0.32	0.23	0.62
97	M	99755	355295	43742	0.28	0.11	0.38	0.13
	I	90494	105167	45992	0.86	0.06	0.07	0.50
All Industries	MP	462181	184639	46535	2.50	0.48	0.19	0.31
	India	424672	157112	41496	2.70	0.51	0.19	0.33

Source: Calculation based on ASI factory sector.

**Table 4.8**  
**Some Structural Ratios and Technical Coefficient in Major States**  
**(ASI Factory sector)**

State	Rank in terms of value added	Fixed capital per Employee		Net Value-Added per Employee		Wages per worker		Fixed Capital/ Value added		Emoluments /NV	
		Rs.	Rank	Rs.	Rank	Rs.	Rank	Ratio	Rank	Ratio	Rank
Andhra Pradesh	5	264406	14	96632	13	23521	15	2.74	7	0.31	
Assam	15	276307	12	82312	15	27887	14	3.36	4	0.41	
Bihar	7	525686	4	340622	1	66583	1	1.54	15	0.22	
Gujarat	2	736329	2	164940	7	38480	9	4.46	1	0.31	
Haryana	11	340853	10	150253	8	46978	5	2.27	13	0.41	
Karnataka	19	397793	8	138450	9	37788	10	2.87	6	0.35	
Kerala	14	231578	15	90791	14	31747	13	2.55	11	0.45	
Madhya Pradesh	6	462181	7	184639	6	46535	6	2.50	12	0.31	
Maharashtra	1	520344	5	230508	2	61357	2	2.26	14	0.38	
Orissa	13	850694	1	209574	3	51814	3	4.06	2	0.29	
Punjab	12	347365	9	103208	12	34594	12	3.37	3	0.40	
Rajasthan	10	517340	6	189299	4	40540	8	2.73	8	0.71	
Tamil Nadu	4	273790	13	106157	11	35503	11	2.58	10	0.42	
Uttar Pradesh	3	577985	3	187162	5	47629	4	3.09	5	0.30	
West Bengal	8	314735	11	116899	10	45479	7	2.69	9	0.44	
All India		424673		157112		41496		2.70		0.33	

*Source : Calculated from ASI – 1997-98*

In terms of level of industrialization Madhya Pradesh is way behind many other states. This however is not necessarily because of a high wage cost or higher capital intensity. Among the industrially developed states only West Bengal presents a complex situation of higher wage rate coexisting with lower

labour productivity. Then there is parity in rank of other developed states in relation to labour productivity and wage rate. What therefore appears more relevant to judge the efficiency of a region's industrial system is the wage-productivity relationship than the relationship between capital intensity and capital productivity.

In order to analyse industrial production in Madhya Pradesh it is worthwhile to formulate some specific questions to which these structural ratios would provide the answers. They are: what is the increase in the cost of creating one job? ( $FK/E$ ). The cost of creating one job means the fixed capital per employee. This is the indicator of capital intensity of the industry. In Madhya Pradesh cotton textiles (23), Wood and wood products (27), Non-metallic mineral products (32), Water supply (42) and Repair (97), have higher capital intensity than other industries compared to all India. But as a whole industry is concerned Madhya Pradesh has higher capital intensity than all India.

What is the level of growth in the productivity of an employee, and in per unit of fixed capital ( $FK/NV$  and  $NV/E$ ). The labour productivity in food productivity is very poor but the capital productivity is very high. As a whole labour productivity in Madhya Pradesh is high but capital productivity is low. This may be of rising capital intensity in the manufacturing sector of the state. What is the change in the share of wages in value added i.e., growth of ( $EMI/NE$ )? The share of emoluments in value added in food products increased faster than any other industry. Other manufactures (38) experienced rise in the share of emoluments in value added prominently. Region wise or industry wise Madhya Pradesh share is below the all India level.



What is the change in value added generated by one unit of output i.e., growth of (NV/O). The value added generated by output of food products (20-21) is very low compared to all India. But the industries water supply (42) and repair services (97), this ratio is very high. But if we take industry as a whole the ratio of value added to output is par with all India.

What is the increase in fixed capital per unit of output i.e., growth of (FK/O)? The growth in capital output ratio of Madhya Pradesh is below the national level. This means that every unit of output is produced with more and more fixed capital. This rise is much higher for electricity (40, other manufacturers (38) and wood products (27).

All these structural ratios explain the increasing capital intensity, falling employment, and falling labour cost in Madhya Pradesh. Rising wages with falling employment explains the increasing skill composition of the employees which results in an increase in labour productivity. The increasing capital intensity and higher skills explain the rising output per employee.

#### **4.4 Infrastructure Penetration in Madhya Pradesh**

What were the impediments for the growth of the state industrial sector? The same question we have raised the previous chapter. In a CMIE study the relative infrastructure development index of Madhya Pradesh in 1980-81 was 62.1, the last one among the 14 major states. In 1991-92 also Madhya Pradesh maintained its last rank by the index value of 71.5. In 1996-97 Madhya Pradesh kept this position (74.1 index value) without any alteration. Infrastructure is generally regarded as a necessary pre requisite of economic development as well as a critical variable in the process of economic

development. A bird's eye view reveals that non availability of quality power, poor road conditions, connectivity and sloppy laws, rules and regulations made the state an 'investment-proof' State.

For example the demand supply gap of power reached at its peak of 2000 MW during the late nineties the state industry was helpless despite the state had 3000 MW (approx) power production capacity including hydel and thermal power plants. (FIG 4A)

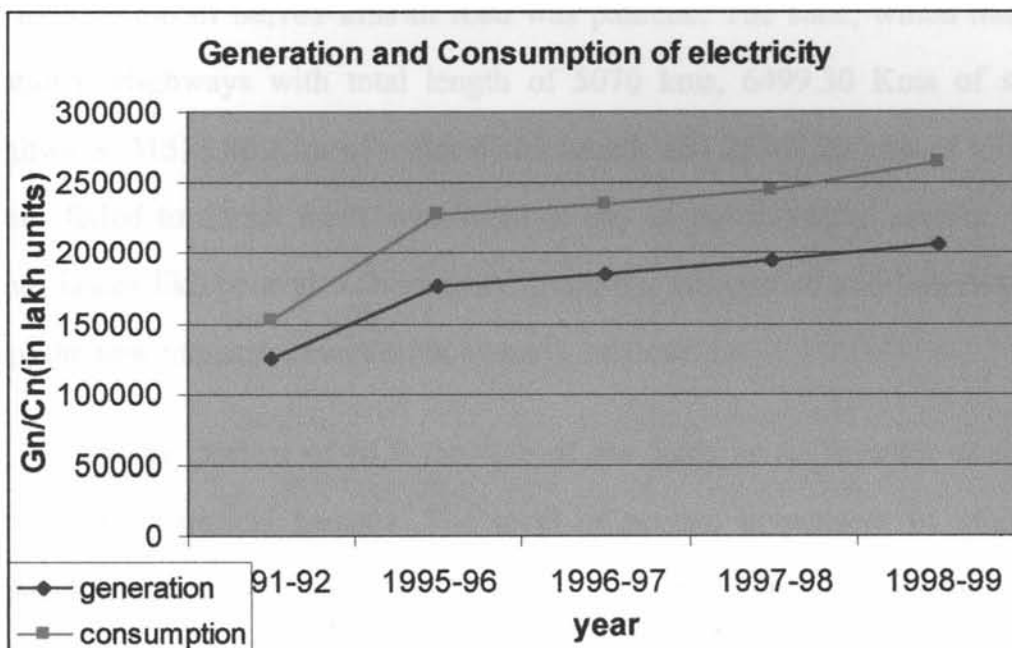


FIG 4A

However, the previous government reasoned that the demand-supply gap widened since most of the power plants were in Chhattisgarh after division of Madhya Pradesh. But the transmission and distribution losses are still hovering around 47%-60%. In past 10 years, the government tried to resuscitated the ailing power system by introducing Power Reforms Act, electronic metering to check power pilferage, establishment of an independent State Electricity Regulatory Commission for fixation of tariff but all in vain.

As a result, the state did not maintain the pace with the nation to achieve 8% growth, the state needed immediate steps to generate more power but steps taken by the state government in this regard were futile. Now the new government is in the saddle it has listed its priorities clearly. The state will be able to break the vicious circle of constant shortages by inducting some flexible rules to attract investments in establishing new generation capacities.

It was not only power that put state industry in trouble. The condition of total length of 68,101 kms of road was pathetic. The state, which has 18 National Highways with total length of 5070 kms, 6499.30 Kms of state highways, 31515.80 Kms of major district roads and 25368.20 kms of village roads failed to attract fresh investment in any of the industrial sectors. The other issues like poor air connectivity, multi-tier tax system and bureaucracy kept the new industries away from Madhya Pradesh.

In the context of M.P the role of the State as an investor assumes critical for historical reasons. The level of private investment in Madhya Pradesh has remained historically very low. It is the public sector investment that sustains industrial activities. Madhya Pradesh state responded to the Central Government's New Industrial policy for the state in 1993. The new policy was very much like its own policy of 1988 but was made fully consistent with the new Central government policy in some respects. The state government offers a graded system of incentives to accelerate industrial growth in all regions of the state. For this purpose the 45 districts of MP have been divided into advanced and backward districts. In general the concessions available to industrial units are higher in the more backward districts. The policy framework also seeks a harmonious development of both large and

small industry sectors. Anyway Madhya Pradesh received relatively less private sector investment and recorded less growth buoyancy in the manufacturing industry.

With the announcement of the new Industrial Promotion Policy (2004) the industries in the state and outside have high hopes. The new policy envisages on creating an industry-friendly administration, maximizing employment opportunities, tackling industrial sickness, to rationalizing rates of commercial taxes and bolstering private sector participation. We hope so.

#### **4.5 Cost Structure and Profit Pattern**

The locational advantages or disadvantages for specific industries could be ascertained in terms of total costs and their components. Through this it would be possible to distinguish between physical factor productivity and factor prices for each component of total cost of those industries, which have a location quotient less than unity in a given region. This will help understanding whether the lack of a “fair share” of a given industry in a given region is due to its locational cost disadvantages. Ideally, such an analysis would involve cost output time services data from units of different sizes in a given region.

As an alternative method, we may here attempt a static comparison of the industry level cost structure in Madhya Pradesh with that of the country has been made using ASI data for 1997-98. The cost structure of an industry is viewed in terms of percentage shares of major components (cost of fuel, raw materials, total inputs emoluments, rent, interest, depreciation and profit). The pattern of cost of production and profit in major industries in Madhya Pradesh (Table 4.9) indicates that the regions industrial system is in a disadvantageous

position with respect to fuel cost and depreciation and interest components in its cost structure. The core industries in the region (Rubber, Plastic Petroleum and Coal Products, Non-metallic mineral products have high fuel cost as compared to the corresponding share in the cost structure of these industrial groups at the national level. The material cost is favourable to Madhya Pradesh as compared to all India. But the food products and some engineering goods industries material cost is high compared to national cost. This may be because of the higher cost of inputs. The profit as a proportion of the value of output in the region is however slightly high as compared to all-India. But almost all industry groups show net losses in the State.

**Table 4.9**  
**Pattern of cost of production and profitability in Major Industries**  
**(ASI Factory Sector: 1997-98)**

NIC Code (Old)	As percent of Gross value of output								Profit as percent of Invested Capital
	Fuel	Material	Total inputs	Emoluments	Rent	Interest	Depreciation	Profit	
20-21 M	2.79	82.64	97.91	2.44	0.17	2.61	1.32	-4.63	-16.68
I	2.91	73.39	87.11	3.73	0.53	3.66	1.72	2.70	6.45
22 M	3.83	45.26	69.51	5.64	3.89	3.54	3.38	13.07	25.61
I	2.61	51.74	71.05	7.02	1.50	2.76	3.08	13.56	31.34
23 M	4.78	71.17	82.04	3.82	0.36	5.99	3.98	3.23	5.85
I	8.18	61.88	84.14	7.01	0.62	6.26	3.89	-3.31	-5.35
24 M	8.76	46.54	62.21	5.58	0.50	3.63	4.51	22.42	42.24
I	8.27	57.38	78.87	5.26	0.60	6.75	4.88	2.77	3.97
25 M	8.17	39.17	78.64	16.11	0.13	2.92	1.40	-0.53	-1.35
I	8.84	46.71	64.82	29.39	0.13	1.91	1.33	-2.12	-5.14
26 M	3.39	52.83	70.30	11.81	0.45	6.34	2.92	7.04	11.24
I	1.94	52.81	79.82	6.25	1.85	3.46	2.54	5.06	11.21
27 M	2.47	63.02	69.31	4.85	0.04	37.34	4.21	-16.05	-18.11
I	3.83	57.00	78.24	8.29	0.47	7.56	3.63	0.87	1.18

28 M	16.46	53.88	78.91	15.47	0.18	7.74	5.46	-9.52	-12.81
I	11.01	54.06	76.82	9.76	1.80	5.20	4.40	0.20	0.25
29 M	2.23	64.56	80.80	6.33	0.15	3.34	1.23	1.34	5.22
I	1.56	64.19	82.58	5.23	0.37	2.76	2.27	5.70	13.91
30 M	19.00	43.28	69.52	3.50	0.23	5.23	4.30	16.42	22.68
I	26.35	52.43	76.75	4.62	0.68	5.32	3.70	7.83	10.57
31M	5.61	61.97	80.11	3.25	0.76	7.17	4.57	3.52	3.98
I	3.33	75.77	86.10	2.95	0.61	3.56	2.67	3.42	7.07
32M	33.36	33.36	76.87	6.27	1.76	8.56	6.22	-1.07	-0.92
I	23.98	34.49	71.47	6.76	1.20	8.91	6.45	3.86	3.63
33 M	13.26	39.96	63.80	5.36	0.83	5.54	3.87	18.89	26.12
I	11.39	51.39	74.39	5.14	0.47	6.51	4.41	7.99	9.11
34M	6.44	52.74	77.28	7.33	0.47	6.35	8.52	-1.41	-2.40
I	4.41	58.07	79.95	7.37	0.61	4.92	3.28	2.28	4.20
35-36 M	2.82	63.69	78.13	9.24	0.46	3.28	2.72	5.42	8.68
I	2.18	56.02	75.66	7.68	0.66	4.38	2.95	6.82	14.01
37 M	2.99	68.69	84.26	6.77	0.67	3.93	3.41	-0.41	-0.92
I	3.55	60.52	76.48	8.55	0.49	3.29	3.47	6.00	8.09
38 M	6.98	49.90	72.71	19.18	1.15	5.06	10.58	-	-10.92
I	1.91	54.38	76.22	7.17	0.34	4.14	2.66	8.13	16.51
39 M	2.71	39.95	62.03	19.26	0.12	0.03	2.14	15.61	31.31
I	2.53	19.50	71.06	19.95	0.13	0.47	1.46	5.23	18.04
40 M	0.71	24.73	94.98	12.35	0.27	11.35	8.33	-	-29.29
I	13.09	38.72	62.09	9.08	0.89	12.52	8.15	5.99	4.20
42 M	4.64	39.06	51.71	1.51	0.01	0.72	2.20	43.76	92.74
I	54.32	15.25	73.60	14.66	0.07	0.06	2.94	7.84	23.52
97 M	2.39	7.02	60.65	5.13	0.15	1.76	0.64	30.75	166.13
I	0.69	4.00	92.13	3.66	0.28	2.28	0.59	0.64	4.30
<b>All Industries MP</b>	<b>7.66</b>	<b>48.89</b>	<b>76.36</b>	<b>6.05</b>	<b>0.62</b>	<b>5.81</b>	<b>4.27</b>	<b>5.87</b>	<b>8.63</b>
<b>India</b>	<b>7.12</b>	<b>55.64</b>	<b>77.25</b>	<b>6.25</b>	<b>0.69</b>	<b>5.64</b>	<b>3.86</b>	<b>5.13</b>	<b>7.22</b>

Source: Calculation based on ASI factory sector.

**Table 4.10**  
**Industrial cost structure of Major States - 1997-98**

State	Cost as percentage of value of output								Profit as percent of Invested Capital
	Fuel	Material Consumed	Other inputs	Emoluments	Rent	Interest	Depreciation	Profit	
Andhra Pradesh	10.64	54.18	75.02	6.31	0.85	6.78	4.58	5.29	7.06
Assam	4.86	60.57	79.56	6.98	0.37	2.45	3.57	6.18	8.24
Bihar	7.68	47.30	64.28	7.04	0.20	5.71	3.64	17.73	24.88
Gujarat	6.09	58.94	82.28	4.22	0.67	6.89	4.17	1.02	1.30
Haryana	5.96	64.22	82.07	5.89	0.50	4.05	3.41	2.99	5.93
Karnataka	4.64	52.73	75.67	7.16	0.90	6.64	4.07	3.87	5.09
Kerala	4.16	64.11	81.16	7.35	0.42	4.53	2.55	2.18	3.80
Madhya Pradesh	9.66	48.89	76.36	6.05	0.62	5.81	4.27	5.87	8.63
Maharashtra	4.76	55.40	76.88	6.35	0.61	4.89	3.62	6.24	10.11
Orissa	14.26	43.18	68.16	7.33	0.54	9.17	6.65	6.99	5.51
Punjab	9.96	60.50	81.90	5.98	1.32	5.21	3.46	1.21	1.82
Rajasthan	10.38	54.34	76.79	5.38	1.59	8.21	3.86	3.35	4.85
Tamil Nadu	9.39	54.92	79.80	6.91	0.89	4.71	3.86	2.61	4.32
Uttar Pradesh	7.66	58.13	75.66	5.97	0.50	6.71	4.35	5.79	5.79
W. Bengal	8.15	51.95	73.46	10.24	0.55	5.00	3.32	5.72	6.93
All India	7.12	55.64	77.25	6.25	0.69	5.64	3.86	5.13	7.22

*Source: Calculated from ASI factory sector.*

The analysis of inter state variations of the cost-structure indicates (Table 4.10) that Kerala is a region which has the least fuel cost. Madhya Pradesh fuel cost is above the national level and reasonably higher compared to advanced states. In terms of the share of the material cost Madhya Pradesh is in an advantageous position as compared to industrially advanced states.

When profitability is measured as return to total investment Madhya Pradesh's record of overall profitability is not par with the all India figure. It is however, profitability recorded by engineering industries is lower in Madhya Pradesh than their counter parts at all Indian level and further, some industries like manufacture of other industries and transport equipment in the region, in fact, recorded losses. The profitability of invested capital in Madhya Pradesh is high as compared to industrially developed States except Maharashtra. As regards the cost structure the most backward State, Bihar has placed more advantageous position than any other states.

All considered the pattern of regional production costs and profitability underlines Madhya Pradesh's locational advantages in terms of material cost as compared to all India and industrially developed States. In view of locational disadvantage in fuel cost and depreciation cost however, the profitability in the region is high particularly in water supply, repairs and basic metals, we therefore conclude the regions industrialization cannot be explained fully in the frame-work of locational cost advantage/disadvantages. If at all the cost framework is used, the locational cost disadvantages of Madhya Pradesh looks connected with its lopsided industrial structure and not with the cost structure.

The main findings emerging from the study so far can be woven around a central theme: there has been lack of diversification in the industrial structure of the State, with heavy concentration of fixed capital employment, input and output only in a few industries. The industrial base of the State economy is not broad-based and diversified. A logical question comes up



here. What explains the relatively not high, more aptly the relatively poor, performance of the manufacturing industry in Madhya Pradesh?

Very few industries have generated high employment growth rates. A region, which specializes in lagging industries, cannot generate more employment in the industrial economy. The consumer goods industries have yet to emerge on the industrial scene of Madhya Pradesh. The centers of industrial development have not yet emerged as growth centers or growth poles. They have little linkages with the industrial or agrarian economy of their respective hinterlands, with the result that they have not become leading sectors or propulsive industries. The exogenous factors of growth have not succeeded in pulling up the State from the quagmires of poverty. Such a structure of industrialization has implications for income distribution. The export industries have a primary role in determining the level of absolute and per capita income in a region and therefore in determining the amount of secondary and tertiary activities is untenable. The export base has not influenced the character of subsidiary industries, the distribution of population and the utilization pattern and the character of labour force.

Madhya Pradesh is one of the richest mineral bearing regions with potential for thermal generation. But the impact of big industrial projects on the surrounding backward region is extremely limited. The success at industrialization is not only about resource allocation. It is as much, if not more, about resource utilization and resource creation. The mode of utilization of resources is a critical determinant of economic efficiency. The process of creation of resources is a crucial determinant of economic growth.

The backwash effects have outweighed the spread effects. The linkages of these industries are closer to distant places than with other towns in the area. This itself cannot be said to be undesirable in any way but when viewed in the context of purpose for which they were designed as nuclei for the development of the backward economy they have certainly not achieved their objectives. The relationship between the leading industry and subsistence agriculture is tenuous at best and that between industries and regional needs is very weak. One of the problems faced by 'growth poles' in culturally and economically backward regions is, the lack of channels through which growth impulses can be diffused. The people themselves are so poor and backward that even if transport network links them with poles, they cannot participate in the venture. Bhilai Steel Plant Bhopal Heavy Electrical and Cement Industry are export-based industries of Madhya Pradesh, but having very little multiplier effects on the respective regional economies. No regional authorities were created at the time of setting up of these plants, for the overall development of the regional economies.

To summarize, significant structural change seems to have taken place within the manufacturing in Madhya Pradesh during the post liberalization era. But that change has been an unfavorable shade in Madhya Pradesh industrial growth. The state continues to have a very concentrated and lop sided industrial structure with comparative low share of capital goods and hence possibly it could not have the benefit of inter-industry linkages within the manufacturing sector. There has been very little development of consumer goods industries, their relative share being very small when compared with basic and heavy industries.

From the 45 districts of Madhya Pradesh only 5 districts are industrially developed. Regional imbalances have been other reasons for the backwardness of Madhya Pradesh. A balanced regional development through locational dispersal of industries has been one of the objectives of government policy. Encouraging SSI development in backward areas ensures maximum utilization of local resources both human and material and in consequence helps to bridge inter regional gaps.

### **Conclusion**

We now summarize the major findings emerging from the forgoing analysis of the structural as well as region-specific factors that hinder the industrial development of Madhya Pradesh.

The infrastructure penetration, especially in terms of physical as well as social, has been very weak in Madhya Pradesh. 36 percent of the total population in Madhya Pradesh belongs to SC and ST. The poor quality in the maintenance of infrastructure facilities and services must have been adversely affected the growth performance of the industrial sector in Madhya Pradesh. A state, which historically used to produce and supply electric power efficiently at a low price and attracted private investment to the State and also exported to the other States, has now turned to be a deficit state-region forcing it to introduce power cuts and raise power-tariff. No manufacturing industry is possible without energy.

The industrial structure of the state is lop-sided and unbalanced. Basic metal and alloys constitute the industrial core of the State but at the same time have not become the leading sectors or propulsive industries to trigger off

growth in the State. The output of these basic heavy industries is primarily used by industries outside Madhya Pradesh inter linkage between industries is low. These industries add little to subsidiary manufacture or employment in Madhya Pradesh. At the same time these industries have consumed not only the bulk of investment but also the bulk of fuels including electricity. The structural changes witnessed during the period of 90s were not favorable to Madhya Pradesh industrial sector. Viewed in terms of value added, engineering industries lost its locational advantage during the reform period of 90s.

Madhya Pradesh is a captive market for non Madhya Pradesh – based industries. Industrialization in Madhya Pradesh cannot be successful if it is not essentially based on provincial market, as is the case of India. However, within the industrial policy Resolution it is necessary to have a competitive environment. Market forces should have their legitimate roles in efficient allocation of resources and ensure timely supply of the materials.

In short, some structural factors like intra-sector relation and inter-sector relation and infrastructure stimuli within the regional economy are essential for sustaining accelerated growth of the manufacturing industry in a State-region. Moreover industrial dispersal is essential for a balanced regional development. Here there has been concentration of industrial development in a few developed districts. Our analysis showed how the structural constraints among others must have been the cause for the relatively poor growth rates in a backward state region.

## ANNEXURE

### Table 4A

**Net State Domestic Product of Madhya Pradesh by Industry of Origin-At constant (1993-94) prices (percent)**

Industry of Origin	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2003-03
Agriculture (Including Animal husbandry)	39.98	38.28	37.17	36.83	35.69	33.60	32.55	25.91	29.43	22.82
Forestry and Logging	2.85	2.96	2.64	2.64	2.57	2.38	1.93	2.38	2.40	2.47
Fishing	0.09	0.13	0.17	0.17	0.19	0.16	0.16	0.16	0.15	0.13
Mining & Quarrying	2.78	2.39	2.37	2.29	2.15	2.68	2.48	3.21	3.09	3.48
<b>Primary Sector</b>	<b>45.7</b>	<b>43.76</b>	<b>42.35</b>	<b>41.93</b>	<b>40.6</b>	<b>38.72</b>	<b>37.12</b>	<b>31.66</b>	<b>35.07</b>	<b>28.9</b>
Manufacturing (Registered)	6.25	7.00	7.45	7.00	8.10	7.69	7.47	8.70	8.04	9.02
Manufacturing (Unregistered)	5.59	6.77	6.57	6.65	6.71	6.57	6.05	7.39	7.16	8.07
Construction	5.40	5.52	5.46	5.34	5.17	5.90	10.46	8.95	8.19	9.32
Electricity, Gas and Water Supply	1.36	1.37	1.59	1.48	1.34	2.31	1.84	1.42	1.62	1.77
<b>Secondary Sector</b>	<b>18.6</b>	<b>20.66</b>	<b>21.07</b>	<b>20.47</b>	<b>21.32</b>	<b>22.47</b>	<b>25.82</b>	<b>26.46</b>	<b>25.01</b>	<b>28.18</b>
Railways	2.42	2.43	2.48	2.25	2.27	1.68	2.18	2.59	2.52	2.86
Transport by other means and storage	1.48	1.49	1.62	1.74	1.91	2.09	2.10	2.40	2.33	2.62
Communication	0.56	0.65	0.59	0.91	0.91	1.03	0.98	1.41	1.49	1.82
Trade, Hotels and Restaurant	12.05	11.40	11.97	12.07	12.62	12.61	11.49	10.86	11.36	10.59
Banking & Insurance	2.49	2.70	2.88	3.55	4.00	3.66	3.50	4.29	4.03	4.46
Real Estate etc.	6.09	6.18	6.01	5.81	5.69	5.47	5.08	6.88	6.35	6.91
Public Administration	4.15	4.15	4.21	4.18	3.95	4.83	4.41	4.80	4.32	5.23
Other Services	6.46	6.58	6.75	7.07	6.73	7.34	7.51	8.65	7.51	8.42
<b>Tertiary</b>	<b>35.7</b>	<b>35.58</b>	<b>36.51</b>	<b>37.58</b>	<b>38.08</b>	<b>38.71</b>	<b>37.25</b>	<b>41.88</b>	<b>39.91</b>	<b>42.91</b>
NSDP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Source: Calculated from Economic Survey – Madhya Pradesh*

## **CHAPTER V**

### **CONCLUDING OBSERVATIONS**

In the previous chapters an analysis is made of the growth, composition and structural changes that have taken place in Madhya Pradesh, and the industrial sector of the economy in particular during the past two decades. In this chapter, an attempt is made to summarize the main findings of the study. Moreover, in order to enable an over all view and assessment some of the main conclusions and recommendations emerging from the analysis in the preceding chapters are briefly recapitulated below.

The state of Madhya Pradesh presents the best paradoxical example of poverty amidst plenty. It has abundance of natural and mineral resources but still its economy and people are most backward from all the indicators of social and economic development. Madhya Pradesh ranks second in mineral wealth and third in food production in the country. Still backwardness persists.

At the very outset it may be written that when different persons think, write or speak about the problem of poverty in India or Madhya Pradesh, or for that matter about any other state of India, they are apt to lose some objectivity in the analysis. If one writes about the poverty, one should also write about the success story of the country or region or at least sectors. Another point that should be emphasized is that the growth, development or backwardness issues should be discussed in the all-India set up.

Madhya Pradesh remains backward despite its natural resources need not be a puzzle to anyone. The range and depth of natural resources of the state is simply fantastic but their exploitation is not optimum. Almost one in

every three person is tribal or S.C. The tribes are virtually starving in the 'green deserts' of the state. A short cut to prosperity is to take up policies in tribal areas. The rural set up is still feudal in character, though class-wars and caste-wars of the type reported from Bihar are fortunately not common in the state. Agriculture remains primitive and poverty unrelieved for a vast majority of people in rural areas. The agricultural sector cannot generate enough real resources to sustain a beehive of agro-based industries nor can the industrial sector lift the agricultural sector from the quagmire of poverty and near stagnation. The state did not get as many Central government projects as a state of this size should have got. Some projects that are located here have remained lonely outposts in a sea of stagnation. Such a big project like BHEL at Bhopal has within its periphery of just three to four kilometres half a dozen villages which in terms of technological development, occupational pattern or educational standards are as backward as villages of interior region.

An analysis of the growth performance in the domestic product of Indian states in the last three decades reveals that the development process has been uneven across states. While advanced industrial states have tended to leapfrog in the reform years, other states have lagged behind. The regional disparity in the growth rates becomes sharper in terms of per capita income. We also note that the growth rate of agriculture, industry and service sectors of MP is far below the national rate through out the analysis period. The other finding is that, the growth profile drawn on the basis of NSDP and Per Capita income clearly endorsed the earlier finding of stagnation in the general economy since the seventies and further revealed the remarkable growth recovery since the late eighties in Madhya Pradesh economy when the Central Government's policy approach began. Although the growth revival is largely

accounted by the steady growth of manufacturing and service sectors, the fact cannot be denied that the post liberalization era (nineties) recorded real growth in NSDP by industry at a rate higher than the eighties in Madhya Pradesh. Another significant conclusion, emerging from the analysis is that Madhya Pradesh, which ranked on the lowest ladder two decades back, could not yet awake from slumber and are still continuing to be far behind their counterparts in the race of development. Almost all the indicators, used in the present exercise for measuring inter-state level of development enable us to conclude that the performance of the state had all along been quite dismal and called for urgent corrective measures.

The single most significant sector that generates about two-thirds of total state income and provides employment, directly or indirectly, to three-fourths of its population, is agriculture. As is well known, besides being the predominant source of livelihood, this sector's growth determines demand for both consumer goods and services through a variety of linkages. Particularly, the demand for industrial goods by the massive rural population is to a great extent dependent upon increased income from agriculture. Similarly, a growing agriculture enhances demands for production inputs and supplies raw materials to processing, transport and marketing units. Further, the rural non-farm activity is closely linked to agriculture.

The share of agriculture in the SDP at constant (1970-71) prices, has been fluctuating and often declining, at least since the 1970s. In fact, from 55.4 per cent in 1971-72 it has come down to 45.7 per cent in 1981-82 and to 35 per cent in 1989-90. Moreover, the rate of fall of income from agriculture in the state is much higher than that at the national level. The sectoral GSDP growth



rates in agriculture and allied sector of Madhya Pradesh in 80s was one of the lowest in the country (2.22%). It is to be noted that even in a situation of shrinking share of agriculture in the SDP, the proportion of agriculture workforce to total population has hardly declined over the period of three decades: 77.4 per cent for 1983, 74.7 per cent for 1987-88, 76.5 per cent for 1993-94, and 73.6 per cent for 1999-2000. This is an alarming situation implying a relative reduction in per worker income compared to the other sectors. The most striking aspect of the work force is the tremendous growth of the agricultural labourers, both in absolute and relative terms. These are significant trends depressing the income of three-fourths of the total workforce.

We now turn to make some concluding observations on the experience of Madhya Pradesh with industrial growth in the nineties representing the pre-liberalization era. The economically poor Madhya Pradesh state has not achieved any levels of social and human development equal to or higher than the other backward states like Bihar, Rajasthan or Orissa. Prima-facie, therefore, our research finding of the relatively not high but poor growth rate of the manufacturing industry in Madhya Pradesh raises more questions rather than it answers. In particular, the study, despite its close examination of alternative sources of data with the aid of alternative methods of analysis, could not bring out clear empirical evidences on the accelerated growth of manufacturing industry of the backward state like Madhya Pradesh and on reducing the 'regional differentiation' across states in the country during the post-liberalization era. But if we make a conclusion like this fashion, it may be like this; the industrial growth rate has been relatively high in the pro-market liberalization policy environment as compared to the pre liberalization period in Madhya Pradesh. But the industrial growth in Madhya Pradesh is always

below the national average. So, we can even conclude, that the pro-market and open economy liberalization policy environment, has intrinsic limitations to promote industrialization, in Madhya Pradesh or any backward state irrespective of the level of social and human development of a region

Although the growth performance of the manufacturing industry in a region is not policy-neutral, it cannot be considered that the observed pattern of growth rate is the concomitant outcome of a particular policy *per se*. If Madhya Pradesh did not do so well in industrial growth, it could be due to the difference in some structural as well as region-specific conditions. The question that must be asked is why a certain region, notwithstanding its richness of resources-both natural and human, has perpetually remained at the lowest rung of industrialization and no diversification in the industrial structure has taken place during over three decades of efforts of reducing disparities through stress on industrialization in the backward areas. It is particularly significant to find as to why a state's major industries (constituting more than three-fourths of the total) based practically on locally available natural resources have not diversified to related industries, for example, engineering goods, chemicals, food products, and wood based industries. More than that during the reform period Madhya Pradesh lost the concentration advantage of electrical machinery and electricity. This is a serious set back of the economy

Industrial development pattern, as revealed by the composition of industries, also show unbalanced and lop sided industrial development of the state. The existing industrial structure is sufficiently indicative of the likely pattern of industrial development therein. The levels of industrial development

are different in different regions of Madhya Pradesh. For instance, the backward Damoh, Surguja and Panna districts, with backward industrial characteristics, has some dormant industrial potential, which could profitably be tapped. The regional resource endowment shows that this backward region is richly endowed with a number of important mineral resources. A good number of minerals based and demand-based industries such as chemicals, cement, leather footwear, agricultural implements, wooden furniture etc., could be developed in these regions. Out of 45, only 13 districts are developed in Madhya Pradesh. Hence, a feasible approach for tapping the dormant development potentials of backward pockets of the regions of the state has to be adopted.

And the conclusion is like that, unlike other developed states, Madhya Pradesh persists with a concentrated and lop sided industrial structure marked by the disproportionately higher shares of a few non-resource based industries and lower shares of consumer goods and modern industries. A diversified industrial structure is essential for promoting inter-dependent growth of the manufacturing industry based on the inter-industry linkages and agglomeration economies. On top is the weak infrastructure penetration especially transport and power which is essential for industrial use. These structural constraints, along with the very low growth rate of fixed capital, and the hesitancy of the commercial banks as reflected in the low credit-deposit ratio (52.5 in 2001), to finance the manufacturing industry, must have been at the root of the relatively poor industrial growth of Madhya Pradesh despite the liberalization environment.

So the industrial development linking with economic development focused on export base, inter-regional trade, inter-industry linkages, urbanization, agglomeration economics, human capital and psychic cost of the entrepreneur's market size and the government policies are the remedy for the backwardness of Madhya Pradesh.

The presence of highly capital-intensive industries with cost disadvantages in fuel, interest payment and depreciation has resulted in heavy losses in most cases. Further, the prevalence of low wages in most industries, points to the low productivity of labour. A poor agricultural base implying meagre farm surplus has adversely affected the emergence of an active local entrepreneurial class and also has depressed rural income. The persistently disadvantageous position of the state all through the planned development phase raises basic questions of neglect and misdirected policies both of the Centre as well as the state itself.

The state has not witnessed anything like the industrial revolution; its share in the overall rate of growth in employment and fixed capital in the organized sector has been very small. The fast growing industries are mostly export-based, in the nature of iron & steel cement, aluminium and a number of luxury goods. The lagging industries are mostly agro- and forest based industries. The capital intensity of important industries has gone up. The industrial structure of the state is lop-sided and unbalanced. The average size of industries in respect of employment per factory is very small. Though a further disaggregated analysis at industry would throw light on constraints and prospects of individual industries, even with the present study a few important policy implications may be noted.

Our analysis is confined to undivided Madhya Pradesh. The formation of the state of Chhattisgarh divided Madhya Pradesh into two parts. Madhya Pradesh lost its land area and also lost its natural resources and revenue and this will have a negative effect on the growth of the state that had started moving on the path of economic reforms. It will affect the industry and thereby the income and output in the state. Madhya Pradesh lost 30.47% of its mineral rich land area, 26.62% of its population, 41.25% of its forests, 29.93% of agricultural produce and 23.38% of its cultivated area. What Madhya Pradesh required to do is to pay attention to some specific aspects of development.

**Conclusion:**

Reverting to the main theme of our study, we summarize the core findings of our analysis.

There is clear cut evidence its manufacturing to conclude that the phase of economic stagnation started in the seventies is over and a phase of growth revival has started in Madhya Pradesh particularly after the shift in the economic policy from command planning to pro-market liberalization

Among the middle income group states Madhya Pradesh state has been continues to remain very different from other states and all-India pattern and hence has been lagging in growth despite the growth revival of the overall economy.

The analysis of the NSDP by manufacturing industry showed that the industrial growth rate in Madhya Pradesh has been relatively high in 90s than 80s. Although the growth revival is largely accounted by the fast growth of the

unregistered sector, the fact cannot be denied that the post liberalization era recorded higher growth rate than planning policy period.

This study has underlined some structural as well as region specific constraints to the accelerated growth of the manufacturing industry in Madhya Pradesh state.

The industrial structure of Madhya Pradesh is concentrated and lop-sided. This is evidenced by the dominance of single industry, basic metal and alloys. Industries such as wool, silk and synthetic fibre, basic metal and alloys etc show a positive impact of economic reforms on their performance in the post liberalization period. Nonetheless, the performance of non-metallic minerals, electrical machinery and electricity deteriorated further during the post liberalization period

A diversified industrial structure is essential for promoting inter dependent growth of the manufacturing industry based on the inter-industry linkages and agglomeration

Rising capital intensity and falling employment, low growth rate of fixed capital and low share of value added all reflect the unsatisfactory performance of the state in manufacturing activity. This state of affairs may be due to insufficient infrastructure-physical as well as social.

In order to accelerate industrial development in the state it has to be supplemented by competitive advantage, which can be engendered, nurtured and shaped by appropriate policy initiatives by the government.

## **Development strategy for Madhya Pradesh**

Lack of proper infrastructure, especially transport and power, has severely impaired both growth and diversification of industries in the state. A serious rethinking on the issue of greater use of power for the state's industrialization rather than mere selling it is essential. Apart from the power factors, poor communication and transport facilities have also hindered greatly the state industrial growth. The network of road and railways needs to be improved. The ratio of road mileage to the total area is extremely poor and needs to be improved substantially. Development of the hitherto neglected railways, connecting depressed regions and also mineral resources, shall activate the industrial sector. Further, the state must press for enlarging its aviation sector by establishing direct flight facilities connecting main metropolitan cities.

The most important reason for the relative lagging behind of Madhya Pradesh is perhaps, its failure on the agricultural front. A greater investment in agricultural development, in particular small and medium scale irrigation, would prompt higher production of food crops and also provide impetus towards cultivation of high-valued crops. This would help to generate income in the rural sector and promote a viable rural industrial base.

Encouragement to the medium and small-scale entrepreneur is also necessary. Although the incentive schemes of the state are quite impressive, they are being implemented in an unimaginative and bureaucratic manner. Promotion policy for the state is a crucial need for future industrial development. Focusing on industrial clusters especially, supporting their technology up gradation and promoting external orientation shall be a

potential area of intervention. Focus on growth of IT, Pharma, Biotech and Research and Development. Food processing, fruit processing and meat processing industries have a good scope in MP. Priority should be given to resource-based industries. There is need for the state to market itself in order to attract private and foreign investment.

As the state is endowed with a range of high-grade minerals, greater prospects lie in upgrading the mining activity. Further, due to the existence of large-scale mineral-based industries, a highly promising area appears to be the engineering and machine tools industry. This, apart from creating substantial employment, would also help growth of the related service sector.

A basic drawback, which has not received the attention it deserves, is the total absence of a proper conceptual frame designed to adopt and implement a strategy conducive to the development of backward areas in different parts of the country. The entire package of incentives and subsidies should be conceived in the broad framework of regional economic development taking into account inter regional and intra-regional variations, resource endowment, infrastructural facilities available and the development potential in a country like ours with its continental size and varying problems of economic development and divergent resource-endowment. A general set up of criteria, however, well conceived from a macro angle, cannot be extended to be operative throughout the country evenly without creating distractions, if not nullifying the very rationales behind the basic objective of balanced regional development.

To sum up, most of the industrially backward regions lacking absorptive capacity relating to fiscal concessions and financial aid- the same



being led by negation of proper infrastructural facilities for industrial development could not avail the aforesaid concessions. In such regions priority should be given to the development of infrastructure to attain an industrial structure in a diversified manner so that higher potential of linkage and required level of industrial development could be observed. For new projects preference should be given to newer areas of industrial activities with special emphasis upon location in underdeveloped districts. Industries having potential for development are electronics, engineering industries, pharmaceuticals, agro based industries, coal based chemical industries etc. The development process today is marked not by the expansion of the traditional industrialization based on cheap raw material and labour, but by the quick transition to a knowledge-based, skill-intensive and digital economic activities or what is now fashionably called, the new economy.

“History illuminates the past, by illuminating the past it illuminates the present, by illuminating the present it illuminates the future” (Cardozo.J). This study is based on the information and data collected in relation to undivided MP. Now the division will cause a change in the industrial structure of the state and thus it will be incomplete and inadequate if any recommendations made on this basis. But as pointed out in the above this study will be worthwhile for formulating the strategy of economic policy of the present State.

## BIBLIOGRAPHY

### Articles and Books

1. Ahluwalia, I J., (1985): *Industrial growth in India: Stagnation since the Mid Sixties*, New Delhi, Oxford University Press.
2. Ahluwalia, I J., (1991): *Productivity and growth in Indian Manufacturing*, New Delhi, Oxford University Press.
3. Ahluwalia, M.S., (2000): Economic Performance of the States in the Post Reform Period EPW Vol, 35, No 17
4. Alagh, Y.K, and et al., (1980): *Structural Analysis of Gujarat, Punjab and Haryana Economies: An input output study*, New Delhi, Allied publisher
5. Alice, A., (1990): *Manufacturing sector in Kerala*, EPW Vol. 25, No 37
6. Awasthi, D.N., (1991): *Regional Patterns of Industrial Growth in India*, Concept publishing company Delhi
7. Awasthi, S.K., (1983): *Economic development and planning in retrospect*, Vikas educational books.
8. Agarwala A.N and Singh, (1959): *The economies of underdevelopment*, Oxford
9. Annapurna, S (1990): *Linkages of large scale, small scale and informal sector industries*, EPW Feb 17-24

10. Arun, A.V, and Vinod Vyasalu, (1997): *Industrialisation in Orissa*, EPW, May 31
11. Bhalla, A.S ed., (1975): *Technology and Capital in industry* IIO Geneva.
12. Bhatt, V.V, (1972): *Structure of financial institutions*, Vora & Co Bombay.
13. Baidyanath and et al., (2000): *Economic liberalization and regional disparities in India*, A P H publishing corporation, New Delhi.
14. Balakrishnan, P. and Pushpangadhan, (1994): *Total factor productivity growth in manufacturing industry: A fresh look*, EPW, Vol.29, No.31.
15. Bharadwaj, K., (1982): *Regional differentiation in India: A note*, EPW, Vol. 17, and No 14.
16. Boyce, J.K (1986): *Kinked exponential models for growth rate estimation*, *Oxford Bulletin of economics and statistics*, Vol. 48, No 4
17. Burange, L.G, (1999): *Industrial Growth and Structure*, EPW Feb 27
18. Bagchi, A (1976): *De industrialization in India in the nineteenth century: Some theoretical implications*, in *JDS*, 12 (2)
19. Banerjee, Amalesh and Biman Kar., (1999): *Economic Planning and Development of North Eastern States*, Kamiksha publishers, New Delhi.
20. Bhattacharya, B.B, and S. Sakthivel, (2004): *Regional growth and disparity in India, Comparison of pre- and post reform period*, EPW, March 6

21. Chakraborty D, (1982): *CES production function: A review of recent literature*, Artha vijyana Vol 24 No 3
22. Chaturvedi D.N. (1980): *Problems of estimation of Gross Fixed Capital Formation at State level*, Journal of Income & Wealth Vol 4 No 1 Jan
23. Chandrasekhar, C.P (1988): *Aspects of growth and structural change in Indian Industry*, EPW Special No November.
24. Dutta Roy Choudhari, U. (1977): *Industrial breakdown of Capital Stock in India*, The journal of income and wealth Vol1 No 2 April.
25. Dholakia, R.H, (1989): *Regional aspects of industrialization in India* Himalaya publishing house, New Delhi
26. Dholakia, R.H, (1994): *Spatial dimensions of acceleration of economic growth in India*, EPW Vol 23, No. 35.
27. Das, S.K. and Barua, A., (1996): *Regional inequalities, Economic growth and liberalization: A study of the Indian Economy*, Journal of Development Studies, Vol.32, No .3
28. Goldar, B.N. and Seth V., (1995): *Spatial variations in the rate of industrial growth in India*, EPW, Vol.24, No.22
29. Goldar, B (2000): *Employment Growth in Organized Manufacturing in India*, EPW April
30. Hirschman, O.A., (1958); *The Strategy of Economic Development*, Yale University Press, New Haven.

31. Harishankar, singhana, (1995): Economic issues Global and National, Vikas Publishing House
32. Indira, Hirway, (1995): Selective Development and widening disparities in Gujarat, EPW, October 14-21.
33. Kaur, Kulwinder (1983): *Structure of Industries in India: Pattern-Framework Disparities*, Deep and Deep Publications New Delhi.
34. Krishna K.L, (1972): *Industrial Capacity and Production*, in Rao (ed)
35. Kundu, A. and M. Raza, (1981): *Indian Economy: The Regional Dimension*. Spectrum Publications, New Delhi.
36. Kuznets, S.(1969):*Modern Economic Growth: Rate, Structure and Spread*, Yale University Press, New York.
37. Kavita, Rao R, ((1993): *Evaluating in a Dual Economy Framework; the Indian Industrial Performance during 1951-52 to 1989-90*, Ph.D Dissertation, Indian Statistical Institute Calcutta.
38. Kelker, V.L and Kumar, R (1990): *Industrial Growth in the Eighties: Emerging policy Issues*, EPW Jan 27
39. Kurian, C.T., (1989): *Indian economy in the 1980s and 1990s*, EPW April 15.
40. Kannan, K.P., (1990): Kerala Economy at cross-Roads, EPW Vol25, No 35.
41. Kurian, N.J., (2000): Widening regional disparities in India, EPW Vol.35 No 7

42. Krishnan, T.N, (1992): *Population, Poverty and Employment in India*, EPW, November 14
43. Krishnamurthy, V., (1990): *Regional development and industrial disparities in India*, Chugh publications, Allahabad.
44. Lahiri, A.K.et al (1984): *The Industrial Sector in India; A quantitative analysis*, EPW Annual No August.
45. Lewis, W.A., (1978): *The theory of economic growth*, 12<sup>th</sup> edition, Allen p Unwin, London.
46. Lakdawala and et al., (1974): *Regional variations in industrial growth*, Popular Prakashan, Bombay.
47. Menon, K.S.V., (1979): *Development of backward areas through incentives-An Indian experiment*, Vidya Vahini, New Delhi.
48. Majumdar, S.K., (1996): *Fall and rise of productivity in Indian industry: Has economic liberalization had an impact?* EPW, Vol 31, No. 33.
49. Myrdal, G., (1957): *Economic theory and underdeveloped region*, Duckworth, London.
50. Murray D. Bryce, (1960): *Industrial development*, McGraw Hill Book Company, London
51. Mahendra dev, C Ravi., (2003): *Macro economic Scene: Performance and Policies*, EPW, March 22-29
52. Nagaraj, R., (1994): *Employment and wages in manufacturing industries-trends, Hypothesis and Evidence*, EPW, Jan 22

53. Nagaraj, R., (1990): *Industrial growth further evidence*, EPW October 13
54. Neogi, C and B. Ghosh., (1998): *Impact of liberalization on performance of Indian Industries, A firm level study*, EPW Feb 28.
55. Nayyar, D. (1994): *Industrial Growth and Stagnation: The Debate in India*, Oxford University Press, New Delhi.
56. Papola, T. s., (1981): *Spatial Diversification of Industries: A study of Uttar Pradesh*, Allied Publishers, New Delhi.
57. Patnaik, P., (1985): *On the Political Economy of Economic Liberalization*, Social Scientist, July August.
58. Rao, Hemlata, (1977): *Identification of Backward Regions and Trends in regional Disparities in India*, Artha Vijanana, Vol.XIX. No.2. June.
59. Rangarajan, C., (1982): *Industrial Growth: Another look*, EPW, Vol. 17, No 14.
60. Ramaswamy, K.V, (1994): *Small Scale Manufacturing Industries some aspects of size, growth and structure*, EPW, Vol XXIX No 9
61. Sandesara, J.C (1982): *Industrial Growth in India- Performance and Prospects*, Indian Economic Journal Vol 30 October- December.
62. Sarkar, P.C., (1994): *Regional imbalances in Indian Economy over plan periods*, EPW, March 12
63. Suni, Mani, (1995): *Economic liberalization and the industrial sector*, EPW, May 27.

64. Subramanian, K.K., and Pillai Mohanan.,(1987): *Kerala;s industrial backwardness: An analysis of industrial stagnation*, EPW, Vol. 25, No 37
65. Subramanian, K.K., (1990): *Development Paradox in Kerala-An analysis of industrial stagnation*, EPW, Vol. 25, No. 37
66. Subramanian, K.K and Pillai Mohanan., (1994): *Modern Small Industry in Kerala-A review of structural change and growth performance*, Working Paper No 254, CDS, Trivandrum
67. Subramanian, K.K and Azeez Abdul, E, (2001): *Industrial Growth in Kerala: Trends and Explanation*, Working Paper No 310, CDS, Trivandrum.
68. Subramanian, K.K., (2003): *Regional industrial growth under economic liberalization*, Manak Publishers, New Delhi.
69. Sarma, Ramakrishna, K (1982): *Industrial development in Andhra Pradesh- A regional analysis*, Himalaya publishing house, Bombay.
70. Shetty, S.L., (2003): *Growth of SDP and Structural Changes in State Economies- inter state comparisons*, EPW December 6
71. Sinha, N.K.P, Sinha, M.B., (1993): *Industrial Development in India*, Rawat Publication, Delhi.
72. Susheela Subramanian, Srinivasa Gowda., (1995): *Regional Economic Development in India*, Deep and Deep Publications



G9043

73. Sher Singh Somara, (1999): *Issues in economic Development*, RBSA Publishers, Jaipur.
74. Thampi, M.M., (1990): *Wage cost and Kerala's industrial stagnation: Study of organized small scale industries*, EPW, Vol.38, and No 3.
75. Tewari, R.T., (1988): *Inter-Regional Pattern of Industrialisation in India: 1971-1981*, Ashish publishing house, New Delhi.
76. Tewari, R.S., (1988): *Industrial Development and Structure in Uttar Pradesh in relation to Indian Economy*, Ashish Publishing House.
77. Thirwall, A.P., (1983): *Growth and Development: With special reference to developing economies*, 3<sup>rd</sup> edition, Macmillan
78. Upendranath, C, Vijayabaskar, M, Vinod Vyasalu., (1994): *Industrial Growth and Structure-Analysis of Manufacturing Sector in Karnataka*, EPW, November 26.
79. Uttamcharan Nayak, (1994): *Industrial Development of Backward States*, Mansi Prakashan, Meerut.
80. Venkataramayah, L.G Burange., (2003): *Structure and Growth of Industry*, EPW, March 22-29.

