

**EMPLOYMENT IN THE ORGANISED MANUFACTURING
SECTOR OF INDIA IN 80s AND 90s**

**Dissertation submitted to the Jawaharlal Nehru University
in partial fulfilment of the requirements
for the award of the degree of**

MASTER OF PHILOSOPHY

SAISHANKAR PRADHAN



CENTRE FOR ECONOMIC STUDIES AND PLANNING

**School of Social Sciences
Jawaharlal Nehru University
New Delhi 110067**

**India
2002**



29 July 2002


CERTIFICATE

I, Saishankar Pradhan certify that the dissertation entitled “**EMPLOYMENT IN THE ORGANISED MANUFACTURING SECTOR OF INDIA IN 80s AND 90s**” submitted in partial fulfilment for the degree of MASTER OF PHILOSOPHY (M.Phil.) has not been previously submitted for any other degree of this or any other University. This is my original work and may be placed before the examiners for evaluation.


SAISHANKAR PRADHAN

We recommend that this dissertation be placed before the examiners for evaluation.


DR. PRAVEEN JHA
(SUPERVISOR)


PROF. C.P. CHANDRASEKHAR
(CHAIRPERSON)

ACKNOWLEDGEMENTS

This academic endeavour of mine would not have been possible without the help of a number of people who with their kind cooperation, active supervision and steadfast support have made this research work a reality.

I am extremely grateful to my esteemed supervisor Dr. Praveen Jha, whose keen supervision, able guidance, intellectual ingenuity, scholastic cooperation and avid suggestion helped me in completing this academic exercise. I express my deep gratitude to Prof. D.N. Rao and Prof. C.P. Chandrasekhar for their useful advice.

I am thankful to the staff of JNU Library, NIPFP Library, C.S.O. Library who have rendered active cooperation in the collection of relevant information. And I am also thankful to Bhupal Singh Bishtji for efficient typing and organisation of the work.

My friends Ajaya, Amarendra and Manoj have been constant source of moral support and immense encouragement throughout this exercise.

I would like to mention gratitude especially to my family members for their constant source of inspiration and appreciation throughout the work. Having been privileged in receiving such sympathy and support, I own responsibility for all the errors or omission that might have crept in the work.

Date: 29.07.02
New Delhi

Saishankar Pradhan
SAISHANKAR PRADHAN

CONTENTS

		Page
CHAPTER - I	INTRODUCTION	1-8
CHAPTER - II	INDIAN INDUSTRIAL PLANS AND POLICIES:AN EYE VIEW	9-16
CHAPTER - III	EMPLOYMENT, OUTPUT AND CAPITAL INTENSITY IN INDIAN ORGANIZED MANUFACTURING IN 1980s AND 1990s	17-47
CHAPTER - IV	EMPLOYMENT IN ORGANISED MANUFACTURING: A STATEWISE ANALYSIS	48-91
CHAPTER - V	CONCLUSIONS	92-97
	BIBLIOGRAPHY	i-vi

CHAPTER – I

INTRODUCTION

Indian economy has witnessed many changes in the pattern of employment and output. After independence national income originated from industrial sector has increased, but the employment has not increased in proportion to the former. The experience regarding service sector is also the same. As a result, the agricultural sector which was contributing around 50 per cent to national income and employing around 70 per cent of workforce in 1951, is now contributing only 25 per cent to national income and employing as much a 60 per cent of the workforce.

In 1951 population of India was mere 361.08 million and it increased to 683.32 million in 1981. The decadal growth rates were 1.96, 2.20 and 2.22 per cent per annum in 50s, 60 and 70s respectively. In 80s the compound annual growth rate of population decreased to 2.14 per cent per annum and it resulted in a population of 846.3 million in 1991. 2001 census estimated the population of India to be 1.02 billion. Between 1983 and 1999-2000, India's population increased from 718.21 million to 1004.10 million at the rate of 2.11 per cent per annum, while labour force increased from 308.64 million to 406.05 million at the rate of 1.72 per cent per annum. Table 1.1 gives the aggregate picture of the population and labour force for four points of time. Labour force grew at a slower pace than that of population. Total employment increased from 302.75 million in 1983 to 397 million in 1999-2000 implying a growth rate of 1.7 per cent per annum. The growth of population between 1983 and 1987-88 was 2.14 per cent per annum and declined in 1993-94 and it further

declined to 1.93 per cent per annum between 1993-94 and 1999-2000. There is a declining tendency of population growth in India. But the growth rate of labour force and employment increased up to 1993-94 and then declined. From the above result it is clear that growth rate of employment is always less than that of workforce.

Table 1.1: Population, Labour Force and Employment in India (in million)

	1983	1987-88	1993-94	1999-2000
Total Population	718.21	790.00 (2.14)	895.00 (2.10)	1004.10 (1.93)
Total Labour Force	308.64	333.49 (1.74)	381.94 (2.29)	406.05 (1.03)
Total Employment	302.75	324.29 (1.54)	374.45 (2.04)	397.00 (0.98)

(Note: Exponential Growth Rates in Brackets)

Source: Economic Survey, Government of India, 2001-02, p. 240.

From Table - 1 it is clear that growth rate of employment is always less than that of workforce.

Table 1.2: Sectorwise Employment of Workers

Sector	1983	1993-94	1999-2000	Compound Annual Growth Rates (in per centage)	
				1983-1994	1994-2000
Primary	208.99 (69.0)	245.16 (65.5)	239.83 (60.4)	1.60	-0.34
Secondary	41.86 (13.8)	55.53 (14.8)	66.91 (16.8)	2.90	3.14
Tertiary	52.11 (17.2)	73.76 (19.7)	20.96 (22.7)	3.53	2.42

(Note: Figures in the parentheses shows shares of sectors in per centage).

Source: Economic Survey, Government of India, 2001-02, p. 241.

From the above Table 1.2 it is evidenced that the workforce employed in secondary and tertiary sector is slowly increasing. The growth rate of labour force in the period of 1993-94 to 1999-2000 was 1.03 per cent and those of employment in secondary and tertiary sectors were 3.14 and 2.42 per cent in the same period. But it was not sufficient to relieve the overburdened agricultural sector. The growth rate of employment in secondary and tertiary sectors should be much higher than the growth rate of workforce, so that workforce could get transferred from the overcrowded agricultural sector. It is relevant to note that value added in the registered manufacturing sector (whose definition by A.S.I. has been given latter on) is about 60 per cent of the value added in the manufacturing sector as a whole, [Rastogi, 1997, p. 104]. So it is the organised manufacturing sector which should perform overwhelmingly with others to solve the problem.

1.1 Objective

The objectives of the study are:

- i. To analyse the growth patterns of employment, output and capital intensity for different industry groups (two digit level) of organised manufacturing sector of India.
- ii. To analyse the relationship between the growth rate of employment and those of output and capital intensity.
- iii. To study the distribution of employment in organised manufacturing sector among different states.
- iv. To study the growth of employment of different industry groups (2 digit level) for the major states.

1.2 Database

The main source of data for this study is Annual Survey of Industries (ASI). It gives information on employment, investment, wages, gross and net value added, value of inputs and output etc. of registered (organised) manufacturing sector of India. The ASI consists primarily of all factories employing 10 or more workers using power and those employing 20 or more workers not using power on any day of the proceeding 12 months. And these factories are required to be registered under section 2 m(i) and 2 m(ii) of the Factories Act 1948. As the NSS data for employment are not available in time series (yearly), so ASI data have been used as the main source of data.

The price Indices for manufacturing sector have been taken from National Accounts Statistics. These indices have been used for converting values at current prices into value at constant (1993-94) prices.

1.3 Methodology

Trend growth rates for employment, output and capital intensity have been calculated for different industry groups (2 digit level) at all India and state level. At first value of output and fixed capital at current prices were converted into values at constant (1993-94) prices. The procedure adopted for calculating the trend growth rates is as follows:

We know that

$$Y_t = Y_0 (1 + r)^t$$

where,

Y_t - number of persons employed in period t

Y_0 - number of persons employed in the starting period

t - number of periods.

r - rate of growth.

Taking logarithm of both sides, we get

$$\log Y_t = \log Y_0 + t \log (1 + r)$$

Denoting $\log Y_t$ as Y_t^* , $\log Y_0$ as β_1 and $\log (1+r)$ as β_2 ,

$$Y_t^* = \beta_1 + \beta_2 t$$

As Y is known to us, Y_t^* can be calculated and we can find β_1 and β_2 by regressing Y_t^* on t.

$$\text{Now } \beta_2 = \log (1+r)$$

$$\text{So, } (1+r) = \text{Anti log } (\beta_2)$$

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

The growth rates of output were calculated in the above procedure. To find capital intensity value of fixed capital in constant (1993-94) prices have been divided by the corresponding number of workers. Then the above procedure has been adopted to find the growth rates. The state level analysis has been done for 14 major states. Hopefully these fourteen states can give a clear picture of regional variation in organised manufacturing employment.

1.4 Concepts and Definitions of Some Terms: (As given by ASI)

Registered (organised) Manufacturing Sector: Registered manufacturing sector

includes registered factories and registered factory is one which is

registered under section 2m(i) and 2m(ii) of the Factory Act, 1948. The sections 2m(i) and 2m(ii) refer to any premises including the precincts thereof (a) whereon ten or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power, or is ordinarily so carried on or (b) whereon twenty or more workers are working or were working on any day of the preceding twelve months and in any part of which a manufacturing process is being carried on without the aid of power, or is ordinarily so carried on.

Fixed Capital: This represents the depreciated value of fixed assets owned by the factory as on the closing day of the accounting year. Fixed assets are those which have a normal productive life of more than one year. Fixed capital covers all types of assets, new or used or own constructed, deployed for production, transportation, living or recreational facilities, hospitals, schools, etc. for factory personnel.

Workers: They are defined to include all persons employed directly or through an agency whether for wages or not and engaged in any manufacturing process or in cleaning any part of the machinery or premises used for manufacturing process or in any other kind of work incidental to or connected with the manufacturing process or the subject of the manufacturing process. Labour engaged in the

repair and maintenance or production of fixed assets for factory's own use or labour employed for generating electricity or producing coal, gas are included. However, persons holding positions of supervision or management, or employed in administrative office, store keeping section and welfare section, sales department as also those engaged in the purchase of raw materials etc., and in production of the fixed assets for the factory and watch and ward staff, are excluded.

Employees: Employees include all workers defined above and persons receiving wages and holding supervisory or managerial positions engaged in administrative office, store keeping section and welfare section, sales department as also those engaged in purchase of raw materials etc. or production of fixed assets for the factory and watch and ward staff.

Gross Output: It is defined to include the ex-factory value of products and by-products manufactured during the accounting year. It also includes the receipt for non-industrial services rendered to others, the receipt for work done for others on materials supplied by them, value of electricity sold and net balance of goods sold in the same condition as purchased. Value of output and gross output are used as the same thing.

1.5 Plan of the Work

In the second chapter a brief review of the Industrial Plan and policies of India has been given. The 3rd chapter deals with the growth rates of employment, output and capital intensity of different industry groups (2 digit level) at all India level. A brief review of the explanation to the slowdown in employment growth in 80s - despite an overwhelming performance of output growth - by different economists has been discussed in this chapter. Moreover, it has been tried to find out the relationship of the growth rate of employment vis-a-vis growth rates of capital intensity and output in relation to employment growth rate.

A state-level analysis of employment has been given in the fourth chapter. Regional distribution of employment and output has been discussed elaborately. There is a discussion on the growth rates of employment, output and capital intensity of different industry groups (2 digit level) for each state of study. Concluding remark has been given in chapter 5.

CHAPTER - II

INDIAN INDUSTRIAL PLANS AND POLICIES: AN EYE VIEW

The independent India of 1947 inherited a weak industrial base (confined to mainly light consumer goods industry), gigantic and growing population, highly uneven distribution of national income, underdeveloped infrastructural facilities and a stagnant economy from the colonial empire. So Government of India called a conference of the representatives of central and provincial governments, industrialists and labours for the development of Indian industry. As a result, the Industrial Policy Resolution of 1948 came out.

2.1 Programs for Industrial Development under Earlier Plans

The Industrial Policy Resolution of 1948 contemplated a mixed economy reserving a sphere of industries for public sector and another part for private sector. The industries were divided into four categories: first category was exclusively reserved for central government (arms and ammunition, atomic energy etc.); second category was reserved for central and state governments; the third category was an optional item of central government and the fourth category was the exclusivity of the private sector.

Planning for development in India started in 1951. In the First Five Year Plan (1951-56) industrial development in India was confined largely to the consumer goods sector. There was no mention of capital goods industries in this plan. Then, came the Industrial Policy Resolution of 1956, in which new classifications of industries were

done. Schedule-A industries remained as exclusive responsibility of state, schedule-B was confined to both state and private sector and schedule-C was the exclusivity of private sector.

The Second Five Year Plan (1956-61) which was based on the Mahalanobis model set out the task of establishing basic and capital goods industries on large scale, so that strong base for industrial development in the future could be built. The strategy was uttered in the plan as following: "If industrialisation is to be rapid enough, the country must aim at developing basic industries which make machines to make the machines needed for further development. This calls for substantial expansion of iron and steel, non-ferrous metals, coal, cement, heavy chemicals and other industries of basic importance." Although the central importance was assigned to the public sector in the Industrial Policy Resolution of 1956, it was the Second Five Year Plan, in which the importance of public sector was incorporated. It was believed that only the state can steer the industrial take-off activity. The arguments in favour of a conscious building of a public sector runs like this. That the lack of private initiative in areas which required bulky investments and long gestation lag needed government initiative. It was also felt that public sector should 'strategically control' the key sectors. This formed the basis for the reservation of certain areas of industrial production in the public sector; e.g., iron and steel, coal, power, atomic energy, arms and ammunition and allied items of defence equipments. Infrastructure was naturally seen as the exclusive responsibility of the public sector. In certain other areas such as machine tools, non-ferrous metals, fertilizers etc., the state would act as the leading entrepreneur. Another set of arguments in favour of public sector was based on the desire to socialize profits. Manmohan Singh

(1989) summarises this argument, “because profits contribute the most important source of accumulation in a dynamic economy and are import determinant of income distribution, their socialisation and the prevention of their wasteful consumption by private capitalists could at once accelerate accumulation and help reduce inequalities of income and wealth”. The expectation was that the public sector would generate investible surpluses, which in turn would enhance growth and employment. The role of public sector was perceived not only to initiate development which the private sector was either unwilling or unable to undertake, but to shape the `entire pattern of investment in the economy'.¹

Another feature of Mahalanobis model was that the central emphasis on heavy industry was in-built in the model. The Mahalanobis model regarded the allocation of investments between the capital goods sector and other sectors as a critical instrument for determining the future rate of sustainable investment in the economy and therefore the rate of growth. A basic assumption of the strategy implicit in the Mahalanobis model was that present consumption could somehow be kept in check so that marginal savings rate would rise sufficiently to permit investment levels to rise rapidly enough to absorb the output of capital goods sector.² And low absorption of labour as a result of this industrial strategy would be moderated through small scale sector. This sector was also expected to cater to the increasing consumer goods demand.

The Third Five Year Plan (1961-66) also placed emphasis on basic and capital goods industries with special emphasis on machine building programme, so that the growth of the economy in the subsequent plans could become self-sustaining. The

concept of self-reliance was mentioned explicitly in the Third Five Year Plan. Although it was not mentioned explicitly in Second Five Year Plan, the emphasis on heavy industry came to be increasingly based on the notions that these industries were strategic and India must become self-reliant. It is important to recognise that self-reliance or reduced dependence on external assistance is perfectly possible with a strategy that plans for higher levels of exports and imports. But in India self-reliance has in practice been interpreted to mean a strong import substitution orientation in the development strategy.³ In an extreme form, self-reliance was understood to be self-sufficiency which resulted substitution of imports by home production at whatever cost.

The Second and Third Five Year Plans laid great emphasis on building up the capital goods and basic industries. Most of the industries were set-up in public sector with the result that the size of the public sector grew rapidly. The consumer goods industry was almost left to the private sector. In Fourth Five Year Plan (1969-74) this structure of industrial development was promoted. But during the Fifth Plan (1974-79), the Congress Party was thrown out and Janata Party formed the government in March 1977. This government contrasted with the industrial policy of the previous government and announced the Industrial Policy Statement of 1977. It emphasised the expansion of small-scale, cottage and village industries, which was a near reversal of the previous strategy. But the Janata government did not, however, stay long and the Congress Party formed the government again in 1980.

The Fourth Five Year Plan made a fair assessment of the system in noting that 'detailed controls not only put considerable strain on administrative machinery, but led

to delayed implementation the controls did not always secure the objective for which they were designed'. In fact the system of controls was reinforced during this period by bringing in additional instruments of control, i.e., MRTP (Monopoly and Restrictive Trade Practices) Act in 1970 and FERA (Foreign Exchange Regulation Act) in 1973. By the mid seventies, it was becoming clear that the licensing system had become more and more regulatory and less and less developmental, thus belying the original promise of 'channelling' growth in desired directions through the licensing mechanism and leading instead to the development of parallel economy [Ahluwalia, 1991]. These factors made road for changes in the industrial policy and consequently Industrial Policy Statement of 1980 was declared by the Congress Government.

2.2 Industrial Strategies in 1980s

The objective of the Industrial Policy Statement of July 1980 was to facilitate industrial production through optimum utilization of installed capacity and expansion of industries. It aimed at large employment and high per capita income. The statement emphasized that the benefits of industrialisation should reach all segments of the population. For this purpose it advocated extension of preferential treatment to agro-based industries, promotion of economic federation through co-ordinated development of small, medium and large enterprises, dispersion of industries to backward, rural and urban areas and protection of masses against high prices and bad quality of goods. Measures such as, exemption of export oriented units from the provisions of MRTP Act to the extent of export production and concession in respect of central excise and central levies to 100 percent export oriented industries manufacturing non-traditional items –

were taken to promote export.

The decade of 1980s witnessed liberalisation in Industrial Policy in many ways. The limit of exemption from licensing was revised upward continuously. There was relaxation to MRTP and FERA companies. With a view to encourage production, the Government delicensed 28 broad categories of industries and 82 bulk drugs and their formulations. By 1989-90 some more industries were delicensed. Various concessions were announced by the Government in its industrial and export-import policy from time to time to promote the expansion of exports. The limits of investment in SSI units and ancillary units were enhanced.

2.3 Experience in the Post-Reform Period

The December 1989, World Bank Report mentioned the need for economic restructuring and liberalisation of the Indian economy. In July 1991, as a part of economic restructuring and liberalisation programme, a new Industrial Policy was announced by the then Narasimha Rao Government. According to the new Industrial Policy, Industrial licensing was abolished except for 18 industries related to security and strategic concerns, social reasons, concerns related to safety and overriding environmental issues, manufacture of products of hazardous nature and articles of elitist consumption. In the course of time many more industries were delicensed. Thus at present only 6 items of health, strategic and security considerations, remain under the purview of industrial licensing. The role of public sector was diluted by reducing the number of industries reserved for public sector from 18 in 1956 to 8 in 1991. Further, the number of industries reserved for public sector was reduced to four. On May 9,

2001, the Government opened up arms and ammunition sector to private companies. This now leaves three industries reserved exclusively for the public sector. MRTP Act was amended to lend a free hand to big firms for expansion, diversification and merger. Until the close of 1980s, foreign direct investment was very little. The new Industrial Policy opened many industries for foreign direct investment. The limit was 100 percent in power, roads, ports, tourism and venture capital funds. It was upto 51 percent in Non-Banking Financial Institutions (NBFIs). On May 9, 2001 the route for FDI was further made easier. The main incentives were as follows:

- (i) In pharma-sector, 100 percent FDI has been allowed through automatic route (earlier the limit was 74 percent);
- (ii) 100 percent FDI has been allowed in airports against the previously 74 percent;
- (iii) In the telecom sector FDI has been raised to 74 percent from the existing 49 percent for Internal Service Providers (ISPs);
- (iv) Subject to Reserve Bank guidelines, the foreign investment limit in the banking sector has been hiked from 20 percent to 49 percent and;
- (v) FDI upto 26 percent has been allowed in defence production. Further, liberalisation in Exim policy has been achieved by removing Quantitative Restrictions and reducing tariff. For promoting exports Special Economic Zones have been established.

It is really a great paradigm shift in the post reform period. The role of public sector is getting further diluted after the launch of second generation reform, that is the disinvestment of Public Sector Undertakings (PSUs). FDI is increasing and multinationals are spreading their business empire. Just within few years the whole Indian economic landscape has been turned into a new look.

Notes:

1. . P. 22, Second Five Year Plan, Planning Commission, Government of India (1956).
2. p. 6, Ahluwalia (1991).
3. Ibid., p. 8.

CHAPTER – III

EMPLOYMENT, OUTPUT AND CAPITAL INTENSITY IN INDIAN ORGANISED MANUFACTURING IN 1980s AND 1990s

Although the growth performance of Indian manufacturing was commendable in the 80s, (after a long period of stagnation since mid-60s), the employment generation by the same was very much discouraging in the same period. The decade beginning in 1980-81 witnessed virtual stagnation in the growth of employment in the organised manufacturing sector. But there was substantial increase in growth of employment in the post-reform period, although there was the popular apprehension that the reform policy measures would encourage the use of capital intensive technology which would in turn reduce employment. In 80s total number of persons employed in registered manufacturing grew at a rate of only 0.73 per cent per annum. At the same time growth rate of output and capital intensity were 7.6 per cent per annum and 8.3 per cent per annum respectively. The growth rate of employment in the 70s was about 3.8 per cent per annum. Likewise, the period of 1990-91 to 1997-98¹ had the growth rate of employment about 3.17 per cent per annum. Output and capital-intensity grew at the rate of 8.84 per cent per annum and 9.53 per cent per annum respectively. Here, we see that there was no substantial difference in the growth of output and capital intensity in the decade of 80s and 90s. But there was substantial difference in the growth rate of employment in 80s and 90s.

In this chapter it has been tried to explain the relationship of the growth of capital-intensity and that of output vis-a-vis employment growth rate. It is taken as granted that increase in capital intensity displaces labour and generates unemployment. However, if the capital intensity is changed keeping pace with the labour intensity of the industry, its impact will be positive on employment and labour productivity. Thus increasing capital intensity has a positive wide ranging impact on the economy, affecting labour productivity, costs, prices, profits, output and, in the long run employment. Growth rate of output and employment are two issues, which attract much discussion. When the demand for a product increases what the entrepreneurs do is, they manage the increased demand with the existing inventory or they increase production. To increase production they don't employ more workforce suddenly. Rather, they utilise the existing workforce overtime by compensating them accordingly. Only after a consistent increase in demand employment is increased. In section 3.1, there is a discussion on the existing literature. In section 3.2 growth pattern of employment and output of different 2-digit industry groups have been discussed. Section 3.3, 3.4 and 3.5 have been devoted to discussion on employment pattern by factory size, employment and output pattern in public and private sector industry and employment pattern in user based industries respectively. Section 3.6 gives the analysis of the study and section 3.7 is devoted to concluding remark.

3.1 Review of Literature

The decade of 80s witnessed a virtual stagnation in the growth of employment. Many economists in their own ways have explained this phenomenon. During 1965-79, value added in the organised manufacturing sector grew at the rate of five per cent per annum, while employment grew at 3.5 per cent per annum. During the period 1979-87 the growth rate of value added increased at the rate of 6.3 per cent per annum, while the growth rate of employment declined to -0.3 per cent per annum (Bhalotra, 1998). The period of 1981-1990 had an employment growth which was positive but negligible. The deceleration in employment growth took place not only at the aggregate level but also for most 2-digit industry groups.

3.1.1 Labour Market and Employment

One popular explanation to the experience regarding employment growth in the registered manufacturing sector runs in terms of labour market rigidity. They opine that it is the job security regulations introduced in the late 1970s and strengthened in the early 1980s² were the main cause of the 'jobless growth' in the organised manufacturing sector in the 1980s. It is argued that these provisions made labour adjustment difficult and therefore enterprises refrained from increasing their workforce. Because they feared that it would not be possible for them to reduce the workforce if warranted by compulsion of

competitive efficiency. Accordingly the enterprises opted either for more capital intensive technologies or contracted out increasing volumes of work. Some empirical support for this view has been provided by the study of Fallon and Lucas (1993) who attempted a quantitative measure of the loss of employment due to job security regulations and estimated that the employment in organised manufacturing would have been 17.5 per cent higher in the absence of such regulation. The above argument has been questioned by Ghose and Papola (1994). Ajit K. Ghose says, "employment growth in organised industry decelerated even while output growth accelerated, so that the low growth in employment was due purely to a steep fall in the employment elasticity". And further he elaborates that the sharp decline in employment elasticity in the organised manufacturing in the 80s resulted from a strategy of capital deepening pursued by enterprises irrespective of their size, organisational set-up or particular field of operation [Ghose, 1994].

Bhalotra (1998) gives a number of reasons to be skeptical of the claim that primary cause of stagnation in employment in organised manufacturing lies in the job security regulation. She points out that,

- (a) there has been considerable evasion of law;
- (b) the view has no firm theoretical backing; and
- (c) the pattern of employment growth in factories of different size classes is not consistent with the threshold effect that one would expect of the job security regulations.

Prof. Amit Bhaduri has discussed the case of labour market flexibility in a liberalised regime in the context of India. He has explained that how a flexible labour market will create negative feedback and create unemployment in a liberalised regime in India. No degree of labour market 'flexibility', and other similar supply side measures are likely to be effective, unless the government assumes the responsibility of managing aggregate demand through its fiscal and monetary policies.³

3.1.2 Wages and Employment

Isher J. Ahluwallia also identified policy induced rigidities in the labour market as the principal reason for the decline in employment, though she mentions other possible reasons like the growth of contract labour and spill-over of employment into the unorganised sector. Identifying consumer non-durable goods industries in registered manufacturing as accounting for the bulk of the decline, she argued: "The sharp increase in the capital - labour ratio in the 1st half of the 80s was associated with a sharp increase in the real wage rate during the period..... While the cause and effect can be debated at length, the data seem to suggest that the consumer non-durable goods sector experienced the maximum increase in capital intensity as well as the maximum increase in the real wage rate during this period" [Ahluwallia 1992 : 82-84]. Associating the increase in real wage rate with the growing labour market rigidities she further

TH-10616

says: " This makes for inflexibility in hiring and firing possibilities and rigidities in the labour market" (Ahluwalia 1992:84).

The World Bank also offers a similar explanation claiming that real wage rate increased at 7.2 per cent per annum in the first half of 80s, the Bank argued: ".....employers responded [to the increase in real wage rate] by virtually stopping new hiring and retrenching existing workers to the extent possible. The study added: "The estimates point to a significant trade off between the higher real cost of labour and employment. This suggests that the faster growth of real wages in 1980s indeed did play an important role in slowing down employment creation" [The World Bank 1989: 109-110].

Nagraj and Papola doesn't favour the argument of hike in real wages as an explanation to the stagnation of employment in 80s. Papola [1994] has pointed out that the increase in labour productivity in this period was much faster than the growth in real wages. Further the decline in employment in food products and cotton textiles industries which accounted for a substantial part of factory employment was caused by closure of mills due to sickness and rationalisation to overcome obsolescence.

R. Nagraj is of the opinion that these studies seem to have ignored the possible role of human capital variables - namely, skill, education and experience - in increasing the wages as those could be considerable in a period of structural changes in the composition of industrial sector.

Nagraj distinguished between wage rate and earning per worker. In his opinion in 80s in the organised manufacturing sector real earning per worker has increased, not the wage rate. He argues, in 80s, while employment growth stagnated, total mandays worked in registered manufacturing - and hence mandays per worker - recorded a positive trend growth rate; suggesting that the observed increase in earning per worker could, at least partly, represent his/her compensation for greater effort and may not necessarily imply an increase in the wage rate, as has been argued, "while earning per worker in registered manufacturing increased at 3.2 per cent per annum in the decade beginning 1979-80, earning per manday increased at only 1.6 per cent per annum, which is less than the corresponding real per capita GDP growth rate during the same period (2.7 per cent)".⁴ He concluded that earnings per worker undoubtedly went up in the 80s, it was mainly on account of an above average increase in the number of days worked per worker. The rise in earnings per manday in consumer non-durable goods industries is considerably low (0.5 per cent per annum) than the average for registered manufacturing (1.6 per cent per annum). If these findings are valid, they question the argument of Ahluwalia and the postulated association between the wage rate, capital-labour ratio and the decline in employment.

Nagraj has given evidence to show a decline in the strength of organised labour in 1980s. So it is unlikely that unionised labours have secured a disproportionate increase in the wage rate. He has given alternative explanation

to the decline in employment in 80s. According to Nagraj and Papola during the 1980s the composition of output of the organised manufacturing sector changed in favour of less labour intensive industries. There was faster growth in industries with low employment intensity and slower growth in industries with high employment intensity. Nagraj has drawn attention to an overhang of employment existing by the end of 1970s caused by markedly decelerated growth of industrial output but a sustained employment growth at the rate of 3 per cent per annum during the previous 15 years or so. He has argued that when demand picked up in the 1980s, the firms would have first used the existing stock of labour intensively before deciding to employ additional workers.

3.1.3 Employment in the Post-Reform Period

Employment in the registered manufacturing sector in 90s, that is the post reform period was encouraging. Goldar (2000) attributes this positive change to two major reasons: slowdown in growth of real wages and faster growth of medium and small sized factories, which are more labour intensive than large-sized factories. Nagraj (2000) contrasted Goldar's views and argued that faster employment generation in 90s was due to the investment boom in the decade. He again pointed out that the faster employment generation in 90s was seen only in the registered manufacturing sector, whereas the unregistered sector witnessed negative employment growth between the mid 1980s and mid 1990s.

3.2 Growth Patterns of Employment, Output and Capital Intensity in Different Industry Groups

Employment growth rate as a whole in the organised manufacturing sector was 0.73 per cent per annum in the decade beginning 1980-81 and it was 3.17 per cent per annum in the post reform period, that is over the period of 1990-91 to 1997-98. The industry group of cotton textile showed the maximum deceleration in employment generation in 80s (-3.04 per cent per annum) and that of leather and leather products had the maximum growth of employment (5.78 per cent per annum) in the same period. The industry groups of food products, jute and other textiles, wood and wood products, paper and paper products and transport equipments had also negative growth in employment in the decade of 80s. In contrast in 90s all the industry groups had positive growth in employment generation. Table 1 shows the growth rates of employment, output and capital intensity of different industry groups. Table 3.2 and 3.3 gives the distribution of employment and output respectively for different industry groups over the years 1980-81 to 1997-98.

Table-3.1: Growth Rates of employment, Output and Capital Intensity
(In Per cent Per Annum)

Industry Groups	Employment			Output			Capital Intensity		
	1981-90	1991-98	1981-98	1981-90	1991-98	1981-98	1981-90	1991-98	1981-98
20+21	-2.77	2.64	0.68	8.12	7.77	8.06	11.30	9.75	9.46
22	1.92	2.56	2.92	8.37	6.39	8.01	14.19	14.42	10.71
23	-3.43	0.97	-1.60	2.75	7.86	5.35	7.72	19.23	10.08
24	2.43	3.58	0.24	7.80	7.71	8.63	8.07	12.74	10.67
25	-3.04	1.93	-1.29	1.83	5.04	1.42	13.50	0.99	7.56
26	4.80	13.22	9.13	9.12	14.55	12.82	9.20	11.43	8.08
27	-1.35	2.34	-0.54	4.74	6.05	3.94	8.32	13.87	8.47
28	-0.74	2.81	0.89	7.70	7.67	7.90	7.03	12.00	6.93
29	5.78	3.22	5.59	10.18	6.74	9.97	1.34	8.07	5.95
30	2.90	5.33	4.41	7.89	7.83	6.39	11.38	9.82	8.32
31	1.78	5.48	2.80	7.50	10.79	8.35	5.10	9.42	7.74
32	1.89	0.45	1.17	10.36	6.76	8.57	16.39	13.16	11.53
33	0.25	1.50	0.65	7.92	6.98	7.60	4.38	5.95	9.35
34	1.03	4.04	2.42	6.98	10.20	8.57	7.75	11.89	10.00
35+36+39	2.06	2.94	3.60	8.14	10.15	5.49	8.07	6.51	6.27
37	-0.30	3.33	0.89	8.32	12.93	9.31	6.49	10.33	6.38
38	4.98	7.90	5.75	9.70	17.25	13.12	9.14	8.04	8.24
Total	0.73	3.17	1.74	7.60	8.84	7.92	8.39	9.53	8.74

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Food Products (20-21): The share of this industry group in total employment in the organised manufacturing sector in 1980-81 was 18.96 per cent (table 2). But its share of value of output was only 14.19 per cent. So it was employing more and producing less. Although its share of value of output remained almost unchanged upto 1989-90, that of employment came down in the decade of 80s from 18.96 per cent to 15.23 per cent per annum. In the period of 1990-91, there was no substantial change in the share of output, as well as employment. It is interesting to note that this industry group had a output growth of 8.12 per cent in 80s and 7.77 per cent per annum, a lower one in 90s, that is over the period of 1990-91 to 1997-98. Growth rates of capital intensity were 11.30 and 9.75

per cent per annum in 80s and 90s respectively. So, much difference was not noticed in the growth rate of output and capital intensity in the pre and post-reform period.

Beverages and Tobacco (22): This industry group showed marginal change in employment growth rate in 90s in comparison to 80s. The growth rates were 1.92 and 2.56 per cent per annum in 80s and 90s respectively. The growth rates of output were 8.37 and 6.39 per cent per annum in 80s and 90s respectively. Capital intensity grew at the rate of 14.19 and 14.42 per cent per annum in 80s and 90s respectively. Here it is interesting to note that despite witnessing a lower growth rate of output in 90s, employment growth rate increased marginally in the same period. There was marginal changes in the share of employment as well as output in some years. But over the years (both in 80s and 90s) there was almost no change in the share of employment and output in the beverages, tobacco industry.

Table-3.2: Distribution of Employment among Different Industry Groups (In Per centage)

Years	20+21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36+39	37	38
1980-81	18.96	5.83	15.75	3.18	4.01	1.45	1.16	4.01	0.86	2.54	7.15	5.10	8.50	2.82	10.56	7.12	1.00
81-82	19.00	6.29	14.82	3.49	3.51	1.45	1.12	4.22	0.89	2.59	7.02	5.35	8.61	2.79	10.60	7.26	0.97
82-83	17.56	6.30	14.98	3.61	3.68	1.41	1.12	4.31	0.89	2.81	7.04	5.77	8.59	2.79	10.94	7.23	0.99
83-84	14.92	6.47	15.22	3.84	3.28	1.58	1.12	4.41	0.92	2.68	7.44	6.30	9.12	2.73	11.56	7.38	1.04
84-85	14.66	5.19	13.99	4.02	4.30	1.62	1.10	4.35	1.04	2.80	7.61	6.18	9.95	3.00	11.52	7.67	1.01
85-86	14.79	5.40	13.69	4.04	3.29	1.75	1.14	4.28	1.11	2.89	8.29	6.59	9.22	2.89	12.21	7.32	1.10
86-87	14.53	6.06	13.92	4.09	3.30	1.64	1.08	4.23	1.10	3.04	8.07	6.48	9.58	2.67	11.52	7.52	1.17
87-88	14.73	6.23	13.65	4.08	3.25	1.99	1.09	4.49	1.18	3.24	8.50	6.54	9.55	0.31	12.53	7.45	1.20
88-89	14.77	6.38	11.96	3.98	3.10	1.99	1.07	4.02	1.35	3.33	8.43	6.36	9.17	3.18	12.09	7.55	1.27
89-90	15.24	7.28	12.04	4.01	2.98	2.28	1.02	3.83	1.45	3.31	7.90	6.11	8.30	3.04	13.34	6.65	1.24
90-91	15.24	6.78	11.48	4.07	2.79	2.39	0.91	3.96	1.45	3.47	7.61	6.00	8.66	3.13	14.19	6.61	1.26
91-92	15.14	7.11	10.81	3.89	2.78	2.46	0.88	3.99	1.50	3.51	7.96	6.27	8.23	3.08	14.29	6.78	1.31
92-93	15.42	7.12	10.46	3.87	2.66	2.60	0.90	3.91	1.45	3.62	8.23	5.91	8.58	3.03	14.38	6.53	1.33
93-94	15.44	6.65	10.54	4.16	2.26	3.59	0.91	3.91	1.52	3.80	8.30	5.73	8.12	3.00	14.00	6.56	1.51
94-95	15.10	7.27	9.87	4.07	2.34	4.02	0.88	4.00	1.65	3.82	8.42	5.56	7.90	3.06	13.80	6.76	1.50
95-96	14.65	6.17	9.81	4.14	2.99	3.87	0.86	4.06	1.53	3.75	8.64	5.48	8.39	3.16	13.80	7.06	1.64
96-97	14.68	6.74	9.71	4.12	2.45	4.09	0.88	3.85	1.51	4.05	8.85	5.31	7.60	3.46	14.03	7.02	1.64
97-98	15.30	6.88	9.87	4.06	2.48	4.24	0.87	3.86	1.40	3.99	9.01	5.08	7.65	3.20	14.08	6.33	1.70

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Table-3.3: Distribution of Output Among Different Industry Groups (In Percentage)

Years	20+21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36+39	37	38
1980-81	14.20	1.98	9.33	3.57	1.54	1.52	0.58	3.02	0.94	10.92	14.42	2.99	12.79	2.48	12.84	6.00	0.86
81-82	14.41	2.03	8.04	3.91	1.09	1.46	0.50	3.06	0.89	11.45	14.66	3.07	13.77	2.46	12.18	6.32	0.70
82-83	15.14	1.81	7.59	3.80	0.98	1.39	0.49	2.78	0.80	12.91	14.01	3.48	13.60	2.24	12.17	6.07	0.74
83-84	15.39	2.34	7.97	3.90	0.91	1.23	0.49	2.94	0.80	11.61	14.87	3.79	12.83	2.20	12.00	5.96	0.79
84-85	14.45	2.07	7.34	3.89	1.48	1.35	0.48	3.21	0.90	11.67	14.62	4.03	13.39	2.26	11.98	6.08	0.79
85-86	13.76	1.99	6.84	4.00	1.20	1.37	0.43	2.93	0.91	13.67	14.66	4.13	13.11	2.15	12.10	5.83	0.90
86-87	14.30	2.11	6.47	3.90	0.82	1.38	0.46	3.16	0.87	12.90	15.21	4.03	13.35	1.96	11.88	6.39	0.82
87-88	15.23	2.23	6.38	3.82	1.23	1.52	0.45	3.08	1.03	12.11	14.69	3.77	12.69	2.25	12.53	6.10	0.90
88-89	14.71	2.08	5.94	3.45	0.73	1.50	0.49	2.88	1.04	12.12	14.32	3.88	14.15	2.43	12.87	6.65	0.82
89-90	15.71	2.05	6.05	4.05	0.71	1.76	0.39	3.00	1.08	10.82	13.98	3.72	13.63	2.36	13.36	6.38	0.95
90-91	14.91	2.18	5.77	4.17	0.70	1.74	0.36	3.00	1.18	12.00	13.48	3.75	13.78	2.38	13.24	6.46	0.90
91-92	16.05	2.30	5.86	4.19	0.62	1.98	0.33	3.17	1.18	8.87	14.61	4.49	13.33	2.44	13.67	5.89	1.02
92-93	15.13	2.21	5.64	4.10	0.55	1.95	0.32	2.97	1.05	9.76	15.23	3.97	14.09	2.19	13.44	6.21	1.20
93-94	15.08	2.22	5.57	4.79	0.52	2.57	0.36	3.08	1.28	10.51	15.04	3.75	12.67	2.55	12.34	6.21	1.47
94-95	14.77	2.15	6.30	4.25	0.52	2.63	0.33	3.08	1.22	9.94	14.80	3.65	12.62	2.34	13.11	6.87	1.43
95-96	13.92	1.74	5.50	3.95	0.59	2.55	0.28	3.25	1.00	10.19	15.08	3.72	12.92	2.52	13.28	8.04	1.48
96-97	15.05	1.97	5.68	3.85	0.55	2.43	0.35	3.07	1.05	10.31	15.08	3.72	11.41	2.52	13.18	8.41	1.46
97-98	14.43	2.07	6.17	4.04	0.48	2.47	0.28	2.60	1.04	9.53	16.43	3.51	13.02	2.57	12.94	6.88	1.54

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Cotton Textiles (23): In this industry group employment decelerated at the rate of -3.43 per cent per annum in 80s. Although the decade of 90s witnessed a positive growth rate in this industry group it was marginal and remained at 0.97 per cent per annum. Here the growth rate of capital intensity was less in 80s than that of 90s. Capital intensity grew at the rates of 7.72 and 19.23 per cent per annum in 80s and 90s respectively. So here, the conventional relationship between increase in capital intensity and employment has been broken. Growth rate of output was substantially more in 90s than that of 80s. This may be attributed to the increase in capital intensity in 90s. Its share of employment in the organised manufacturing has come down over the years in 80s as well as in 90s. The share of output came down in 80s, but in 90s it was some what constant over the years.

Wool, Silk, Man-made Fibre Textiles (24): In this industry group also, employment and capital intensity grew more rapidly in 90s than that of 80s. But the growth rates of output were 7.8 and 7.7 per cent per annum in 80s and 90s respectively. Its share in employment generation marginally slowed down in 80s, but remained almost unchanged in 90s. In case of output its share increased slightly in the later part of 80s and it remained almost unchanged at about 4 per cent in 90s.

Jute and Other Textiles (25): In this industry group growth rate of employment was very less (-3.04 per cent per annum) and that of capital

intensity was very high (13.5 per cent per annum) in 80s. But in 90s employment growth rate remained at 1.93 per cent and that of capital intensity marked 0.99 per cent. Its employment as well as output share came down marginally over the years both in 80s and 90s.

Textile Products (26): The growth rates of employment were 4.8 and 13.22 per cent per annum in the decade of 80s and over the period of 1990-91 to 1997-98 respectively. It has done well in comparison to other industry groups both in 80s and 90s. Its employment growth rate was highest among all industry groups in 90s. Capital intensity grew at the rates of 9.2 and 11.43 per cent per annum in 80s and 90s respectively. Growth rates of output were 9.12 and 14.55 per cent per annum in 80s and 90s respectively. Its share of employment and output has increased over the years both in 80s and 90s.

Wood and Wood Products (27): Growth rate of capital intensity in this industry group was 8.32 per cent per annum and that of employment was -1.35 per cent per annum in 80s. In 90s growth rate of capital intensity increased to 13.87 per cent per annum and that of employment to 2.34 per cent per annum. Growth rates of output were 4.74 and 6.05 per cent in 80s and 90s respectively. Its employment share came down marginally over the years (Table 2) and the same thing happened in case of output also.

Paper and Paper products (28): Growth rate of employment in this industry group was -0.74 per cent per annum and that of output was 7.03 per cent per annum in 1980s. In the post-reform period (1990-91 to 1997-98) growth rate of

capital intensity as well as employment increased to 12.0 and 2.81 per cent per annum respectively. There was almost no difference in the growth rate of output in 80s and 90s. Employment share was marginally less in 90s in comparison to 80s. The output share has remained almost unchanged over the years with little fluctuation in some years.

Leather and Leather Products (29): Here, it is interesting to note that growth rate employment has decreased in 90s in comparison to 80s. This industry group achieved highest growth in employment among all the groups in 80s. Employment growth rate decreased from 5.78 per cent per annum in 80s to 3.22 per cent per annum in 90s and that of capital intensity increased from 1.34 per cent per annum in 80s to 8.07 per cent per annum in 90s. Employment share increased marginally over the years with some fluctuations in some years. But there was more fluctuation in the share of output, although it increased marginally over the period of 1990-81 to 1997-98.

Chemicals and Chemical Products (30): Employment growth rate in this industry group increased from 2.9 per cent per annum in 80s to 5.33 per cent per annum in 90s and that of capital intensity decreased from 11.38 per cent per annum in 80s to 9.82 per cent per annum in 90s. There was not much discrepancy in the growth rates of output in 80s and 90s (7.89 per cent per annum and 7.83 per cent per annum in 80s and 90s respectively). Share of employment increased marginally over the years and that of output has almost remained unchanged over the period of 1980-81 to 1997-98 with some

fluctuations. It was producing about 10 per cent of output and employing only 3.5 per cent of employees.

Rubber, Plastics and Petroleum Products (31): In this industry group the growth rate of employment as well as capital intensity has increased in 90s as compared to 80s. Employment growth rates were 1.78 and 5.48 per cent per annum and those of capital intensity were 5.10 and 9.42 per cent per annum in 80s and 90s respectively. Growth rate of output remained at 7.5 per cent per annum in 80s and in 90s it touched 10.79 per cent per annum. Its share of employment increased upto 1988-89, then decreased in 1989-90 and 1990-91. Again, after 1990-91 it increased upto 1997-98. Share of output almost remained at around 14 per cent in 80s, but increased to about 16 per cent in 90s.

Non-metallic Mineral Products (32): Employment growth rate in this industry group was 1.89 per cent per annum in 80s and decreased to 0.45 per cent per annum in 90s. The growth rate of capital intensity also decreased to 13.16 per cent per annum in 90s from 16.39 per cent per annum in 80s. Here, the growth rate of output was also less in 90s (10.36 and 6.76 in 80s and 90s respectively). Its share of employment remained around 5 and 6 per cent and that of output remained around 3 and 4 per cent over the total period.

Basic Metals and Alloys (33): In this industry group growth rates of employment were 0.25 per cent per annum and 1.5 per cent per annum and those of capital intensity were 4.38 per cent per annum and 5.95 per cent per annum in 80s and 90s respectively. Output grew at the rate of 7.92 and 6.98 per cent per

annum in 80s and 90s respectively. Although its share of output was around 13 per cent of total registered manufacturing, employment share remained at about 8-9 per cent.

Metal Products and Parts (34): Growth rate of employment in this industry group was 1.03 per cent per annum and that of capital intensity was 7.75 per cent per annum in 80s and both increased to 4.04 and 11.89 per cent per annum respectively in 90s. The growth rates of output were 8.14 and 10.15 per cent in 80s and 90s respectively. The share of employment marginally increased in 90s and that of output remained almost unchanged over the whole period.

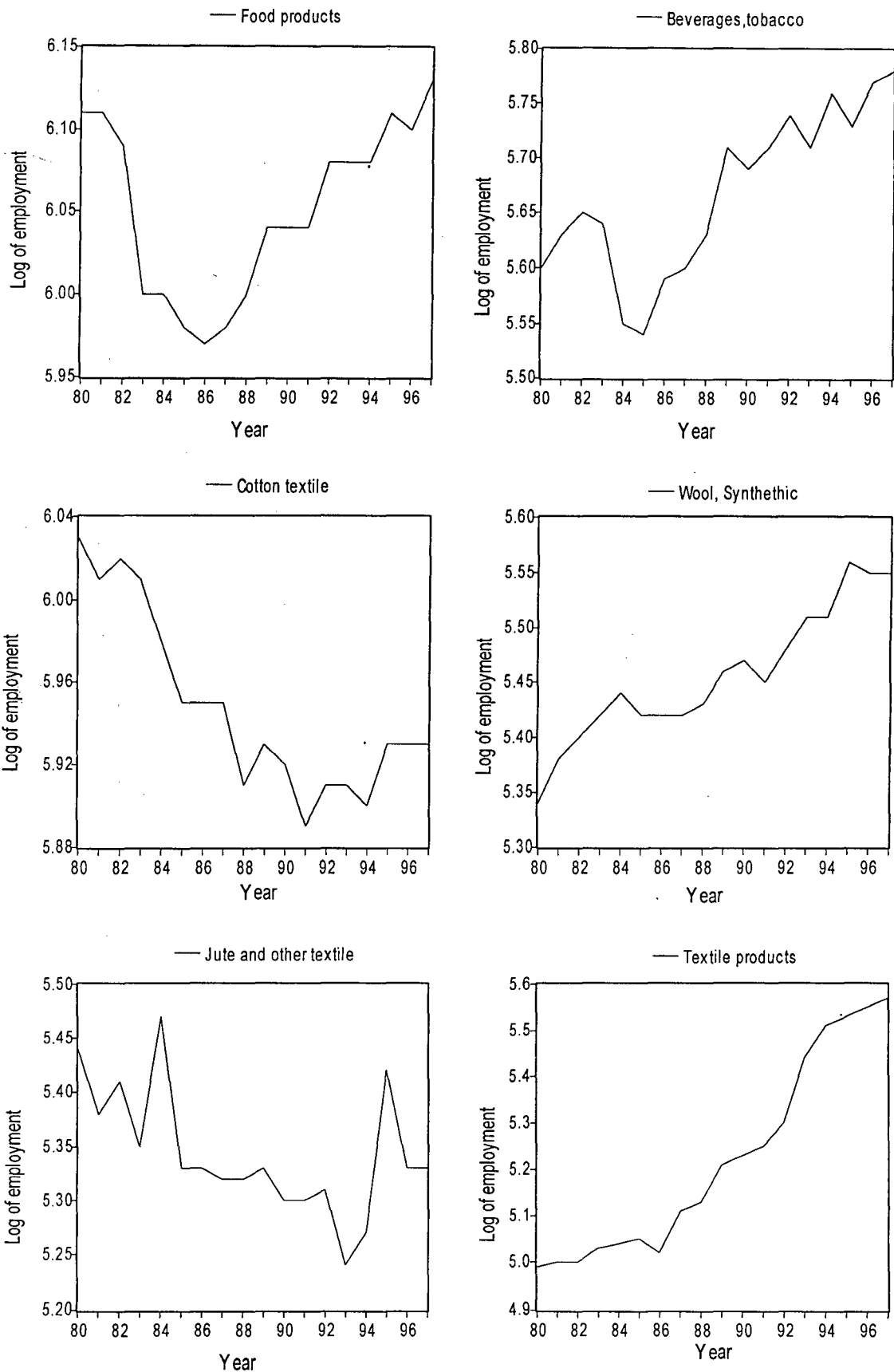
Machinery and Equipment, Repair of Capital Goods (35-36, 39): Employment growth rate in these industry groups did not show much difference in 80s and 90s (2.06 and 2.94 per cent per annum respectively). Growth rate of capital intensity was 8.07 per cent per annum in 80s and it decreased to 6.51 per cent per annum in 90s. Growth rates of output were 8.14 and 10.15 per cent per annum in 80s and 90s respectively. While its share of employment increased over the total period, output share remained almost unchanged.

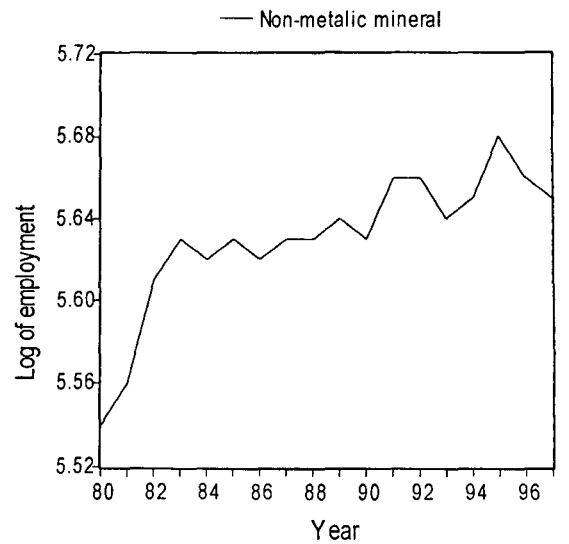
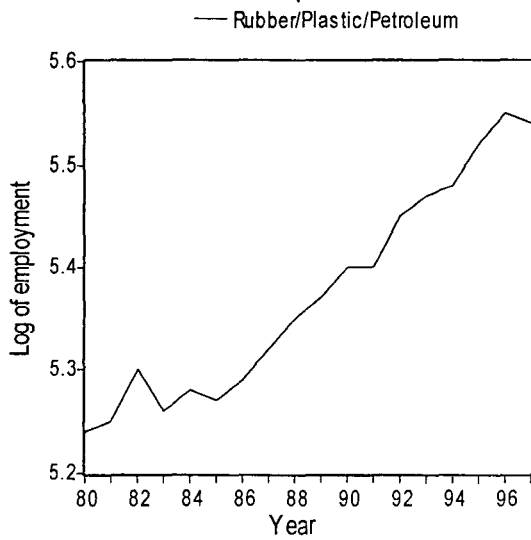
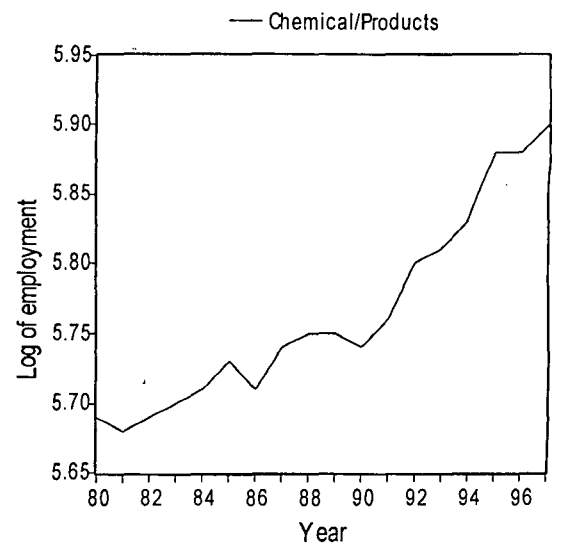
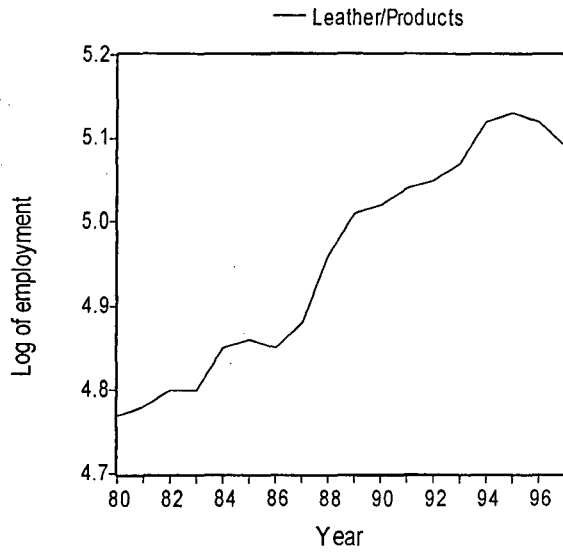
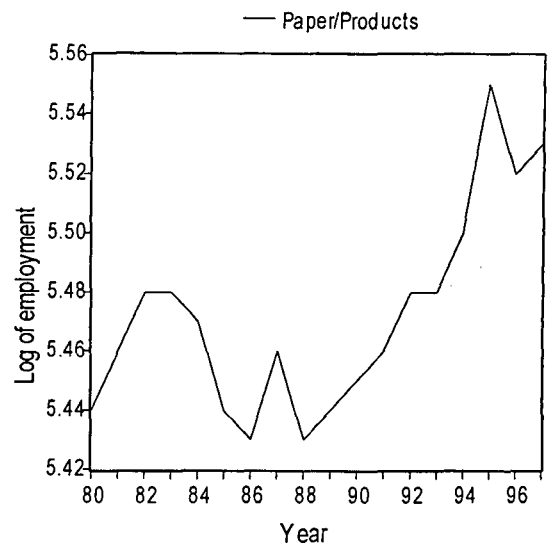
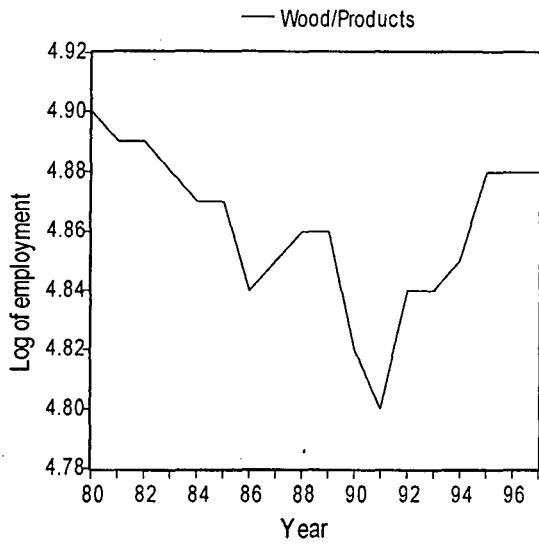
Transport Equipment (37): In this industry group employment, capital intensity and output, all witnessed increased growth rate in 90s as compared to 80s. Growth rates of employment were -0.30 and 3.33 per cent per annum in 80s and 90s respectively and those of capital intensity were 6.49 and 10.33 per cent per annum in 80s and 90s respectively. Output grew at the rate of 8.32 and 12.93 per cent per annum in 80s and

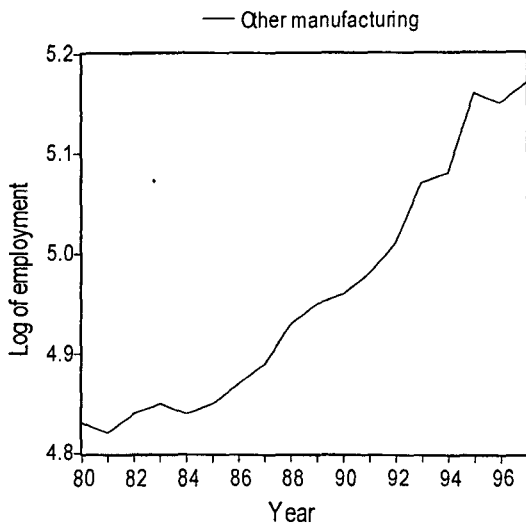
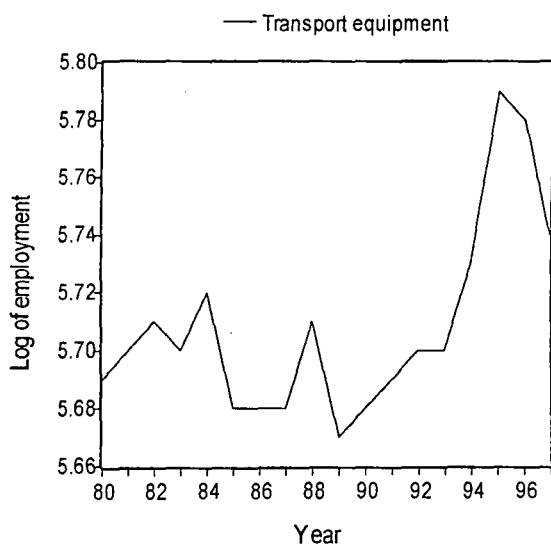
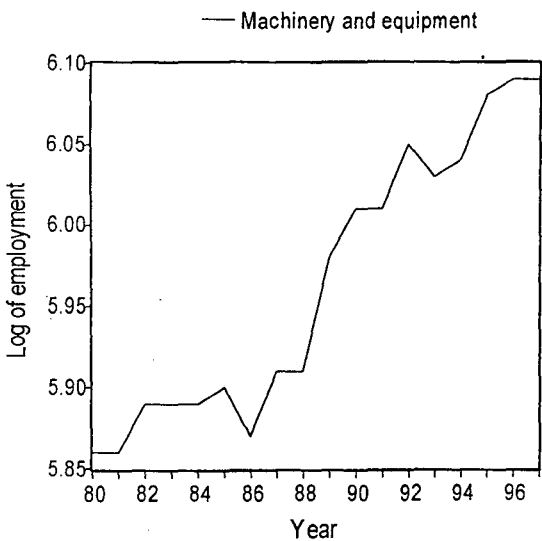
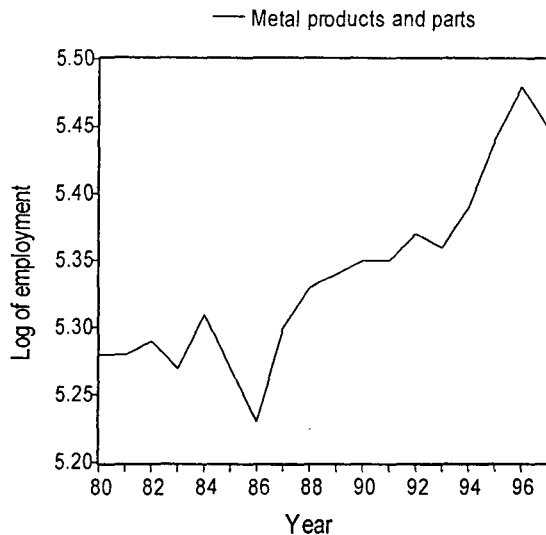
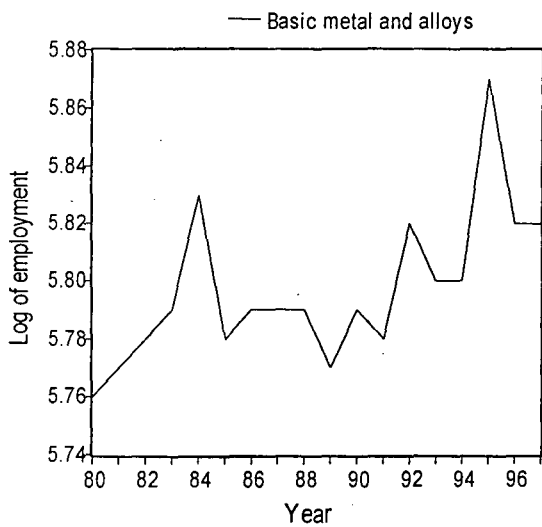
90s respectively. The share of employment decreased marginally in 90s in comparison to 80s and that of output remained almost unchanged over the years.

Other Manufacturing Equipments (38): In this industry group employment grew at the rate of 4.98 per cent per annum in 80s and 7.90 per cent per annum in 90s. Growth rates of capital intensity were 9.14 and 8.04 per cent per annum in 80s and 90s respectively and those of output remained at 7.60 and 8.84 per cent per annum in the decade of 80s and over the period of 1990-91 to 1997-98 respectively. In this industry group although output share increased marginally in 90s in comparison to 80s, employment share remained almost unchanged over the years.

Figure 3.1: Trends of Employment of Different Industry Groups.







3.3 Distribution of Employment by Factory Size

Table – 3.4:

	Distribution of Employment (per cent)				Growth Rate (per cent per annum)		
	1973-74	1980-81	1990-91	1997-98	1973-80	1980-90	1990-97
0-49	14.4	13.8	17.5	16.8	3.477	2.983	2.201
50-99	8.2	9.0	10.8	13.1	5.502	2.416	5.686
100-199	9.4	9.2	10.7	12.9	3.789	2.096	5.652
200-499	13.1	12.1	13.5	19.0	2.934	1.673	7.979
500-999	11.6	9.7	12.0	13.6	1.481	2.729	4.711
1000-1999	12.8	13.7	10.1	9.4	5.124	-2.454	1.815
2000-4999	16.7	15.9	9.5	10.0	3.381	-4.482	3.649
5000+	13.8	16.6	15.9	5.2	6.892	0.134	-12.438
Total	100.0	100.0	100.0	100.0	4.108	0.566	2.835

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Note: Table 4, 5 and 6 are based on data for aggregate ASI which includes electricity, gas, warehousing, etc. From the published data of ASI it is not possible to prepare such tables for manufacturing only.

Table 3.4 shows the distribution of employment size class of factories.

There was a marked change in 90s in comparison to 80s. The size classes 0-49, 50-500 (employment) gained while the size classes 2000 to 4999 and 5000+ lost heavily. Since the factories in lower employment size classes are more labour intensive, these changes in size structure had a favourable effect on employment growth. "The change in size structure which occurred in the 1980s should have led to an increase in employment, but this was neutralised by several factors including a marked fall in employment in cotton textiles and food products industries, which according to Papola [1994] was caused by closure of factories due to sickness and rationalisation to overcome obsolescence" [Goldar, 2000, p. 1193].

3.4 Employment and Output in Public and Private Sector

Table – 3.5: Growth of Employment in Public and Private Sectors.

	Employment (in ' 000)				Growth Rate (per cent per annum)		
	1973-74	1980-81	1989-90	1997-98	1974-81	1981-90	1990-98
Public Sector	1365	2049	2227	2388	5.97	1.39	0.87
Private and joint Sector (including unspecified)	4456	5666	5914	7538	3.49	0.30	3.71
Aggregate ASI (all industry groups)	5820	7715	8143	9926	4.10	0.56	2.83

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Table 3.5 shows the employment pattern of public sector and private sector (including joint sector) over the period of 1973 to 1998. Table 3.6 shows the growth pattern of output and fixed capital over the period of 1981-90 and 1990-98. In 70s employment growth was substantial both in public and private sector. There was a sharp deceleration in employment growth in 80s both in public and private sector. Growth rates of output in public, joint and private sector were 9.2, 11.7 and 8.01 per cent per annum respectively and those of fixed capital were 5.33, 10.05 and 12.36 per cent per annum respectively in 80s. Although growth rates of output and fixed capital were substantial, employment growth was very much lower in 80s. According to Nagraj this is due to overhang of employment existing by the end of 1970s. In 90s, growth rate of employment in public sector factories came down further. It was only 0.87 per cent per annum between 1990-91 and 1997-98. But the growth rate of

employment in private sector (including joint sector) surpassed that of public sector and remained at 3.71 per cent per annum. Both the growth rates of output and fixed capital were very less in 90s in public sector factories in comparison to private and joint sector factories. So the increase in employment growth of the manufacturing sector in 90s is accounted for by private sector factories. The change in employment pattern in private and public sector may be due to the drastic changes in policies in the post-reform period.

Table 3.6: Growth of Output and Fixed Capital in Public, Joint and Private Sectors.

	Output		Fixed Capital	
	1981-90	1990-98	1981-90	1990-98
Public Sector	9.20	6.00	5.53	3.58
Joint Sector	11.71	10.71	10.05	17.35
Private Sector	8.01	9.24	12.36	14.73

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

3.5 Employment and Output growth pattern in Userbased Industries

Table 3.7: Employment and Output Growth Pattern of User based Industries.

	Employment Growth Rate (per cent per annum)		Output Growth Rate (per cent per annum)	
	1981-90	1990-98	1981-90	1990-98
Basic Goods	-0.905	1.381	7.134	7.536
Intermediate Goods	-2.802	2.457	6.50	7.39
Capital Goods	1.879	2.727	13.127	8.124
Consumer Goods	0.52	2.557	7.88	8.28
of which				
Consumer durables	0.318	2.963	8.004	9.540
Consumer non-durable	0.02	2.50	7.85	8.04

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Table 3.7 shows the growth pattern of employment and output of industry groups classified according to their use. Employment growth rate was negative in basic and intermediate goods industries in 80s. Consumer goods industries marked a marginal growth of employment (0.52 per cent per annum) in the decade of 80s. In 90s employment growth rate was marginally more in the consumer durable goods industries than that of consumer non-durable goods industries. Capital good industry showed highest growth in employment in 80s. There was no substantial difference in the growth rate of output in 80s and 90s.

3.6 Analysis

There was a substantial change in growth of employment in 90s in comparison to 80s. But there was no substantial changes in the growth rates of output and capital-intensity in 80s and 90s. There was secular trend in increase in capital intensity over the years for all industry groups (Table - 8). From the growth patterns of employment, output and capital intensity, it is clear that in some industry groups despite the rise in the growth rate of capital intensity, employment growth rate has increased. In some industry groups, also the reverse has taken place. In the industry group, '31' - Rubber, Plastics and Petroleum products-employment growth rate was 1.78 per cent in 80s and that of capital intensity was 5.1 per cent. In 90s employment growth rate increased to 5.48 per cent and that of capital intensity to 9.42 per cent. In case of industry group '29', the reverse has taken place. If we see the result of 80s (registered manufacturing total) we say that role of increase capital intensity is labour

replacing, but the experience of 90s gives the idea that increase capital intensity is labour-augmenting. So the relationship between growth of capital intensity and growth of employment is ambiguous.

Table-3.8: Capital Intensity (In Rs. Lakh per Worker)

Years	20-21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36+39	37	38	Total
1980-81	0.31	0.10	0.30	0.68	0.11	0.26	0.25	1.02	0.38	1.39	2.86	0.60	2.53	0.47	0.77	0.96	0.55	0.80
81-82	0.31	0.09	0.33	0.77	0.12	0.27	0.25	1.11	0.38	1.93	2.90	0.70	2.79	0.45	0.83	0.96	0.61	0.86
82-83	0.35	0.08	0.39	0.98	0.13	0.31	0.28	1.28	0.44	2.04	2.70	0.81	3.09	0.50	0.92	1.04	0.59	0.94
83-84	0.51	0.12	0.44	1.19	0.14	0.32	0.49	1.54	0.46	2.91	3.16	1.01	3.26	0.65	1.04	1.06	0.70	1.12
84-85	0.53	0.14	0.49	1.10	0.15	0.34	0.34	1.85	0.42	3.01	3.05	1.07	3.32	0.58	0.60	1.18	0.85	1.14
85-86	0.55	0.22	0.55	1.14	0.18	0.36	0.33	1.38	0.47	3.43	3.27	1.41	1.60	0.62	1.24	1.31	0.82	1.13
86-87	0.63	0.21	0.56	1.25	0.16	0.42	0.38	1.88	0.46	3.46	3.77	1.79	3.42	0.70	1.27	1.43	0.95	1.41
87-88	0.72	0.27	0.57	1.33	0.28	0.66	0.45	1.86	0.42	3.62	3.68	1.90	3.87	0.84	1.37	1.48	0.98	1.50
88-89	0.65	0.27	0.60	1.24	0.34	0.50	0.52	2.06	0.45	4.31	3.70	2.10	3.82	0.90	1.54	1.49	1.05	1.56
89-90	0.77	0.20	0.56	1.61	0.29	0.48	0.52	1.72	0.43	3.64	4.66	2.09	4.10	0.78	1.37	1.57	1.23	1.57
90-91	0.84	0.25	0.62	1.84	0.35	0.51	0.52	1.96	0.62	4.18	5.57	2.07	6.15	1.07	1.42	1.54	1.20	1.89
91-92	0.88	0.23	0.66	2.09	0.34	0.57	0.48	1.89	0.59	4.15	5.09	2.19	6.86	1.05	1.45	1.60	1.23	1.94
92-93	0.90	0.28	0.77	2.33	0.26	0.53	0.49	1.92	0.67	4.43	5.37	2.23	7.07	1.22	1.63	1.82	1.55	2.10
93-94	1.05	0.32	0.93	2.71	0.31	0.65	0.86	2.32	0.74	5.50	6.16	2.79	7.95	1.66	1.66	1.91	1.68	2.39
94-95	1.12	0.37	1.22	2.96	0.29	0.80	0.69	3.89	0.82	4.93	6.94	3.10	8.51	1.66	1.84	1.90	1.76	2.46
95-96	1.32	0.45	1.43	3.40	0.35	0.93	0.85	2.79	0.94	5.78	8.49	3.37	8.96	1.87	1.96	2.23	1.90	2.96
96-97	1.38	0.52	1.62	3.90	0.39	0.93	1.29	3.76	1.01	8.24	8.18	4.30	8.57	1.83	2.10	2.99	1.73	3.17
97-98	1.58	0.56	2.00	4.16	0.32	1.02	1.00	3.71	0.92	7.17	9.48	4.65	9.39	2.32	2.12	2.93	2.16	3.41

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

The econometrics analysis is also skeptical about the role of capital intensity. To analyse the relationship between employment growth, growth rate of output and growth rate of capital intensity three regression equations have been estimated. Employment growth (g_{empl}) has been regressed on growth rates in capital intensity (g_{CI}) and output (g_{output}). The regression analysis has been done separately for the period 1980-81 to 1989-90, 1990-91 to 1997-98 and 1980-81 to 1997-98. The growth rates computed for various 2-digit industries shown in Table - 1 have been used for the purpose. The estimated equations are as follows: (t-ratios are in parentheses)

For the period 1980-81 to 1989-90

$$G_{empl} = -4.738 - 0.095g_{CI} + 0.883g_{output}$$

$$(-2.43) \quad (-0.781) \quad (4.528)$$

$$n = 18, \quad R^2 = 0.59$$

For the period 1980-81 to 1997-98

$$G_{empl} = -2.05 - 0.036g_{CI} + 0.688g_{output}$$

$$(-1.012) \quad (-0.285) \quad (4.392)$$

$$n = 18, \quad R^2 = 0.56$$

For the period 1980-81 to 1997-98

$$G_{empl} = 1.001 - 0.508g_{CI} + 0.707g_{output}$$

$$(0.374) \quad (-1.871) \quad (4.438)$$

$$n = 18, \quad R^2 = 0.60$$

Here, in all the equations the coefficient of output is statistically significant even at below 1 per cent level of significance. In the first two equations the coefficient of capital intensity is not significant even at 10 per cent level. In the last equation (3rd one) it is significant at 10 per cent level. But the sign is negative in all equations. So, the econometrics analysis also fails to establish relationship between growth of capital intensity and growth of employment. But the growth rate of output keeps a definite relationship with growth rate of employment.

3.7 Conclusion

The post-reform period has made difference to only employment growth rate in the registered manufacturing sector. There was marginal difference in the growth rates of 80s and 90s in case of output and capital intensity. Registered manufacturing sector had an employment growth of 3.8 per cent in 70s. So the post-reform period has not done any considerable improvement in employment generation if the experience of 70s is taken into account. Growth of employment and output in public sector has come down and that of private sector has gone up in 90s. So the role of public sector in Indian industrial scenario is diminishing in the post-reform period.

Notes:

1. Although the provisional ASI result of 1998-99 was available, it was not possible to accommodate it. Because there was a drastic change in the national industrial classification in 1998-99 at two and three digit level.
2. In 1976, the Industrial Disputes Act was changed to make it necessary for enterprises employing 300 or more workers to seek government permission to effect lay-offs, retrenchments and closures. This was made applicable to establishments employing 100 or more workers in 1982.
3. See his article in the Indian Journal of Labour Economics, Vol. 39, No. 1, 1996.
4. Nagraj R. 1994, Economic and Political Weekly, January 22, 1994.

CHAPTER - IV

EMPLOYMENT IN ORGANISED MANUFACTURING: A STATEWISE ANALYSIS

Industrialisation in India although broadly influenced by the plans and policies of Union Government, the role of regional factors such as state administration, geographical structure of a region etc. can't be ignored. These factors become conducive for a particular industry group or for some groups to flourish in a particular region, such as the textile industries in Gujrat and Maharashtra, jute industries in West Bengal. Regional variation in employment in industrial sector occurs due to variation in these local factors. This chapter aims to study the interstate and intrastate variation and growth in employment.

4.1 Statewise Distribution of Employment¹ and Output

Table 1 shows the per centage share of employment and output of different states over the period of 1980-81 to 1997-98. In 1980-81, each of the four states, viz., Gujrat, Maharashtra, Tamilnadu and West Bengal employed around 10 per cent (or more) of total persons employed in organised manufacturing in India each. Maharashtra had the highest share among all the states, that was 18.21 per cent in 1980-81. Although, Maharashtra and Gujrat were producing 23.71 and 12.01 per cent of total organised manufacturing output of India respectively, the corresponding employment shares were 18.21 and 9.91 per cent only, which were less than those of output shares of respective states. It means, more capital intensive industries were located in Maharashtra and Gujrat. In case of Tamilnadu the share of employment was commensurate to its share of output, which were 10.24 and 10.96 per cent respectively. The story of West Bengal was somewhat different in 1980-81. Its output share remained at 10.06 per cent and employment share marked a high of 13.20

Table-4. 1: Per centage Share of Employment and Output of Different States in Different Years

EMPLOYMENT

States	1980-81	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
Andhra Pradesh	8.63	9.60	9.58	9.57	8.78	9.22	9.51	10.03	9.67	10.60	10.69	10.99	11.24	10.44	11.14	11.04	10.73	11.29
Bihar	4.73	4.84	4.74	4.61	4.39	4.61	4.70	5.15	4.88	4.35	4.46	4.39	4.18	3.89	3.73	3.40	3.33	2.98
Gujarat	9.71	9.31	10.21	10.70	9.31	9.47	9.72	9.63	9.11	9.14	8.69	8.75	8.70	9.13	8.98	9.28	9.18	9.30
Haryana	2.28	2.48	2.65	2.80	2.77	3.04	2.88	2.99	2.83	2.95	3.05	3.14	2.95	3.24	3.32	3.40	3.47	3.16
Karnataka	5.13	4.59	4.90	4.98	4.98	4.90	4.99	5.19	5.12	5.30	5.27	5.34	5.15	5.32	5.35	5.43	6.26	6.63
Kerala	3.59	3.87	3.33	3.24	3.18	3.18	3.05	3.31	3.04	3.25	3.43	3.49	3.83	3.58	4.08	3.39	3.56	3.81
Madhya Pradesh	1.69	3.99	4.11	4.19	4.62	4.30	4.50	4.63	4.57	4.58	4.57	4.27	4.78	4.68	4.44	4.96	4.55	4.32
Maharashtra	18.21	17.57	16.79	16.83	16.64	16.68	16.68	16.71	16.18	15.78	15.79	15.05	15.30	15.64	15.12	15.98	15.42	15.40
Orissa	1.48	1.52	1.27	1.48	1.50	1.73	1.62	1.83	1.71	1.54	1.55	1.76	1.74	1.79	1.81	1.71	1.74	1.63
Punjab	2.89	3.11	2.99	3.25	3.42	3.81	3.68	4.49	4.19	4.22	4.16	3.87	4.02	4.18	4.07	3.97	4.10	3.73
Rajasthan	1.91	1.90	1.94	1.98	2.08	2.26	2.26	2.37	2.12	2.43	2.42	2.48	2.39	2.35	2.51	2.51	2.68	2.49
Tamilnadu	10.24	10.56	10.35	10.55	11.55	11.77	11.76	12.15	11.80	11.74	12.01	12.54	12.71	13.22	13.39	13.18	13.39	13.62
Uttar Pradesh	9.23	9.43	9.61	8.67	8.94	8.67	8.89	9.68	9.29	9.47	9.30	9.09	8.91	8.80	8.26	7.97	8.29	7.89
West Bengal	13.20	12.67	12.65	12.31	12.59	11.26	10.83	10.33	10.28	9.36	9.48	9.49	8.90	8.58	8.40	8.49	7.97	8.69

OUTPUT

States	1980-81	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98
Andhra Pradesh	5.26	4.78	5.47	6.03	5.91	6.12	6.11	5.94	6.21	5.92	6.11	6.55	6.75	6.50	6.97	6.56	6.33	7.01
Bihar	0.67	0.78	0.66	0.63	0.56	0.57	0.54	0.52	0.56	0.56	0.44	0.50	0.41	0.31	0.37	0.43	0.52	0.41
Gujarat	12.01	11.68	12.18	12.58	11.45	11.40	11.71	10.61	11.21	10.68	10.29	10.58	11.41	11.28	11.03	11.87	12.13	13.02
Haryana	2.89	3.30	3.35	3.21	3.23	3.47	3.32	3.55	3.59	3.61	3.80	3.70	3.60	3.88	4.13	4.28	4.66	4.25
Karnataka	4.16	3.90	4.05	4.42	4.05	3.94	3.95	4.21	4.38	4.47	4.56	5.13	4.70	4.48	4.71	4.63	5.37	5.31
Kerala	3.49	3.39	3.00	2.68	2.48	2.61	2.72	2.80	2.76	2.69	2.34	2.84	2.68	2.19	1.87	2.48	2.59	2.62
Madhya Pradesh	7.92	4.11	4.14	4.43	5.01	4.47	4.92	4.99	5.24	5.13	5.23	5.09	5.72	5.66	5.43	4.52	5.52	5.24
Maharashtra	23.71	23.20	22.15	22.79	22.40	22.51	20.47	20.91	21.04	21.62	22.75	19.70	21.22	22.06	21.36	22.81	20.92	18.32
Orissa	1.21	1.80	1.54	1.51	1.57	1.70	1.76	1.87	2.36	2.02	1.76	2.25	2.07	1.90	1.81	1.71	1.60	1.40
Punjab	4.03	4.27	3.66	4.02	4.05	4.34	4.11	5.01	4.67	5.17	4.69	4.76	4.54	4.71	4.43	4.14	4.21	3.93
Rajasthan	2.38	2.43	2.08	2.63	2.58	2.79	2.86	2.75	2.81	3.00	3.08	2.82	3.06	3.07	3.29	3.21	3.37	3.19
Tamilnadu	10.96	11.05	9.45	10.10	10.73	10.92	10.90	10.51	10.71	10.46	10.26	10.79	10.65	11.06	11.99	10.53	11.07	10.36
Uttar Pradesh	6.09	6.63	5.67	7.06	8.01	7.39	8.13	8.38	8.63	9.73	9.41	9.09	8.84	8.75	9.09	8.44	8.44	8.31
West Bengal	10.06	9.39	8.04	8.40	8.29	7.74	7.36	7.03	6.47	5.92	5.93	5.73	5.44	5.22	4.79	4.51	4.55	4.45

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

per cent, which remained higher than that of output share. So it could be expected that more labour intensive industries were located in West Bengal in 1980-81. The employment share of Maharashtra decreased marginally over the years in 1980s with some fluctuations and touched 15.78 per cent in 1989-90. In 1990s it remained around 15 per cent upto 1997-98. The output share of Maharashtra roughly decreased over the years till 1997-98. It witnessed a secular decrease upto 1986-87 and touched the low of 20.47 per cent and again increased upto 1990-91 touching 22.75 per cent. And there were marginal fluctuations over the years upto 1997-98, when it touched 18.32 per cent. The share of employment for Gujrat was 9.14 per cent in 1989-90 and 9.30 per cent in 1997-98. It did not show any trend. It was fluctuating between the low of 8.69 per cent (1990-91) and high of 10.70 per cent (1983-84) in 1980s and 1990s. For output, the story was same in Gujrat. Tamilnadu did well in employment generation. Its employment share hovered around 11 per cent in 1980s and touched the peak of 12.15 per cent in 1987-88. And in 1990s there was a marginal increase in its share of employment and touched 13.62 per cent in 1997-98. The sorry state of affair for West Bengal was that it witnessed a decrease in its share of employment as well as output over the years both in 1980s and 1990s. But the share of employment always remained more than that of output.

The employment share of the each of the four states - Andhra Pradesh, Bihar, Karnataka and Uttar Pradesh - remained within the bracket of 4 to below 10 per cent. All these states contributed more to employment in comparison to output. Output shares remained less than the employment share in each of the four states. The share of employment in case of Andhra Pradesh increased marginally in 1980s with little fluctuation in some years and reached at 10.60 per cent in 1989-90. And again it

increased to 11.29 per cent in 1997-98. The share of output also increased from 5.26 per cent in 1980-81 to 5.92 per cent in 1989-90 (almost stagnant in 1980s) and reached at 7.01 per cent in 1997-98. The employment share of Bihar was 4.73 per cent in 1980-81 and increased to the peak of 5.15 per cent in 1987-88, again receded and, hovered around 4 per cent upto 1992-93. After 1992-93, it continuously decreased and reached the low of 2.98 per cent in 1997-98. So Bihar's performance regarding employment generation has degraded drastically in 1990s. The share of output in case of Bihar remained below 1 per cent both in 1980s and 1990s. It came down marginally over the years (with some fluctuations) and reached at 0.41 per cent in 1997-98. In case of Karnataka the share of employment increased marginally in 1990s and so for output also. In Uttar Pradesh the share of employment and output showed almost no change upto 1990-91. But after that they came down marginally and reached at 7.89 and 8.31 per cent respectively.

The employment share of each of the remaining six states, namely, Haryana, Kerala, Madhya Pradesh, Orissa, Rajasthan and Punjab remained at below 4 per cent in 1980-81. There were marginal differences in the shares of employment and output in all these four states. Among all states Orissa had the lowest share of employment (1.48 per cent) in 1980-81 and it remained as the lowest over the years of 1980s and 1990s. But in case of output, it was Bihar, whose share remained lowest among all the states.

Looking at the above results, we can say that Andhra Pradesh, Karnataka, Haryana and Tamilnadu are the gainers regarding employment generation in the post-reform period and the losers are Bihar, Uttar Pradesh, West Bengal and Maharashtra. The top four industrialised states (taking employment into consideration) were Maharashtra, West Bengal, Tamilnadu and Gujrat in 1980-81. But in 1997-98, Andhra Pradesh entered into the club of top 4 industrialised states replacing West Bengal.

Table-4.2: Per centage Distribution of Employment of Different Industry Groups among States.

1980-81

States	20+21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36	37	38	TOTAL
Andhra Pradesh	11.23	60.11	4.62	1.48	7.11	1.18	3.77	8.10	1.78	2.09	6.41	8.27	2.22	3.84	6.68	3.78	5.49	9.60
Bihar	4.03	1.01	0.25	0.40	2.91	0.69	2.30	3.80	4.59	14.38	3.56	10.10	17.91	1.75	3.25	7.12	0.16	4.84
Gujrat	5.48	2.84	22.34	17.65	0.05	8.03	4.66	5.69	1.14	7.01	14.44	12.63	4.51	8.05	9.27	2.44	9.75	9.31
Harayana	1.58	0.44	2.03	4.30	0.31	1.58	1.20	3.19	0.44	4.54	1.21	2.68	2.32	5.13	5.18	3.39	3.13	2.48
Karnataka	5.21	3.07	4.91	2.66	0.00	7.73	8.06	6.18	1.23	3.90	3.52	5.93	4.68	3.77	5.73	3.87	5.50	4.59
Kerala	9.58	5.00	1.77	0.80	0.00	5.94	18.10	4.13	0.50	4.86	3.71	4.01	0.45	1.86	1.83	0.92	2.50	3.87
Madhya Pradesh	2.67	4.23	6.75	3.61	0.55	1.33	4.60	4.69	2.26	0.76	2.86	6.02	8.10	1.83	3.69	1.24	0.54	3.99
Maharashtra	11.85	11.99	20.83	32.47	0.10	22.30	7.76	19.73	2.23	20.66	27.00	10.64	11.97	29.05	22.69	21.45	28.50	17.57
Orissa	0.76	0.39	0.74	0.00	0.96	0.21	5.02	4.73	0.46	0.41	1.07	4.38	6.11	1.03	0.59	0.06	0.41	1.52
Punjab	2.96	0.66	3.05	11.47	0.00	4.97	1.44	1.11	1.52	2.76	2.00	0.40	4.24	6.42	3.18	4.85	4.09	3.11
Rajasthan	1.26	0.39	2.52	7.43	0.07	2.95	0.35	1.08	0.58	1.25	1.93	4.28	2.21	1.77	2.31	3.54	2.00	2.16
Tamil Nadu	9.89	2.53	14.81	6.44	0.14	17.16	6.55	11.38	40.08	10.48	14.89	7.40	7.50	10.10	11.30	14.15	7.48	10.56
Uttar Pradesh	20.85	4.98	7.21	4.22	3.00	4.88	2.86	7.01	18.48	6.63	5.96	10.97	5.68	6.03	7.25	8.23	6.85	9.43
West Bengal	5.54	1.27	6.05	4.37	84.01	7.02	7.58	11.82	23.77	15.78	8.59	6.58	20.41	14.03	13.14	22.15	13.09	12.67

1989-90

States	20+21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36+39	37	38	TOTAL
Andhra Pradesh	11.12	63.75	5.75	1.46	7.20	1.52	3.15	10.02	3.54	4.55	5.59	8.49	3.89	4.68	6.80	3.97	4.60	10.60
Bihar	1.88	0.99	0.39	0.32	2.44	0.43	3.41	1.44	2.79	10.27	3.05	9.43	20.34	2.60	2.23	7.48	0.26	4.35
Gujrat	6.35	2.11	17.25	21.72	0.00	9.78	4.25	6.40	0.68	8.33	17.12	13.19	4.73	10.23	8.80	2.30	10.62	9.19
Harayana	2.89	0.31	1.22	4.62	0.00	1.75	1.21	3.45	0.87	3.86	1.12	4.40	2.23	4.95	4.79	6.67	4.17	2.95
Karnataka	5.45	2.30	4.94	2.32	0.17	12.08	9.26	7.68	3.09	3.59	3.11	5.88	3.65	4.66	9.39	4.88	12.23	5.30
Kerala	7.12	6.01	2.02	0.59	0.89	2.27	13.90	3.74	0.00	4.04	3.40	3.92	0.73	1.79	2.04	0.68	1.59	3.25
Madhya Pradesh	3.32	5.00	5.53	4.84	0.69	0.60	4.92	5.40	2.21	2.08	2.50	8.71	11.43	4.33	3.81	1.97	0.85	4.58

Contd.....

Maharashtra	10.90	11.00	19.81	23.77	0.00	12.74	6.33	15.39	3.66	18.32	23.15	9.59	11.10	22.42	21.67	17.57	24.01	15.78
Orissa	0.83	0.23	1.73	0.00	0.42	0.43	4.10	3.98	0.21	0.45	1.74	3.31	6.56	2.37	0.62	0.14	0.29	1.64
Punjab	5.87	0.49	3.37	13.99	0.00	9.27	0.82	2.32	2.25	4.88	2.19	0.41	4.43	5.93	3.78	8.10	2.27	4.22
Rajasthan	1.32	0.38	3.06	11.12	0.00	5.63	0.34	1.13	0.00	2.91	1.32	6.54	2.31	2.31	2.66	3.45	2.63	2.70
Tamil Nadu	9.91	1.82	20.23	3.04	1.05	22.88	5.48	14.14	48.85	10.74	18.84	6.76	4.85	9.03	11.78	16.90	6.59	11.77
Uttar Pradesh	19.05	3.37	8.59	4.08	2.32	3.89	5.84	9.61	19.10	8.96	7.18	10.31	5.94	9.07	9.14	9.62	11.22	9.47
West Bengal	5.42	0.84	4.23	2.76	83.40	3.74	8.04	7.60	10.92	10.73	5.89	4.61	15.95	9.93	7.67	13.36	9.74	9.36

1997-98

States	20+21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36+39	37	38	TOTAL
Andhra Pradesh	13.25	62.06	7.62	2.60	3.65	2.65	3.47	8.05	1.37	5.58	6.61	11.77	6.63	6.49	7.06	4.18	4.34	11.18
Bihar	1.12	0.94	0.36	0.01	1.90	0.11	7.77	2.17	1.90	5.93	1.59	9.56	14.93	1.01	0.93	4.79	0.18	2.98
Gujrat	6.42	0.90	11.36	26.49	0.00	3.75	5.16	6.26	0.63	9.01	24.10	14.14	6.41	10.16	8.28	3.99	7.27	9.30
Haryana	2.49	0.30	1.50	4.17	0.00	4.12	1.35	1.81	4.18	3.77	1.49	3.63	1.95	5.79	4.52	9.36	5.42	3.16
Karnataka	4.25	2.63	3.58	3.84	0.06	24.55	3.19	6.62	10.77	4.55	3.30	5.26	4.12	5.90	15.37	4.18	7.83	6.63
Kerala	8.99	5.65	2.74	0.23	2.65	1.32	19.77	5.31	0.00	6.49	3.40	4.63	0.92	1.61	1.99	0.61	1.62	3.81
Madhya Pradesh	3.29	2.32	5.78	6.48	0.88	0.46	3.46	5.12	1.48	3.02	2.29	7.55	12.77	4.08	3.52	3.10	1.21	4.32
Maharashtra	11.26	13.82	18.34	15.80	0.01	7.88	5.52	16.62	4.12	19.56	20.13	8.07	10.25	26.29	20.77	17.92	29.92	15.40
Orissa	1.11	0.32	1.38	0.00	1.40	0.29	2.73	3.73	0.00	1.52	1.30	3.71	7.43	1.73	0.63	0.06	0.17	1.63
Punjab	4.90	1.02	3.64	8.51	0.00	3.56	1.52	2.36	3.42	4.70	1.98	0.32	3.68	6.65	2.70	9.12	4.12	3.73
Rajasthan	1.09	0.80	3.19	16.14	0.00	1.42	1.76	1.01	0.31	2.22	1.49	8.65	2.03	1.49	2.69	2.05	3.80	2.75
Tamil Nadu	11.10	1.84	29.07	2.56	1.66	34.00	4.87	14.07	46.64	8.97	17.95	7.21	5.99	8.83	13.49	15.61	7.84	13.62
Uttar Pradesh	12.84	2.99	6.47	4.31	2.21	6.20	5.86	10.77	12.65	9.35	6.07	5.29	5.44	6.59	8.11	8.31	13.76	7.66
West Bengal	10.30	3.07	3.16	2.11	84.86	1.08	7.30	7.08	8.55	7.14	3.90	3.50	15.09	7.65	5.62	12.65	5.62	8.69

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, GOI

Table 4.2 shows the distribution of employment of different industry groups among states. The results have been given for the years 1980-81, 1989-90 and 1997-98. The industry group of food product (20-21) was dominant in Uttar Pradesh, Maharashtra and Andhra Pradesh invariably in all the three years. Above 60 per cent of total persons employed in the industry group of beverages, tobacco (22) were employed in Andhra Pradesh only. Maharashtra had the highest per centage of employment in the industry groups of wool, silk, man-made fibre textiles (24), textile products (26), paper and paper products (28), chemicals and chemical products (30), metal products and parts (34), machinery and equipment (35-36), transport equipments (37) in all the three years. In the industry group of jute and other textiles maximum employment was generated in West Bengal invariably in all the three years (above 80 per cent). The industry group of wood and wood products witnessed maximum employment in the state of Kerala and that of leather and leather products witnessed maximum employment in Tamilnadu. In 1997-98 the industry group of rubber, plastic and petroleum products (31) had maximum employment in Gujrat. The group of non-metalic mineral products (32) generated maximum employment in Gujrat in all the three years. The industry group of basic metals and alloys witnessed maximum employment in Bihar.

4.2 Structure of Employment in Different States

By studying the structure of employment we want to know that which industry groups dominate in which states. There are two criteria to ascertain the dominance of industry groups in a state. They are absolute and relative criterion. The absolute criterion simply measures which industry group (of a specific state) employs what proportion of total persons employed in a particular state. In relative measure, the proportion of an industry within a state has to be judged in relation to the same proportion at the all-India level. In order to take account of such relatives, the

prominence of an industry within a state can be measured in terms of Location Quotients. Location Quotients, according to the works of Sargent Florence (1948) and Walter Isard (1960) can be expressed as:

$$LQ_{ij} = \frac{E_{ij} / \sum_i E_{ij}}{\sum_j E_{ij} / \sum_i \sum_j E_{ij}} \dots\dots\dots (i)$$

$i = 1, \dots\dots\dots, n$ (industries)
 $j = 1, \dots\dots\dots, m$ (states)

LQ_{ij} denote the Location Quotient of i th industry in j th state. Here the numerator measures proportion of employment of 'i'th industry in the region (state) j , while denominator measures the corresponding proportion of industry 'i' at the all-India level. So LQ_{ij} denotes the ratio of two proportions. In case two proportions are equal, the Location Quotient becomes unity and implies that a particular industry is just as important in a state as at the all-India level.² Both the absolute measure and the Location Quotient have their own advantages. Absolute measure conveys a more appropriate idea of the aggregate scale of operation of various industry groups in different regions (states here). On the other hand, the Location Quotient, being a relative measure, gives more accurate idea of the comparative advantage of various industries in different regions.³ If this ratio is greater than unity, the concerned industry group would be more prominent in the state than at the all India level. And we can assume that, that particular industry group has comparative advantage in that state.

Taking into consideration of the relative merits of both measures, to study intra state variation of employment both the criteria have been used. Table 4.3 gives the absolute measure and Table 4.4 gives the relative measure. Both measures have been taken for three years, 1980-81, 1989-90 and 1997-98.

Table-4.3: Per centage of organised employment in different industry groups in different state to total org. employment of that state

1980-81																	
States	20+21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36	37	38
Andhra Pradesh	22.22	39.40	7.13	0.54	2.60	0.18	0.44	3.56	0.16	0.56	4.69	4.61	1.99	1.11	7.38	2.86	0.56
Bihar	15.84	1.31	0.78	0.29	2.12	0.21	0.53	3.32	0.84	7.70	5.18	11.18	31.87	1.01	7.12	10.69	0.03
Gujrat	11.18	1.92	35.57	6.62	0.02	1.26	0.56	2.58	0.11	1.95	10.90	7.26	4.18	2.41	10.56	1.90	1.02
Harayana	12.13	1.11	12.12	6.06	0.43	0.93	0.54	5.44	0.16	4.74	3.41	5.79	8.07	5.76	22.13	9.94	1.23
Karnataka	21.54	4.21	15.83	2.02	0.00	2.45	1.97	5.68	0.24	2.20	5.39	6.91	8.77	2.29	13.22	6.12	1.16
Kerala	47.07	8.13	6.78	0.72	0.00	2.23	5.24	4.50	0.11	3.25	6.73	5.54	1.00	1.34	5.00	1.73	0.63
Madhya Pradesh	12.75	6.67	25.08	3.17	0.48	0.49	1.29	4.96	0.50	0.49	5.04	8.09	17.49	1.28	9.81	2.27	0.13
Maharashtra	12.81	4.29	17.56	6.45	0.02	1.84	0.49	4.74	0.11	3.04	10.79	3.24	5.86	4.60	13.69	8.87	1.58
Orissa	9.46	1.63	7.16	0.00	2.21	0.21	3.70	13.14	0.27	0.69	4.94	15.41	34.58	1.89	4.14	0.30	0.26
Punjab	18.07	1.34	14.52	12.88	0.00	2.32	0.52	1.50	0.43	2.30	4.51	0.69	11.74	5.75	10.84	11.32	1.28
Rajasthan	11.12	1.15	17.32	12.03	0.11	1.99	0.18	2.11	0.24	1.50	6.29	10.63	8.83	2.28	11.36	11.94	0.90
Tamil Nadu	17.79	1.51	20.77	2.13	0.05	2.36	0.69	4.55	3.37	2.57	9.90	3.75	6.12	2.66	11.35	9.73	0.69
Uttar Pradesh	42.03	3.33	11.33	1.56	1.12	0.75	0.34	3.14	1.74	1.82	4.44	6.23	5.19	1.78	8.15	6.34	0.71
West Bengal	8.30	0.63	7.07	1.21	23.28	0.81	0.67	3.94	1.67	3.22	4.76	2.78	13.87	3.08	11.00	12.70	1.00
All India	19.00	6.29	14.82	3.49	3.51	1.45	1.12	4.22	0.89	2.59	7.02	5.35	8.61	2.79	10.60	7.26	0.97

1989-90																		
States	20+21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36	37	38	39
Andhra Pradesh	15.98	43.76	6.53	0.55	2.02	0.33	0.30	3.62	0.48	1.42	4.17	4.89	3.04	1.34	6.47	2.49	0.54	2.07
Bihar	6.58	1.66	1.09	0.30	1.67	0.23	0.80	1.27	0.93	7.80	5.54	13.24	38.77	1.81	6.34	11.42	0.07	0.48
Gujrat	10.53	1.67	22.61	9.48	0.00	2.42	0.47	2.67	0.11	3.00	14.72	8.78	4.27	3.39	11.96	1.67	1.43	0.82
Harayana	14.95	0.77	5.00	6.28	0.00	1.35	0.42	4.49	0.43	4.33	3.00	9.13	6.28	5.10	18.20	15.05	1.76	3.46
Karnataka	15.68	3.17	11.23	1.76	0.09	5.20	1.78	5.56	0.84	2.24	4.64	6.79	5.71	2.68	20.50	6.13	2.86	3.16
Kerala	33.41	13.47	7.51	0.73	0.82	1.59	4.35	4.42	0.00	4.12	8.28	7.37	1.86	1.68	6.31	1.39	0.61	2.09
Madhya Pradesh	11.03	7.95	14.54	4.24	0.45	0.30	1.09	4.52	0.70	1.50	4.31	11.62	20.70	2.87	10.60	2.85	0.23	0.50

Contd.....

Maharastra	10.53	5.07	15.12	6.04	0.00	1.84	0.41	3.74	0.34	3.84	11.59	3.71	5.84	4.32	14.69	7.40	1.89	3.63
Orissa	7.71	1.00	12.73	0.00	0.77	0.60	2.55	9.32	0.19	0.92	8.40	12.35	33.23	4.41	4.60	0.58	0.22	0.44
Punjab	21.21	0.85	9.63	13.31	0.00	5.01	0.20	2.11	0.77	3.83	4.10	0.60	8.71	4.28	11.21	12.77	0.67	0.74
Rajastan	7.45	1.02	13.68	16.54	0.00	4.75	0.13	1.61	0.00	3.57	3.86	14.82	7.10	2.61	9.89	8.50	1.21	3.25
Tamil Nadu	12.83	1.12	20.71	1.04	0.27	4.43	0.47	4.61	6.00	3.02	12.65	3.51	3.42	2.33	11.65	9.54	0.69	1.70
Uttar Pradesh	30.66	2.59	10.93	1.73	0.73	0.94	0.63	3.89	2.92	3.13	5.99	6.66	5.20	2.91	12.13	6.75	1.47	0.74
West Bengal	8.82	0.65	5.44	1.18	26.52	0.91	0.87	3.11	1.69	3.79	4.97	3.01	14.14	3.22	10.08	9.48	1.29	0.84
All India	15.24	7.28	12.04	4.01	2.98	2.28	1.02	3.83	1.45	3.31	7.90	6.11	8.30	3.04	11.50	6.65	1.24	1.84

1997-98

States	20+21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36	37	38	39
Andhra Pradesh	18.14	38.17	6.73	0.94	0.81	1.01	0.27	2.78	0.17	1.99	5.33	5.35	4.53	1.86	5.43	2.37	0.66	3.47
Bihar	5.77	2.16	1.20	0.02	1.58	0.16	2.26	2.81	0.89	7.94	4.80	16.31	38.32	1.09	3.97	10.18	0.10	0.43
Gujrat	10.56	0.67	12.06	11.56	0.00	1.71	0.48	2.60	0.09	3.86	23.35	7.72	5.27	3.49	10.90	2.72	1.33	1.64
Harayana	12.06	0.65	4.69	5.37	0.00	5.53	0.37	2.22	1.85	4.76	4.26	5.84	4.72	5.86	17.39	18.76	2.92	2.75
Karnataka	9.81	2.72	5.33	2.36	0.02	15.70	0.42	3.85	2.27	2.74	4.48	4.03	4.75	2.85	16.78	3.99	2.01	15.88
Kerala	36.09	10.19	7.11	0.25	1.73	1.47	4.49	5.38	0.00	6.80	8.04	6.17	1.84	1.35	4.98	1.01	0.72	2.38
Madhya Pradesh	11.67	3.70	13.21	6.10	0.51	0.45	0.69	4.58	0.48	2.79	4.79	8.89	22.62	3.02	9.71	4.55	0.48	1.76
Maharastra	11.18	6.17	11.75	4.17	0.00	2.17	0.31	4.17	0.37	5.07	11.78	2.66	5.09	5.46	14.80	7.36	3.31	4.19
Orissa	10.43	1.35	8.34	0.00	2.14	0.75	1.45	8.86	0.00	3.72	7.18	11.56	34.93	3.40	3.40	0.22	0.18	2.09
Punjab	20.08	1.88	9.63	9.27	0.00	4.04	0.35	2.45	1.28	5.03	4.78	0.43	7.55	5.70	9.28	15.47	1.88	0.91
Rajastan	6.06	2.00	11.45	23.85	0.00	2.18	0.56	1.42	0.16	3.22	4.89	15.99	5.64	1.74	9.53	4.72	2.36	4.25
Tamil Nadu	12.47	0.93	21.07	0.76	0.30	10.58	0.31	3.99	4.79	2.63	11.87	2.69	3.36	2.07	10.26	7.25	0.98	3.68
Uttar Pradesh	25.64	2.68	8.34	2.28	0.71	3.43	0.66	5.43	2.31	4.87	7.14	3.51	5.43	2.75	11.72	6.86	3.06	3.18
West Bengal	18.14	2.43	3.59	0.99	24.19	0.53	0.73	3.15	1.38	3.28	4.04	2.04	13.27	2.82	6.60	9.21	1.10	2.51
All India	15.30	6.88	9.87	4.06	2.48	4.24	0.87	3.86	1.40	3.99	9.01	5.08	7.65	3.20	10.32	6.33	1.70	3.76

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Table-4.4: Location Quotients of Different Industry Groups.

1980-81																	
States	20+21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36	37	38
Andhra Pradesh	1.17	6.26	0.48	0.15	0.74	0.12	0.39	0.84	0.19	0.22	0.67	0.86	0.23	0.40	0.70	0.39	0.57
Bihar	0.83	0.21	0.05	0.08	0.60	0.14	0.48	0.79	0.95	2.97	0.74	2.09	3.70	0.36	0.67	1.47	0.03
Gujrat	0.59	0.31	2.40	1.90	0.01	0.86	0.50	0.61	0.12	0.75	1.55	1.36	0.49	0.87	1.00	0.26	1.05
Harayana	0.64	0.18	0.82	1.74	0.12	0.64	0.48	1.29	0.18	1.83	0.49	1.08	0.94	2.07	2.09	1.37	1.26
Karnataka	1.13	0.67	1.07	0.58	0.00	1.68	1.75	1.35	0.27	0.85	0.77	1.29	1.02	0.82	1.25	0.84	1.20
Kerala	2.48	1.29	0.46	0.21	0.00	1.54	4.68	1.07	0.13	1.25	0.96	1.04	0.12	0.48	0.47	0.24	0.65
Madhya Pradesh	0.67	1.06	1.69	0.91	0.14	0.33	1.15	1.18	0.57	0.19	0.72	1.51	2.03	0.46	0.93	0.31	0.14
Maharashtra	0.67	0.68	1.19	1.85	0.01	1.27	0.44	1.12	0.13	1.18	1.54	0.61	0.68	1.65	1.29	1.22	1.62
Orissa	0.50	0.26	0.48	0.00	0.63	0.14	3.30	3.11	0.30	0.27	0.70	2.88	4.02	0.68	0.39	0.04	0.27
Punjab	0.95	0.21	0.98	3.69	0.00	1.60	0.46	0.36	0.49	0.89	0.64	0.13	1.36	2.06	1.02	1.56	1.31
Rajastan	0.59	0.18	1.17	3.44	0.03	1.37	0.16	0.50	0.27	0.58	0.90	1.99	1.03	0.82	1.07	1.64	0.93
Tamil Nadu	0.94	0.24	1.40	0.61	0.01	1.62	0.62	1.08	3.79	0.99	1.41	0.70	0.71	0.96	1.07	1.34	0.71
Uttar Pradesh	2.21	0.53	0.76	0.45	0.32	0.52	0.30	0.74	1.96	0.70	0.63	1.16	0.60	0.64	0.77	0.87	0.73
West Bengal	0.44	0.10	0.48	0.34	6.63	0.55	0.60	0.93	1.88	1.25	0.68	0.52	1.61	1.11	1.04	1.75	1.03
1989-90																	
States	20+21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36+39	37	38
Andhra Pradesh	1.05	6.01	0.54	0.14	0.68	0.14	0.30	0.94	0.33	0.43	0.53	0.80	0.37	0.44	0.64	0.37	0.43
Bihar	0.43	0.23	0.09	0.07	0.56	0.10	0.78	0.33	0.64	2.36	0.70	2.17	4.67	0.60	0.51	1.72	0.06
Gujrat	0.69	0.23	1.88	2.36	0.00	1.06	0.46	0.70	0.07	0.91	1.86	1.44	0.51	1.11	0.96	0.25	1.16
Harayana	0.98	0.11	0.41	1.57	0.00	0.59	0.41	1.17	0.30	1.31	0.38	1.49	0.76	1.68	1.62	2.26	1.42
Karnataka	1.03	0.44	0.93	0.44	0.03	2.28	1.75	1.45	0.58	0.68	0.59	1.11	0.69	0.88	1.77	0.92	2.31
Kerala	2.19	1.85	0.62	0.18	0.27	0.70	4.28	1.15	0.00	1.25	1.05	1.21	0.22	0.55	0.63	0.21	0.49
Madhya Pradesh	0.72	1.09	1.21	1.06	0.15	0.13	1.07	1.18	0.48	0.45	0.55	1.90	2.50	0.95	0.83	0.43	0.19

Contd.....

Maharashtra	0.69	0.70	1.26	1.51	0.00	0.81	0.40	0.98	0.23	1.16	1.47	0.61	0.70	1.42	1.37	1.11	1.52
Orissa	0.51	0.14	1.06	0.00	0.26	0.26	2.51	2.43	0.13	0.28	1.06	2.02	4.00	1.45	0.38	0.09	0.17
Punjab	1.39	0.12	0.80	3.32	0.00	2.20	0.20	0.55	0.53	1.16	0.52	0.10	1.05	1.41	0.90	1.92	0.54
Rajasthan	0.49	0.14	1.14	4.12	0.00	2.09	0.13	0.42	0.00	1.08	0.49	2.43	0.86	0.86	0.99	1.28	0.98
Tamil Nadu	0.84	0.15	1.72	0.26	0.09	1.95	0.47	1.20	4.15	0.91	1.60	0.57	0.41	0.77	1.00	1.44	0.56
Uttar Pradesh	2.01	0.36	0.91	0.43	0.25	0.41	0.62	1.02	2.02	0.95	0.76	1.09	0.63	0.96	0.97	1.02	1.19
West Bengal	0.58	0.09	0.45	0.29	8.91	0.40	0.86	0.81	1.17	1.15	0.63	0.49	1.70	1.06	0.82	1.43	1.04

1997-98

States	20+21	22	23	24	25	26	27	28	29	30	31	32	33	34	35+36+39	37	38
Andhra Pradesh	1.19	5.55	0.68	0.23	0.33	0.24	0.31	0.72	0.12	0.50	0.59	1.05	0.59	0.58	0.63	0.37	0.39
Bihar	0.38	0.31	0.12	0.00	0.64	0.04	2.61	0.73	0.64	1.99	0.53	3.21	5.01	0.34	0.31	1.61	0.06
Gujrat	0.69	0.10	1.22	2.85	0.00	0.40	0.55	0.67	0.07	0.97	2.59	1.52	0.69	1.09	0.89	0.43	0.78
Harayana	0.79	0.09	0.48	1.32	0.00	1.30	0.43	0.57	1.32	1.19	0.47	1.15	0.62	1.83	1.43	2.96	1.72
Karnataka	0.64	0.40	0.54	0.58	0.01	3.70	0.48	1.00	1.63	0.69	0.50	0.79	0.62	0.89	2.32	0.63	1.18
Kerala	2.36	1.48	0.72	0.06	0.70	0.35	5.19	1.39	0.00	1.70	0.89	1.21	0.24	0.42	0.52	0.16	0.42
Madhya Pradesh	0.76	0.54	1.34	1.50	0.20	0.11	0.80	1.19	0.34	0.70	0.53	1.75	2.96	0.94	0.81	0.72	0.28
Maharashtra	0.73	0.90	1.19	1.03	0.00	0.51	0.36	1.08	0.27	1.27	1.31	0.52	0.67	1.71	1.35	1.16	1.94
Orissa	0.68	0.20	0.85	0.00	0.86	0.18	1.68	2.29	0.00	0.93	0.80	2.28	4.57	1.06	0.39	0.03	0.10
Punjab	1.31	0.27	0.98	2.28	0.00	0.95	0.41	0.63	0.92	1.26	0.53	0.08	0.99	1.78	0.72	2.44	1.10
Rajasthan	0.40	0.29	1.16	5.87	0.00	0.52	0.64	0.37	0.11	0.81	0.54	3.15	0.74	0.54	0.98	0.75	1.38
Tamil Nadu	0.81	0.13	2.13	0.19	0.12	2.50	0.36	1.03	3.42	0.66	1.32	0.53	0.44	0.65	0.99	1.15	0.58
Uttar Pradesh	1.68	0.39	0.84	0.56	0.29	0.81	0.76	1.41	1.65	1.22	0.79	0.69	0.71	0.86	1.06	1.08	1.80
West Bengal	1.19	0.35	0.36	0.24	9.76	0.12	0.84	0.82	0.98	0.82	0.45	0.40	1.74	0.88	0.65	1.46	0.65

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

In Andhra Pradesh the most dominant⁴ industry group was beverages, tobacco (22). This group employed around 40 per cent of the total persons employed in organised manufacturing in Andhra Pradesh. The next prominent one was the industry group of food products (20-21), which employed 22.2, 15.9 and 18.14 per cent in 80-81, 89-90 and 97-98 respectively. So about sixty per cent of total persons employed in organised manufacturing sector in Andhra Pradesh were employed in these two industry groups only. In both the measures, these two groups came out to be dominant.

In case of Bihar the industry groups of chemical and chemical products (30), non-metallic mineral products (32), basic metals and alloys (33) and transport equipment (37) had Location Quotients more than unity for all the three years. So it can be assumed that these industry groups have comparative advantage over other industry groups of that state in comparison to all-India level. The industry group of basic metals and alloys employed the highest number of persons among all the groups. The proportion of employment in the industry of basic metals and alloys increased in 1989-90 (38.77 per cent) in comparison to 1980-81 (31.87 per cent). In 1997-98 it was 38.32 per cent. In 1980-81, although the industry group of food products (20-21) was the second largest in terms of employment, it was not dominant according to the Location Quotient criterion. Industry group of non-metallic mineral product remained in second and third position in employment generation in 1989-90 and 1997-98 respectively.

In Gujrat the industry groups of cotton textiles (23), wool, silk, man-made fibre textiles (24), rubber, plastics and petroleum products (31) and non-metallic mineral products (32) were dominant³ according to the Location Quotient criterion. Cotton textiles employed the maximum proportion of persons among all the groups in 1980-81 (35.57 per cent) and in 1989-90 (22.61 per cent). But in 1997-98, it was the industry

group of rubber, plastic and petroleum products, which had the highest proportion of employment.

The industry groups of wool, silk, man-made fibre textiles (24), chemicals and chemical products (30), non-metallic mineral products (32), metal products and parts (34) and machinery and equipments (35-36) were prominent in Haryana in comparison to the national level. In the absolute measure the top two employment generating industry groups were machinery and equipment (35-36) and food products (20-21). Although the industry group of food products was the second prominent one in absolute measure, it was not prominent in comparison to the all-India level. The employment proportion in the industry of machinery and equipment came down gradually. It was 22.13 per cent in 80-81, became 18.20 per cent in 1989-90 and again declined to 17.39 per cent in 1997-98.

In case of Karnataka the industry groups of textile products (26), paper and paper products (28), machinery and equipment (35-36) and other manufacturing equipments (38) were prominent in comparison to the national level. The top three contributors to employment generation were the industries of food products (20-21), cotton textiles (23) and machinery and equipment (35-36) in 1980-81 and machinery and equipment (35-36), food products (20-21) and cotton textiles in 1989-90. In 1997-98 the industry groups of machinery and equipment (35-36), repair of capital goods (39) and textile products (26) were prominent in absolute measure.

In Kerala the industry groups of food products (20-21), beverages, tobacco (22), wood and wood products (27), paper and paper products (28), chemicals and chemical products (30) and non-metallic mineral products (32) were prominent according to the

relative measure. In the absolute measure also the industry groups of food products (20-21) and beverages, tobacco (22) were dominant. They were employing 47.07 and 8.13 per cent in 1980-81, 33.41 and 13.47 per cent in 1989-90 and 96.09 and 10.19 per cent in 1997-98 respectively.

In Madhya Pradesh the industries of cotton textiles (23), paper and paper products (28), non-metallic mineral products (32) and basic metals and alloys (33) were prominent according to Location Quotient criterion. In 1980-81, the top three employment generating industries were cotton textiles (23), basic metals and alloys (33) and food products (20-21). In 1997-98 the industry groups of basic metals and alloys (33), cotton textiles (23) and food products (20-21) were prominent according to absolute measure criterion regarding employment generation.

Maharashtra is the most industrialised state in India. Industry groups of cotton textiles (23), wool, silk, man-made fibre textiles (24), chemicals and chemical products (30), rubber, plastic and petroleum products (31), metal products and parts (34), machinery and equipment (35-36), transport equipment (37) and other manufacturing equipments (38) were prominent in comparison to all-India level in this state. The top three industries regarding employment generation were cotton textiles (23), machinery and equipment (35-36) and food products (20-21) in 1980-81. In 1989-90, the industry group of rubber, plastics and petroleum products (31) took the place of food products. In 1997-98 also those of 1989-90 were prominent.

In Orissa, industry groups of wood and wood products (27), paper and paper products (28), non-metallic mineral products (32), and basic metals and alloys (33) were prominent according to the relative measure. The industry group of basic metals and

alloys invariably remained as the highest contributor to employment generation in all the three years. Around 34 per cent of total persons employed in organised manufacturing sector in Orissa were engaged in this industry group. Among other prominent contributors to employment generation were the industries of paper and paper products (28), non-metallic mineral products (32), and food products (20-21).

The industries of wool, silk, man-made fibre textiles (24), textile products (26), metal products and parts (34) and transport equipment (37) were prominent in Punjab in comparison to the all-India level. In 1980-81, although the industry group of food products (20-21) was the most prominent according to the absolute measure, it was not prominent according to relative measure. But it was prominent in 1989-90 and 1997-98 according to relative measure. The industry group of food produces remained invariably as the highest contributors to employment generation for all the three years.

In Rajasthan the industry groups of cotton textiles (23), wool, silk, man-made fibre textiles (24) and non-metallic mineral products (32) were prominent in relative measure as well as absolute measure. Cotton textile industry remained in the first place regarding employment generation in 1980-81. But that place was grabbed by the industry group of wool, silk, man-made fibre textiles in 1989-90 and 1997-98.

The industry groups of cotton textiles (23), textile products (26), paper and paper products (28), leather and leather products (27), rubber, plastics and petroleum products (31) and transport equipment (37) were prominent as compared to the national level in Tamilnadu. Cotton textile industry invariably remained as the highest contributor to employment generation in all the three years. Although the industry group of food products was very prominent according to the absolute measure, it was not prominent

according to the relative criterion.

In case of Uttar Pradesh the industry groups of food products (20-21) and leather and leather products (29) were prominent in relative measure. 42.03 per cent of total persons employed in organised manufacturing in Uttar Pradesh were employed in the food products industry in 1980-81. It was 30.66 per cent in 1989-90 and declined to 25.64 per cent in 1997-98. Other prominent contributors to employment generation, according to absolute measure were machinery and equipment (35-36) and cotton textiles (23) industries.

The industry groups of jute and other textiles (25), basic metals and alloys (33) and transport equipment (39) were invariably prominent as compared to the national level in West Bengal. The most prominent industry group was jute and other textiles and it employed around 24 per cent of total persons employed in the organised manufacturing of West Bengal. And another notable thing is that around 84 per cent of total persons employed in the industry group of jute and other textiles in India were employed in West Bengal only.

4.3 Trends of Employment, Output and Capital Intensity in Different States

In 1980s there was marginal increase in employment in the organised manufacturing as a whole. But output growth rate remained substantial both in 1980s and 1990s. Many states witnessed negative employment growth in 1980s. They were Bihar, Gujrat, Kerala, Maharashtra and West Bengal. The states of Karnataka, Haryana, Andhra Pradesh and Tamilnadu witnessed marginal employment growth rate in 1980s. The employment growth rate in Uttar Pradesh was nearly zero in 1980s. The good

performing states in 1980s regarding employment generation were Punjab, Madhya Pradesh, Rajasthan and Orissa. In 1990s the situation of Bihar worsened and growth of employment decreased. IN case of West Bengal, although it improved a little, it was not at all encouraging. During the period of 1981-98, the employment growth rate remained negative for Bihar and West Bengal. Growth rate of employment remained at below 1 per cent in Uttar Pradesh in 1990s. Other states have done well regarding employment generation after 1990.

There was not much difference in the growth rates of output between 1980s and 1990s. For the states, Andhra Pradesh, Gujrat, Haryana, Karnataka, Maharashtra and Tamilnadu, output growth rate was more in 1990s as compared to 1980s. For the remaining states growth of output was less in 1990s in comparison to 1980s. Bihar recorded the lowest growth of output in 1990s among all states, which was just 1.62 per cent. Growth rate of capital intensity was negative for Bihar in 1980s. For some states growth rate of capital intensity remained less in 1990s as compared to 1980s and for some states the reverse was true. Now let us take a look at the growth rates of different industry groups for the states individually.

4.3.1 Andhra Pradesh

Table 4.5 gives the growth rates of different industry groups for Andhra Pradesh. Andhra Pradesh marked a marginal growth in employment (1.01 per cent) in 1980s. The remarkable performers regarding employment generation, in the decade were the industry groups of leather and leather products, textile products, chemicals and chemical products and metal products and parts. But growth rate in the prominent industry groups, such as beverages, tobacco (22) and food products (20-21) were 1.34 and -2.31 per cent respectively in 1980s. The other industry groups, which marked negative

employment

Table-4.5: Growth Rates (Trend) of Employment, Output and Capital Intensity (Andhra Pradesh)
(per cent per annum)

Industry Groups	Employment			Output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	-2.31	4.72	2.17	9.33	8.96	9.27	3.24	14.78	7.20
22	1.24	2.66	2.97	3.72	4.01	6.06	12.46	4.86	7.69
23	-0.47	4.81	2.05	6.96	12.55	9.99	9.70	11.37	7.93
24	0.68	9.27	6.47	20.24	20.74	22.03	42.00	24.70	23.94
25	-1.97	-11.60	-6.19	-0.30	-8.46	-4.10	8.40	8.84	6.63
26	14.44	26.83	15.79	13.44	20.93	15.73	22.73	-12.19	5.40
27	-1.20	-3.34	-2.25	11.14	-4.19	2.50	-4.37	-5.52	-7.68
28	0.62	3.31	1.78	7.86	5.91	7.58	-2.49	12.66	1.37
29	16.06	-2.18	7.39	25.74	-6.88	9.44	-2.86	-4.23	-4.07
30	13.98	9.37	10.67	19.87	7.36	10.76	2.21	1.83	-1.06
31	-0.03	10.53	2.86	5.50	16.42	10.12	-0.41	14.48	8.26
32	5.41	4.09	4.43	10.36	10.65	10.52	25.88	-0.91	9.05
33	7.71	3.49	9.24	14.85	14.41	16.52	15.04	-5.31	22.01
34	9.33	-0.60	7.20	16.01	10.43	14.08	20.00	10.75	11.08
35+36+39	2.80	4.06	5.39	8.68	4.39	5.96	3.04	0.70	-0.14
37	-1.88	7.89	-1.22	5.75	13.51	4.62	10.38	2.98	1.78
38	2.07	9.67	5.97	12.97	15.42	12.38	33.66	1.61	19.15
Total	1.01	3.91	3.18	9.38	9.73	9.45	11.48	2.73	11.10

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

growth in 1980s were cotton textiles (23), jute and other textiles (25), wood and wood products (27), rubber, plastics and petroleum products (31) and transport equipment (37). It was due to the low growth of employment in the industry group of beverages, tobacco and negative growth in the industry group of food products, the overall employment growth rate of Andhra Pradesh remained at 1.01 per cent in 1980s. These two industry groups recorded employment growth rates of 2.66 and 4.72 per cent respectively in 1990s. The highest employment growth in 1990s was achieved by the industry group of textile products, which remained at 26.83 per cent per annum. The industry groups of jute and other textiles (25), wood and wood products (27), leather and leather products (29) and metal products and parts (34) witnessed negative employment

growth in 1990s.

4.3.2 Bihar

Table 4.6 shows the growth rates employment, output and capital intensity for 1980s and 1990s. Employment growth rate in Bihar marked a low of -0.12 per cent per annum in 1980s and in 1990s it further worsened to reach -1.70 per cent per annum. The most prominent industry group in Bihar was basic metals and alloys (33).

Table-4. 6: Growth Rates (Trend) of Employment, Output and Capital Intensity (Bihar)
(per cent per annum)

Industry groups	Employment			output			capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	-10.93	-3.45	-4.89	3.38	5.05	4.60	21.56	12.03	15.02
22	9.60	-0.04	8.78	10.17	7.15	9.34	-2.98	15.35	2.89
23	4.63	-1.38	-0.78	10.77	-3.45	1.09	2.83	-13.30	-10.57
24	-0.58	-15.11	-6.85	11.97	-17.64	-7.62	-4.26	-13.20	-11.10
25	-4.05	-4.71	-4.84	-6.00	-0.03	-1.97	-2.30	13.84	8.75
26	-2.37	-0.12	1.77	5.19	-3.33	4.87	20.18	3.20	10.17
27	8.22	7.05	5.63	18.65	3.01	6.21	13.35	-2.76	6.40
28	-12.26	-0.40	-6.67	-5.16	-4.10	-0.36	-8.45	-2.79	-4.33
29	-1.23	-1.55	-1.34	2.40	-1.34	1.06	-0.80	-17.60	-9.78
30	0.59	1.14	1.46	2.12	-3.08	-1.16	9.53	-3.90	0.96
31	-1.84	-4.45	-2.64	2.25	-1.22	2.07	-9.03	-1.08	-2.71
32	-0.80	-1.03	-0.06	3.96	0.71	3.03	5.32	23.76	9.27
33	2.99	-2.13	0.00	6.53	2.28	5.38	-3.13	8.97	2.40
34	5.45	-2.28	1.40	5.42	11.36	7.32	2.88	9.15	4.48
35+36+39	-0.19	-3.37	-1.80	6.97	-1.93	2.05	5.42	5.24	7.64
37	1.42	-0.93	0.66	3.56	5.66	3.95	-9.90	1.69	-5.39
38	24.53	-2.31	8.30	25.93	9.19	16.10	-7.04	1.91	-3.49
Total	-0.12	-1.70	-0.54	4.83	1.63	3.58	-1.20	7.52	2.14

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Although, it recorded an employment growth rate of 2.99 per cent in 1980s, it was not able to outweigh the bad performance of other industries. Except the industry groups of beverages, tobacco (22), cotton textiles (23), wood and wood products (27), chemicals and chemical products (30), basic metals and alloys (33), metal products and parts (34),

transport equipment (37) and other manufacturing equipments (38), all others marked negative growth in employment. The worst performing industry groups were paper and paper products (28) and food products (20-21). The growth rates were -12.26 and -10.93 per cent respectively. Although the industry group of other manufacturing equipment (38) recorded a commendable growth of employment (24.53 per cent), as its share of employment was 0.1 per cent, it could not considerably influence the overall employment growth rate in 1980s.

In 1990s the overall growth of employment decelerated at the rate of 1.70 per cent per annum. Except two industry groups, namely, wood and wood products (27) and chemicals and chemical products (37), all others marked negative employment growth in 1990s. The most prominent industry group basic metals and alloys (37) which recorded a positive employment growth in 1980s, performed badly in 1990s and employment in this group decelerated at the rate of 2.13 per cent per annum. This is one of the important causes, why employment growth rate touched the low of 1.70 per cent.

The growth rate of output decreased in 1990s as compared to 1980s. Output grew at the rate of 4.83 per cent per annum in 1980s and 1.03 per cent per annum in 1990s. In 1980s negative output growth was marked by the industry groups of jute and other textiles (25) and paper and paper products (28). In 1990s many industry groups came in the domain of negative output growth. Except the industries of food products (20-21), beverages, tobacco (22), wood and wood products (27), non-metallic mineral products (32), basic metals and alloys (33), metal products and parts (34), transport equipment (37) and other manufacturing equipments (39), all others recorded negative output growth in 1990s. But growth rate of capital intensity improved in 1990s to 7.52 per cent from -1.2 per cent.

4.3.3 Gujrat

Table 4.7 gives the growth rates for different industry groups of Gujrat. It employs around 9 per cent of total persons employed in the organised manufacturing sector of India and produces around 12 per cent of the total output produced by the organised manufacturing sector of India. The employment growth rates were -1.39 and 3.91 per cent per annum in 1980s and 1990s respectively. The industry group of food products (20-21), beverages, tobacco (22), cotton textiles (23), wood and wood products (27), paper and paper products (28), leather and leather products (29) and transport equipment (37) recorded negative employment growth rate in 1980s. The worst performer was the cotton textile (23) industry group, which was the most prominent industry of Gujrat. Employment in this group decelerated at the rate of 8.87 per cent per annum.

Table-4.7: Growth Rates (Trend) of Employment, Output and Capital Intensity (Gujarat)
(per cent per annum)

Industry Group	Employment			Output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20+21	-2.91	3.25	0.65	6.86	7.09	7.70	6.91	11.44	7.13
22	-3.35	-4.48	-4.04	3.60	3.12	2.03	11.53	19.94	15.67
23	-8.87	-2.91	-5.88	-3.41	5.10	-0.38	10.43	19.62	10.36
24	4.77	5.55	4.31	6.29	6.97	6.30	-0.10	5.24	2.82
26	8.26	3.52	4.42	8.57	9.00	8.09	-1.51	27.56	8.73
27	-1.08	2.48	-0.20	8.46	1.80	5.58	12.66	4.72	8.37
28	-0.12	3.52	1.49	8.83	9.46	9.24	2.40	15.03	7.58
29	-2.31	7.31	4.42	12.03	10.44	14.85	5.56	7.78	9.00
30	7.25	7.84	7.45	-0.20	11.67	5.28	0.52	8.45	8.40
31	4.06	9.21	5.45	9.31	13.98	9.90	7.80	11.22	8.17
32	0.15	2.18	0.68	7.31	11.92	9.18	18.34	12.69	13.91
33	1.30	4.33	1.61	9.36	13.79	11.76	5.77	45.05	21.61
34	4.33	2.76	3.66	10.65	5.66	9.84	2.27	15.35	8.08
35+36+39	2.14	4.41	3.63	11.50	7.57	9.36	6.82	11.21	7.55
37	-0.37	12.66	4.47	9.71	26.55	19.66	23.72	7.29	5.96
38	6.48	8.92	6.54	13.67	8.87	11.18	0.61	9.66	6.48
Total	-1.39	3.91	0.93	5.74	10.63	7.62	10.49	16.33	11.61

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

although some industry groups like chemicals and chemical products (30) achieved employment growth of as high as 7.25 per cent per annum, as these were not so prominent, they could not outweigh the bad performers. As a result the overall growth rate touched a low of -1.39 per cent per annum in 1980s.

Again in 1990s the industry groups of cotton textiles (23) and beverages, tobacco (22) recorded negative employment growth rate in 1990s. But as all other industry groups performed well, the overall growth rate touched a prestigious high of 3.91 per cent.

There was a substantial increase in growth rate of output in 1990s as compared to 1980s. It increased from 5.74 per cent in 1980s to 10.63 per cent in 1990s. Except two industry groups cotton textiles (23) and chemicals and chemical products (30) all other recorded positive output growth in 1980s. In 1990s all the industry groups achieved positive growth of output. The growth rate of capital intensity increased to 16.33 per cent per annum in 1990s from a low of 10.49 per cent per annum in 1980s.

4.3.4 Haryana

Table-4.8: Growth Rates (Trend) of Employment, Output and Capital Intensity (Haryana)
(per cent per annum)

Industry Groups	Employment			output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	2.34	4.28	4.84	10.77	8.96	10.86	6.94	13.81	8.17
22	4.01	9.78	5.59	12.09	13.60	11.89	5.93	17.27	11.20
23	-6.92	4.94	-0.74	3.31	8.32	8.66	7.05	16.61	8.10
24	3.02	4.61	5.65	7.26	11.40	10.27	3.10	17.49	7.50
26	-1.39	29.06	12.92	1.04	38.40	19.39	10.99	10.17	11.14
27	3.30	10.91	6.25	7.71	15.80	9.58	1.44	54.15	20.34
28	0.38	-0.08	-0.30	7.62	2.81	6.10	19.02	-0.32	7.74
29	11.49	36.94	15.25	12.87	21.38	15.04	4.41	-0.12	5.16
30	0.54	3.17	1.10	5.43	8.11	5.40	18.11	7.15	10.59
31	1.00	8.19	3.53	8.39	7.31	6.98	-10.14	-2.62	-3.90
32	5.09	-2.29	0.19	4.94	3.00	4.49	9.82	15.33	14.90
33	-2.61	1.97	-0.89	4.40	4.16	5.52	9.67	14.57	10.57
34	-1.31	7.41	2.03	-1.96	12.66	4.92	0.14	11.42	5.70
35+36+39	3.12	4.60	4.16	6.36	9.44	7.98	4.09	8.54	5.40
37	7.05	7.76	6.88	29.55	20.15	20.91	28.38	7.05	14.28
38	6.37	15.41	10.82	14.19	17.52	17.18	5.15	10.66	6.78
Total	1.74	5.38	3.45	9.31	11.54	10.09	6.92	9.04	7.14

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Table 4.8 shows the growth rates of different industry groups for Haryana. This state performed comparatively better than Gujrat. Except the industry groups of cotton textiles (23), textile products (26), basic metals and alloys (33) and metal products and parts (34), all others recorded positive employment growth in 1980s. The two most prominent groups, namely, machinery and equipment (35-36) and food products (20-21) achieved employment growth rate of 3.12 and 2.34 per cent respectively in 1980s. As the major industry groups did well the employment growth rate was able to remain at 1.74 per cent in 1980s.

In 1990s employment growth rate increased to 5.38 per cent per annum. Except the industry groups of paper and paper products (28) and non-metallic mineral products (32), all others achieved positive employment growth in 1990s. The industry group of cotton textile which recorded the lowest growth rate of -6.92 per cent in 1980s improved to 4.94 per cent in 1990s.

There was not much difference between the output growth rates of 1980s and 1990s. Except the industry group of metal products and parts (34), all others recorded positive output growth in 1980s. In 1990s all industries witnessed positive output growth. The growth rate of capital intensity improved to 9.04 per cent in 1990s from 6.92 per cent in 1980s.

4.3.5 Karnataka

Table 4.9 shows the growth rates of various industry groups of Karnataka. Employment growth rate in Karnataka was 0.78 per cent in 1980s, which was as good as the national level. Many industry groups such as food products (20-21), beverages, tobacco (22), cotton textiles (23), wood and wood products (27) and basic metals and alloys (33) recorded negative employment growth in 1980s. Out of these, the industry groups of food products and cotton textiles were very prominent. Therefore, inspite of very good performance by many industry groups, such as leather and leather products (29), jute and other textiles (25), the over all employment growth rate remained as low as 0.78 per cent in 1980s.

Table-4.9: Growth Rates (Trend) of Employment, Output and Capital Intensity (Karnataka)
(per cent per annum)

Industry Groups	Employment			output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	-2.52	1.08	-0.21	7.92	7.54	8.02	9.56	8.79	7.90
22	-0.22	4.11	2.68	7.07	5.45	7.96	26.82	0.33	12.40
23	-4.68	-3.06	-2.88	0.69	6.06	4.62	9.24	10.32	6.73
24	2.35	5.58	3.40	12.38	15.51	16.63	15.32	11.60	5.75
25	10.73	24.30	20.10	21.78	25.64	26.36	11.66	14.58	11.28
27	-3.31	-7.51	-5.84	5.38	-3.99	-2.21	7.46	5.94	4.85
28	1.21	-1.78	0.52	11.13	5.02	7.88	-1.59	-1.02	-2.82
29	23.32	17.21	21.05	40.14	13.25	25.93	5.67	4.41	5.28
30	4.75	5.82	4.22	13.59	17.00	12.20	1.39	23.58	5.20
31	0.52	3.43	1.31	5.93	6.60	6.24	5.18	6.43	4.12
32	1.28	1.42	0.39	10.07	7.89	8.89	10.51	9.03	9.62
33	-3.28	4.34	-0.74	5.05	6.22	6.59	1.40	26.01	9.26
34	4.29	13.55	7.61	8.86	19.35	13.44	0.87	8.70	2.39
35+36+39	4.81	5.07	4.94	11.12	11.54	12.18	9.50	5.15	7.06
37	1.61	2.50	1.87	9.45	8.07	10.23	22.38	-2.71	7.53
38	8.91	2.34	6.04	9.38	6.15	8.94	-0.12	6.59	2.81
Total	0.78	5.11	2.86	8.54	9.64	9.56	7.49	7.11	5.53

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

In 1990s, employment growth rate improved and touched 5.11 per cent per annum. In this decade also, some industries like cotton textiles (23), wood and wood products (27), paper and paper products marked negative employment growth.

The output growth rates in 1980s and 1990s were almost identical. In 1980s all the industry groups recorded positive output growth. In 1990s except the industry group of wood and wood products, all other achieved positive output growth. Growth rate of capital intensity was marginally less in 1990s as compared to 1980s.

4.3.6 Kerala

Table 4.10 shows the growth rates of employment, output and capital intensity for different industry groups of Kerala. Employment growth rate was -1.44 per cent per

annum in 1980s. The industry groups of food products (20-21), cotton textiles (23), textile products (26), wood and wood products (27), paper and paper products (28) and

Table-4.10: Growth Rates (Trend) of Employment, Output and Capital Intensity (Kerala)
(per cent per annum)

Industry Groups	Employment			output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	-4.61	7.55	2.76	6.37	6.37	7.27	11.34	14.87	11.77
22	2.14	-0.43	4.87	10.92	-2.49	6.56	8.99	9.56	3.43
23	-0.92	2.36	0.12	5.45	4.55	6.06	2.49	11.79	7.19
26	-2.93	2.04	-4.80	-5.81	-8.90	-9.63	0.86	15.18	5.26
27	-4.60	1.50	-1.98	-2.28	0.54	-1.30	1.09	6.30	1.20
28	-2.93	5.79	1.04	6.73	6.37	7.13	-2.89	3.44	-3.91
30	6.65	5.14	9.17	1.16	0.63	-0.73	4.93	-3.52	-1.21
31	0.21	1.92	0.38	12.00	3.65	10.37	6.26	6.39	5.49
32	-0.92	9.32	0.70	13.32	1.93	6.63	25.24	1.81	10.85
33	3.45	7.76	4.06	10.36	-0.61	5.50	13.42	5.11	5.36
34	2.23	-0.62	0.09	7.46	-3.42	1.99	4.02	-2.72	2.25
35+36+39	3.79	3.36	4.84	9.78	-1.35	5.85	3.19	-1.16	-1.19
37	0.59	0.60	0.52	-2.37	5.10	2.76	-8.04	-4.50	-6.57
38	4.28	3.21	2.29	6.77	-0.68	4.62	7.50	-12.47	-2.56
Total	-1.44	4.77	2.53	6.07	2.89	5.28	6.29	2.24	2.28

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

non-metallic mineral products (32) marked negative employment growth in 1980s. The prominent industry groups such as food products (20-21), wood and wood products (27), paper and paper products (28) and non-metallic mineral products (32) witnessed negative employment growth in 1980s. Therefore the overall employment growth of organised manufacturing sector in Kerala came out negative.

The employment growth rate in 1990s improved to 4.77 per cent per annum. One of the major industry groups, i.e., beverages, tobacco (22) witnessed a negative employment growth (-0.43 per cent). All other industries except metal products and parts (34) achieved positive employment growth in 1990s. The highest one was achieved by the food products industries, which was one of the prominent industries of

Kerala. Therefore, the employment growth rate in Kerala could reach 4.77 per cent in 1990s.

In Kerala, it is interesting to note that despite an increase in employment growth rate in 1990s, output growth rate has decreased in 1990s as compared to 1980s. The growth rate of output was 6.07 per cent in 1980s and came down to 2.89 per cent in 1990s. Many industry groups like beverages, tobacco (22), textile products (26), basic metals and alloys (33), metal products and parts (34), machinery and equipment (35-36) and other manufacturing equipments (38) recorded negative output growth in 1990s. Likely the growth rate of capital intensity was also less in 1990s than 1980s.

4.3.7 Madhya Pradesh

Table-4.11: Growth Rates (Trend) of Employment, Output and Capital Intensity (Madhya Pradesh) (per cent per annum)

Industry Groups	Employment			output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	0.31	4.30	3.00	3.68	12.99	13.35	22.83	16.45	21.55
22	6.65	-2.41	2.33	13.80	-5.32	6.26	14.91	29.38	25.35
23	-3.22	-1.22	-2.88	-0.33	18.33	5.58	3.70	37.92	15.04
24	8.23	7.17	6.47	16.39	12.29	13.70	2.06	11.66	8.47
26	5.74	1.32	3.09	7.89	7.52	4.76	22.09	8.01	10.35
27	0.69	-2.60	-1.61	1.58	0.30	1.49	3.23	13.73	4.71
28	1.30	1.53	1.91	3.99	2.83	4.92	-2.82	0.47	3.38
29	9.54	-0.93	3.78	16.83	1.81	8.40	-9.42	6.71	1.42
30	23.35	12.49	18.70	52.02	19.44	31.01	58.24	7.96	20.04
31	3.97	6.26	4.61	9.41	11.69	9.37	1.08	6.60	6.23
32	6.61	1.31	3.96	13.43	4.85	9.46	8.41	7.75	7.12
33	4.58	6.90	3.94	8.82	2.87	5.45	-1.88	3.83	-1.28
34	8.86	4.19	6.91	17.36	14.51	14.39	6.93	26.83	13.44
35+36+39	2.67	5.29	4.13	11.21	7.29	8.85	5.07	4.14	5.02
37	2.84	3.73	4.93	23.76	9.03	20.89	15.40	11.13	15.45
38	12.48	15.32	15.78	14.37	39.10	24.94	19.21	1.37	15.08
Total	2.89	3.71	2.98	8.93	8.04	8.96	3.76	8.76	4.64

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Table 4.11 gives the growth rates for different industry groups of Madhya Pradesh. This state witnessed positive employment growth rate in 1980s as well as in 1990s. Employment growth rate remained at 2.89 per cent per annum in 1980s. Except one industry group, i.e. cotton textiles (23), all others recorded positive employment growth in 1980s. Highest growth of employment was achieved by the industry group of chemicals and chemical products (30).

In 1990s more industry groups recorded negative employment growth rate. In spite of this overall employment growth rate remained at 3.71 per cent per annum, which was greater than that of 1980s. The most prominent industry groups such as food products (20-21) and basic metals and alloys (33) did better in 1990s. Therefore the employment growth rate improved in 1990s.

The growth rates of output were almost identical in 1980s and 1990s. The industry group of cotton textiles (23) in 1980s and that of beverages, tobacco (22) in 1990s recorded negative output growth rate. The growth rate of capital intensity was 3.76 per cent per annum in 1980s and increased to 8.76 per cent per annum in 1990s.

4.3.8 Maharashtra

Table-4.12: Growth Rates (Trend) of Employment, Output and Capital Intensity (Maharashtra)
(per cent per annum)

Industry Groups	Employment			output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	-1.98	3.08	1.43	6.04	7.73	7.24	10.16	5.80	6.52
22	1.42	2.30	2.44	7.54	8.35	7.19	11.09	14.52	11.25
23	-3.41	-0.57	-2.07	1.89	3.56	2.84	5.85	13.00	7.98
24	-1.98	0.46	-1.94	2.35	6.99	3.03	3.93	23.66	12.41
26	-0.11	8.38	3.99	9.20	12.20	10.88	15.33	14.32	11.24
27	-4.01	2.22	-1.28	1.26	9.95	2.20	4.71	13.85	7.44
28	-3.06	5.31	-0.64	4.89	11.74	7.24	12.33	11.68	10.55
29	8.38	1.68	4.68	15.78	4.93	10.57	9.38	2.51	9.25
30	0.52	5.33	2.78	7.71	4.38	6.08	12.03	15.41	11.68
31	0.52	3.60	1.67	6.74	8.44	7.86	11.72	5.58	12.63
32	1.28	-1.84	0.04	10.35	3.45	7.49	19.04	11.67	10.30
33	-2.30	3.07	-0.42	6.52	7.67	9.49	13.39	16.11	17.06
34	-1.21	6.61	1.73	6.17	11.11	7.44	9.22	14.65	12.93
35+36+39	0.81	4.19	3.41	7.06	6.44	8.19	8.37	7.38	6.42
37	-2.54	2.82	-1.21	7.05	13.08	8.20	10.52	10.18	8.08
38	0.81	10.49	5.35	8.32	23.07	15.04	6.14	13.30	6.80
Total	-1.14	3.13	0.85	6.43	8.11	7.43	10.79	10.94	10.74

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Table 4.12 shows the growth rate of various industry groups for Maharashtra. Growth rate of employment remained negative at 1.14 per cent per annum in 1980s. More than 50 per cent industry groups recorded negative employment growth in 1980s. The most prominent industry groups in 1980s were cotton textiles (23), machinery and equipment (35-36), food products (20-21) and rubber, plastic and petroleum products (31). Out of these cotton textiles and food products industry groups recorded negative employment growth rates of 3.41 and 1.98 per cent per annum respectively. And the industry groups of machinery and equipment and rubber, plastics and petroleum products recorded growth rates of only 0.92 and 0.81 per cent per annum respectively.

In 1990s employment growth rate increased to 3.13 per cent per annum. In this time period except the industry groups of cotton textiles (23) and non-metallic mineral products (32), all others witnessed positive employment growth. Out of the above two cotton textiles groups was prominent in 1990s. But employment in this group decelerated at only 0.57 per cent per annum. Therefore it could not affect the overall employment growth rate in its own direction.

The growth rate of output was 6.43 per cent per annum in 1980s and it improved to 8.11 per cent per annum in 1990s. All the industry groups recorded positive output growth in 1980s as well as in 1990s. The growth rates of capital intensity remained almost identical in 1980s and 1990s.

4.3.9 Orissa

Table 4.13 gives the growth rates for different industry groups of Orissa. This state has a share of only about 1.7 per cent of total organised manufacturing sector employment in India. It did well regarding employment generation in 1980s as compared to other states. The employment growth rate remained at 2.26 per cent per annum in 1980s. The industry groups of food products (20-21), jute and other textiles (25), wood and wood products and paper and paper products (28) recorded negative employment growth rates in 1980s. The most prominent industry group, that was the basic metals and alloys (33) marked an employment growth rate of 0.16 per cent per annum. But due to better performance of other groups, the growth rate of employment managed to remain at 2.26 per cent per annum.

Table-4.13: Growth Rates (Trend) of Employment, Output and Capital Intensity (Orissa)
(per cent per annum)

Industry Groups	Employment			output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	-2.62	9.36	4.39	5.15	16.54	11.56	9.21	19.52	11.37
22	1.26	7.56	0.61	12.46	5.14	2.65	-4.98	10.68	2.84
23	11.24	-1.15	4.26	17.65	-6.81	5.20	5.68	8.15	0.84
25	-5.04	13.21	0.25	2.23	11.78	3.78	-8.02	1.79	-1.84
26	18.17	9.12	15.98	15.98	12.58	17.63	0.19	14.03	6.18
27	-2.39	-3.67	-2.92	3.44	-2.33	2.75	28.14	-2.71	11.92
28	-3.07	4.55	-0.06	4.64	6.63	4.84	16.06	7.91	13.44
29	0.81	-9.64	-3.25	2.19	-12.32	-2.02	7.86	2.81	24.29
30	19.23	22.89	21.83	47.17	22.82	33.03	62.83	-28.70	12.39
31	8.86	6.97	7.37	17.70	8.35	13.51	19.89	-8.42	6.09
32	4.32	3.95	4.48	8.06	3.91	7.28	8.80	13.73	8.86
33	0.16	3.97	1.63	12.64	1.80	8.18	21.29	3.21	11.33
34	15.13	-1.18	4.95	20.06	7.27	12.72	4.62	8.09	2.93
35+36+39	4.37	6.29	6.65	10.12	-2.32	5.60	11.61	0.64	5.16
37	7.91	0.75	2.57	27.55	5.32	12.52	34.70	11.05	23.00
38	10.35	-3.37	-4.22	5.24	-4.35	-7.28	26.44	-28.65	0.99
Total	2.26	4.45	3.09	12.14	4.44	8.90	19.02	2.29	9.82

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

In 1990s employment growth rate increased to 4.45 per cent per annum. All the major industry groups recorded positive employment growth in this decade. The industry groups of cotton textiles (23), wood and wood products (27), leather and leather products (29), metal products and parts (34) and other manufacturing equipments (38) witnessed negative employment growth rates in 1990s. As these industry groups were not prominent in Orissa, they could not influence the employment growth rate substantially.

Here, it is interesting to note that inspite of an increase in employment growth rate in 1990s, output growth rate remained lower in this period than 1980s. In 1980s the growth rate of output was 12.14 per cent per annum and in 1990s it came down to 4.44 per cent per annum. All the industry groups witnessed positive output growth in 1980s.

But in 1990s some recorded negative output growth. Likely the growth rate of capital intensity remained at 19.02 per cent per annum in 1980s and decreased to 2.29 per cent per annum in 1990s.

4.3.10 Punjab

Table-4.14: Growth Rates (Trend) of Employment, Output and Capital Intensity (Punjab)
(per cent per annum)

Industry Groups	Employment			output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	7.32	1.82	3.28	12.07	3.81	7.18	8.24	6.37	8.61
22	7.75	5.02	4.32	10.54	8.59	8.06	0.51	24.83	11.79
23	2.89	1.83	3.06	6.91	6.86	9.24	3.61	13.01	7.61
24	3.75	-0.41	0.91	11.60	5.74	8.39	17.38	18.73	14.95
26	12.28	2.24	8.77	7.98	3.88	6.96	5.43	10.99	6.18
27	-6.58	21.61	2.08	1.56	28.93	8.93	31.28	24.01	21.36
28	11.05	4.40	4.89	25.32	10.80	16.30	-0.27	10.47	2.83
29	10.68	6.50	7.59	13.32	11.62	10.69	-2.71	14.97	3.46
30	10.19	5.22	8.50	17.50	6.57	12.23	10.66	-0.62	5.20
31	5.18	0.33	2.46	11.82	3.53	7.97	-9.26	2.32	-4.00
32	9.39	-2.50	1.37	17.35	25.63	14.42	7.42	44.92	12.19
33	1.10	1.18	0.39	9.60	4.98	7.26	6.86	10.89	9.39
34	-0.23	6.92	3.62	8.82	9.74	10.86	5.31	6.13	6.60
35+36+39	3.15	1.23	3.13	11.19	5.96	10.21	13.21	4.78	7.90
37	5.94	6.15	7.09	10.84	7.34	10.94	6.98	11.11	11.75
38	-2.19	13.18	2.91	5.00	18.33	9.89	14.54	-10.55	4.41
Total	4.81	2.73	3.54	10.93	5.71	8.62	3.09	9.02	5.72

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Table 4.14 gives the growth rates for different industry groups of Punjab. In case of Punjab the employment growth was less in 1990s in comparison to 1980s. While employment grew at the rate of 4.81 per cent per annum in 1980s, it registered a growth rate of mere 2.73 per cent per annum in 1990s. The industry groups of wood and wood products (27), metal products and parts (34) and other manufacturing equipments (38) recorded negative employment growth in 1980s. The industry group of

food products (20-21), which had the highest employment share in organised manufacturing sector in Punjab recorded an employment growth rate of 7.32 per cent per annum. Except the industry groups of metal products and parts (34), all other prominent industry groups did better in 1980s regarding employment generation. This group witnessed a deceleration in employment, which was only -0.23 per cent. Another highly prominent industry group, textile products (26) recorded an employment growth rate of 12.28 per cent per annum in 1980s. As the prominent industry groups except one did well in 1980s, the employment growth rate could touch 4.81 per cent.

But in 1990s, the prominent industry groups did badly. Employment in the most prominent group - food products (20-21) - grew at the rate of only 1.82 per cent per annum. Employment growth rate in another two prominent industry groups, namely, wool, silk, man-made fibre textiles (24) and textile products (26) came down drastically and reached to -0.41 and 2.24 per cent per annum respectively. Comparatively, the industry group of metal products and parts did well in 1990s and recorded an employment growth rate of 6.92 per cent. There was little difference in the employment growth rate of the industry group of transport equipment (37). So broadly speaking, the industry groups of food products, textile products and wool, silk, man-made fibre textiles are responsible for the lower employment growth in 1990s.

Growth rate of output also remained lower at 5.71 per cent per annum in 1990s in comparison to 1980s (which was 10.93 per cent per annum in 1980s). All the industry groups recorded positive output growth rates both in 1980s and 1990s. But the growth rate of capital intensity increased about three times to 9.02 per cent per annum in 1990s from a mere 3.09 per cent per annum in 1980s.

4.3.11 Rajasthan

Table 4.15 shows the growth rates of employment, output and capital intensity of different industry groups of Rajasthan. The industry groups of cotton textiles (23), wool, silk, man-made fibre textiles (24) and non-metallic mineral products (32) were prominent in this state in 1980s as well as in 1990s. These three employed above 40 per cent of total persons employed in organised manufacturing of Rajasthan in 1980s and it increased to around 50 per cent in 1997-98. In 1980s employment growth rates in these groups were substantial, except that of cotton textiles, which recorded a growth rate of -0.82 per cent per annum. Another two industry groups, namely, food products (20-21) and transport equipment (37) witnessed negative employment growth rates in 1980s.

Table-4.15: Growth Rates (Trend) of Employment, Output and Capital Intensity (Rajasthan)
(per cent per annum)

Industry Groups	Employment			output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	-2.24	3.06	0.66	9.03	16.28	9.74	6.68	15.90	10.48
22	2.06	12.63	7.81	13.27	17.04	13.35	6.76	19.74	6.83
23	-0.82	-0.19	-0.07	5.57	4.80	6.91	3.58	17.01	5.48
24	6.50	9.65	8.19	12.19	10.90	14.33	4.75	5.55	7.96
26	7.04	8.05	5.88	10.45	19.50	15.82	13.53	36.60	13.47
27	5.93	19.46	9.43	28.31	26.19	20.66	17.72	9.15	13.17
28	0.18	3.18	0.61	11.88	12.78	11.76	-4.28	21.06	5.17
30	12.87	2.51	10.98	13.05	9.43	13.21	3.55	5.02	1.30
31	0.63	4.35	-0.86	10.92	13.81	6.59	9.09	29.28	12.27
32	6.36	5.65	5.80	18.29	9.90	13.19	15.64	8.39	9.15
33	2.21	2.58	1.52	10.91	4.59	8.05	-0.79	6.89	7.43
34	3.45	1.39	3.44	9.93	7.45	10.05	11.67	14.84	14.70
35+36+39	5.50	4.26	7.64	11.51	8.74	10.57	8.97	9.31	5.04
37	-2.32	-5.08	-4.12	6.24	7.04	5.12	18.61	3.34	9.59
38	7.47	6.68	8.89	26.00	17.95	21.58	4.71	13.82	11.01
Total	2.54	4.46	3.62	11.02	10.18	10.30	9.62	11.61	9.08

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

As the prominent industries did well and many others also achieved positive employment growth rates in 1980s, the overall employment growth rate managed to remain at 2.54 per cent per annum.

In 1990s the employment growth rate increased to 4.46 per cent per annum. Again the industry group of cotton textiles was marked by negative employment growth, although, it did improve a little over 1980s. Except another one, the industry group of transport equipment, all other groups achieved positive employment growth rate in 1990s. There was an improvement in the employment growth rate of almost all industries in 1990s.

Output growth rates were almost identical in 1980s and 1990s and growth rate of capital intensity was marginally higher in 1990s than 1980s.

4.3.12 Tamil Nadu

Table-4.16: Growth Rates (Trend) of Employment, Output and Capital Intensity (Tamil Nadu)
(per cent per annum)

Industry Groups	Employment			output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	-2.49	3.98	1.06	7.18	7.95	7.67	10.32	4.28	10.38
22	-2.64	3.29	0.14	10.24	11.98	9.45	16.68	7.93	10.80
23	1.98	4.34	2.81	9.57	11.72	10.70	6.16	13.48	8.84
24	-7.63	4.42	-2.88	-0.09	15.64	7.56	12.23	23.34	16.59
25	15.25	11.39	22.71	12.23	14.89	24.83	10.72	0.25	-1.00
26	10.61	19.05	14.64	18.41	24.27	20.57	6.72	14.00	9.76
27	-3.11	0.15	-1.78	1.24	5.05	2.44	3.47	10.83	8.38
28	1.62	2.74	2.25	10.66	0.10	6.40	10.66	22.83	10.32
29	9.34	4.44	8.45	10.78	6.92	10.28	1.18	6.70	3.43
30	3.68	7.03	4.88	6.68	8.33	5.35	13.21	8.25	10.05
31	4.04	4.80	4.13	4.27	8.16	6.19	10.90	6.31	7.64
32	0.52	2.28	1.38	6.67	7.78	7.05	11.58	1.89	6.17
33	-3.76	4.46	-0.05	8.32	7.32	8.03	1.31	16.02	6.36
34	-0.02	4.60	2.02	6.46	11.27	8.19	14.04	6.14	6.74
35+36+39	3.29	5.44	4.45	9.48	8.51	8.64	5.46	6.83	4.38
37	2.32	1.19	1.68	7.75	7.41	7.83	4.33	9.25	5.95
38	4.41	11.03	8.59	18.59	12.20	18.73	31.41	4.43	17.67
Total	1.73	5.19	3.43	7.97	9.16	8.36	7.92	9.31	7.48

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Table 4.16 shows the growth rates of employment, output and capital intensity of different industry groups for Tamilnadu. Except the industry group of food products (20-21), all the prominent industry groups - cotton textiles (23), textile products (26), paper and paper products (28), leather and leather products (29), rubber, plastics and petroleum products (31) and transport equipments (37) - recorded positive employment growth in 1980s. The food products industry which employs a substantial proportion of total persons employed in organised manufacturing sector in Tamilnadu showed a decline in employment growth (-2.49 per cent). Other industry groups such as beverages, tobacco (22), wool, silk, man-made fibre textiles (24), wood and wood products (27), basic metals and alloys (33), metal products and parts (34) witnessed negative employment growth in 1980s. As a result overall employment growth rate remained at 1.73 per cent per annum in 1980s.

In 1990s the employment growth rate increased to 5.19 per cent per annum. All the major industry groups except two – leather and leather products (29) and transport equipment (37) – witnessed improvement in the employment growth rate in 1990s.

The growth rates of output remained at 7.79 and 9.16 per cent in 1980s and 1990s respectively. Except the industry group of wool, silk, man-made fibre textiles (24), all others recorded positive output growth in 1980s. And in 1990s all groups were marked by positive output growth. Capital intensity grew at the rate of 7.90 and 9.31 per cent per annum in 1980s and 1990s respectively.

4.3.13 Uttar Pradesh

Table 4.17 gives the growth rates for different industry groups of Uttar Pradesh. In 1980s, there was almost no growth in employment in Uttar Pradesh. The most

prominent industry group, namely, the food products, recorded a negative employment growth of three per cent per annum. Many other industry groups such as beverages, tobacco (22), cotton textile (23), jute and other textiles (25), chemicals and chemical products (30) and basic metals and alloys (33) witnessed negative employment growth rate. Employment growth rates in some industry groups like other manufacturing equipments (38) and wood and wood products (27) touched the heights of 8.25 and 8.87 per cent per annum respectively. But, as these industry groups were not prominent in Uttar Pradesh, they could not considerably influence the overall growth of employment in 1980s.

Table-4.17: Growth Rates (Trend) of Employment, Output and Capital Intensity (Uttar Pradesh)
(per cent per annum)

Industry Groups	Employment			Output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	-3.00	-0.61	-0.82	10.76	5.79	9.06	15.53	11.63	13.36
22	-5.20	3.43	0.28	12.35	6.65	11.62	21.93	16.63	17.06
23	-1.58	-4.69	-3.70	0.99	1.96	0.01	3.50	25.08	8.14
24	5.68	2.86	2.23	14.94	8.87	14.93	16.22	5.61	18.03
25	-5.13	-1.67	-3.63	0.17	-2.49	-2.00	23.46	8.98	10.33
26	4.13	7.23	8.32	7.84	10.25	12.56	9.05	7.31	5.80
27	7.87	1.73	4.48	25.63	7.88	15.40	21.72	14.67	18.92
28	3.80	5.10	4.04	18.46	11.18	14.05	8.91	19.28	9.48
29	5.42	1.63	3.68	13.66	8.16	11.29	4.97	18.79	12.19
30	-1.73	6.08	4.04	24.59	5.75	10.93	-0.06	4.12	1.32
31	3.75	3.32	4.26	13.73	7.99	12.06	7.65	10.40	9.77
32	0.37	-4.93	-1.78	12.61	2.04	6.71	11.79	14.87	11.64
33	-0.29	-0.29	-0.95	11.20	5.22	8.67	12.90	27.41	18.45
34	4.04	-1.07	3.32	16.76	2.81	13.32	9.93	9.93	11.30
35+36+39	5.16	1.74	5.47	13.54	5.57	11.55	5.03	0.97	3.30
37	1.88	4.41	1.95	14.27	14.83	13.61	17.07	16.31	13.73
38	8.25	9.48	7.34	22.78	19.50	18.62	7.97	7.37	5.59
Total	0.01	0.86	0.96	13.23	6.74	10.22	10.42	13.35	11.49

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Although there was improvement in employment growth rate in 1990s, the situation was more or less same as 1980s. Many industry groups like food products (20-21), cotton textiles (23), jute and other textiles (25), non-metallic mineral products (32),

basic metals and alloys (33) and metal products and parts (34) recorded negative employment growth in 1990s.

The growth rate of output reduced drastically to 6.74 per cent per annum in 1990s from a high of 13.23 per cent per annum in 1980s. Even though growth rate of capital intensity has increased in 1990s, output growth rate has come down and there has been marginal improvement in the growth rate of employment.

4.3.14 West Bengal

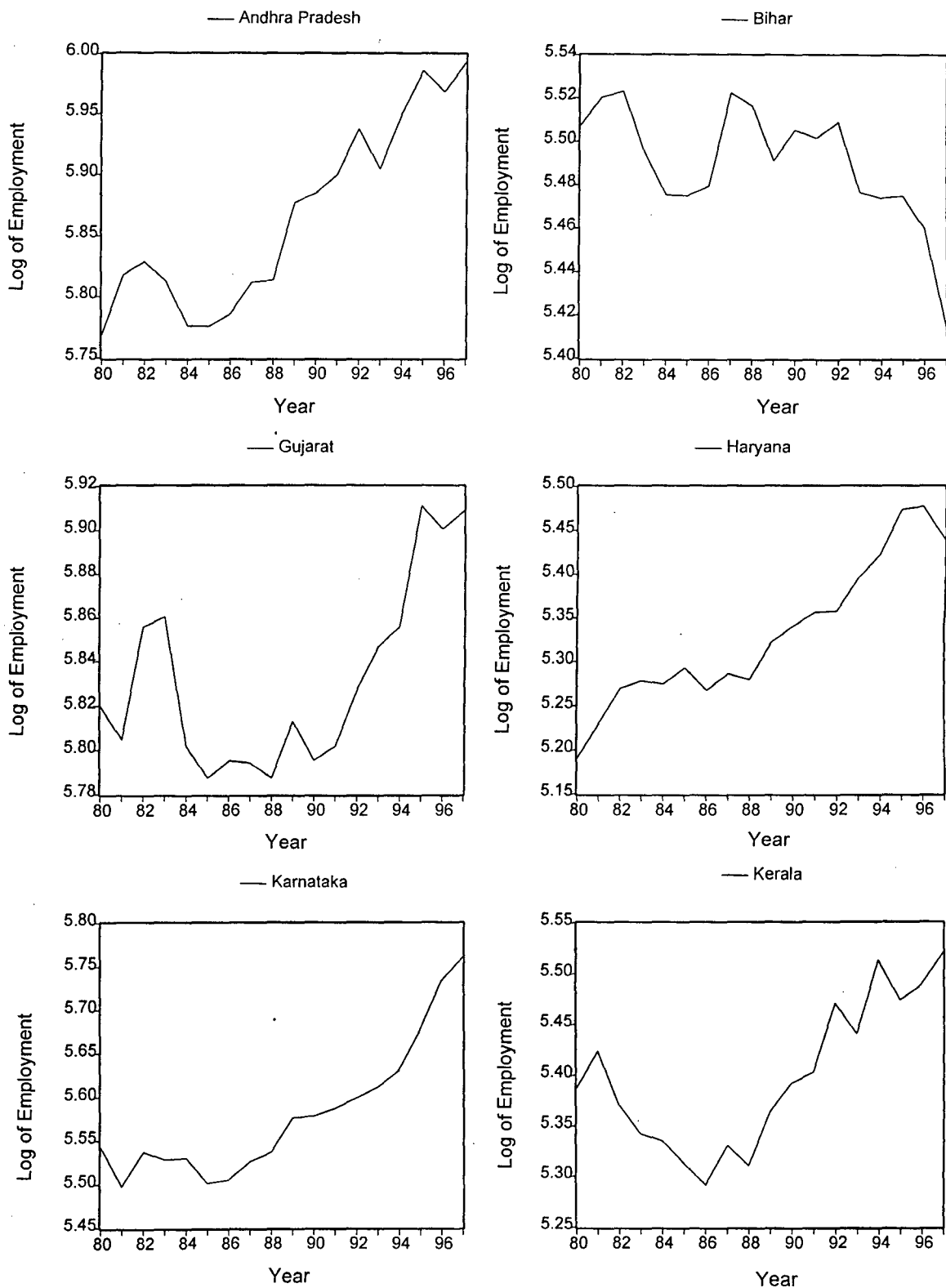
Table 4.18 shows the growth rates of employment, output and capital intensity for West Bengal. There was a huge decline in employment in organised manufacturing sector in West Bengal in 1980s. Employment decelerated at the rate of 3.91 per cent per annum in 1980s. Except the industry groups of chemicals and chemical products (30), wool, silk and man-made fibre textiles (24), all others recorded negative employment growth in 1980s. The above said two industry groups had employment growth rates of 0.25 and 0.0 per cent per annum respectively. The situation improved a little in 1990s. Some industries showed positive employment growth. Employment growth rate in the most prominent

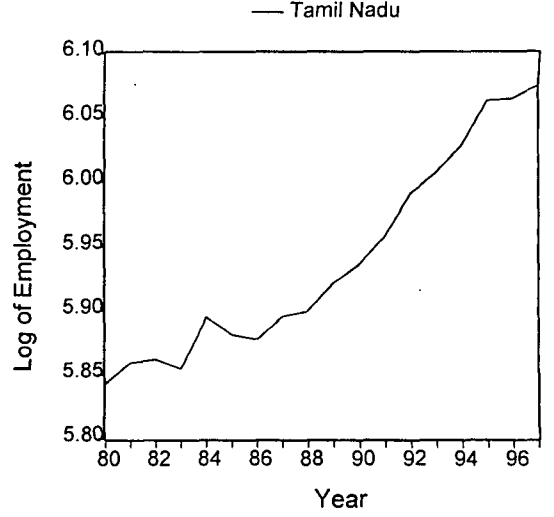
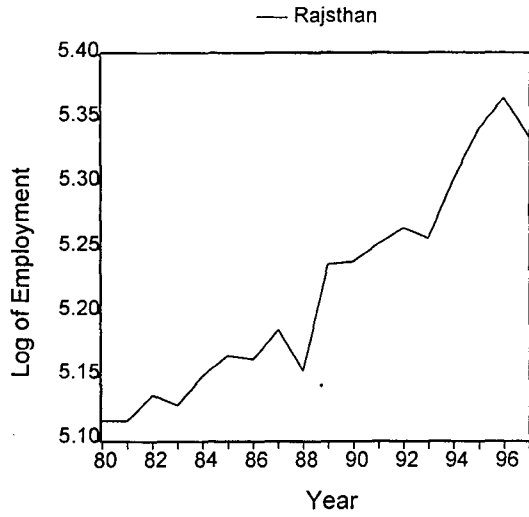
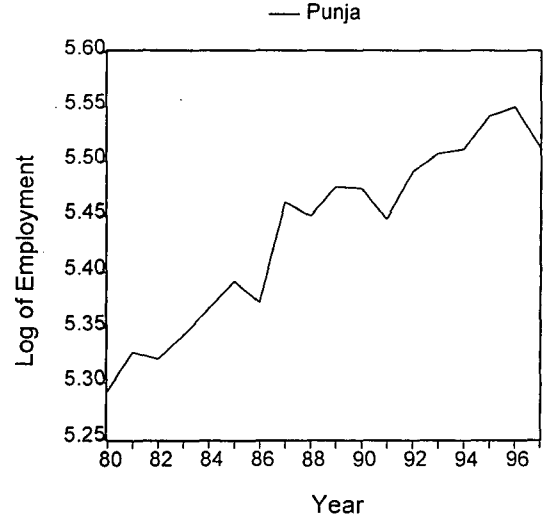
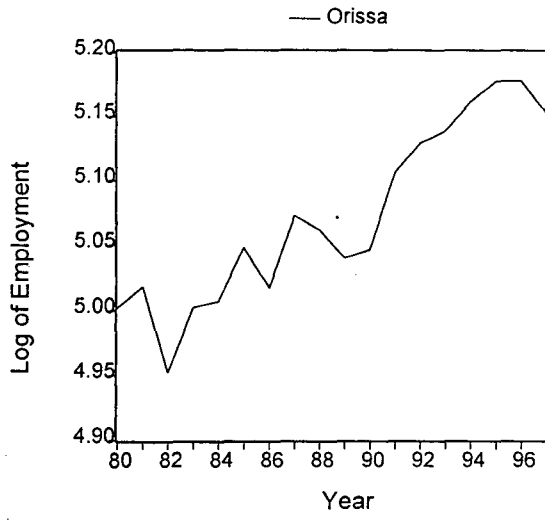
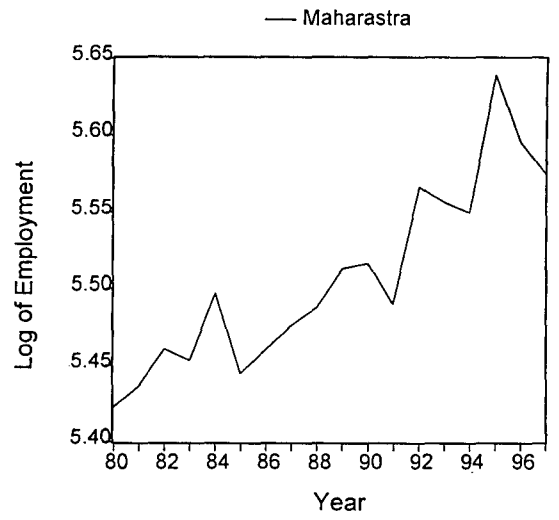
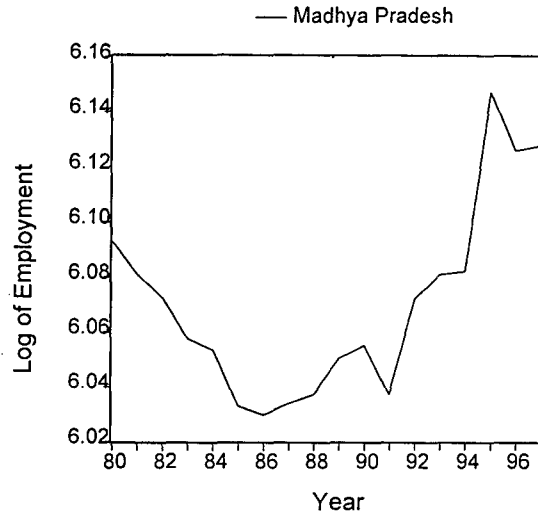
Table-4.18: Growth Rates (Trend) of Employment, Output and Capital Intensity (West Bengal)
(per cent per annum)

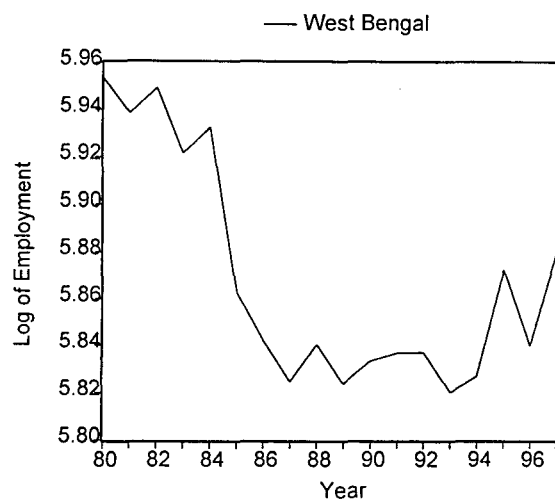
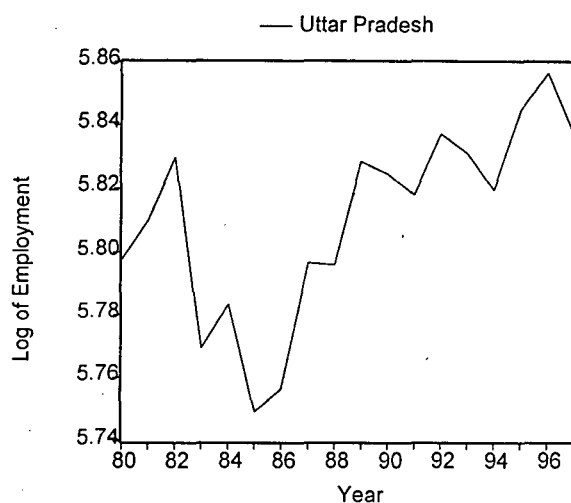
Industry Groups	Employment			output			Capital Intensity		
	1981-90	90-98	1981-98	1981-90	90-98	1981-98	1981-90	90-98	1981-98
20-21	-3.88	3.17	-0.41	4.90	0.87	3.12	6.58	7.48	7.58
22	-1.09	19.55	7.14	7.61	21.08	12.28	31.11	-6.34	1.98
23	-8.73	-1.27	-5.79	-5.33	7.75	-0.35	6.51	18.01	8.16
24	0.00	-11.52	-3.70	0.24	-2.55	1.31	18.08	26.64	19.89
25	-3.42	2.05	-1.21	0.45	4.35	1.66	17.17	-0.58	9.41
26	-3.38	0.28	-0.71	1.58	-1.09	2.83	15.82	3.16	14.63
27	-1.59	0.80	0.60	4.68	3.35	5.08	11.03	6.58	10.13
28	-7.05	2.00	-2.13	-0.19	7.01	3.23	10.78	7.51	8.15
29	-3.55	-2.07	-2.44	4.40	3.50	4.65	0.05	16.07	6.88
30	0.25	-0.95	0.14	4.85	1.46	2.18	7.05	11.89	9.26
31	-1.93	0.08	-1.31	4.49	2.50	3.60	0.12	2.25	0.45
32	-4.60	-0.95	-1.79	1.20	6.65	3.90	4.41	20.54	10.10
33	-3.00	-0.52	-1.49	1.59	3.83	2.59	9.66	14.38	15.00
34	-2.89	-1.09	-1.07	4.88	0.96	4.75	7.16	3.54	6.78
35+36+39	-3.47	-1.10	-1.18	1.58	3.30	2.92	7.88	7.82	7.29
37	-6.26	2.65	-2.53	0.83	5.11	1.30	-6.07	-0.91	2.71
38	-0.39	-3.31	-0.65	3.24	3.97	3.97	7.94	4.43	8.40
Total	-3.91	0.86	-1.52	2.42	3.46	2.78	8.80	9.36	10.32

Source: Calculated and compiled from Annual Survey of Industries Summary Results for Factory Sector, Various Issues, GOI.

Fig: 4.1 Trends of Employment of Different States (Organised Manufacturing)







industry group, that was jute and other textiles (25) improved to 2.05 per cent per annum in 1990s from a negative one in 1980s. Most of the industry groups showed negative employment growth rates in 1990s also. Over the total period of 1981-98, employment growth rate was -1.5 per cent per annum. Output growth rate improved marginally in 1990s to 3.46 per cent from 2.42 per cent in 1980s. The growth rate capital intensity remained at 8.80 per cent in 1980s and 9.36 per cent in 1990s.

4.4 Summary and Conclusion

Like the all India level in many states employment growth rates improved in 1990s as compared to 1980s. But in states like Bihar and Punjab employment growth rates decreased in 1990s. But the context of Bihar and Punjab is totally different. In case of Bihar there was a continuous decrease in the number of persons employed in organised manufacturing, that is why the negative employment growth rate in 1980s further worsened in 1990s. In contrast, Punjab recorded an overwhelming 4.81 per cent growth rate in employment and it was the highest among all states in 1980s. In 1990s it

decreased to 2.73 per cent only. Due to the bad performance of some major states like Maharashtra, Gujrat, Bihar, Uttar Pradesh, West Bengal, the overall employment growth rate of organised manufacturing in India remained very low in 1980s. In 1990s except Bihar, all other states improved. But Uttar Pradesh West Bengal recorded very low employment growth. So far as capital intensity is concerned, like the all-India level, in the states also no definite relationship between growth rates of employment and capital intensity is discernible. From the result it is evidenced that the big states like Bihar, Uttar Pradesh and West Bengal are the decelerator of employment generation in organised manufacturing of India.

Notes:

1. Employment means, employment in organised manufacturing unless and otherwise mentioned.
2. Alagh et al., 1971 and 1972.
3. Mathur et al., 1993.
4. One industry group is dominant or prominent means, it is dominant or prominent in all the three years, 1980-81, 1989-90 and 1997-98, unless and otherwise mentioned.

CHAPTER – V

CONCLUSIONS

The decade of 80s was marked by a near stagnation in employment growth rate in organised manufacturing sector inspite of a healthy growth of output. Many arguments are forwarded by many economists to explain this jobless growth of this period. According to some it was the labour market rigidity, which was the culprit. Economists like Isher Judge Ahluwalia feel that the sharp increase in wage rate in 80s, which resulted in an increase and in capital labour ratio (capital intensity) was responsible for a decline in employment growth rate. The World Bank's explanation also went in line of Ahluwalia. But Nagraj and Papola does not favour the above explanation. He argues that the overhang of employment which existed in 70s was responsible for stagnation in employment growth in 80s.

In 90s, there was not much change in the growth rates of output and capital intensity. But employment witnessed a healthy growth in this period. Some argue that this is due to slowdown in real wages and some others explain this phenomenon in terms of increase in investment.

In 80s the major industry groups such as food products and cotton textiles performed badly regarding employment generation because of closure of many units due to sickness and rationalisation to overcome of obsolescence. These two along with many others such as jute and other textiles, wood and wood products were the decelerators of employment growth. In 90s all the industry

groups achieved positive employment growth. The growth rate of employment in private sector increased more than that of public sector in 90s. This change in employment pattern may be due to major policy changes in the 90s. Employment growth rate remained negative in basic and intermediate goods industries in 80s and consumer goods industries marked a marginal employment growth in 80s. In 90s employment growth was marginally more in the consumer durable goods industries than that of consumer non-durable goods industries. There was no substantial difference in output growth rates of 80s and 90s.

If we compare the growth rates of employment, output and capital intensity in 80s and 90s, we see that the growth rates of output and capital intensity are almost same. There was much change in the growth rate of employment in 80s and 90s. From the econometric analysis a definite relationship was found between the growth rates of output employment. But the growth rate of capital intensity does not bear a definite relationship with the growth rate of employment. In some cases in spite of an increase in capital intensity, employment growth has increased and in some other cases the reverse is also true. The econometric analysis also fails to establish the relationship between the growth rate of employment and capital-intensity.

So, so far as the organised manufacturing sector is concerned , the post-reform period has made difference only to the employment growth rate. If the experience of 90s regarding employment generation is compared to that of 70s, we can say that the post-reform period has not done any considerable improvement. Growths of employment and output in public sector has come down and those of private sector have gone up in 90s. It can be said that the role

of public sector is diminishing in the post-reform period.

There is a substantial change in the distribution of employment and output (organised manufacturing sector) among states in 90s as compared to 80s. In 1980-81 each of the four states, viz., Gujrat, Maharashtra, Tamilnadu and West Bengal had the employment share of ten per cent or more. In case of Maharashtra and Gujrat the output share remained lesser than the corresponding employment share. So, more capital intensive industries were located in these two states. West Bengal had more labour intensive industries. Among all states Orissa had the lowest share of employment (1.48 percent) in 1980-81 and it remained as the lowest in all the years of 80s and 90s. But in case of output, it was Bihar, whose share remained lowest among all the states. So far as the employment and output shares were concerned, Andhra Pradesh, Karnataka, Haryana and Tamilnadu were the gainers in the post-reform period and the losers were Bihar, Uttar Pradesh, West Bengal and Maharashtra. In 1980-81 the top four industrialised states (taking employment into consideration) were Maharashtra, West Bengal, Tamilnadu and Gujarat. But in 1997-98 Andhra Pradesh replaced West Bengal and entered into the club of top four industrialised states.

In Andhra Pradesh the most prominent industry group was beverages and tobacco and the next prominent was food products. About sixty percent of total persons employed in organised manufacturing sector in Andhra Pradesh were engaged in these two industries groups only. The industry groups of chemical and chemical products, non-metallic mineral products, basic metals and alloys and transport equipment were dominant in Bihar. The industry group of basic

metals and alloys employed the highest number of persons among all the groups. The industry group of cotton textiles employed the maximum proportion of persons among all the groups in 1980-81 in Gujrat. But in 1997-98, it was the industry group rubber, plastic and petroleum products, which had the highest proportion of employment. The industry groups of wool, silk, man-made fibre textiles, chemicals and chemical products, non-metalic mineral products, metal products and parts were prominent in Haryana in comparison to the national level. In Karnataka the top three contributors to employment generation in 1980-81 were the industries of food products, cotton textiles and machinery and equipment. But in 1997-98, the industry groups of food products and cotton textiles were replaced by the industry group of repair of capital goods and textile products. In case of Kerala, the industry groups of food products, beverages, tobacco, wood and wood products, chemicals and chemical products and non-metalic mineral products were prominent. In Madhya Pradesh the top three employment generating industries were basic metals and alloys, cotton textiles and food products. Maharashtra is the most industrialised state in India. Most of capital intensive industries such as rubber, plastic and petroleum products, metal products and parts, machinery and equipment, transport equipment and other manufacturing equipments were dominant in this state. The industry group of basic metals and alloys invariably remained as the highest contributors to employment generation in case of Orissa. Around 34 percent of total persons employed in organised manufacturing sector in Orissa were engaged in this industry group. In Punjab, the industry group of food products invariably remained as the highest contributor to employment generation. Other prominent groups in Punjab were textile products, metal products and parts, transport

equipment etc. In Rajasthan the industry group of cotton textile was the highest contributor regarding employment generation in 1980-81. But in 1997-98, it was replaced by the industry group of wool, silk and man-made fibre textiles. In case of Tamilnadu cotton textiles and food products industries were most prominent. The industry groups of food products and leather and leather products were dominant in Uttar Pradesh. The industry group of jute and other textiles was the most prominent industry group in West Bengal. Around 84 percent of total persons employed in this industry group in India were employed in West Bengal only.

States like Bihar, Gujarat, Kerala, Maharashtra and West Bengal witnessed negative employment growth (in organised manufacturing sector) in 1980s. Karnataka, Haryana, Andhra Pradesh and Tamilnadu were marked by marginal growth in employment in 1980s. Uttar Pradesh had nearly zero employment growth in 1980s. The good performing states were Punjab, Madhya Pradesh, Rajasthan and Orissa. In 1990s the situation of Bihar worsened and the number of persons employed in organised manufacturing decreased in absolute number. Although there was little improvement for West Bengal, it was not encouraging. Uttar Pradesh had the employment growth rate of below one percent in 1990s.

After analysing the behaviour of states regarding employment generation, it is evidenced that the three major states – Uttar Pradesh, Bihar and West Bengal – are responsible for the slow growth of employment in organised manufacturing sector in India. These three states accommodate a large chunk of population. So unless and untill these states get industrially developed, the overburdened as well as overcrowded

agricultural sector can't be able to heave a sigh of relief.

The great limitation of this work is lack of explanation to the growth behaviour of different industry groups at the national as well as state level. It needs deeper study which was not possible on my part due to various constraints.

BIBLIOGRAPHY

Books

- Agrawal, P. (1997), '*Labour Policy: Striking a Balance*', in *India Development Report 1997*, ed. Parikh K.S., Oxford University Press, Delhi.
- Ahluwalia, I J (1991): 'Productivity and Growth in Indian Manufacturing', Oxford University Press, Delhi.
- Ahluwalia, I.J.(1985), 'Industrial Growth in India Stagnation Since the Mid-Sixties', Oxford University Press, Delhi.
- Awasthi, D.N. (1991), 'Regional Patterns of Industrial Growth in India', Concept Publishing Company, New Delhi.
- Bhagwati, J.N. (1993), 'India in Transition: Freeing the Economy', Oxford University Press, Oxford.
- Chandhok, H.L (1990), 'India Data Base: The Economy- Annual Time-Series Data', Living Media Books, New Delhi, Two Volume.
- Datt, R. and K.P.M. Sundharam(1999), 'Indian Economy', S. Chand & Company Ltd. New Delhi.
- Goldar, B.N. (1986), 'Productivity Growth in Indian Industry', Allied Publishers, New Delhi.
- Kundu, A. and M. Raja (1981), 'Indian Economy: The Regional Dimension', Spectrum Publishers, New Delhi.
- Nayyar, D.(1994), 'Introduction' in D.Nayyar (ed), *Industrial Growth and Stagnation: The Debate in India*, Oxford University Press, Bombay.
- Sandesara, J C (1992), '*Industrial Policy and Planning 1947-91: Tendencies, Interpretations and Issues*', Sage Publications India Pvt. Ltd. , New Delhi.
- Seth,V.K.(1987), 'Industrialization in India: Spatial Perspective', Common Wealth Publishers.
- Weiss, J.(1988), 'Industry in Development Countries: Theory, Policy and Evidence', Croom Helm, London.

Articles

- Agarwal, R N and B Goldar (1995), 'Economic Reforms and Employment in India: Projections for the Year 2001-2002', *Indian Journal of Labour Economics*, Vol 38, No 4, pp 577-95.
- Alam, M. and S.N. Mishra (1998), 'Structural Reforms and Employment Issues in India: A case of Industrial Labour', *The Indian Journal of Labour Economics*, Vol-41, No-2, pp.271-292. Vaidyanathan, A(1994), 'Employment Situation: Some Emerging Perspectives', *Economic and Political Weekly*, December 10, pp. 3147-56.
- Awasti, D.N. (1989), 'Trends in the Regional Industrial Inequalities in India, 1966-78', *Anvesak*, Vol.19, Issue-2.
- Bhaduri, Amit (1996), 'Employment, Labour Market Flexibility and Economic Liberalisation in India', *Indian Journal of Labour Economics*, Vol. 39, No. 1.
- Bhalotra, Sonia, R (1998), 'The Puzzle of Jobless Growth in Indian Manufacturing', *Oxford Bulletin on Economics and Statistics*, Vol. 60, No. 1, pp 5-32.
- Bhattacharya, B.B. and Arup Mitra (1993), 'Employment and Structural Adjustment: A Look at 1991 Census Data', *Economic and Political Weekly*, 18th September, pp1989-1295.
- Chadha, G.K. (1999), 'Trade Technology and Employment: Some Missing Links in India's Rural Economy', *Indian Journal of Labour Economics*, Vol.42, No.4, pp881-908.
- Chaudhuri, S.(2002), 'Economic Reforms and Industrial Structure in India', *Economic and Political Weekly*, January 12, Vol.37, No.2, pp.155-162.
- Datt, R. (1993), 'New Economic Policy and its Impact on Industrial Relations and Employment in India', *The Indian Journal of Labour Economics*, Vol.36, No.1, pp 66-76.
- Deshpande, L (1992), 'Economic Liberalization and Labour in India', *Indian Journal of Labour Economics*, Vlo. 35, No. 4.
- Deshpande, Sudha (1996), 'Changing Structure of Employment in India, 1981-1991', *Indian Journal of Labour Economics*, Vol.39, No. 4, pp741-761.

- Dev, S.M. (2000), 'Economic Liberalisation and Employment in South Asia-I', *Economic and Political Weekly*, January 8, pp. 40-50.
- Dholakia, R. (1989), 'Regional Aspect of Industrialization in India', *Economic and Political Weekly*, November, 18.
- Fallon, P and R E B Lucas (1993), 'Job Security Regulations and the Dynamic Demand for Industrial Labour in India', *Journal of Development Economics*, Vol. 40, pp 241-275.
- Gangopadhyay, S and Wilima Wadhwa (1998), 'Economic Reforms and Labour', *Economic and Political Weekly*, 30th May, pp L40-48.
- Ghose, A K (1994), 'Employment in Organised Manufacturing in India', *Indian Journal of Labour Economics*, vol 37, no 2, April-June, pp 141-62.
- Ghosh, A.K. (1999), 'Current Issues of Employment Policy in India', *Economic and Political Weekly*, September, 4, Vol. 34, No. 36, pp.2592-2608.
- Goldar, B.N and Vijay Seth (1989), 'Spatial Variation in the Rate of Industrial Growth in India', *Economic and Political Weekly*, 8th June, pp 1237-1240.
- Goldar, B.N. and V.K. Seth (1989), 'Spatial Variations in the Rate of Industrial Growth in India', *Economic and Political Weekly*, June 3, pp. 1237-40.
- Goldar, B.N. (2000), 'Employment Growth in Organised Manufacturing in India' *Economic and Political Weekly*, 1st April, pp1191-1195.
- Gowda, M.V.S. (1984), 'Organised Sector Employment in India', IEA Conference Volume, 67th Annual Conference, Agra..
- Kadak, A. M. (1986), 'Growth and Employment in Some Indian Manufacturing Sector', *Anvesak*, Vol. 16, Issue-1.
- Kadak, A.M. (1985), 'Growth and Employment and choice of Technique- A Survey', *Anvesak*, Vol. 15, Issue-1.
- Kundu, A (1997), 'Trends and Structure of Employment in the 1990s: Implications for Urban Growth', *Economic and Political Weekly*, June 14.

- Kuznets, S. (1957), 'Quantitative Aspect of the Economic Growth of Nations, II Industrial Distribution of National Product and Labour Force', *Economic Development and Cultural Change*, pp-3-11.
- Mani, S. (1995), 'Economic Liberalisation and the Industrial Sector', *Economic and Political Weekly*, May 27, pp. M38-M50.
- Mathur, Ashok and P.K.Pani(1993), 'The Character of Rural Industrialization and its Employment Impact in India: An Inter-Regional Perspective', *The Indian Journal of Labour Economics*, Vol. 6, No. 3.
- Mathur, Ashok (1983), 'Regional Development and Income Disparities in India: A Sectoral Analysis', *Economic Development and Cultural Change*, April.
- Mohan, Rakesh (1992), 'Industrial Policy and Controls', in Bimal Jalan (ed.) *The Indian Economy*.
- Mukhapadhyay, D. (1989), 'Inter District Variation in Industrial Employment its Main Causes: A Case Study of West Bengal', *Artha Vijnana*, Vol.31, Issue-4.
- Nagaraj, R (1994), 'Employment and Wages in Manufacturing Industries: Trends, Hypotheses and Evidence', *Economic and Political Weekly*, Vol 29, No. 4, January 22, pp 177-86.
- Nagaraj, R (1985), 'Trends in Factory Size in Indian Industry, 1950 to 1980: Some Tentative Inferences', *Economic and Political Weekly*, Vol. 20, No. 8, Review of Management, February 22.
- Nagraj, R. (1994), 'Employment and Wages in Manufacturing Industries, Trends, Hypothesis and Evidence', *Economic and Political Weekly*, 22nd January, pp178-186.
- Naidu, K.M. (1993), 'Unemployment and Employment in India', *The Indian Journal of Labour Economics*, Vol. 36, No. 1.
- Pal, Sumitra (1993), 'Structural Change in the Indian Manufacturing Sector', *Artha Vijnana*, Dec., Vol. 35, No. 4, pp 358-378.
- Patel, N.T. and Gandhi Madalasa(2000), 'Capital Intensity, Output, Employment and Productivity: A Study of Two Service Industries', *The Indian Journal of Labour Economics*, Vol. 43, No. 4, pp. 1023-1031.

- Popala, TS (1994), 'Structural Adjustment, Labour Market Flexibility and Employment', *Indian Journal of Labour Economics*, Vol. 37, No. 1, January-March, pp 3-16.
- Rastogi, Gursharan (1997), 'Growth and Employment in Indian Industry: A Statewise Decomposition Analysis', *The Indian Journal of Labour Economics*, Vol. 40, No. 1, pp. 103-122.
- Shah, V.K. and R.D. Desai, (1986), 'The Tendency of Indian Industries: A Comparison Over Time', 1969 to 1980-81', *Anvesak*, Vol.16, Issue-1.
- Shankar, K. (1989), 'Characteristics of Diversification in Indian Industry', *Economic and Political Weekly*, June 3, pp. 1241-50.
- Shastri, Rahul A. (2001), 'Declining Efficiency and the Slow Growth of Employment in organised Indian Manufacturing Sector (1950-94)', *Asian Economic Review*, pp105-116.
- Singh, M. (1989), 'Development Policy Research: The Tasks Ahead', Proceedings of the World Bank Annual Conference on Development Economics.
- Singh, S. and R.N. Singh (1993), 'Employment Generation in India', *The Indian Journal of Labour Economics*, Vol. 36, No. 4, pp 558-563.
- Srinivasan, G. (1998), 'Industrial Scene: Challenges Ahead', *Yojana*, August, Vol. 42, No. 8, pp.21-24.
- Srivastava, Rave (1994), 'Planning and Regional Disparities in India', in T.J. Bayers (ed.) *The State and Development Planning in India*.
- Streefkerk, H. (2001), 'Thirty Years of Industrial Labour in South Gujarat: Trends and Significance', *Economic and Political Weekly*, June 30, Vol. 36, No. 26, pp.2398-2411.
- Sundaram, K. (2001), 'Employment-Unemployment Situation in the Nineties, Some Results from NSSS 55th Round Survey', *Economic and Political Weekly*, Vol. 36, No. 11, pp. 931-940.
- Tewari, R.T. (1988), 'Inter-Regional Pattern of Industrialization in India: 1971-81', *The Indian Economic Journal*, Vol. 36, No. 2.
- Udaiy, Sekher A. (1983), 'Trends in Inter-State Disparities in Industrial Development in India:1961-75', *The Indian Economic Journal*, Vol.30, No.2.

Unni, J., N. Lalitha and Uma Rani (2001), 'Economic Reforms and Productivity Trends in Indian Manufacturing', *Economic and Political Weekly*, October 13-19, pp. 3914-22.

Visaria, Pravin (1996), 'Structure of the Indian Workforce, 1961-1994', *Indian Journal of Labour Economics*, Vol. 39, No. 4, pp725-740.

Visaria, P. and Minhas B.S. (1991), 'Evolving an Employment Policy for the 1990s: What Do the Data Tell Us?', *Economic and Political Weekly*, April 13.