

# **INTER-REGIONAL DISPARITIES IN INDUSTRIAL GROWTH AND STRUCTURE**

*T.S. Papola  
Nitu Maurya  
Narendra Jena*

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Macro-economic Implications of Emerging Pattern

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## Preface

Institute for Studies in Industrial Development (ISID) has been carrying out a 3-year Research Programme on “Structural Changes, Industry and Employment in Indian Economy: Macro-economic Implications of Emerging Pattern” with the sponsorship of the Indian Council of Social Science Research (ICSSR) since March 2009. The Programme envisages undertaking studies on various aspects of the structural changes in the Indian economy under the following six major themes:

- i) Growth and Structural Changes in Indian Economy
- ii) Employment Implications of Structural Changes
- iii) Growth and Structure of Industry
- iv) Structure of Services Sector
- v) Income Distribution, Demand Supply Balances and Price Stability
- vi) Trade

The Programme team which consists of several faculty members of the Institute has identified over a dozen different sub-themes within the above major themes for study. The present study on “Inter-regional Disparities in Industrial Growth and Structure” is one of those identified under the broad theme of Growth and Structure of Industry.

An earlier draft of the paper was presented at a national workshop, organised to discuss 10 studies at different stages of progress under the Programme, during 7–8 July 2011. We have immensely benefited from the comments and suggestions made by participants, especially by Professor A.K. Singh, who chaired the discussion on it and also made detailed written comments and Dr Dinesh N. Awasthi, who acted as the main discussant on the paper.

We are grateful to other members of the Programme Team for their comments, cooperation and help. We are especially thankful to Dr Partha Pratim Sahu for his valuable guidance on data selection and statistical analysis.

T.S. Papola  
Nitu Maurya  
Narendra Jena



# I. Introduction

Inter-regional disparity in levels of development and incomes is a major issue of economic, social and political significance in India. That there are wide disparities across the states is well known and is also recognized as a concern to be addressed through public policy. Several mechanisms and instruments have been in use to reduce these disparities since independence. Some of them like the Finance Commission, a constitutionally provided mechanism and the Planning Commission are of a standing nature while several others, in the form of policies and programmes are adopted from time to time to promote development of relatively less developed states and regions by giving them preferential treatment in central public investment, and fiscal and financial concessions and incentives.

Public policy instruments, no doubt, influence the growth of economic activity in different regions, but in ultimate analysis, relative economic position of different regional entities depends on their rate and pattern of economic growth which are determined by several other factors, especially the region-specific factors. According to the dominant theory of modern economic development, industry is expected to play a major role in creating as well as mitigating disparities among different regions. Industry is seen as the main “engine of growth” (Kaldor, 1967) and industrial development subject to “cumulative causation” to a larger degree than development of other sectors (Myrdal, 1957). Industrial development, and consequently overall economic development of different regions, according to the typical conventional theory of regional development, is expected to take a path that finally leads to a “convergence” (See Barro and Sala-i-Martin, 1992 and 1995). To begin with, industry goes where industry is—as a result of developed infrastructure, agglomeration and linkages, but subsequently, when diminishing returns set in—in the more industrialised regions—it shifts to less developed regions. Since diminishing returns set in agriculture much earlier, due to fixity of land and limits to technological advances, it is industry with continuation of increasing returns for a reasonably long period of time, that plays the levelling role once the process of its

development starts in the poorer regions. The historical experience of development, as a result, has revealed what is called “inverted U-shaped” behaviour of disparities in the long period development (Williamson, 1965; Barro and Sala-i-Martin, 1990; Kuznets, 1955). In a way, this represents the “spatial” version of Kuznets Hypothesis on income inequality.

Contrasting the ‘convergence’ hypothesis there is an equally strong view that postulates increasing divergence due to “technology and agglomeration externalities” which make increasing returns possible over long periods. Different regions situated differently in terms of initial levels and capacities for development are thus subjected to “cumulative causation”. They not only grow differentially due to internal factors, but differences get reinforced through interaction among them through the mechanism of “back-wash effects” (Myrdal, 1957; Hirschman, 1958; Kaldor, 1970). Differences arise and get perpetuated often by what are called the ‘core-periphery’ and ‘dependency’ relationships that apply both internationally and inter regionally (Baron, 1957). Technological change, new forms of organisation and transaction costs are also seen by some, specially the post-Fordist scholars, as factors leading to widening of disparities (Piore and Sebel, 1984).

What has been the experience in India? Have inter-regional disparities in levels of incomes, economic development and industrial activity increased or declined over the post-Independence period, especially since early 1990s when economic reforms were introduced and the country adopted the path of globalisation? The fact that wide variations exist in the levels of economic development, particularly of industrial development, was recognised soon after Independence. Policy mechanisms and instruments were devised to mitigate these disparities, specially in industrial sector in the form of establishment of central public sector undertakings in less industrially developed regions, use of “backwardness” of regions as a criterion in industrial licensing, special packages for development of industrial infrastructure in poorer states, and special fiscal and financial incentives for industrial development in backward areas. Have they helped in promoting industrial development in poorer states and regions thus leading to a reduction in inter-regional disparities in the levels of industrialisation? There is a view that these policies of state intervention have, in fact, tended to favour better developed

urbanized areas within the backward states (Lipton, 1977). Some of the policies aiming at providing a level-playing field to all states, such as Freight Equalisation in respect of coal, steel and cement have actually been found to disfavour the industrially backward states like Bihar and Madhya Pradesh.

Most of these policies have been removed, if not reversed, since the introduction of economic reforms. Has that led to any change in the trends in interregional variations in growth of industrial activity? There is a view that post-reform regional development is likely to be more evenly balanced” (Elizondo and Krugman, 1992), as a “free flow of goods, services and factors of production” would have strengthened spread effects thus reducing inter-regional disparities (Dholakia, 2009). A study using ASI data has, however, found that the new investments are spatially more concentrated in the post-reform than in the pre-reform period (Chakravorty and Lall, 2007). It is, therefore, interesting to study the pattern of disparities in the post-reform period when most of the “interventionist” measures have been removed in comparison with the pre-reform period when they were in place. If anything, India now has “a reduced or spatially disengaged state as far as the promotion of regional balance is concerned and a more enlarged state in terms of promoting selected metropolitan regions for receiving investment, especially foreign direct investment (FDI)” (Chakravorty and Lall, 2007, p. 20).

There have been a few studies examining the pattern of interstate disparities in industrial development in India, covering different periods of time. Some early studies, covering 1950's and 1960's, observed a decline in disparities (Dhar and Sastry, 1967; Sardamoni, 1969). Covering the period of 1950–51 to 1975–76, another study (Mathur, 1983) observed that while overall income disparity had narrowed down, the secondary sector has moved along an inverted U-shaped path (the primary sector having followed the reverse path). Another study (Awasthi, 1991), covering almost the same period, however, found that interstate disparities in industrial development had narrowed down. Increasing divergence seems to be the case during 1970's and 1980's, according to another study (Bajpai and Sachs, 1996) which finds a reversal of trend in disparity in per capita income from convergence during 1961–71 to divergence during 1972–82 and 1983–93 and attributes it to concentrated pattern of industrialisation and of Green Revolution during the latter

two decades. Another study (Marjit and Mitra, 1996) covering the period (1961–62/1989–90) found that income disparities across Indian states are on the ascending part of the “inverted U-shaped curve”.

All of the few studies that relate to the post-reform period have pointed to a trend towards greater divergence in industrial growth as industrialised states were found to be growing faster than backward states (Bhattacharya and Sakthival, 2004). One of them (Nair, 2005) found this trend to be in contrast with the pre-reform period. A study that has examined the post-reform behaviour of investment and industrial location taking ASI census sector data for 1995 as indicative of pre-reform level of investment and investment in completed or under-implementation projects during January 1992 to February 1998 from CMI database for investment in post reform period (Chakravorty and Lall, 2007) has come out with several interesting findings. Overall, it concludes that there is evidence of the “return of cumulative causation and divergence”. It found that advanced region (Western India), though not the most advanced state (Maharashtra) was the main beneficiary of new investment; Northern and Eastern Regions lost their shares though Orissa—the least industrialised state—gained. Southern Region maintained its share though Karnataka had a significant gain and Andhra Pradesh suffered a loss. Another interesting aspect examined by this study related to the trend in localised concentration. Based on district level investment data it found that only two districts (greater Bombay and Visakhapatnam) among the top ten in the pre-reform period, could maintain their position in the top ten in the post reform period, though even these two lost in their relative share (*ibid.*, Table 2.6). Bharuch, which held 22<sup>nd</sup> position in pre-reform period, stood first in post reform period and Surat climbed up from fourteenth to second position. Madras with sixth rank and Hyderabad with eighth rank in pre-reform period did not feature even among the top 25 districts in post-reform period. A geographically significant finding of the study is that all top ten districts in terms of the share of investment in the post-reform period were situated “south of Vindhya”, the corresponding number was six in pre-reform period. Even among the top 25 districts, the study concludes that metropolitan regions have gained, but not necessarily the largest ones. The phenomenon is described as that of “concentrated decentralisation” (*ibid.*, p. 71).

Why do rates of industrial growth differ among states? It is a natural question with seemingly obvious answers: infrastructure, human development and expanding markets are among the factors most often mentioned to explain differences in growth rates. Level and growth of agriculture is seen as another factor acting both on supply and demand side to affect the rate of industrial growth. According to a study (Sastry *et. al.*, 2003), agriculture contributed to industrial growth through production channel during 1960's, but by 1990's it contributed greatly through the demand channel. Another study (Chakravorty and Lall, 2007) argues that new investments tend to go where industrial concentration exists. Does industry go where industry is; the other factors only explaining existence, rather than growth, of industry in different regions? A related question, why industrial structure varies among states in term of degrees of diversification and specialization, is also equally interesting, as the industrial base varies widely among them. On the basis of an examination of the industrial structure of different states and changes in it between 1951 and 1965, a study (Alagh *et. al.* 1971) found that states with specialization in resource (raw material) based industries have less diversified industrial structure, while industrial structure of states with a base of "rounded spectrum of industries" including capital goods and demand based industries is more diversified. Also, more industrialised states had a more diversified industrial structure than those with lower levels of industrialisation. Another study (Awasthi, 1991) covering the period 1961–1978, also confirmed this observation. These propositions need to be examined afresh in the context of a highly different pattern of industrialisation that has emerged during the last two to three decades.

## **II. The Present Study: Objectives, Scope and Method**

The present study examines the issues and propositions outlined above by analyzing the growth and structure of manufacturing industry in different states of India, in a comparative framework. It attempts an assessment of the contribution of industry to the interstate variations in the rates of economic growth. In the process it also analyses the differences in the industrial structure and factors responsible for variations in the extent and structure of industrialisation. Interstate variations in the levels of productivity and capital intensity are also studied. It also examines the differences in the pre- and post-reform trends at regional levels and pattern of industrial development, as the earlier studies have covered only a short period after economic reforms. It also covers the organised and unorganised manufacturing unlike most of the earlier studies which have covered only the former. Broadly, the study seeks to answer the following questions:

- i) How strong is the relationship between the level of industrialisation and overall economic development across the states of India? Does this relationship hold cross-sectionally and temporally?
- ii) How is industry distributed across states? What changes have taken place in the share of different states over the years?
- iii) What has been the performance of different states in the growth of industry? How have the rates of industrial growth varied across states in relation with the initial levels of industrialisation? Have the industrially better developed states experienced faster industrial growth?
- iv) How does the structure of industries—by product group, organised/unorganised segments, agro-based and others—differ among states? Have there been significant changes in recent years? What explains the structural variations in industry among states?

- v) How do technical ratios, like output-labour and capital-labour, differ among states? Have there been changes in relative position of different states in these ratios?
- vi) What has been the impact of economic reform measures on the relative industrial performance of different states?

'Industry' for the purpose of this study includes 'manufacturing'. Period of study and states covered in different parts of the study some time vary depending upon the availability of data. Major sources of data for study are: CSO for Gross State Domestic Product (GSDP) estimates, Annual Survey of Industries (ASI) and National Sample Survey Organization (NSSO) survey of employment and unemployment and unorganised enterprises. Due to data limitations some analysis is attempted only for the organised industry (ASI) and some other only for the unorganised industry (NSSO Surveys), or for the two separately rather than for the industrial sector in aggregate except in respect of GSDP of different states and employment for which data from CSO, National Accounts Statistics and NSSO quinquennial surveys on employment and unemployment are available.

### III. The Extent and Change in Industrialisation: Convergence or Divergence among States

#### Extent of Industrialisation

Differences in the extent of industrialisation are one of the most glaring aspects of the variations in the levels and structure of state economies. The share of manufacturing in the Gross State Domestic Product (GSDP) varies very widely among the Indian states. In terms of this indicator, Gujarat with about 30 per cent share of manufacturing in GSDP was the most industrialised state among the major states of India in 2008–09 (*Table 1*). Other major states which had a higher than the national figure of 17 per cent were Maharashtra (23.46 per cent), Tamil Nadu (23.32 per cent), Haryana (20.0 per cent), Karnataka (19.85 per cent) and Orissa (17.04 per cent). Kerala had the lowest 9.96 per cent of its SDP originating in manufacturing. Andhra Pradesh followed by Bihar and Uttar Pradesh were other states with low level of industrialisation with only 12 to 14 per cent of their SDP originating in manufacturing.

Among the three new states—Chhattisgarh, Jharkhand and Uttarakhand—Chhattisgarh and Jharkhand feature as relatively better industrialised states with 21.94 and 32.02 per cent share of manufacturing in their SDP. Uttarakhand with 14.12 per cent of its SDP from manufacturing is among the states with a low level of industrialisation. All states in the North Eastern Region except Assam (10.74 per cent) had less than 10 per cent of their SDP from manufacturing industry. Among UTs and other states Pondicherry (65.49 per cent) and Goa (30.08 per cent) showed a relatively high degree of industrialisation. The share of industry in GDP ranged between 9.96 per cent in Kerala, the least industrialised state to 29.94 per cent in Gujarat, the most industrialised state, in 2008–09. The range of variation seems to have marginally declined from 1980–81, when the least industrialised state (Kerala) had 9.52 per cent of its SDP originating from manufacturing while in the most industrialised state (Tamil Nadu) manufacturing contributed 31.47 per cent. But the states in the most industrialised category have changed their relative positions. In fact, West Bengal which held second position in 1980–81 has gone out of the group

**Table 1**  
**Share of Manufacturing in Total GSDP (%) at 1993–94 Prices**

|   | <b>Major States</b>    | <b>1980–81</b> | <b>1990–91</b> | <b>2000–01</b> | <b>2008–09</b> |
|---|------------------------|----------------|----------------|----------------|----------------|
| 1   | Andhra Pradesh         | 13.86          | 15.32          | 13.69          | 12.05          |
| 2   | Bihar(+)               | 9.92           | 12.56          | 9.17 (3.73)    | 13.27 (2.50)   |
| 3   | Gujarat*               | 18.92          | 26.14          | 30.41          | 29.94          |
| 4   | Haryana**              | 13.65          | 19.10          | 20.59          | 20.00          |
| 5   | Karnataka              | 15.25          | 18.63          | 17.26          | 19.85          |
| 6   | Kerala*                | 9.52           | 11.11          | 11.68          | 9.96           |
| 7   | Madhya Pradesh (+)     | 11.11          | 15.50          | 16.46 (15.08)  | 15.35 (12.73)  |
| 8   | Maharashtra*           | 24.92          | 26.08          | 23.93          | 23.46          |
| 9   | Orissa                 | 9.08           | 11.29          | 12.13          | 17.04          |
| 10  | Punjab                 | 9.21           | 13.61          | 15.96          | 16.05          |
| 11  | Rajasthan              | 12.43          | 12.36          | 16.50          | 15.63          |
| 12  | Tamil Nadu             | 31.47          | 28.54          | 24.36          | 23.32          |
| 13  | Uttar Pradesh (+)      | 9.01           | 13.87          | 13.85 (14.00)  | 14.02 (14.01)  |
| 14  | West Bengal*           | 20.31          | 17.80          | 17.28          | 16.37          |
| <b>New States</b>                         |                        |                |                |                |                |
| 15  | Chhattisgarh           | -              | -              | 18.50          | 21.94          |
| 16  | Jharkhand              | -              | -              | 19.17          | 32.02          |
| 17  | Uttarakhand            | -              | -              | 11.74          | 14.12          |
| <b>North Eastern States</b>               |                        |                |                |                |                |
| 18  | Arunachal Pradesh*     | 3.80           | 2.60           | 3.43           | 2.03           |
| 19  | Assam                  | 9.55           | 9.17           | 7.67           | 10.74          |
| 20  | Manipur                | 6.41           | 13.53          | 7.93           | 7.48           |
| 21  | Meghalaya              | 1.80           | 2.42           | 2.07           | 8.49           |
| 22  | Mizoram                | 1.49           | 2.87           | 1.73           | 2.13           |
| 23  | Nagaland**             | 5.09           | 3.65           | 1.12           | 1.40           |
| 24  | Sikkim                 | 0.00           | 0.00           | 4.13           | 3.48           |
| 25  | Tripura*               | 3.44           | 2.78           | 4.85           | 2.82           |
| <b>Union Territories and Other States</b> |                        |                |                |                |                |
| 26  | A&N Islands*           | 7.27           | 6.39           | 4.80           | 3.35           |
| 27  | Chandigarh             | N.A.           | N.A.           | 15.63          | 12.72          |
| 28  | Delhi                  | 8.25           | 8.94           | 11.49          | 8.80           |
| 29  | Dadar and Nagar Haveli | N.A.           | N.A.           | N.A.           | N.A.           |
| 30  | Daman and Diu          | N.A.           | N.A.           | N.A.           | N.A.           |
| 31  | Lakshadweep            | N.A.           | N.A.           | N.A.           | N.A.           |
| 32  | Pondicherry            | 20.39          | 28.74          | 49.10          | 65.49          |
| 33  | Goa*                   | 24.24          | 22.29          | 33.26          | 30.08          |
| 34  | Himachal Pradesh*      | 3.01           | 7.32           | 15.02          | 13.64          |
| 35  | Jammu & Kashmir*       | N.A.           | N.A.           | 5.86           | 8.10           |
|   | <b>India</b>           | <b>13.80</b>   | <b>16.60</b>   | <b>17.20</b>   | <b>17.00</b>   |
|   | <b>SD</b>              | <b>6.78</b>    | <b>5.82</b>    | <b>5.74</b>    | <b>5.29</b>    |
|   | <b>CV</b>              | <b>45.52</b>   | <b>33.70</b>   | <b>33.06</b>   | <b>30.08</b>   |

*Note:* 1. Figure in parentheses against Bihar, Madhya Pradesh and Uttar Pradesh are for the territory after division while those outside include new states Jharkhand, Chhattisgarh and Uttarakhand respectively, in this as well as other tables.

2. Estimates of SD and CV are based on 14 major states

3. \* Latest available data is for the year 2007–08, \*\* Latest data available is for the year 2006–07

4. N.A: Not available

*Source:* www.mospi.gov.in

of top five, to the seventh position. Haryana, which was below national average, has acquired fourth position. Tamil Nadu has yielded its first position in 1980–81 to

Gujarat in 2008–09, the latter held fourth position in 1980–81. Orissa, which was amongst the least industrialised states in 1980–81, rose to the national average in 2008–09. Other states which have experienced relatively rapid industrialisation during the 28 year period, in terms of a significant increase in the share of manufacturing in GSDP are: Karnataka, Punjab, Madhya Pradesh, Rajasthan and Uttar Pradesh. Gujarat, of course, had the fastest advance in industrialisation, raising its manufacturing share in SDP from 19 per cent in 1980–81 to 30 per cent in 2008–09. Among smaller states and UTs, Himachal Pradesh (from 3.01 per cent in 1980–81 to 13.64 per cent in 2008–09) and Pondicherry (from 20.39 per cent in 1980–81 to 65.49 per cent in 2008–09) made rapid advance in industrialisation.

West Bengal saw a ‘deindustrialisation’ insofar as manufacturing now contributes only 16.4 per cent in SDP as compared to 20.3 per cent 28 years back. Maharashtra and Andhra Pradesh also experienced some decline in the share of manufacturing in their SDP from 25 to 24 per cent and from 14 to 12 per cent, respectively. North Eastern states in which some such decline has taken place are Arunachal Pradesh (3.80 to 2.03 per cent), Nagaland (5.09 to 1.40 per cent) and Tripura (3.44 to 2.82 per cent). Andaman and Nicobar Island also saw a significant decline in the share of manufacturing SDP from 7.27 to 3.35 per cent.

Amidst changes in different directions and extent, the overall disparity in the degree of industrialisation seems to have declined. Both standard deviation (SD) and coefficients of variation (CV) have declined from one decade to another since 1980–81. SD declined from 6.78 in 1980–81 to 5.29 in 2008–09 and CV from 45.52 per cent to 30.08 per cent (*Table 1*).

### **Industrialisation, SDP Growth Rate and Structural Transformation**

Has a faster pace of industrialisation been accompanied also by a larger transformation of state economies from agricultural to non-agricultural? Is there a direct relationship between the increase in the share of manufacturing and decline in that of agriculture, as has been conventionally presumed? In this connection it needs to be noted that over the years 1980–81 to 2008–09, the share of agriculture in the national GDP declined from 39.70 per cent to 16.20 per cent (*Table 2*). This decline has, however, not meant a corresponding gain in the share of manufacturing which

**Table 2**  
**Share of Agriculture in Total GSDP (%) at 1993–94 Prices**

|  | <i>Major States</i>    | <b>1980–81</b>      | <b>1990–91</b>      | <b>2000–01</b>      | <b>2008–09</b>      |
|--|------------------------|---------------------|---------------------|---------------------|---------------------|
| 1  | Andhra Pradesh         | 38.66               | 33.31               | 28.61               | 22.23               |
| 2  | Bihar(+)               | 52.45               | 43.84               | 38.43 (46.56)       | 25.74 (31.62)       |
| 3  | Gujarat*               | 38.21               | 27.02               | 15.19               | 16.00               |
| 4  | Haryana**              | 49.09               | 42.94               | 32.07               | 23.10               |
| 5  | Karnataka              | 43.56               | 33.45               | 26.37               | 13.83               |
| 6  | Kerala*                | 41.70               | 31.16               | 23.64               | 15.68               |
| 7  | Madhya Pradesh (+)     | 47.30               | 38.01               | 24.03 (25.87)       | 23.99 (26.23)       |
| 8  | Maharashtra*           | 25.53               | 20.73               | 15.49               | 13.35               |
| 9  | Orissa                 | 54.59               | 38.69               | 28.22               | 19.24               |
| 10   | Punjab                 | 46.41               | 46.02               | 39.21               | 32.55               |
| 11   | Rajasthan              | 43.80               | 41.11               | 26.73               | 24.00               |
| 12   | Tamil Nadu             | 25.25               | 22.75               | 17.62               | 10.99               |
| 13   | Uttar Pradesh (+)      | 48.05               | 39.27               | 35.60 (35.65)       | 27.72 (28.37)       |
| 14   | West Bengal*           | 31.94               | 30.95               | 26.06               | 20.70               |
| <b><i>New States</i></b>                         |                        |                     |                     |                     |                     |
| 15   | Chhattisgarh           | -                   | -                   | 18.25               | 18.33               |
| 16   | Jharkhand              | -                   | -                   | 23.49               | 15.48               |
| 17   | Uttarakhand            | -                   | -                   | 34.88               | 28.37               |
| <b><i>North Eastern States</i></b>               |                        |                     |                     |                     |                     |
| 18   | Arunachal Pradesh*     | 44.96               | 31.79               | 28.99               | 16.31               |
| 19   | Assam                  | 49.21               | 41.48               | 34.02               | 23.93               |
| 20   | Manipur                | 28.76               | 35.44               | 32.89               | 26.36               |
| 21   | Meghalaya              | 41.75               | 29.45               | 25.06               | 21.03               |
| 22   | Mizoram                | 26.96               | 21.14               | 19.67               | 15.38               |
| 23   | Nagaland**             | 27.57               | 24.70               | 33.94               | 35.51               |
| 24   | Sikkim                 | 41.08               | 34.75               | 21.86               | 16.66               |
| 25   | Tripura*               | 56.00               | 42.09               | 32.05               | 28.59               |
| <b><i>Union Territories and Other States</i></b> |                        |                     |                     |                     |                     |
| 26   | A&N Islands*           | 43.69               | 47.39               | 29.32               | 11.90               |
| 27   | Chandigarh             | N.A.                | N.A.                | 1.10                | 0.53                |
| 28   | Delhi                  | 4.28                | 2.98                | 1.31                | 0.63                |
| 29   | Dadar and Nagar Haveli | N.A.                | N.A.                | N.A.                | N.A.                |
| 30   | Daman and Diu          | N.A.                | N.A.                | N.A.                | N.A.                |
| 31   | Lakshadweep            | N.A.                | N.A.                | N.A.                | N.A.                |
| 32   | Pondicherry            | 29.08               | 18.90               | 6.95                | 3.52                |
| 33   | Goa*                   | 20.55               | 14.53               | 8.44                | 4.46                |
| 34   | Himachal Pradesh*      | 44.21               | 35.51               | 23.41               | 18.99               |
| 35   | Jammu & Kashmir*       | N.A.                | N.A.                | 32.17               | 28.57               |
| <b><i>India</i></b>                              |                        | <b><u>39.70</u></b> | <b><u>32.20</u></b> | <b><u>23.90</u></b> | <b><u>16.20</u></b> |

*Note:* Same as Table 1

has increased at a much slower pace, from 13.80 to 17.00 per cent. Major gain in the share has been for the services which rose from 36.60 per cent in 1980–81 to 57.30 per cent in 2008–09.

Similar phenomenon of a shift mainly from agriculture to services is observed in the case of most of the major states. Yet in some cases, particularly where industrialisation has been rapid, decline in agriculture has been accompanied, to a

large extent, by an increase in industry. Thus in the case of Gujarat, share of agriculture declined from 38 to 16 per cent, that is, by 22 percentages point, it was accompanied by an equal increase in the share of manufacturing and of services, by 11 percentage point each (Tables 1 & 3). Similarly, in Orissa, a decline in the share of

**Table 3**  
**Share of Services in Total GSDP (%) at 1993–94 Prices**

|   |                        | 1980–81      | 1990–91      | 2000–01       | 2008–09       |
|---|------------------------|--------------|--------------|---------------|---------------|
| <b>Major States</b>                       |                        |              |              |               |               |
| 1   | Andhra Pradesh         | 39.26        | 41.71        | 46.54         | 51.25         |
| 2   | Bihar(+)               | 28.02        | 31.95        | 39.76 (43.39) | 45.41 (51.28) |
| 3   | Gujarat*               | 33.22        | 37.34        | 44.18         | 44.38         |
| 4   | Haryana**              | 25.39        | 29.81        | 40.18         | 46.43         |
| 5   | Karnataka              | 31.59        | 39.17        | 46.13         | 54.53         |
| 6   | Kerala*                | 40.92        | 50.35        | 56.09         | 60.73         |
| 7   | Madhya Pradesh (+)     | 27.99        | 33.36        | 39.82 (40.55) | 38.22 (39.71) |
| 8   | Maharashtra*           | 39.94        | 43.86        | 53.36         | 57.20         |
| 9   | Orissa                 | 27.16        | 34.76        | 43.38         | 45.07         |
| 10  | Punjab                 | 36.18        | 33.48        | 36.92         | 41.27         |
| 11  | Rajasthan              | 33.94        | 35.12        | 41.15         | 41.90         |
| 12  | Tamil Nadu             | 36.73        | 39.98        | 47.93         | 57.10         |
| 13  | Uttar Pradesh (+)      | 33.94        | 37.90        | 40.30 (40.34) | 42.00 (42.44) |
| 14  | West Bengal*           | 40.38        | 43.34        | 49.35         | 53.50         |
| <b>New States</b>                         |                        |              |              |               |               |
| 15  | Chhattisgarh           | -            | -            | 37.55         | 34.44         |
| 16  | Jharkhand              | -            | -            | 33.09         | 35.17         |
| 17  | Uttarakhand            | -            | -            | 39.81         | 37.07         |
| <b>North Eastern States</b>               |                        |              |              |               |               |
| 18  | Arunachal Pradesh*     | 29.04        | 23.08        | 34.24         | 23.31         |
| 19  | Assam                  | 31.57        | 35.34        | 44.58         | 51.05         |
| 20  | Manipur                | 23.13        | 41.59        | 46.24         | 41.03         |
| 21  | Meghalaya              | 42.46        | 49.88        | 53.45         | 50.79         |
| 22  | Mizoram                | 59.10        | 46.15        | 64.42         | 62.46         |
| 23  | Nagaland**             | 52.78        | 59.14        | 53.46         | 48.70         |
| 24  | Sikkim                 | 41.63        | 51.34        | 52.91         | 50.00         |
| 25  | Tripura*               | 39.37        | 49.84        | 59.23         | 58.42         |
| <b>Union Territories and Other States</b> |                        |              |              |               |               |
| 26  | A&N Islands*           | 34.16        | 29.64        | 50.31         | 34.39         |
| 27  | Chandigarh             | N.A.         | N.A.         | 72.74         | 72.20         |
| 28  | Delhi                  | 82.32        | 83.06        | 78.72         | 81.88         |
| 29  | Dadar and Nagar Haveli | N.A.         | N.A.         | N.A.          | N.A.          |
| 30  | Daman and Diu          | N.A.         | N.A.         | N.A.          | N.A.          |
| 31  | Lakshadweep            | N.A.         | N.A.         | N.A.          | N.A.          |
| 32  | Pondicherry            | 34.56        | 37.44        | 40.77         | 29.38         |
| 33  | Goa*                   | 39.53        | 50.61        | 47.94         | 55.88         |
| 34  | Himachal Pradesh*      | 33.65        | 38.69        | 41.57         | 40.95         |
| 35  | Jammu & Kashmir*       | N.A.         | N.A.         | 51.44         | 48.76         |
|   | <b>India</b>           | <b>36.60</b> | <b>40.60</b> | <b>46.90</b>  | <b>57.30</b>  |

Note: Same as Table 1

agriculture was accompanied not only by increase in the share of services, but also that of manufacturing to a significant extent. On the other side, in Kerala and Karnataka, services have taken the major share of the loss in the share of agriculture. In Punjab, agriculture has seen a relatively smaller decline in its share: it is the only

state in which it still contributed almost one-third (32.6 per cent) of GSDP. The decline in the share of agriculture has, however benefitted industry more than services. West Bengal is another stand alone case with everything happening rather slowly: Agricultural GDP has decline by 11 percentage point only (against 24 per cent at the national level), industry share has significantly declined and that of services was much less than the national average. Tamil Nadu is yet another exceptional case, where share of agriculture has sharply declined—it is now at the lowest (11 per cent) in any state, share of manufacturing has also significantly declined, and all the gains have gone to services sector only. Among smaller states and UTs, a very sharp shift from agriculture to non-agricultural sector is observed in the case of Goa and Pondicherry. In the case of Goa, share of agriculture declined from 21 to 4 per cent, which was mostly compensated by an increase in the share of services from 40 to 56 per cent; Pondicherry saw a decline in the share of agriculture from 29 to 4 per cent; manufacturing increased its share by 45 percentage points from 20 to 65 per cent.

There are two questions that are of significant interest in regard with the relationship between growth and structural changes. One, Have growth rate and structural transformation (shift from agriculture to non-agriculture) taken place together? And two, Which type of structural transformation, one characterized by shift to manufacturing or to services, has been more growth augmenting? Gujarat has been the fastest growing state during the entire period 1980–81/2008–09 and in all the sub-periods since 1991, having recorded a GSDP growth rate of 9.48 per cent during 1991–2001 and 11.71 per cent during 2001–2009 (*Appendix A*). It also has undergone a large transformation with share of agriculture in GSDP declining from 38 per cent in 1980–81 to 16 per cent in 2008–09. The largest transformation has, however, been experienced by Karnataka—reducing share of agriculture in its GSDP from 44 per cent to 14 per cent during 1981–2009. Its rate of growth has also been quite high in recent years. Orissa has experienced the second highest growth, after Gujarat during 2001–09 and it has also seen rapid transformation in its economy: share of agriculture in its SDP declined from 55 in 1980–81 to 28 in 2000–01 and to 19 per cent in 2008–09. Kerala is another state where both growth rate and structural transformation have been fast. Slowest transformation is observed in Punjab and West Bengal; both have also had slow growth of GSDP. Madhya Pradesh

and Uttar Pradesh are also in the same category. Andhra Pradesh, Haryana and Rajasthan have grown relatively faster though the process of transformation has been rather slow in these states. Maharashtra already had a relatively low share of agriculture initially; saw a significant decline in it and a reasonably high growth rate.

Among the North Eastern states, Mizoram, Nagaland and Sikkim are the fastest growing states, having recorded a GSDP growth rate of 10 per cent per annum during 1981–2009. Mizoram and Sikkim have also undergone a large transformation with share of agriculture in GSDP declining during 1981–2009, from 27 per cent to 15 per cent and from 41 to 17 per cent, respectively. Nagaland, however, seems to have experienced an increase in the share of agriculture from 28 to 36 per cent. Andaman and Nicobar Island, Pondicherry and Goa have not only experienced faster transformation from agricultural sector to non-agricultural sector, but have also seen very high growth rates, particularly during 2001–09.

Insofar as decline in the share of agriculture is taken as a measure of structural transformation, its relation with growth of GSDP has been rather weak –  $r=-0.181$  if we take the long period 1981–2009. Yet the two have been significantly related in the shorter period, 2001–09 where  $r=-0.676$ . States with faster decline in the share of agriculture also seem to have seen faster growth of GSDP, during this period. Changes in the share of manufacturing or services, either in the short or long term do not seem to have any significant relation with GSDP growth rates in states (Table 4).

**Table 4**  
**Relationship between Structural Change and its Components and**  
**Rate of Growth of GSDP (Correlation Coefficients)**

|  | 80–81/90–91 | 90–91/00–01 | 00–01/08–09 | 80–81/08–09 |
|--|-------------|-------------|-------------|-------------|
| Correlation between growth of GSDP & % change in the share of agriculture during 1980–81/2008–09   | 0.275       | -0.176      | -0.676*     | -0.181      |
| Correlation between growth of GSDP & % change in the share of manufacturing during 1980–81/2008–09 | 0.078       | 0.038       | 0.029       | 0.056       |
| Correlation between growth of GSDP & % change in the share of services during 1980–81/2008–09      | 0.01        | -0.04       | 0.429       | 0.082       |

\* significant at 0.01 level.

Punjab has seen the slowest transformation in its economy: Over a period of almost thirty years, the contribution of non-agricultural sectors has increased from 54 to 66 per cent only. It still derives about one-third of its GDP from agriculture—highest in any state. Its growth rate has been one of the lowest around 5 per cent, against the national average of 7 per cent, during 1980–81/2008–09. During 2000–01/2008–09 when the national economy grew at 8.3 per cent per annum, Punjab’s economy grew at 5.4 per cent. Strangely enough, Tamil Nadu, the state with the largest structural transformation of the economy, with the lowest (11 per cent) share of agriculture in GDP, has also not done very well in terms of the growth of its GSDP. The state experienced an average growth rate of 6.5 per cent over the period 1980–81/2008–09, though it has accelerated to 7.6 per cent during 2000–01/2008–09.

Did structural transformation in favour of manufacturing help in accelerating growth of a state? Here again, Gujarat provides strong positive evidence: it increased share of manufacturing in its GSDP from 19 per cent in 1980–81 to 30 per cent in 2008–09 and experienced the fastest economic growth overall. Orissa, and Haryana are other states with significantly large increase in the share of manufacturing and both of them have grown reasonably fast. Bihar, Karnataka, Madhya Pradesh, Rajasthan and Uttar Pradesh have seen moderate increase in the share of manufacturing and relatively low GSDP growth. Punjab, with significantly large increase in manufacturing share, experienced low growth. Maharashtra and West Bengal both saw a decline in manufacturing share; while the former grew reasonably well, the latter grew at a relatively slow rate. On the whole, there appears to be a positive relation between the increase in the extent of industrialisation and the rate of economic growth. This relation that holds in the case of most of the 14 major states is also observed in the case of Assam, Meghalaya, Pondicherry and Goa which have experienced a large increase in the share of manufacturing along with high growth rates. Himachal Pradesh, with significantly large increase in manufacturing share, on the other side, experienced low growth.

There are few major states where the services sector has played more important role in economic growth. Kerala, which now has the highest share (60.7%) of services in its GSDP, rising from 41 per cent in 1980–81 while the share of

manufacturing remaining constant at around 10 per cent (*Table 3*), registered a reasonably high growth. So did Haryana with services share rising from 25 to 47 per cent and Karnataka with increase in it from 32 to 55 per cent. Services sector has played an important role in economic growth in most of the North Eastern states, Goa and Himachal Pradesh. Tamil Nadu and West Bengal did not see large increase in the share of services, nor did they experience very high growth rates. It appears that unlike in the country as a whole, services did not make a major contribution to growth in most states in recent years. It is only a few states which had experienced high growth in the services sector, which is reflected in what is called a 'service-led growth' nationally. In most states, industries, particularly manufacturing, seem to have made a more significant contribution to growth of GSDP. In other words, structural change in favour of manufacturing is more often accompanied by a higher GSDP growth than a change in favour of services. The relationship, however, does not turn up to be consistent once all states are taken together for comparison, because in some states the manufacturing sector while in other states the service sector push up the GSDP growth. As a result, the coefficient of correlation between growth rates and change in the share of manufacturing and of services is not significant in the shorter or longer periods as noted earlier. It appears that faster growth of non-agricultural sectors as a whole, irrespective of whether it is derived from manufacturing or services, leads to high growth of GSDP.

### **Rates of Industrial Growth**

How have different states performed in terms of the growth of manufacturing SDP over the longer period 1980–81 to 2008–09 and in the post-reform period, particularly during 2001–09 when national average growth rate has been relatively high. Gujarat is the only major state which has maintained high and accelerating growth rates over the years: its manufacturing sector grew at over 8 per cent during 1981–91, at 9.5 per cent during the 1991–2001 and a much higher rate of 11.7 per cent during 2001–09 (*Table 5*). Among other better industrialised states, Maharashtra maintained a moderate growth rate of 6 to 8.5 per cent; Tamil Nadu had a much lower average growth rate of about 6 per cent—only during 2001–09, it attained a growth of 7.7 per cent per annum; and West Bengal's manufacturing sector grew at

**Table 5**  
**Growth Rate of Manufacturing GSDP (at 1993–94 prices)**

| <b>Major States</b>   |                        | <b>80–81/90–91</b> | <b>90–91/00–01</b> | <b>00–01/08–09</b> | <b>80–81/08–09</b> |
|---|------------------------|--------------------|--------------------|--------------------|--------------------|
| 1   | Andhra Pradesh         | 5.36               | 5.2                | 6.92               | 5.1                |
| 2   | Bihar(+)               | 6.24               | 3.18               | 13.95 (1.44)       | 3.94               |
| 3   | Gujarat*               | 8.29               | 9.48               | 11.71              | 8.17               |
| 4   | Haryana**              | 10.42              | 6.8                | 8.13               | 7.33               |
| 5   | Karnataka              | 7.07               | 6.9                | 10.51              | 7.42               |
| 6   | Kerala*                | 3.26               | 5.92               | 6.19               | 5.12               |
| 7   | Madhya Pradesh (+)     | 6.52               | 6.58               | 5.44 (2.26)        | 5.82               |
| 8   | Maharashtra*           | 6.79               | 6.27               | 8.64               | 6.29               |
| 9   | Orissa                 | 8.78               | 4.17               | 15.6               | 6.68               |
| 10  | Punjab                 | 8.98               | 6.43               | 6.18               | 6.49               |
| 11  | Rajasthan              | 6.66               | 9.37               | 7.84               | 6.96               |
| 12  | Tamil Nadu             | 4.06               | 5.06               | 7.7                | 4.56               |
| 13  | Uttar Pradesh (+)      | 9.53               | 4.8                | 6.26 (5.85)        | 5.65               |
| 14  | West Bengal*           | 3.32               | 6.36               | 6.07               | 5.21               |
| <b>New States</b>   |                        |                    |                    |                    |                    |
| 15  | Chhattisgarh           | -                  | -                  | 11.66              | -                  |
| 16  | Jharkhand              | -                  | -                  | 16.88              | -                  |
| 17  | Uttarakhand            | -                  | -                  | 12.15              | -                  |
| <b>North Eastern States</b>   |                        |                    |                    |                    |                    |
| 18  | Arunachal Pradesh*     | 8.14               | 7.1                | 2.85               | 6.56               |
| 19  | Assam                  | 2.96               | 1.87               | 8.86               | 3.91               |
| 20  | Manipur                | 7.81               | 3.37               | 5.19               | 4.46               |
| 21  | Meghalaya              | 7.5                | 7.74               | 14.85              | 11.22              |
| 22  | Mizoram                | 9.85               | 5.42               | 9.27               | 7.81               |
| 23  | Nagaland**             | 11.73              | -0.55              | 8.38               | 6.11               |
| 24  | Sikkim                 | <b>N.E.</b>        | <b>N.E.</b>        | 6.55               | <b>N.E.</b>        |
| 25  | Tripura*               | 3.05               | 12.82              | 4.52               | 8.44               |
| <b>Union Territories and Other States</b>   |                        |                    |                    |                    |                    |
| 26  | A&N Islands*           | 2.63               | 3.87               | 7.56               | 2.8                |
| 27  | Chandigarh             | <b>N.E.</b>        | <b>N.E.</b>        | 9.2                | <b>N.E.</b>        |
| 28  | Delhi                  | 8.04               | 3.35               | 5.83               | 5.47               |
| 29  | Dadar and Nagar Haveli | <b>N.E.</b>        | <b>N.E.</b>        | <b>N.E.</b>        | <b>N.E.</b>        |
| 30  | Daman and Diu          | <b>N.E.</b>        | <b>N.E.</b>        | <b>N.E.</b>        | <b>N.E.</b>        |
| 31  | Lakshadweep            | <b>N.E.</b>        | <b>N.E.</b>        | <b>N.E.</b>        | <b>N.E.</b>        |
| 32  | Pondicherry            | 7.44               | 19.53              | 14.02              | 13.05              |
| 33  | Goa*                   | 0.71               | 10.68              | 8.68               | 8.08               |
| 34  | Himachal Pradesh*      | 14.52              | 14.9               | 6.65               | 12.46              |
| 35  | Jammu & Kashmir*       | <b>N.E.</b>        | <b>N.E.</b>        | 11.03              | <b>N.E.</b>        |
|   | <b>India</b>           | <b>7.44</b>        | <b>7.02</b>        | <b>8.2</b>         | <b>6.77</b>        |
|   | <b>SD</b>              | <b>2.26</b>        | <b>1.74</b>        | <b>3.15</b>        | <b>1.2</b>         |
|   | <b>CV</b>              | <b>33.15</b>       | <b>28.21</b>       | <b>36.38</b>       | <b>19.79</b>       |
| <b>Correlation between growth of manufacturing GSDP 80-81/08-09 and initial share of manufacturing GSDP</b> |                        | <b>-0.208</b>      | <b>0.484**</b>     | <b>0.601**</b>     | <b>0.285</b>       |

*Note:* N.E. = Not Estimated, \*\* Correlation is significant at 0.01 level,

*Source:* Same as Table 1

a still lower rate, averaging about 5 per cent over the entire period and slightly over 6 per cent during the post-reform period.

Some of the less industrialised states have shown spectacular growth in manufacturing during 2001–09. Orissa registered a manufacturing growth of 15.6 per cent. Karnataka has also recorded a manufacturing growth of 10.5 per cent. Haryana and Punjab saw significantly high growth rates in this sector during 1981–91, but it decelerated in the next two decades, particularly in Punjab, where it has been only 6 per cent as against the national average of over 10 per cent. Similar is the case with Uttar Pradesh. Andhra Pradesh and Kerala have maintained a relatively low growth rate over the whole period. All the three new states have registered high growth rate in manufacturing GSDP during 2001–09, Jharkhand having the highest, about 17 per cent growth rate. Among other states and UTs, Meghalaya, Pondicherry and Himachal Pradesh registered relatively high—above 11 per cent—rate of growth over the entire period 1981–2009.

Growth rates of manufacturing in different states seem to show a tendency towards divergence over the longer period. Coefficient of variation among growth rates of different states was 33 per cent during 1981–91, it declined to 28 per cent during 1990–91/2000–01; but increased to 36 per cent during 2000–01/2008–09. Also, while better industrialised states grew slower than less industrialised during 1981–91, the reverse seems to have happened in recent decades. Correlation between initial level of industrialisation and growth rate was negative during 1981–91 (-0.317), it turned positive and significant during 1991–01 (0.484) and 2001–09 (0.601). Thus, it appears that the trend towards a decline in differences in the level of industrialisation among states observed in earlier years has been reversed in the post-reform period.

## IV. Shares of States in Total, Organised and Unorganised Manufacturing

### Share in Total Manufacturing

Maharashtra has always accounted for the largest share in manufacturing output of the country. In 2006–07, it contributed about one-fifth of the manufacturing GSDP of the all states of India. It has maintained that share all along though there is a small decline in it from that in 1980–81 (Table 6). Tamil Nadu used to be the second largest contributor to the national manufacturing GSDP till 1990–91, but has now given way to Gujarat: the former accounted for 14 per cent and latter for 8 per cent of national manufacturing GDP in 1980–81, their shares in 2006–07 are 11 per cent and 14 per cent respectively. West Bengal has been a major loser with a share of 10 per cent in 1980–81 and only 7 per cent in 2006–07. Other losers are: Andhra Pradesh (from 7.3 per cent to 6.1 per cent), Madhya Pradesh (from 5.7 to 4.7 per cent) Assam (from 1.42 to 0.90 per cent) and Delhi (from 1.95 to 1.87 per cent). Gainers include Karnataka, Haryana, Goa and Pondicherry. Uttar Pradesh, a significant contributor with about 8 per cent, has maintained its share. This pattern of changes in the GSDP shares seems to be in line with the changes in investment shares reported in an earlier study covering the immediate pre-reform and post-reform periods (Chakravorty and Lall, 2007).

The four most industrialised states viz. Maharashtra, Tamil Nadu, West Bengal and Gujarat, accounted for 53 per cent of the total manufacturing GDP of 14 major states of India in 1980–81; their share is lower at 51 per cent in 2006–07. West Bengal continues to be part of this group in 2006–07, only because Uttar Pradesh has lost a part of its territory to Uttarakhand, which otherwise would have had a higher share than that of West Bengal. Among the states with relatively small (1 to 3 per cent) contribution to national manufacturing GSDP manufacturing in 1980–81, Haryana, Orissa, Punjab and Himachal Pradesh have improved their shares while Kerala has a lower share in 2006–07 than in 1980–81. Other major states, Andhra Pradesh and Madhya Pradesh (even including Chhattisgarh) and Bihar (even

**Table 6**  
**State-wise Distribution of Manufacturing GSDP (%) at 1993–94 Prices**

| <i>Major States</i>                              |                        | <b>1980–81</b>       | <b>1990–91</b>       | <b>2000–01</b>       | <b>2006–07</b>       |
|--|------------------------|----------------------|----------------------|----------------------|----------------------|
| 1  | Andhra Pradesh         | 7.33                 | 6.80                 | 6.14                 | 6.12                 |
| 2  | Bihar(+)               | 4.17                 | 4.51                 | 2.54 (0.67)          | 3.62 (0.41)          |
| 3  | Gujarat                | 7.98                 | 9.58                 | 11.72                | 13.70                |
| 4  | Haryana                | 2.54                 | 3.40                 | 3.63                 | 3.69                 |
| 5  | Karnataka              | 5.21                 | 5.38                 | 5.86                 | 6.77                 |
| 6  | Kerala                 | 2.71                 | 2.15                 | 2.32                 | 1.98                 |
| 7  | Madhya Pradesh (+)     | 5.71                 | 6.31                 | 5.70 (4.15)          | 4.71 (2.85)          |
| 8  | Maharashtra            | 20.51                | 20.34                | 19.89                | 19.70                |
| 9  | Orissa                 | 1.79                 | 1.55                 | 1.49                 | 2.21                 |
| 10   | Punjab                 | 2.41                 | 3.09                 | 3.46                 | 2.92                 |
| 11   | Rajasthan              | 3.25                 | 3.47                 | 4.46                 | 3.99                 |
| 12   | Tamil Nadu             | 14.81                | 12.12                | 11.37                | 10.58                |
| 13   | Uttar Pradesh (+)      | 7.38                 | 9.68                 | 8.35 (7.88)          | 7.39 (6.82)          |
| 14   | West Bengal            | 9.70                 | 6.91                 | 7.54                 | 7.02                 |
| <b><i>New States</i></b>                         |                        |                      |                      |                      |                      |
| 15   | Chhattisgarh           | N.A.                 | N.A.                 | 1.54                 | 1.86                 |
| 16   | Jharkhand              | N.A.                 | N.A.                 | 1.87                 | 3.21                 |
| 17   | Uttarakhand            | N.A.                 | N.A.                 | 0.47                 | 0.57                 |
| <b><i>North Eastern States</i></b>               |                        |                      |                      |                      |                      |
| 18   | Arunachal Pradesh      | 0.02                 | 0.02                 | 0.03                 | 0.02                 |
| 19   | Assam                  | 1.42                 | 1.08                 | 0.70                 | 0.90                 |
| 20   | Manipur                | 0.12                 | 0.14                 | 0.11                 | 0.09                 |
| 21   | Meghalaya              | 0.02                 | 0.03                 | 0.04                 | 0.09                 |
| 22   | Mizoram                | 0.002                | 0.01                 | 0.01                 | 0.01                 |
| 23   | Nagaland               | 0.01                 | 0.03                 | 0.01                 | 0.01                 |
| 24   | Sikkim                 | 0.00                 | 0.00                 | 0.01                 | 0.01                 |
| 25   | Tripura                | 0.05                 | 0.04                 | 0.11                 | 0.06                 |
| <b><i>Union Territories and Other States</i></b> |                        |                      |                      |                      |                      |
| 26   | A&N Islands            | 0.03                 | 0.02                 | 0.02                 | 0.01                 |
| 27   | Chandigarh             | N.E.                 | N.E.                 | 0.23                 | 0.22                 |
| 28   | Delhi                  | 1.95                 | 2.47                 | 2.14                 | 1.87                 |
| 29   | Dadar and Nagar Haveli | N.E.                 | N.E.                 | N.E.                 | N.E.                 |
| 30   | Daman and Diu          | N.E.                 | N.E.                 | N.E.                 | N.E.                 |
| 31   | Lakshadweep            | N.E.                 | N.E.                 | N.E.                 | N.E.                 |
| 32   | Pondicherry            | 0.19                 | 0.21                 | 0.61                 | 0.77                 |
| 33   | Goa                    | 0.55                 | 0.40                 | 0.67                 | 0.69                 |
| 34   | Himachal Pradesh       | 0.13                 | 0.27                 | 0.60                 | 0.54                 |
| 35   | Jammu & Kashmir        | N.E.                 | N.E.                 | 0.26                 | 0.30                 |
|  | <b><i>India</i></b>    | <b><u>100.00</u></b> | <b><u>100.00</u></b> | <b><u>100.00</u></b> | <b><u>100.00</u></b> |
|  | <b><i>SD</i></b>       | <b><u>5.30</u></b>   | <b><u>4.97</u></b>   | <b><u>4.92</u></b>   | <b><u>4.97</u></b>   |
|  | <b><i>CV</i></b>       | <b><u>77.67</u></b>  | <b><u>72.97</u></b>  | <b><u>72.96</u></b>  | <b><u>73.65</u></b>  |

N.A. = Not Applicable, N.E. = Not Estimated

Source: Same as Table 1

including Jharkhand) have lost while, Karnataka and Rajasthan have gained. On the whole, the relative positions of different states have not changed much, except a 6 percentage point rise in the share of Gujarat and a 4 percentage point decline in the share of Tamil Nadu and 3 percentage point decline in that of West Bengal. Among the new states, only Chhattisgarh and Jharkhand each have a significant (about 2 per

cent) share of manufacturing GDP of the country and both, especially Jharkhand, have increased their shares since their formation in 2000. Among other states and UTs only Delhi contributes more than one per cent of manufacturing GSDP and it has maintained its share of around 2 per cent.

In terms of employment, however, Uttar Pradesh accounts for the largest share of manufacturing (Table 7). In 2004–05 (the latest year for which data are available) Tamil Nadu, West Bengal and Maharashtra employed about 11 per cent each,

**Table 7**  
**State-wise Distribution of Manufacturing Employment (UPSS) (%)**

|   |                        | 1983       | 1993<br>–94 | 1999–2000  | 2004–05       |
|---|------------------------|------------|-------------|------------|---------------|
| <b>Major States</b>                       |                        |            |             |            |               |
| 1   | Andhra Pradesh         | 9.08       | 8.53        | 7.73       | 8.17          |
| 2   | Bihar(+)               | 5.71       | 3.07        | 5.61       | 4.65 (2.84)   |
| 3   | Gujarat                | 6.42       | 8.25        | 5.61       | 7.25          |
| 4   | Haryana                | 1.91       | 1.71        | 1.72       | 2.32          |
| 5   | Karnataka              | 6.05       | 6.13        | 5.44       | 4.98          |
| 6   | Kerala                 | 4.46       | 3.93        | 3.94       | 3.6           |
| 7   | Madhya Pradesh (+)     | 5.51       | 4.36        | 5.3        | 5.29 (4.24)   |
| 8   | Maharashtra            | 9.85       | 10.26       | 10.36      | 10.5          |
| 9   | Orissa                 | 3.67       | 2.94        | 3.53       | 3.8           |
| 10  | Punjab                 | 2.35       | 1.87        | 2.32       | 2.6           |
| 11  | Rajasthan              | 3.86       | 3.07        | 3.51       | 4.54          |
| 12  | Tamil Nadu             | 12.8       | 14.86       | 12.7       | 11.09         |
| 13  | Uttar Pradesh (+)      | 13.26      | 12.55       | 15.32      | 15.80 (15.44) |
| 14  | West Bengal            | 10.87      | 14.38       | 12.12      | 10.74         |
| <b>New States</b>                         |                        |            |             |            |               |
| 15  | Chhattisgarh           | -          | -           | -          | 1.05          |
| 16  | Jharkhand              | -          | -           | -          | 1.81          |
| 17  | Uttarakhand            | -          | -           | -          | 0.36          |
| <b>North Eastern States</b>               |                        |            |             |            |               |
| 18  | Arunachal Pradesh      | 0.01       | 0.02        | 0.02       | 0             |
| 19  | Assam                  | 0.73       | 0.81        | 0.92       | 0.73          |
| 20  | Manipur                | 0.13       | 0.23        | 0.13       | 0.16          |
| 21  | Meghalaya              | 0.06       | 0.03        | 0.02       | 0.08          |
| 22  | Mizoram                | 0.01       | 0.01        | 0.01       | 0.02          |
| 23  | Nagaland               | 0.01       | 0.01        | 0.01       | 0.02          |
| 24  | Sikkim                 | 0.02       | 0.02        | 0.01       | 0.01          |
| 25  | Tripura                | 0.14       | 0.13        | 0.08       | 0.12          |
| <b>Union Territories and Other States</b> |                        |            |             |            |               |
| 26  | A&N Islands            | 0.01       | 0.02        | 0.02       | 0.01          |
| 27  | Chandigarh             | 0.06       | 0.16        | 0.13       | 0.12          |
| 28  | Delhi                  | 1.87       | 2.01        | 2.39       | 2.02          |
| 29  | Dadar and Nagar Haveli | 0.00       | 0.02        | 0.04       | 0.06          |
| 30  | Daman and Diu          | 0.00       | 0.02        | 0.04       | 0.03          |
| 31  | Lakshadweep            | 0.00       | 0.00        | 0.00       | 0.00          |
| 32  | Pondicherry            | 0.12       | 0.13        | 0.20       | 0.14          |
| 33  | Goa                    | 0.23       | 0.10        | 0.14       | 0.07          |
| 34  | Himachal Pradesh       | 0.23       | 0.25        | 0.30       | 0.37          |
| 35  | Jammu & Kashmir        | 0.57       | 0.12        | 0.35       | 0.69          |
| <b>India</b>                              |                        | <b>100</b> | <b>100</b>  | <b>100</b> | <b>100</b>    |

Source: NSS Report on Employment and Unemployment (Various Rounds)

Andhra Pradesh 8 per cent and Gujarat 7 per cent of all manufacturing workers in the country. Karnataka and Madhya Pradesh contributed above 5 per cent each. Employment shares of different states have not significantly changed over the years, except some decline in the case of Bihar (even including Jharkhand) and increase in case of Gujarat. Except the 14 major states, Chhattisgarh, Jharkhand and Delhi, all other 18 states/UTs contributed less than 1 per cent each of the country wide manufacturing employment in 2004–05.

There are large differences between the employment and GSDP shares of individual states. Maharashtra with over 21 per cent of GSDP, contributed only 11 per cent of employment among the 14 major states. Uttar Pradesh with 16 per cent employment has much less, about 8 per cent share in GSDP and Gujarat with 14 per cent SDP had only 7 per cent share in employment. This is a reflection of large variations of the industrial structure and productivity among states, a point to which we will turn later in Section VII of this paper.

### **Share of Organised and Unorganised Sectors**

The quality of industrial activity varies significantly across the states depending on composition in terms of the shares of the organised (registered) and unorganised (unregistered) segments in manufacturing. The aggregate manufacturing GSDP of the all states and UTs covered in this study was distributed between organised (registered) and unorganised (unregistered) sectors in the ratio of 68.61: 31.39 in 2008–09. The organised sector, no doubt, contributed the major share in manufacturing GSDP in most of the major states except West Bengal (42 per cent) (*Table 8*). On the other side, it was as high as 87 per cent in Orissa. States with over 75 per cent share of the organised sector include Chhattisgarh, Jharkhand, Uttarkhand, Assam, Meghalaya, Himachal Pradesh and Goa and those with less than 60 per cent include Kerala, West Bengal, Mizoram, Nagaland, Sikkim, Tripura, Andaman Nicobar Island, Chandigarh, Delhi and Jammu and Kashmir. Manipur derives practically all its manufacturing GSDP from the unorganised sector. Among the major states, Bihar gets only 19 per cent and West Bengal 42 per cent of manufacturing GSDP from organised sector; all other states drive over 50 per cent from this segment. Changes in the shares of different states in national GDP from

**Table 8**  
**Share (%) of Registered Sector in Manufacturing GSDP at 1993–94 Prices**

|   |                        | 1980–81      | 1990–91      | 2000–01          | 2004–05          | 2008–09          |
|---|------------------------|--------------|--------------|------------------|------------------|------------------|
| <b>Major State</b>                        |                        |              |              |                  |                  |                  |
| 1   | Andhra Pradesh         | 59.01        | 69           | 63.91            | 66.44            | 66.51            |
| 2   | Bihar(+)               | 72.67        | 79.08        | 81.69<br>(38.95) | 88.28<br>(34.66) | 88.98<br>(18.74) |
| 3   | Gujarat*               | 66.68        | 69           | 64.08            | 85.2             | 71.66            |
| 4   | Haryana**              | 79.03        | 66.89        | 70.84            | 71.7             | 72.24            |
| 5   | Karnataka              | 52.13        | 63.44        | 60.98            | 66.23            | 72.91            |
| 6   | Kerala*                | 54.41        | 47.71        | 57.93            | 51.82            | 51.26            |
| 7   | Madhya Pradesh (+)     | 57.66        | 61.46        | 64.71<br>(62.00) | 66.65<br>(55.27) | 64.07<br>(53.56) |
| 8   | Maharashtra*           | 69.88        | 74.99        | 60.56            | 62.85            | 63.18            |
| 9   | Orissa                 | 62.93        | 73.44        | 77.49            | 86.43            | 87.19            |
| 10  | Punjab                 | 68.74        | 70.62        | 66.48            | 63.12            | 61.26            |
| 11  | Rajasthan              | 42.77        | 57.99        | 63.63            | 60.53            | 61.5             |
| 12  | Tamil Nadu             | 47.96        | 60.22        | 63.18            | 62.45            | 64.89            |
| 13  | Uttar Pradesh (+)      | 44.7         | 60.51        | 56.93<br>(55.67) | 59.20<br>(57.23) | 59.89<br>(57.76) |
| 14  | West Bengal*           | 55.47        | 54.91        | 44.69            | 47.66            | 41.95            |
| <b>New States</b>                         |                        |              |              |                  |                  |                  |
| 15  | Chhattisgarh           | -            | -            | 72.01            | 83.27            | 80.35            |
| 16  | Jharkhand              | -            | -            | 96.98            | 98.28            | 98.54            |
| 17  | Uttarakhand            | -            | -            | 78.03            | 83.86            | 83.8             |
| <b>North Eastern State</b>                |                        |              |              |                  |                  |                  |
| 18  | Arunachal Pradesh*     | N.A.         | N.A.         | N.A.             | N.A.             | N.A.             |
| 19  | Assam                  | 68.64        | 74.41        | 71.66            | 82.48            | 81.24            |
| 20  | Manipur                | 3.9          | 1.82         | 1.12             | 2.42             | 2.67             |
| 21  | Meghalaya              | 36.93        | 45.64        | 32.57            | 62.39            | 77.41            |
| 22  | Mizoram                | 35.48        | 58.63        | 26.51            | 25.15            | 21.79            |
| 23  | Nagaland**             | 0            | 15.53        | 27.81            | 32.66            | 35.22            |
| 24  | Sikkim                 | N.A.         | N.A.         | 42.3             | 42.83            | 42.64            |
| 25  | Tripura*               | 13.8         | 27.32        | 62.14            | 42.59            | 48.17            |
| <b>Union Territories and Other States</b> |                        |              |              |                  |                  |                  |
| 26  | A&N Islands*           | 73.91        | 39.01        | 26.26            | 23.66            | 29.81            |
| 27  | Chandigarh             | N.E.         | N.E.         | 26.01            | 23.85            | 25.44            |
| 28  | Delhi                  | 36.48        | 40.62        | 32.21            | 28.45            | 24.94            |
| 29  | Dadar and Nagar Haveli | N.A.         | N.A.         | N.A.             | N.A.             | N.A.             |
| 30  | Daman and Diu          | N.A.         | N.A.         | N.A.             | N.A.             | N.A.             |
| 31  | Lakshadweep            | N.A.         | N.A.         | N.A.             | N.A.             | N.A.             |
| 32  | Pondicherry            | 66.95        | 77.12        | 87.52            | 84.87            | 92.83            |
| 33  | Goa*                   | 36.24        | 74.47        | 84.18            | 70.99            | 84.53            |
| 34  | Himachal Pradesh*      | 46.54        | 73.09        | 79.71            | 80.96            | 80.49            |
| 35  | Jammu & Kashmir*       | N.A.         | N.A.         | 15.76            | 30.56            | 30.62            |
|   | <b>India</b>           | <b>58.58</b> | <b>65.51</b> | <b>61.29</b>     | <b>64.05</b>     | <b>68.61</b>     |

Source: Same as Table 1

manufacturing are obviously the results of the differential rates of growth of the organised and unorganised segments of manufacturing in different states. In aggregate, the organised segment has grown faster than the unorganised one in all the sub-periods during 1980–81 to 2008–09 (Table 9). The difference appears to have been widened during 2000–01 to 2008–09. In most states, organised sector has grown at a higher rate than the unorganised sector. But a few states, namely Kerala,

**Table 9**  
**Growth of Registered and Unregistered Manufacturing GSDP at 1993–94 Prices**

|   | 80–81/90–91   |              | 90–91/00–01   |              | 00–01/08–09      |                | 04–05/08–09      |                |
|---|---------------|--------------|---------------|--------------|------------------|----------------|------------------|----------------|
|   | Registered    | Unregistered | Registered    | Unregistered | Registered       | Unregistered   | Registered       | Unregistered   |
| <b>Major States</b>   |               |              |               |              |                  |                |                  |                |
| Andhra Pradesh  | 6.83          | 2.74         | 4.65          | 6.3          | 7.22             | 6.36           | 5.65             | 5.27           |
| Bihar(+)  | 6.84          | 4.25         | 4.02          | -1.17        | 15.37<br>(-9.20) | 5.78<br>(5.86) | 11.24<br>(-8.17) | 9.56<br>(9.78) |
| Gujarat*  | 8.78          | 7.27         | 9.6           | 9.13         | 13.65            | 7.67           | 12.86            | 11.69          |
| Haryana**   | 8.35          | 16.37        | 7.54          | 5.18         | 8.53             | 7.13           | 10.48            | 9.01           |
| Karnataka   | 9.45          | 4.15         | 7.2           | 6.33         | 13.15            | 5.21           | 14.23            | 5.29           |
| Kerala*   | 4.11          | 1.79         | 7.82          | 3.72         | 4.13             | 8.69           | 10.33            | 11.11          |
| Madhya Pradesh (+)  | 7.71          | 4.73         | 7.42          | 5.17         | 5.27<br>(-0.02)  | 5.73<br>(5.44) | 3.38<br>(2.96)   | 6.67<br>(5.39) |
| Maharashtra*  | 7.48          | 5.03         | 4.81          | 9.5          | 9.49             | 7.27           | 10.19            | 9.61           |
| Orissa  | 11.92         | 2.57         | 4.36          | 3.49         | 17.74            | 6.06           | 10.57            | 9.18           |
| Punjab  | 9.18          | 8.53         | 5.65          | 8.12         | 5.26             | 7.83           | 7.75             | 9.95           |
| Rajasthan   | 9.34          | 4.12         | 11.41         | 6.44         | 7.74             | 8.02           | 11.25            | 10.59          |
| Tamil Nadu  | 6.83          | 0.79         | 5.39          | 4.51         | 8.62             | 6.13           | 9.09             | 7              |
| Uttar Pradesh (+)   | 12.96         | 5.71         | 4.7           | 4.89         | 6.85<br>(6.21)   | 5.43<br>(5.38) | 7.05<br>(6.78)   | 5.98<br>(5.87) |
| West Bengal*  | 2.95          | 3.75         | 5.05          | 7.68         | 4.76             | 7.09           | 0.56             | 8.54           |
| <b>New States</b>   |               |              |               |              |                  |                |                  |                |
| Chhattisgarh  | N.E.          | N.E.         | N.E.          | N.E.         | 13.11            | 7.14           | 6.72             | 10.29          |
| Jharkhand   | N.E.          | N.E.         | N.E.          | N.E.         | 17.15            | 5.16           | 12.11            | 7.96           |
| Uttarakhand   | N.E.          | N.E.         | N.E.          | N.E.         | 13.37            | 7.12           | 9.27             | 9.6            |
| <b>North Eastern States</b>   |               |              |               |              |                  |                |                  |                |
| Arunachal Pradesh*  | N.E.          | 8.14         | N.E.          | 7.1          | N.E.             | 2.85           | N.E.             | 7.01           |
| Assam   | 3.84          | 0.7          | 1.6           | 2.63         | 10.01            | 5.05           | 2.02             | 3.94           |
| Manipur   | 0.91          | 7.89         | -2.75         | 3.46         | 15.47            | 5              | 10.31            | 5.86           |
| Meghalaya   | 10.35         | 5.49         | 3.81          | 10.29        | 39.15            | 5.23           | 25.23            | 9.36           |
| Mizoram   | 38.41         | 22.59        | -2.51         | 10.55        | 5.11             | 10.67          | 9.37             | 13.55          |
| Nagaland**  | N.E.          | 10.88        | 1.44          | -1.31        | 11.07            | 7.17           | 20.78            | 14.07          |
| Sikkim  | N.E.          | N.E.         | N.E.          | N.E.         | 6.54             | 6.55           | 7.35             | 7.6            |
| Tripura*  | 7.34          | 2.04         | 18.79         | 8.92         | 4.82             | 4.53           | 5.28             | 7.15           |
| <b>Union Territories And Other States</b>   |               |              |               |              |                  |                |                  |                |
| A&N Islands*  | -2.24         | 10.38        | 3.13          | 5.18         | 15.03            | 5.45           | 21.82            | 13.46          |
| Chandigarh  | N.E.          | N.E.         | N.E.          | N.E.         | 9.88             | 8.99           | 15.77            | 10.51          |
| Delhi   | 9.17          | 7.34         | 2.26          | 4.01         | 0.77             | 8.02           | 2.59             | 9.42           |
| Dadar and Nagar Haveli  | N.E.          | N.E.         | N.E.          | N.E.         | N.E.             | N.E.           | N.E.             | N.E.           |
| Daman and Diu   | N.E.          | N.E.         | N.E.          | N.E.         | N.E.             | N.E.           | N.E.             | N.E.           |
| Lakshadweep   | N.E.          | N.E.         | N.E.          | N.E.         | N.E.             | N.E.           | N.E.             | N.E.           |
| Pondicherry   | 8.85          | 4.48         | 21.04         | 12.69        | 14.63            | 8.21           | 39.21            | 9.57           |
| Goa*  | 10.31         | -9.69        | 12.03         | 5.46         | 8.72             | 8.46           | 9.9              | 11.83          |
| Himachal Pradesh*   | 19.65         | 6.25         | 15.79         | 12.03        | 6.66             | 6.57           | 6.76             | 7.45           |
| Jammu & Kashmir*  | N.E.          | N.E.         | N.E.          | N.E.         | 25.19            | 7.15           | 12.82            | 12.92          |
| <b>India</b>  | <b>8.28</b>   | <b>6.14</b>  | <b>7.28</b>   | <b>6.54</b>  | <b>8.8</b>       | <b>7</b>       | <b>10.19</b>     | <b>8.29</b>    |
| <b>Correlation between growth rates of registered &amp; unregistered manufacturing GSDP</b> | <b>0.476*</b> |              | <b>0.501*</b> |              | <b>-0.31</b>     |                | <b>0.408*</b>    |                |

*Note:* \* correlation significant at 0.05 per cent level

*Source:* Same as Table 1

Madhya Pradesh, Punjab and West Bengal have experienced higher growth of the unorganised than of the organised segment. In more recent years (04–05/08–09), West Bengal has hardly seen any growth in the organised sector GSDP in manufacturing while its unorganised segment has recorded higher growth than the national average. By and large the states with higher growth in organised segment have also experienced higher growth in unorganised segment of manufacturing. Thus we find that the two rates were significantly correlated across states in each of the three periods, 1980–81/1990–91, 1990–91/2000–2001 and 2004–05/2008–09 though the relationship does not hold for the period 2001–01/2008–09 (Table 9, last row).

### **Share of States in Organised and Unorganised Industry**

States with high share of organised manufacturing in the country also have high share in the unorganised manufacturing, suggesting that unorganised industry generally coexists with the organised industry. Maharashtra has about 19 per cent of country's organised manufacturing, it also has 21 per cent of unorganised manufacturing, in 2006–07 (*Table 10*). Gujarat accounts for 15 per cent of organised and 11 per cent of unorganised manufacturing. Tamil Nadu has 11 per cent of the organised as well as unorganised manufacturing. A few cases of exceptional differences between the state's share in total organised and unorganised segments are: West Bengal with 12 per cent of the unorganised but only 4.5 per cent of the organised and Bihar and Orissa with much larger share of the organised than of the unorganised manufacturing.

It is interesting to note that while in some cases, a decline in one segment has been compensated by an increase in another so as to retain the state's share in total manufacturing or prevent a sharp decline in it; in others, the two have proceeded in the same direction to result in an increase or a decline in their respective shares. Thus, Maharashtra saw a decline from 24 per cent in 1980–81 to 19 per cent in 2006–07 in its share in organised, but an increase in its share in unorganised manufacturing from 15 to 21 per cent. As a result, it could maintain its share in total at about 21 per cent. In Gujarat, both organised and unorganised segments contributed almost equally to increase in its share in total from 8 per cent to 14 per cent. Tamil Nadu's share declined primarily because of a sharp decline in its share in

unorganised segment and West Bengal saw a decline in its share in total manufacturing despite some increase in unorganised segment, because of a sharp decline in its share of the organised manufacturing. In most cases, however, changes in the two segments were in the same direction: Andhra Pradesh, Assam, Bihar, Kerala, MP and Tamil Nadu experienced a decline in their share, both in the organised and unorganised manufacturing while Gujarat, Haryana, Jammu and Kashmir and Punjab saw increase in both (*Table 10*). Thus, it appears that the two segments—organised and unorganised—in manufacturing generally go together: a state which has a larger share of one also has a larger share of the other and vice versa. The exact proportions of the two may not be similar, but ranking of states by the two is remarkably similar. In 2006–07, ranking of states in terms of the shares of organised and unorganised in national aggregate were remarkably similar (*Table 11*) yielding a rank correlation coefficient of 0.906.

Each of the two segments also showed very high similarity in ranking with that in total manufacturing. These ranking have also remained quite stable in terms of the total manufacturing, as well as its two segments. But ranks changed significantly in some cases in respect of the organised and unorganised segments. So, Karnataka ranked ninth in 1980–81, but climbed up to fourth position in 2006–07 in terms of its share in organised manufacturing and West Bengal slid down from the second to the ninth position.

**Table 10**  
**Share of States in Total Manufacturing GSDP: Total, Registered and Unregistered**

|                      | Total- Manufacturing |         |             |             |             |             | Registered- Manufacturing |         |             |             |             |       | Unregistered- Manufacturing |             |             |             |         |  |
|----------------------|----------------------|---------|-------------|-------------|-------------|-------------|---------------------------|---------|-------------|-------------|-------------|-------|-----------------------------|-------------|-------------|-------------|---------|--|
|                      | 1980-81              | 1990-91 | 2000-01     | 2004-05     | 2006-07     |             | 1980-81                   | 1990-91 | 2000-01     | 2004-05     | 2006-07     |       | 1980-81                     | 1990-91     | 2000-01     | 2004-05     | 2006-07 |  |
|                      |                      |         |             |             |             |             |                           |         |             |             |             |       |                             |             |             |             |         |  |
| <b>Major States</b>  |                      |         |             |             |             |             |                           |         |             |             |             |       |                             |             |             |             |         |  |
| 1 Andhra Pradesh     | 7.33                 | 6.8     | 6.14        | 6.17        | 6.12        | 6.12        | 7.39                      | 7.16    | 6.54        | 6.34        | 6.33        | 6.33  | 7.26                        | 6.11        | 5.89        | 5.88        | 5.74    |  |
| 2 Bihar(+)           | 4.17                 | 4.51    | 2.54 (0.67) | 3.33 (0.51) | 3.62 (0.41) | 3.62 (0.41) | 5.18                      | 5.44    | 4.49 (0.43) | 4.61 (0.27) | 5.01 (0.12) | 2.75  | 2.73                        | 1.06 (1.06) | 1.04 (0.93) | 1.07 (0.94) |         |  |
| 3 Gujarat            | 7.98                 | 9.58    | 11.72       | 13.76       | 13.7        | 13.7        | 9.09                      | 10.09   | 14.47       | 15.22       | 15.07       | 6.42  | 8.61                        | 10.54       | 11.14       | 11.18       |         |  |
| 4 Haryana            | 2.54                 | 3.4     | 3.63        | 3.73        | 3.69        | 3.69        | 3.43                      | 3.47    | 4.15        | 4.17        | 4.11        | 1.29  | 3.26                        | 2.92        | 2.93        | 2.9         |         |  |
| 5 Karnataka          | 5.21                 | 5.38    | 5.86        | 6.85        | 6.77        | 6.77        | 4.64                      | 5.21    | 6.62        | 7.38        | 7.45        | 6.02  | 5.7                         | 6.01        | 5.91        | 5.52        |         |  |
| 6 Kerala             | 2.71                 | 2.15    | 2.32        | 1.95        | 1.98        | 1.98        | 2.52                      | 1.57    | 1.61        | 1.57        | 1.57        | 2.98  | 3.26                        | 2.66        | 2.65        | 2.72        |         |  |
| 7 Madhya Pradesh (+) | 5.71                 | 6.31    | 5.70 (4.15) | 4.74 (3.30) | 4.71 (2.85) | 4.71 (2.85) | 5.62                      | 5.92    | 5.78 (4.20) | 4.66 (2.85) | 4.64 (2.36) | 5.84  | 7.05                        | 5.16 (4.08) | 4.90 (4.10) | 4.84 (3.75) |         |  |
| 8 Maharashtra        | 20.51                | 20.34   | 19.89       | 19.71       | 19.7        | 19.7        | 24.47                     | 23.28   | 19.35       | 19.32       | 19.26       | 14.91 | 14.74                       | 20.38       | 20.39       | 20.51       |         |  |
| 9 Orissa             | 1.79                 | 1.55    | 1.49        | 1.98        | 2.21        | 2.21        | 1.93                      | 1.74    | 2.85        | 2.64        | 2.97        | 1.6   | 1.2                         | 0.8         | 0.78        | 0.8         |         |  |
| 10 Punjab            | 2.41                 | 3.09    | 3.46        | 2.92        | 2.92        | 2.92        | 2.82                      | 3.33    | 2.91        | 2.86        | 2.83        | 1.82  | 2.63                        | 3.02        | 3.03        | 3.09        |         |  |
| 11 Rajasthan         | 3.25                 | 3.47    | 4.46        | 3.99        | 3.99        | 3.99        | 2.37                      | 3.08    | 3.61        | 3.86        | 3.84        | 4.49  | 4.23                        | 4.19        | 4.24        | 4.26        |         |  |
| 12 Tamil Nadu        | 14.81                | 12.12   | 11.37       | 10.66       | 10.58       | 10.58       | 12.13                     | 11.14   | 9.73        | 10.82       | 10.68       | 18.6  | 13.98                       | 10.42       | 10.36       | 10.4        |         |  |
| 13 Uttar Pradesh (+) | 7.38                 | 9.68    | 8.35 (7.88) | 7.70 (7.29) | 7.39 (6.82) | 7.39 (6.82) | 5.64                      | 8.94    | 7.28 (7.15) | 7.04 (6.52) | 6.79 (6.05) | 9.86  | 11.08                       | 9.02 (8.68) | 8.89 (8.68) | 8.49 (8.23) |         |  |
| 14 West Bengal       | 9.7                  | 6.91    | 7.54        | 6.92        | 7.02        | 7.02        | 9.19                      | 5.79    | 5.76        | 4.68        | 4.53        | 10.43 | 9.03                        | 11.27       | 10.96       | 11.6        |         |  |
| <b>New States</b>    |                      |         |             |             |             |             |                           |         |             |             |             |       |                             |             |             |             |         |  |
| 15 Chhattisgarh      | N.E.                 | N.E.    | 1.54        | 1.74        | 1.86        | 1.86        | N.E.                      | N.E.    | 2.94        | 2.12        | 2.28        | N.E.  | N.E.                        | 1.05        | 1.05        | 1.08        |         |  |
| 16 Jharkhand         | N.E.                 | N.E.    | 1.87        | 2.92        | 3.21        | 3.21        | N.E.                      | N.E.    | 4.22        | 4.47        | 4.89        | N.E.  | N.E.                        | 0.13        | 0.12        | 0.13        |         |  |
| 17 Uttarakhand       | N.E.                 | N.E.    | 0.47        | 0.57        | 0.57        | 0.57        | N.E.                      | N.E.    | 0.76        | 0.75        | 0.74        | N.E.  | N.E.                        | 0.26        | 0.26        | 0.26        |         |  |

|   | Total- Manufacturing   |              |              |              |              |              |              |              |              |              |              |              | Registered- Manufacturing |              |              |              |             |             | Unregistered- Manufacturing |              |              |              |              |             |             |              |              |              |             |             |              |              |            |      |
|---|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------------|--------------|--------------|--------------|-------------|-------------|-----------------------------|--------------|--------------|--------------|--------------|-------------|-------------|--------------|--------------|--------------|-------------|-------------|--------------|--------------|------------|------|
|   | 1980-81                |              |              | 1990-91      |              |              | 2000-01      |              |              | 2004-05      |              |              | 2006-07                   |              |              | 1980-81      |             |             | 1990-91                     |              |              | 2000-01      |              |             | 2004-05     |              |              | 2006-07      |             |             |              |              |            |      |
|   | 1980-81                | 1990-91      | 2000-01      | 2004-05      | 2006-07      | 1980-81      | 1990-91      | 2000-01      | 2004-05      | 2006-07      | 1980-81      | 1990-91      | 2000-01                   | 2004-05      | 2006-07      | 1980-81      | 1990-91     | 2000-01     | 2004-05                     | 2006-07      | 1980-81      | 1990-91      | 2000-01      | 2004-05     | 2006-07     | 1980-81      | 1990-91      | 2000-01      | 2004-05     | 2006-07     |              |              |            |      |
| <b>North Eastern States</b>               |                        |              |              |              |              |              |              |              |              |              |              |              |                           |              |              |              |             |             |                             |              |              |              |              |             |             |              |              |              |             |             |              |              |            |      |
| 18  | Arunachal Pradesh*     | 0.02         | 0.02         | 0.03         | 0.02         | 0.02         | 0            | 0            | 0            | 0            | 0            | 0            | 0                         | 0            | 0.04         | 0.06         | 0.07        | 0.05        | 0                           | 0            | 0.04         | 0.06         | 0.07         | 0.05        | 0           | 0            | 0.04         | 0.06         | 0.07        | 0.05        | 0.05         |              |            |      |
| 19  | Assam                  | 1.42         | 1.08         | 0.7          | 1.05         | 0.9          | 1.66         | 1.23         | 0.82         | 1.35         | 1.13         | 0.82         | 1.35                      | 1.13         | 1.07         | 0.8          | 0.51        | 0.51        | 0.47                        | 1.13         | 1.07         | 1.07         | 0.8          | 0.51        | 0.51        | 0.47         | 1.13         | 1.07         | 1.07        | 0.8         | 0.51         |              |            |      |
| 20  | Manipur                | 0.12         | 0.14         | 0.11         | 0.1          | 0.09         | 0.01         | 0            | 0            | 0            | 0            | 0            | 0                         | 0            | 0.28         | 0.39         | 0.26        | 0.26        | 0.25                        | 0            | 0.28         | 0.39         | 0.26         | 0.26        | 0.26        | 0.25         | 0.28         | 0.39         | 0.26        | 0.26        | 0.25         |              |            |      |
| 21  | Meghalaya              | 0.02         | 0.03         | 0.04         | 0.09         | 0.09         | 0.02         | 0.02         | 0.05         | 0.11         | 0.11         | 0.02         | 0.05                      | 0.11         | 0.04         | 0.05         | 0.06        | 0.06        | 0.06                        | 0.06         | 0.11         | 0.04         | 0.05         | 0.06        | 0.06        | 0.06         | 0.06         | 0.04         | 0.05        | 0.06        | 0.06         | 0.06         |            |      |
| 22  | Mizoram                | 0            | 0.01         | 0.01         | 0.01         | 0.01         | 0            | 0.01         | 0            | 0            | 0            | 0            | 0                         | 0            | 0            | 0.01         | 0.02        | 0.02        | 0.03                        | 0            | 0            | 0            | 0.01         | 0.02        | 0.03        | 0.03         | 0            | 0.01         | 0.02        | 0.03        | 0.03         | 0.03         |            |      |
| 23  | Nagaland               | 0.01         | 0.03         | 0.01         | 0.01         | 0.01         | 0            | 0.01         | 0.01         | 0.01         | 0.01         | 0.01         | 0.01                      | 0.01         | 0.03         | 0.06         | 0.02        | 0.02        | 0.03                        | 0.01         | 0.03         | 0.03         | 0.06         | 0.02        | 0.02        | 0.03         | 0.01         | 0.03         | 0.06        | 0.02        | 0.03         | 0.03         |            |      |
| 24  | Sikkim                 | 0            | 0            | 0.01         | 0.01         | 0.01         | 0            | 0.01         | 0.01         | 0.01         | 0.01         | 0.01         | 0.01                      | 0.01         | 0.01         | 0            | 0           | 0.02        | 0.02                        | 0.02         | 0.01         | 0            | 0            | 0.02        | 0.02        | 0.02         | 0.02         | 0.01         | 0.02        | 0.02        | 0.02         | 0.02         |            |      |
| 25  | Tripura                | 0.05         | 0.04         | 0.11         | 0.11         | 0.06         | 0.01         | 0.01         | 0.04         | 0.12         | 0.05         | 0.04         | 0.12                      | 0.05         | 0.1          | 0.08         | 0.1         | 0.1         | 0.1                         | 0.1          | 0.05         | 0.1          | 0.08         | 0.1         | 0.1         | 0.1          | 0.1          | 0.08         | 0.1         | 0.1         | 0.1          | 0.1          |            |      |
| <b>Union Territories and Other States</b> |                        |              |              |              |              |              |              |              |              |              |              |              |                           |              |              |              |             |             |                             |              |              |              |              |             |             |              |              |              |             |             |              |              |            |      |
| 26  | A&N Islands            | 0.03         | 0.02         | 0.02         | 0.01         | 0.01         | 0.03         | 0.01         | 0            | 0.01         | 0.01         | 0            | 0.01                      | 0.01         | 0.02         | 0.04         | 0.03        | 0.02        | 0.03                        | 0.01         | 0.02         | 0.02         | 0.04         | 0.03        | 0.02        | 0.02         | 0.02         | 0.02         | 0.02        | 0.02        | 0.03         | 0.03         |            |      |
| 27  | Chandigarh             | 0            | 0            | 0.23         | 0.21         | 0.22         | 0            | 0            | 0.08         | 0.06         | 0.08         | 0.08         | 0.06                      | 0.08         | 0.08         | 0            | 0           | 0.46        | 0.47                        | 0.48         | 0.08         | 0            | 0            | 0.46        | 0.47        | 0.48         | 0.08         | 0            | 0           | 0.46        | 0.47         | 0.48         |            |      |
| 28  | Delhi                  | 1.95         | 2.47         | 2.14         | 1.95         | 1.87         | 1.21         | 1.53         | 0.86         | 0.83         | 0.73         | 0.86         | 0.83                      | 0.73         | 2.99         | 4.25         | 3.87        | 3.98        | 3.97                        | 1.87         | 2.99         | 2.99         | 4.25         | 3.87        | 3.98        | 3.97         | 2.99         | 4.25         | 3.87        | 3.98        | 3.97         | 3.97         |            |      |
| 29  | Dadar and Nagar Haveli | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.                      | N.E.         | N.E.         | N.E.         | N.E.        | N.E.        | N.E.                        | N.E.         | N.E.         | N.E.         | N.E.         | N.E.        | N.E.        | N.E.         | N.E.         | N.E.         | N.E.        | N.E.        | N.E.         | N.E.         | N.E.       |      |
| 30  | Daman and Diu          | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.                      | N.E.         | N.E.         | N.E.         | N.E.        | N.E.        | N.E.                        | N.E.         | N.E.         | N.E.         | N.E.         | N.E.        | N.E.        | N.E.         | N.E.         | N.E.         | N.E.        | N.E.        | N.E.         | N.E.         | N.E.       |      |
| 31  | Lakshadweep            | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.         | N.E.                      | N.E.         | N.E.         | N.E.         | N.E.        | N.E.        | N.E.                        | N.E.         | N.E.         | N.E.         | N.E.         | N.E.        | N.E.        | N.E.         | N.E.         | N.E.         | N.E.        | N.E.        | N.E.         | N.E.         | N.E.       | N.E. |
| 32  | Pondicherry            | 0.19         | 0.21         | 0.61         | 0.5          | 0.77         | 0.22         | 0.25         | 0.66         | 0.66         | 1.08         | 0.66         | 0.66                      | 1.08         | 0.15         | 0.14         | 0.21        | 0.21        | 0.21                        | 0.77         | 0.15         | 0.15         | 0.14         | 0.21        | 0.21        | 0.21         | 0.15         | 0.14         | 0.21        | 0.21        | 0.21         | 0.21         | 0.21       |      |
| 33  | Goa                    | 0.55         | 0.4          | 0.67         | 0.69         | 0.69         | 0.34         | 0.46         | 0.92         | 0.91         | 0.9          | 0.92         | 0.91                      | 0.9          | 0.85         | 0.3          | 0.29        | 0.29        | 0.3                         | 0.69         | 0.85         | 0.85         | 0.3          | 0.29        | 0.29        | 0.3          | 0.85         | 0.3          | 0.29        | 0.29        | 0.3          | 0.3          | 0.3        |      |
| 34  | Himachal Pradesh       | 0.13         | 0.27         | 0.6          | 0.59         | 0.54         | 0.11         | 0.31         | 0.72         | 0.73         | 0.66         | 0.72         | 0.73                      | 0.66         | 0.17         | 0.21         | 0.3         | 0.35        | 0.31                        | 0.54         | 0.17         | 0.17         | 0.21         | 0.3         | 0.35        | 0.31         | 0.17         | 0.21         | 0.3         | 0.35        | 0.35         | 0.31         | 0.31       |      |
| 35  | Jammu & Kashmir        | N.E.         | N.E.         | 0.26         | 0.28         | 0.3          | N.E.         | N.E.         | 0.14         | 0.13         | 0.14         | 0.14         | 0.13                      | 0.14         | N.E.         | N.E.         | 0.55        | 0.54        | 0.59                        | 0.3          | N.E.         | N.E.         | N.E.         | 0.55        | 0.54        | 0.59         | N.E.         | N.E.         | 0.55        | 0.54        | 0.59         | 0.59         | 0.59       |      |
|   | <b>India</b>           | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>                | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>  | <b>100</b>  | <b>100</b>                  | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>  | <b>100</b>  | <b>100</b>   | <b>100</b>   | <b>100</b>   | <b>100</b>  | <b>100</b>  | <b>100</b>   | <b>100</b>   | <b>100</b> |      |
|   | <b>SD</b>              | <b>5.3</b>   | <b>4.97</b>  | <b>4.92</b>  | <b>5.01</b>  | <b>4.97</b>  | <b>5.89</b>  | <b>5.56</b>  | <b>4.87</b>  | <b>5.07</b>  | <b>5.01</b>  | <b>4.87</b>  | <b>5.07</b>               | <b>5.01</b>  | <b>5.17</b>  | <b>4.29</b>  | <b>5.28</b> | <b>5.3</b>  | <b>5.36</b>                 | <b>5.01</b>  | <b>5.17</b>  | <b>5.17</b>  | <b>4.29</b>  | <b>5.28</b> | <b>5.3</b>  | <b>5.36</b>  | <b>5.17</b>  | <b>4.29</b>  | <b>5.28</b> | <b>5.3</b>  | <b>5.36</b>  | <b>5.36</b>  |            |      |
|   | <b>CV</b>              | <b>77.67</b> | <b>72.97</b> | <b>72.96</b> | <b>74.31</b> | <b>73.65</b> | <b>85.52</b> | <b>80.97</b> | <b>71.59</b> | <b>74.59</b> | <b>73.74</b> | <b>71.59</b> | <b>74.59</b>              | <b>73.74</b> | <b>76.84</b> | <b>64.22</b> | <b>79.2</b> | <b>79.7</b> | <b>80.55</b>                | <b>73.65</b> | <b>76.84</b> | <b>76.84</b> | <b>64.22</b> | <b>79.2</b> | <b>79.7</b> | <b>80.55</b> | <b>76.84</b> | <b>64.22</b> | <b>79.2</b> | <b>79.7</b> | <b>80.55</b> | <b>80.55</b> |            |      |

Source: Same as Table 1

**Table 11**  
**Rank Orders of States in Organised and Unorganised Manufacturing (2006–07)**

| State  | Rank in terms of the share in manufacturing in GSDP |            |                |
|--|---|------------|----------------|
|  | Total   | Registered | Unregistered   |
| Maharashtra  | 1   | 1          | 1              |
| Gujarat  | 2   | 2          | 3              |
| Tamil Nadu   | 3   | 3          | 4              |
| Uttar Pradesh (+)  | 4   | 5          | 5              |
| West Bengal  | 5   | 9          | 2              |
| Karnataka  | 6   | 4          | 7              |
| Andhra Pradesh   | 7   | 6          | 6              |
| Madhya Pradesh (+)   | 8   | 8          | 8              |
| Rajasthan  | 9   | 11         | 9              |
| Haryana  | 10  | 10         | 12             |
| Bihar(+)   | 11  | 7          | 14             |
| Punjab   | 12  | 13         | 11             |
| Orissa   | 13  | 12         | 15             |
| Kerala   | 14  | 14         | 13             |
| Delhi  | 15  | 18         | 10             |
| Assam  | 16  | 15         | 18             |
| Pondicherry  | 17  | 16         | 22             |
| Goa  | 18  | 17         | 20             |
| Himachal Pradesh   | 19  | 19         | 19             |
| Jammu & Kashmir  | 20  | 20         | 16             |
| Chandigarh   | 21  | 21         | 17             |
| Meghalaya  | 22  | 22         | 24             |
| Manipur  | 23  | 28         | 21             |
| Tripura  | 24  | 23         | 23             |
| Arunachal Pradesh  | 25  | 29         | 25             |
| Nagaland   | 26  | 24         | 28             |
| Mizoram  | 27  | 27         | 26             |
| A&N Islands  | 28  | 26         | 27             |
| Sikkim   | 29  | 25         | 29             |
| Dadar and Nagar Haveli   | N.E.  | N.E.       | N.E.           |
| Daman and Diu  | N.E.  | N.E.       | N.E.           |
| Lakshadweep  | N.E.  | N.E.       | N.E.           |
| <b>Correlation between share of total and registered manufacturing GSDP</b>        |   |            | <b>0.971**</b> |
| <b>Correlation between share of registered and unregistered manufacturing GSDP</b> |   |            | <b>0.906**</b> |
| <b>Correlation between share of total and unregistered manufacturing GSDP</b>      |   |            | <b>0.968**</b> |

*Note:* \*\*Correlation is significant at 0.01 per cent level

## V. Differences in Structure of Industries

### Organised Sector

Since organised (registered) segment now constitutes a substantially large part of total manufacturing in the country (accounting for 69 per cent) and also a large part of the unorganised segment is found to be linked with the organised segment, it would be meaningful here to go into some more details regarding the product structure of this segment. This is attempted here in respect of two aspects of the product groups. In the first instance, we have tried to broadly classify industries into two groups—agro-based and non agro-based, the former consisting of product group 20–21 to 29 and later 30 to 39, according to the National Industrial Classification (NIC) 1987 (*Appendix-B*). Next, we have tried to identify major product groups (at 2-digit level) of different states and examine industrial diversification and specialization of states and industries by identifying industries which dominate the structure of different states and states which account for large part of important industries. The analysis is further sharpened with the use of location quotients and coefficients of specialization/diversification.

### Agro-based and Non Agro-based

Even though NIC groupings have changed and we have data according to 1987 scheme till 1997–98, and 1998 scheme since 1998–99, it is possible to regroup the 2-digit industry groups into the broad agro-based and non agro-based as mentioned above<sup>1</sup>.

Agro-based products have always dominated the Indian manufacturing industry in terms of employment, employing majority of workers working in the sector. Even after experiencing some decline from 58 per cent in 1980–81, the share

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<sup>1</sup> To make the new series (2000–01 and 2006–07) comparable with the previous one (1980–81 and 1990–91) we have used concordance table between NIC 1987 and NIC 1998 prepared by CSO. For detail see *Appendix-C*.

of this group of industries was one-half of the total manufacturing employment in 2006–07 (Table 12). Their share in gross value added in manufacturing has, however, been much lower, it was about one-third in 1980–81, and declined to less than one-fourth in 2006–07 (Table 13). The importance of agro-based industries, differed widely among states both in terms of employment and value added, as also between shares of the two in individual states reflecting differences in productivity levels among states.

**Table 12**  
**Share of Agro-based Product Group in Organised Manufacturing (Number of Workers)**

|   |                        | 1980–81      | 1990–91      | 2000–01       | 2006–07       |
|---|------------------------|--------------|--------------|---------------|---------------|
| <b>Major States</b>                       |                        |              |              |               |               |
| 1   | Andhra Pradesh         | 76.60        | 70.94        | 72.34         | 65.91         |
| 2   | Bihar(+)               | 27.13        | 17.31        | 16.11 (39.82) | 14.13 (33.62) |
| 3   | Gujarat                | 64.50        | 51.84        | 41.08         | 36.02         |
| 4   | Haryana                | 38.38        | 39.33        | 41.76         | 43.33         |
| 5   | Karnataka              | 55.24        | 48.38        | 59.01         | 59.93         |
| 6   | Kerala                 | 76.80        | 72.33        | 74.23         | 76.85         |
| 7   | Madhya Pradesh (+)     | 58.04        | 46.84        | 43.93 (52.02) | 36.59 (43.90) |
| 8   | Maharashtra            | 51.28        | 46.60        | 46.00         | 35.78         |
| 9   | Orissa                 | 42.69        | 37.47        | 35.34         | 29.44         |
| 10  | Punjab                 | 49.67        | 54.91        | 54.13         | 45.78         |
| 11  | Rajasthan              | 50.62        | 46.37        | 48.51         | 46.58         |
| 12  | Tamil Nadu             | 57.63        | 55.42        | 61.62         | 63.28         |
| 13  | Uttar Pradesh (+)      | 67.48        | 55.44        | 53.23 (53.69) | 49.62 (51.95) |
| 14  | West Bengal            | 54.02        | 50.38        | 60.25         | 59.37         |
| <b>New State</b>                          |                        |              |              |               |               |
| 15  | Chhattisgarh           | -            | -            | 22.39         | 24.97         |
| 16  | Jharkhand              | -            | -            | 7.54          | 4.89          |
| 17  | Uttarkhand             | -            | -            | 46.94         | 32.45         |
| <b>North Eastern States</b>               |                        |              |              |               |               |
| 18  | Arunachal Pradesh      | N.A.         | N.A.         | N.A.          | N.A.          |
| 19  | Assam                  | 89.34        | 83.22        | 79.31         | 64.04         |
| 20  | Manipur                | 91.15        | 73.80        | 24.44         | 12.05         |
| 21  | Meghalaya              | 56.63        | 50.49        | 17.95         | 7.84          |
| 22  | Mizoram                | N.A.         | N.A.         | N.A.          | N.A.          |
| 23  | Nagaland               | N.A.         | 93.77        | 49.45         | 72.27         |
| 24  | Sikkim                 | N.A.         | N.A.         | N.A.          | N.A.          |
| 25  | Tripura                | 26.85        | 17.33        | 38.34         | 10.10         |
| <b>Union Territories And Other States</b> |                        |              |              |               |               |
| 26  | A&N Islands            | 86.49        | 76.10        | 100.00        | 100.00        |
| 27  | Chandigarh             | 49.18        | 34.43        | 20.24         | 28.43         |
| 28  | Delhi                  | 47.93        | 39.51        | 50.41         | 56.49         |
| 29  | Dadar and Nagar Haveli | N.A.         | 67.40        | 44.25         | 36.67         |
| 30  | Daman and Diu          | 34.51        | 20.50        | 25.20         | 23.24         |
| 31  | Lakshadweep            | N.A.         | N.A.         | N.A.          | N.A.          |
| 32  | Pondicherry            | 92.23        | 73.91        | 48.68         | 32.34         |
| 33  | Goa                    | N.A.         | 28.40        | 24.66         | 19.21         |
| 34  | Himachal Pradesh       | 38.92        | 46.64        | 57.36         | 37.47         |
| 35  | Jammu & Kashmir        | 53.73        | 71.21        | 61.78         | 38.04         |
|   | <b>India</b>           | <b>57.54</b> | <b>52.49</b> | <b>54.30</b>  | <b>50.28</b>  |

Source: Annual Survey of Industry, CSO

**Table 13**  
**Share of Agro-based Product Group in Total Manufacturing (Gross Value Added)**

|   |                        | 1980-81      | 1990-91      | 2000-01       | 2006-07       |
|---|------------------------|--------------|--------------|---------------|---------------|
| <b>Major States</b>                       |                        |              |              |               |               |
| 1   | Andhra Pradesh         | 45.87        | 39.12        | 32.59         | 25.24         |
| 2   | Bihar(+)               | 12.70        | 7.30         | 8.39 (46.88)  | 6.49 (80.56)  |
| 3   | Gujarat                | 45.44        | 32.11        | 20.99         | 13.19         |
| 4   | Haryana                | 23.06        | 26.40        | 25.92         | 22.34         |
| 5   | Karnataka              | 30.01        | 29.81        | 39.91         | 33.96         |
| 6   | Kerala                 | 42.00        | 38.28        | 37.66         | 50.06         |
| 7   | Madhya Pradesh (+)     | 23.42        | 23.36        | 25.88 (35.69) | 23.80 (41.83) |
| 8   | Maharashtra            | 27.32        | 24.13        | 25.88         | 29.72         |
| 9   | Orissa                 | 20.46        | 15.79        | 11.45         | 6.69          |
| 10  | Punjab                 | 36.62        | 51.26        | 54.30         | 55.63         |
| 11  | Rajasthan              | 36.60        | 40.13        | 26.43         | 29.48         |
| 12  | Tamil Nadu             | 41.15        | 39.79        | 43.90         | 40.29         |
| 13  | Uttar Pradesh (+)      | 43.63        | 33.50        | 35.56 (35.96) | 30.67 (33.53) |
| 14  | West Bengal            | 33.15        | 30.44        | 42.05         | 32.19         |
| <b>New State</b>                          |                        |              |              |               |               |
| 15  | Chhattisgarh           | -            | -            | 4.18          | 3.26          |
| 16  | Jharkhand              | -            | -            | 1.64          | 1.18          |
| 17  | Uttarkhand             | -            | -            | 31.24         | 16.80         |
| <b>North Eastern States</b>               |                        |              |              |               |               |
| 18  | Arunachal Pradesh      | N.A.         | N.A.         | N.A.          | N.A.          |
| 19  | Assam                  | 85.97        | 70.87        | 50.13         | 23.04         |
| 20  | Manipur                | 79.31        | 67.36        | 52.61         | 28.92         |
| 21  | Meghalaya              | 43.06        | 25.94        | 11.43         | 17.73         |
| 22  | Mizoram                | N.A.         | N.A.         | N.A.          | N.A.          |
| 23  | Nagaland               | N.A.         | 98.74        | 75.69         | 92.94         |
| 24  | Sikkim                 | N.A.         | N.A.         | N.A.          | N.A.          |
| 25  | Tripura                | 42.55        | 63.35        | 92.14         | 48.08         |
| <b>Union Territories And Other States</b> |                        |              |              |               |               |
| 26  | A&N Islands            | 90.41        | 88.48        | 100.00        | 100.00        |
| 27  | Chandigarh             | 51.45        | 28.13        | 33.11         | 35.23         |
| 28  | Delhi                  | 42.44        | 47.63        | 63.77         | 54.85         |
| 29  | Dadar and Nagar Haveli | N.A.         | 71.44        | 31.40         | 35.03         |
| 30  | Daman and Diu          | 7.08         | 22.70        | 14.38         | 22.94         |
| 31  | Lakshadweep            | N.A.         | N.A.         | N.A.          | N.A.          |
| 32  | Pondicherry            | 90.42        | 59.81        | 20.85         | 12.61         |
| 33  | Goa                    | N.A.         | 9.97         | 20.86         | 17.33         |
| 34  | Himachal Pradesh       | 27.80        | 32.65        | 31.31         | 16.03         |
| 35  | Jammu & Kashmir        | 55.47        | 33.66        | 53.49         | 16.11         |
|   | <b>India</b>           | <b>33.75</b> | <b>31.17</b> | <b>30.47</b>  | <b>23.74</b>  |

*Source:* Same as Table 12

Agro-based industries accounted for as much as 77 per cent of manufacturing employment in Kerala, but only 29 per cent Orissa in 2006-07. States with dominance of such industries in employment include Andhra Pradesh, Tamil Nadu, Karnataka and West Bengal each with about or above 60 per cent share. Bihar and Orissa have low (less than 40 per cent) contribution of agro-industries in their manufacturing employment. Three new, Jharkhand, Chhattisgarh and Uttarakhand, and most other smaller states and UTs, all fall in this category. Two North Eastern

states Assam and Nagaland, however, have major part of their organised manufacturing employment in agro-based industry. There does not appear to be any systematic pattern of the importance of agro-based industries in different states which could be associated with any one or a set of variables such as agricultural development and degree of industrialisation.

In aggregate, agro-based industries contribute less to gross value added (24 per cent) than to employment (50 per cent), reflecting lower productivity than in non agro-based industries. That was true for most of the states and UTs as well. But that was not the case in Punjab where they contributed 56 per cent of value added against 46 per cent of manufacturing employment in 2006–07, reflecting not only highest productivity in agro-based industries among the states but also higher productivity in these industries than the non agro-based industries in the state. Maharashtra, Kerala, Tamil Nadu and Delhi are among states with relatively higher productivity in this group of industries, though even in these states their productivity was lower than that in the non agro-based industry.

Turning to the share of different states in employment in agro-based manufacturing, Tamil Nadu accounts for the largest chunk (22%) in 2006–07 followed by Andhra Pradesh (14%), Maharashtra (9%), Karnataka (8%), Uttar Pradesh (8%), Gujarat (7%) and Kerala and West Bengal (6%) (*Table 14*).

In the case of non agro-based industries, Maharashtra topped the list with 16 per cent followed by Tamil Nadu (13%) and Gujarat (12%), Andhra Pradesh, Karnataka, Punjab and UP were other states with a higher than five per cent share each. It is also worth noting that Gujarat increased its share significantly while West Bengal had a large fall in its share in all India non agro-based manufacturing employment during 1981–2007. In the agro-based sector, Gujarat, Maharashtra, Uttar Pradesh and West Bengal lost heavily while Karnataka, Madhya Pradesh, Punjab and Tamil Nadu registered substantial gains.

Importance of different states in terms of their share in value added in agro-industries follows the similar pattern as in the case of employment. Thus, Tamil Nadu with a share of 18 per cent tops the list followed by Maharashtra (14%), Karnataka (10%), Andhra Pradesh (7%) and Gujarat (7%) (*Table 15*). In respect of

**Table 14**  
**% Share of Different States in Total India (Number of Workers)**

| Major States   |                        | Agro-based Industries |            |                |                | Non Agro-based Industries |            |                |                |
|--|------------------------|-----------------------|------------|----------------|----------------|---------------------------|------------|----------------|----------------|
|  |                        | 1980-81               | 1990-91    | 2000-01        | 2006-07        | 1980-81                   | 1990-91    | 2000-01        | 2006-07        |
| 1  | Andhra Pradesh         | 12.6                  | 15.65      | 16.39          | 13.56          | 5.22                      | 7.08       | 7.45           | 7.09           |
| 2  | Bihar(+)               | 2.1                   | 1.46       | 0.90<br>(0.59) | 0.61<br>(0.47) | 7.65                      | 7.73       | 5.55<br>(1.06) | 3.74<br>(0.93) |
| 3  | Gujarat                | 11.47                 | 8.67       | 6.75           | 6.71           | 8.56                      | 8.9        | 11.5           | 12.05          |
| 4  | Haryana                | 1.49                  | 2.18       | 2.76           | 3.72           | 3.24                      | 3.72       | 4.57           | 4.92           |
| 5  | Karnataka              | 4.85                  | 4.63       | 6.32           | 8.37           | 5.35                      | 5.46       | 5.22           | 5.65           |
| 6  | Kerala                 | 5.18                  | 5.18       | 5.97           | 5.83           | 2.12                      | 2.19       | 2.46           | 1.78           |
| 7  | Madhya Pradesh (+)     | 3.83                  | 3.90       | 3.24<br>(2.79) | 2.56<br>(1.88) | 3.75                      | 4.89       | 4.91<br>(3.05) | 4.48<br>(2.43) |
| 8  | Maharashtra            | 15.32                 | 13.13      | 11.18          | 9.03           | 19.81                     | 16.62      | 15.6           | 16.38          |
| 9  | Orissa                 | 1.09                  | 1.09       | 1.06           | 0.95           | 1.99                      | 2.01       | 2.31           | 2.3            |
| 10   | Punjab                 | 2.64                  | 4.52       | 4.57           | 4.66           | 3.63                      | 4.1        | 4.6            | 5.57           |
| 11   | Rajasthan              | 1.87                  | 2.32       | 2.54           | 2.86           | 2.47                      | 2.96       | 3.2            | 3.31           |
| 12   | Tamil Nadu             | 10.7                  | 13.16      | 17.26          | 21.82          | 10.66                     | 11.69      | 12.78          | 12.8           |
| 13   | Uttar Pradesh (+)      | 11.02                 | 9.68       | 6.89<br>(6.48) | 7.57<br>(6.98) | 7.23                      | 8.6        | 7.20<br>(6.65) | 7.78<br>(6.53) |
| 14   | West Bengal            | 12.45                 | 9.08       | 8.3            | 6.09           | 14.53                     | 9.88       | 6.51           | 4.21           |
| <b>New State</b>   |                        |                       |            |                |                |                           |            |                |                |
| 15   | Chhattisgarh           | -                     | -          | 0.45           | 0.67           | -                         | -          | 1.86           | 2.05           |
| 16   | Jharkhand              | -                     | -          | 0.31           | 0.14           | -                         | -          | 4.49           | 2.81           |
| 17   | Uttarkhand             | -                     | -          | 0.41           | 0.59           | -                         | -          | 0.55           | 1.25           |
| <b>North Eastern States</b>  |                        |                       |            |                |                |                           |            |                |                |
| 18   | Arunachal Pradesh      | N.A.                  | N.A.       | N.A.           | N.A.           | N.A.                      | N.A.       | N.A.           | N.A.           |
| 19   | Assam                  | 2.72                  | 2.5        | 2.25           | 1.89           | 0.44                      | 0.56       | 0.7            | 1.08           |
| 20   | Manipur                | 0.02                  | 0.01       | 0.01           | 0.01           | 0                         | 0.01       | 0.02           | 0.04           |
| 21   | Meghalaya              | 0.03                  | 0.02       | 0              | 0.01           | 0.03                      | 0.02       | 0.02           | 0.11           |
| 22   | Mizoram                | N.A.                  | N.A.       | N.A.           | N.A.           | N.A.                      | N.A.       | N.A.           | N.A.           |
| <b>North Eastern States</b>  |                        |                       |            |                |                |                           |            |                |                |
| 23   | Nagaland               | N.A.                  | 0.06       | 0.03           | 0.06           | N.A.                      | 0          | 0.04           | 0.02           |
| 24   | Sikkim                 | N.A.                  | N.A.       | N.A.           | N.A.           | N.A.                      | N.A.       | N.A.           | N.A.           |
| 25   | Tripura                | 0.08                  | 0.05       | 0.09           | 0.05           | 0.29                      | 0.26       | 0.17           | 0.42           |
| <b>Union Territories And Other States</b>  |                        |                       |            |                |                |                           |            |                |                |
| 26   | A&N Islands            | 0.1                   | 0.11       | 0.06           | 0              | 0.02                      | 0.04       | 0              | 0              |
| 27   | Chandigarh             | 0.1                   | 0.1        | 0.04           | 0.05           | 0.14                      | 0.21       | 0.17           | 0.13           |
| 28   | Delhi                  | 1.37                  | 1.28       | 1.24           | 1.25           | 2.02                      | 2.17       | 1.44           | 0.97           |
| 29   | Dadar and Nagar Haveli | N.A.                  | 0.1        | 0.4            | 0.56           | N.A.                      | 0.05       | 0.6            | 0.98           |
| 30   | Daman and Diu          | 0.11                  | 0.02       | 0.24           | 0.4            | 0.27                      | 0.07       | 0.85           | 1.32           |
| 31   | Lakshadweep            | N.A.                  | N.A.       | N.A.           | N.A.           | N.A.                      | N.A.       | N.A.           | N.A.           |
| 32   | Pondicherry            | 0.41                  | 0.38       | 0.45           | 0.33           | 0.05                      | 0.15       | 0.56           | 0.7            |
| 33   | Goa                    | N.A.                  | 0.1        | 0.16           | 0.16           | N.A.                      | 0.28       | 0.58           | 0.67           |
| 34   | Himachal Pradesh       | 0.08                  | 0.25       | 0.52           | 0.5            | 0.18                      | 0.32       | 0.46           | 0.85           |
| 35   | Jammu & Kashmir        | 0.38                  | 0.25       | 0.33           | 0.36           | 0.45                      | 0.11       | 0.25           | 0.6            |
|  | <b>India</b>           | <b>100</b>            | <b>100</b> | <b>100</b>     | <b>100</b>     | <b>100</b>                | <b>100</b> | <b>100</b>     | <b>100</b>     |
| <b>Correlation Between Agro- and Non Agro-based Product Group in 2006-07 (Number of Workers)</b> |                        |                       |            |                |                |                           |            | <b>0.797**</b> |                |

*Note:* \*\*Correlation is significant at 0.01 per cent level

*Source:* Same as Table 12

**Table 15**  
**% Share of Different States in Total India (Gross Value Added)**

|  | Major States       | Agro-based Industries |            |                |                | Non Agro-based Industries |            |                |                |
|--|--------------------|-----------------------|------------|----------------|----------------|---------------------------|------------|----------------|----------------|
|  |                    | 1980-81               | 1990-91    | 2000-01        | 2006-07        | 1980-81                   | 1990-91    | 2000-01        | 2006-07        |
| 1  | Andhra Pradesh     | 6.36                  | 7.41       | 6.49           | 6.89           | 3.83                      | 5.22       | 5.88           | 6.35           |
| 2  | Bihar (+)          | 2.12                  | 1.28       | 0.92<br>(0.76) | 0.66<br>(0.55) | 7.42                      | 7.34       | 4.38<br>(0.38) | 2.95<br>(0.04) |
| 3  | Gujarat            | 13.18                 | 9.46       | 8.58           | 7.47           | 8.06                      | 9.06       | 14.15          | 15.3           |
| 4  | Haryana            | 2.1                   | 2.81       | 3.54           | 3.93           | 3.58                      | 3.55       | 4.43           | 4.25           |
| 5  | Karnataka          | 4.66                  | 5.18       | 7.48           | 10.12          | 5.54                      | 5.52       | 4.93           | 6.13           |
| 6  | Kerala             | 3.63                  | 2.81       | 2.91           | 1.86           | 2.55                      | 2.05       | 2.11           | 0.58           |
| 7  | Madhya Pradesh (+) | 4.05                  | 4.58       | 4.75<br>(4.51) | 5.05<br>(4.72) | 6.74                      | 6.81       | 5.96<br>(3.56) | 5.03<br>(2.04) |
| 8  | Maharashtra        | 20.05                 | 17.75      | 16.35          | 14.36          | 27.19                     | 25.28      | 23.66          | 27.92          |
| 9  | Orissa             | 1.29                  | 1.1        | 0.65           | 0.53           | 2.56                      | 2.65       | 2.22           | 2.28           |
| 10   | Punjab             | 2.98                  | 5.87       | 5.36           | 6.14           | 2.63                      | 2.53       | 1.98           | 1.52           |
| 11   | Rajasthan          | 2.41                  | 3.91       | 3.14           | 3.84           | 2.13                      | 2.64       | 3.83           | 2.86           |
| 12   | Tamil Nadu         | 11.99                 | 14.29      | 16.66          | 18.01          | 8.74                      | 9.8        | 9.33           | 8.31           |
| 13   | Uttar Pradesh (+)  | 7.84                  | 8.98       | 8.70<br>(8.05) | 8.83<br>(8.00) | 5.16                      | 8.07       | 6.91<br>(6.28) | 6.21<br>(4.94) |
| 14   | West Bengal        | 11.34                 | 5.86       | 5.55           | 3.82           | 11.66                     | 6.06       | 3.35           | 2.5            |
| <b>New State</b>   |                    |                       |            |                |                |                           |            |                |                |
| 15   | Chhattisgarh       | -                     | -          | 0.24           | 0.32           | -                         | -          | 2.4            | 2.98           |
| 16   | Jharkhand          | -                     | -          | 0.15           | 0.11           | -                         | -          | 4              | 2.91           |
| 17   | Uttarkhand         | -                     | -          | 0.66           | 0.83           | -                         | -          | 0.64           | 1.27           |
| <b>North Eastern States</b>  |                    |                       |            |                |                |                           |            |                |                |
| 18   | Arunachal Pradesh  | N.A.                  | N.A.       | N.A.           | N.A.           | N.A.                      | N.A.       | N.A.           | N.A.           |
| 19   | ASSAM              | 2.51                  | 3.83       | 1.49           | 0.98           | 0.21                      | 0.71       | 0.65           | 1.02           |
| 20   | Manipur            | 0.002                 | 0.005      | 0.003          | 0.003          | 0                         | 0.001      | 0.001          | 0.002          |
| 21   | Meghalaya          | 0.009                 | 0.012      | 0.003          | 0.005          | 0.006                     | 0.015      | 0.01           | 0.007          |
| 22   | Mizoram            | N.A.                  | N.A.       | N.A.           | N.A.           | N.A.                      | N.A.       | N.A.           | N.A.           |
| 23   | Nagaland           | N.A.                  | 0.03       | 0.02           | 0.05           | N.A.                      | 0          | 0              | 0              |
| 24   | Sikkim             | N.A.                  | N.A.       | N.A.           | N.A.           | N.A.                      | N.A.       | N.A.           | N.A.           |
| 25   | Tripura            | 0.01                  | 0.03       | 0.32           | 0.11           | 0.01                      | 0.01       | 0.01           | 0.04           |
| <b>Union Territories And Other States</b>  |                    |                       |            |                |                |                           |            |                |                |
| 26   | A & N. Island      | 0.04                  | 0.09       | 0.02           | 0              | 0                         | 0.01       | 0              | 0              |
| 27   | Chandigarh         | 0.07                  | 0.1        | 0.15           | 0.1            | 0.03                      | 0.12       | 0.13           | 0.06           |
| 28   | Delhi              | 0.74                  | 2.08       | 3.75           | 1.77           | 0.51                      | 1.04       | 0.93           | 0.45           |
| 29   | Dadra & N Haveli   | N.A.                  | 0.31       | 1.79           | 2.08           | N.A.                      | 0.06       | 1.71           | 1.2            |
| 30   | Daman & Diu        | 0.05                  | 0.02       | 0.6            | 1.16           | 0.33                      | 0.03       | 1.56           | 1.21           |
| 31   | Lakshadweep        | N.A.                  | N.A.       | N.A.           | N.A.           | N.A.                      | N.A.       | N.A.           | N.A.           |
| 32   | Pondicherry        | 0.21                  | 0.33       | 0.79           | 0.34           | 0.01                      | 0.1        | 1.31           | 0.72           |
| 33   | Goa                | N.A.                  | 0.09       | 0.92           | 1.13           | N.A.                      | 0.36       | 1.52           | 1.68           |
| 34   | Himachal Pradesh   | 0.1                   | 0.37       | 0.92           | 1.07           | 0.14                      | 0.34       | 0.88           | 1.75           |
| 35   | Jammu & Kashmir    | 0.26                  | 0.18       | 0.19           | 0.27           | 0.11                      | 0.16       | 0.07           | 0.43           |
|  | <b>India</b>       | <b>100</b>            | <b>100</b> | <b>100</b>     | <b>100</b>     | <b>100</b>                | <b>100</b> | <b>100</b>     | <b>100</b>     |
| <b>Correlation Between Agro- and Non Agro-based Product Group in 2006-07 (Gross Value Added)</b> |                    |                       |            |                |                |                           |            | <b>0.746**</b> |                |

*Note:* \*\* Correlation is significant at 0.01 per cent level

*Source:* Same as Table 12

non agro-based industries: the situation is similar, insofar as Maharashtra with largest share in employment also contributes the largest (28%) to value added, Gujarat with 15 per cent and Tamil Nadu with 8 per cent of value added have 12 and 13 shares in

employment. Andhra Pradesh and Karnataka follow them, though in terms of employment Uttar Pradesh is ahead of them. It also needs to be noted that share of Gujarat and Andhra Pradesh in all states value added in non agro-based industries has vastly increased while that of Bihar and West Bengal has drastically declined. Maharashtra and Tamil Nadu have been able to retain their shares.

Do the two segments of manufacturing industry—agro-based and others—follow each other? This may primarily be the size effect with the states with larger overall industrial sector having larger share of both segments. Still, it is interesting to note that the distribution of the two segments across the states is very significantly correlated. The states with larger share of one also have the larger share of the other, both in respect of employment and value added. Correlating the state shares between agro and non agro in industries in 2006–07, the coefficient turned out to be +0.797 in respect of workers and +0.746 in respect of value added (both coefficients being significant at 0.01 per cent level).

### **Interstate Differences in Structure and Specialisation: Top 5 Product Groups in a State**

As in the case of the composition of manufacturing industry in terms of agro-based and non agro-based groups, industrial structure of states differs in terms of product groups at more disaggregated (2-digit) level. We look here at the top five product groups in terms of their contribution to employment in organised manufacturing in a state to see to what extent the product groups featuring in this bunch differ from state to state. This exercise also enables us to see the degree of specialization or diversification of the manufacturing sector in a state, as shown by the percentage of employment claimed by the five top industries. This analysis has been attempted for the year 2006–07.

Among all states and UTs, food products feature in 24 out of 31, for which data are available (data are not available for Arunachal Pradesh, Mizoram, Sikkim and Lakshadweep), in the top five product groups (*Table 16*). The next most ubiquitous groups among the top five in 18 states and Union Territories are non-metallic mineral products and machine tools and machinery. Different states, however, show diverse patterns insofar as the largest product group is concerned. Textiles group

**T Table 16**  
**Top Five Industries of the States in terms of Number of Workers in Organised Manufacturing (2006-07)**

|                     | 20-21          | 22      | 23+24+25 | 26      | 27 | 28 | 29 | 30 | 31 | 32      | 33      | 34 | 35-36   | 37      | 38 | 39 | Total of five |
|---------------------|----------------|---------|----------|---------|----|----|----|----|----|---------|---------|----|---------|---------|----|----|---------------|
| <b>Major States</b> |                |         |          |         |    |    |    |    |    |         |         |    |         |         |    |    |               |
| 1                   | Andhra Pradesh | *       | * 35.04  | *       |    |    |    | *  |    | *       |         |    |         |         |    |    | 75.67         |
| 2                   | Bihar          | *       | *        | *       |    |    |    |    | *  | * 53.69 |         |    |         |         |    |    | 85.54         |
| 3                   | Gujarat        | *       | * 20.25  | *       |    |    |    | *  |    | *       |         |    | *       |         |    |    | 64.48         |
| 4                   | Haryana        | *       |          | *       |    |    |    |    |    |         |         | *  | *       | * 25.53 |    |    | 74.22         |
| 5                   | Karnataka      | *       |          | * 38.10 |    |    |    |    |    |         | *       |    | *       | *       |    |    | 71.34         |
| 6                   | Kerala         | * 48.87 |          |         |    |    |    |    | *  | *       |         |    | *       |         |    |    | 77.97         |
| 7                   | Madhya Pradesh | *       | * 16.20  |         |    |    |    | *  |    | *       |         |    | *       |         |    |    | 62.6          |
| 8                   | Maharashtra    | *       | *        | *       |    |    |    | *  |    | *       |         |    | *       | * 14.23 |    |    | 56.66         |
| 9                   | Orissa         | *       | *        | *       |    |    |    | *  |    | *       | * 45.14 |    |         |         |    |    | 84.33         |
| 10                  | Punjab         | * 18.68 |          | *       |    |    |    |    |    | *       |         |    |         | *       |    |    | 66.01         |
| 11                  | Rajasthan      | *       | * 26.73  | *       |    |    |    |    |    | *       | *       |    | *       |         |    |    | 67.82         |
| 12                  | Tamil Nadu     | *       | *        | * 25.26 |    |    |    | *  |    |         |         |    |         | *       |    |    | 69.74         |
| 13                  | Uttar Pradesh  | * 21.22 |          | *       |    |    | *  |    |    |         |         | *  | *       |         |    |    | 59.11         |
| 14                  | West Bengal    | *       | * 35.99  | *       |    |    |    |    |    |         | *       | *  | *       |         |    |    | 76.53         |
| <b>New States</b>   |                |         |          |         |    |    |    |    |    |         |         |    |         |         |    |    |               |
| 15                  | Jharkhand      |         |          |         |    |    |    |    | *  | *       | * 51.90 |    | *       | *       |    |    | 92.08         |
| 16                  | Chhattisgarh   | *       | *        |         |    |    |    |    |    | *       | * 54.36 |    | *       | *       |    |    | 87.45         |
| 17                  | Uttarakhand    | *       |          |         |    | *  |    | *  |    |         |         | *  | * 22.58 |         |    |    | 78.95         |

|   | 20-21            | 22            | 23+24+25 | 26       | 27       | 28 | 29 | 30       | 31       | 32       | 33       | 34       | 35-36    | 37       | 38       | 39       | Total of five |
|---|------------------|---------------|----------|----------|----------|----|----|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------------|
| <b>North Eastern States</b>               |                  |               |          |          |          |    |    |          |          |          |          |          |          |          |          |          |               |
| 18  | Assam            | *56.10        |          |          |          | *  |    | *        | *        | *        |          |          |          |          |          |          | N.A.          |
| 19  | Manipur          | *             |          |          | *        |    |    |          |          | *87.95   |          |          |          |          |          |          | 91.68         |
| 20  | Mizoram          | *             |          |          |          | *  |    | *        |          | *47.11   | *        |          |          |          |          |          | 100           |
| 21  | Nagaland         | *             |          |          | *63.74   | *  |    |          |          | *        |          |          |          |          |          |          | N.A.          |
| 22  | Sikkim           | *             |          |          |          |    |    |          |          |          |          |          |          |          |          |          | 100           |
| 23  | Tripura          | *             |          |          |          |    |    | *        |          | *86.46   |          | *        |          |          |          |          | N.A.          |
| 24  |                  |               |          |          |          |    |    |          |          |          |          |          |          |          |          |          | 97.25         |
| <b>Union Territories and Other States</b> |                  |               |          |          |          |    |    |          |          |          |          |          |          |          |          |          |               |
| 26  | A & N. Island    | *98.39        |          |          | *        |    |    |          |          |          |          |          |          |          |          |          | 100           |
| 27  | Chandigarh       | *             |          |          |          | *  |    |          |          |          | *        | *        | *28.41   |          |          |          | 74.82         |
| 28  | Delhi            |               |          |          | *37.91   | *  |    |          |          |          | *        | *        | *        | *        |          |          | 74.7          |
| 29  | Dadra & N Haveli |               | *27.64   |          |          |    |    | *        | *        |          | *        | *        | *        |          |          |          | 83.5          |
| 30  | Daman & Diu      |               |          |          |          |    |    | *        | *33.72   |          |          |          | *        |          | *        |          | 80.75         |
| 31  | Lakshadweep      |               |          |          | *        |    |    |          |          |          |          |          |          |          |          |          | N.A.          |
| 32  | Pondicherry      |               |          |          |          |    |    | *18.19   | *        | *        | *        | *        | *        | *        |          |          | 62.91         |
| 33  | Goa              | *             |          |          |          |    |    | *26.85   | *        | *        | *        | *        | *        | *        |          |          | 71.84         |
| 34  | Himachal Pradesh |               | *23.65   |          |          |    |    | *        | *        | *        | *        | *        | *        | *        |          |          | 75.33         |
| 35  | Jammu & Kashmir  | *             | *        |          |          |    |    | *21.44   | *        | *        | *        | *        | *        | *        |          |          | 66.3          |
|   | <b>India</b>     | <b>*13.99</b> | <b>*</b> | <b>*</b> | <b>*</b> |    |    | <b>*</b> | <b>*</b> | <b>*</b> | <b>*</b> | <b>*</b> | <b>*</b> | <b>*</b> | <b>*</b> | <b>*</b> | <b>54.28</b>  |

Note: Figure in parentheses shows the highest share of the industry in the states, Source same as Table 12

and food products are the largest in each of the six states. A single product group (out of 15 two-digit industries) accounts for over 50 per cent of the organised sector manufacturing employment in several, mostly less industrialised/smaller states. Thus, in Manipur and Tripura non-metallic mineral products dominate with 88 and 86 per cent of workers respectively. The same group dominates in Bihar, though with small share (54 per cent) in total employment. Chhattisgarh and Jharkhand have 52 and 54 per cent, respectively, of organised sector manufacturing employment in basic metal industries. In Andaman and Nicobar Islands and Assam, food products dominate with 98 and 56 per cent employment respectively. Wood and wood products is the largest industry in Nagaland with 64 per cent of employment. Industries with significant domination though with smaller proportion (between 33% to 55%) of total employment in different states are: beverages and tobacco in Andhra Pradesh (35%), food products in Kerala (49%), basic metals in Orissa (45%), textile products in Delhi and Karnataka (38% each), textiles in West Bengal (36%) and non-metallic mineral products in Meghalaya (47%).

The above features suggest a high degree of specialization in the product structure of different states. That is also reflected by the high proportion of total employment accounted for by the largest five industry groups. Among major states, Andhra Pradesh, Bihar, Kerala, Orissa and West Bengal had over 75 per cent of their respective organised manufacturing employment concentrated in top 5 industry groups. Haryana came close to them with a figure of 74 per cent as also Karnataka with 71 and Rajasthan with 70 per cent. The three new states also showed very high degree of concentration. So did all the states in Northeast with a much higher degree. Product structure of Gujarat, Maharashtra, Madhya Pradesh, Punjab and Uttar Pradesh, on the other side, is relatively well-diversified with the top five industries contributing less than two-thirds of total employment. Maharashtra has the most diversified industrial structure with the top five industries contributing only 57 per cent and even the largest industry group (transport equipment) accounting for only 14 per cent of employment. Interestingly, the largest group which accounted for similar share in total employment in organised manufacturing in the country is food products.

## **Locational Diversification: Five Most Important States in a Product Group**

How are different industries dispersed or concentrated among states? Leather products is most concentrated industry with the five largest contributing states accounting for 84 per cent of total employment in that industry with Tamil Nadu alone accounting for 41 per cent (*Table 17*). That is followed by beverages and tobacco with 83 per cent of employment in five largest contributing states and Andhra Pradesh alone accounting for 56 per cent. Next comes textile products with 82 per cent share of the five top states and 39 per cent of the largest contributing state, namely Tamil Nadu. Most other industries seem reasonably dispersed in their location; though the top five states contribute more than half of total employment in all cases. Non-metallic mineral products, chemical products, wood products and metal products are among the most dispersed industries with the top five states contributing between 51 to 55 per cent each of their employment.

## **Difference in the Structure of Unorganised Manufacturing**

### ***Top Five Industries***

Based on the NSSO data for 2005–06, we have also attempted a look at the interstate differences in product structure and specialization and locational differences among different industry groups, in the case of unorganised manufacturing. On the whole, product structure of unorganised manufacturing is more similar among different states than of organised manufacturing. Thus, textile products feature among the top five industry groups in terms of employment in all the states and Union Territories. Food products also have similar presence in all UTs, except Delhi and Daman and Diu (*Table 18*). Wood and wood products is also among the important industries in 31 out of the 35 states and UTs. Unlike in the case of organised manufacturing, where a single product group accounted for more than 50 per cent of employment in several cases, there is such single industry dominance in the unorganised manufacturing only in two cases: food products in Arunachal Pradesh and textiles in Manipur. Cases of a single industry contributing between one-third to one-half of employment were also less frequent in the case of the unorganised than of the organised manufacturing. Thus, the product structure of

**Table 17**  
**Top five States in Organised Manufacturing in terms of Number of Workers (2006-07)**

| Industry Code | Andhra Pradesh | Bihar | Gujarat | Haryana | Karnataka | Kerala | Madhya Pradesh | Maharashtra | Orissa | Punjab | Rajasthan | Tamil Nadu | Uttar Pradesh | West Bengal | Chhattisgarh | Jharkhand | Uttaranchal | Assam | Manipur | Meghalaya | Nagaland | Tripura | A & N. Island | Chandigarh | Delhi | Dadra & N Haveli | Daman & Diu | Pondicherry | Goa | Himachal Pradesh | Jammu & Kashmir | Total of five |
|---------------|----------------|-------|---------|---------|-----------|--------|----------------|-------------|--------|--------|-----------|------------|---------------|-------------|--------------|-----------|-------------|-------|---------|-----------|----------|---------|---------------|------------|-------|------------------|-------------|-------------|-----|------------------|-----------------|---------------|
| 20-21         | * 13.53        |       |         |         |           | *      |                | *           |        |        |           | *          | *             |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 60.10         |
| 22            | * -55.7        |       |         |         |           | *      |                | *           |        |        |           |            | *             | *           |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 82.60         |
| 23+24+25      |                |       | *       |         |           |        |                | *           |        |        | *         | * 27.83    |               |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 74.42         |
| 26            |                |       |         | *       |           |        |                | *           |        |        |           | * 38.70    | *             |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 81.92         |
| 27            |                |       |         |         | *         | *      |                | * 18.54     |        |        |           | *          | *             |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 53.40         |
| 28            | *              |       | *       |         |           | *      |                | * 15.48     |        |        |           | *          | *             |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 58.55         |
| 29            |                |       |         | *       |           |        |                |             |        |        |           | * 40.76    | *             | *           |              |           |             |       |         |           |          |         |               |            | *     |                  |             |             |     |                  |                 | 84.16         |
| 30            | *              |       | * 20.34 |         |           |        |                | *           |        |        |           | *          | *             |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 68.32         |
| 31            | *              |       | *       |         |           |        |                | * 15.96     |        |        |           | *          | *             |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 53.31         |
| 32            | * 12.60        |       | *       |         |           |        |                |             |        | *      |           | *          |               |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 51.34         |
| 33            |                |       |         |         |           |        |                | * 14.19     | *      |        |           |            |               | *           | *            | *         |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 54.86         |
| 34            |                |       | *       |         |           |        |                | * 18.64     |        | *      |           | *          | *             |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 64.79         |
| 35-36         |                |       | *       |         |           |        |                | * 18.26     |        |        |           | *          | *             |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 59.26         |
| 37            |                |       |         | *       |           |        |                | * 27.28     |        | *      |           | *          |               |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 76.61         |
| 38            |                |       | * 27.14 |         |           |        |                | *           |        |        | *         | *          | *             |             |              |           |             |       |         |           |          |         |               |            |       |                  |             |             |     |                  |                 | 72.23         |

**Table 18**  
**Top Five Industries of States in Unorganised Manufacturing in terms of Number of Workers (2005-06)**

|                     | 20-21          | 22       | 23 + 24 + 25 | 26       | 27       | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35-36 | 37 | 38       | Total of Five |
|---------------------|----------------|----------|--------------|----------|----------|----|----|----|----|----|----|----|-------|----|----------|---------------|
| <b>Major States</b> |                |          |              |          |          |    |    |    |    |    |    |    |       |    |          |               |
| 1                   | Andhra Pradesh | *        | *            | * -22.36 | *        |    |    |    |    |    |    |    |       |    |          | 84.61         |
| 2                   | Bihar          | * -25.88 | *            | *        | *        |    |    | *  |    |    |    |    |       |    |          | 85.29         |
| 3                   | Gujarat        | *        | *            | *        |          |    |    |    |    |    |    |    | *     |    | * -28.05 | 77.08         |
| 4                   | Haryana        | *        |              | * -29.28 | *        |    |    |    | *  |    |    | *  |       |    |          | 72.86         |
| 5                   | Karnataka      | * -26.46 | *            | *        | *        |    |    |    |    |    |    |    |       |    |          | 79.09         |
| 6                   | Kerala         | *        | *            | * -23.39 | *        |    |    |    |    |    |    |    |       |    |          | 74.05         |
| 7                   | Madhya Pradesh | *        | * 40.53      | *        | *        |    |    |    | *  |    |    |    |       |    |          | 86.31         |
| 8                   | Maharashtra    | *        | * 32.34      | *        | *        |    |    |    | *  |    |    |    |       |    |          | 83.52         |
| 9                   | Orissa         | *        | *            | *        | * 36.22  |    |    |    | *  |    |    |    |       |    |          | 87.01         |
| 10                  | Punjab         | *        |              | * -39.84 | *        |    |    |    |    |    |    | *  |       |    | *        | 76.16         |
| 11                  | Rajasthan      | *        |              | * -26.89 | *        |    |    |    |    |    |    |    |       |    | *        | 77.76         |
| 12                  | Tamil Nadu     | *        | * -23.05     | *        |          |    |    | *  |    |    |    |    |       |    |          | 66.89         |
| 13                  | Uttar Pradesh  | *        | *            | * -32.38 | *        |    |    |    |    | *  |    |    |       |    |          | 79.91         |
| 14                  | West Bengal    | *        | *            | * -24.4  | *        |    |    |    |    |    |    |    |       |    |          | 80.58         |
| <b>New States</b>   |                |          |              |          |          |    |    |    |    |    |    |    |       |    |          |               |
| 15                  | Chhattisgarh   | *        |              | *        | * -28.05 |    |    |    |    | *  |    | *  |       |    |          | 84.79         |
| 16                  | Jharkhand      | *        | * -38.98     | *        | *        |    |    |    |    |    |    | *  |       |    |          | 91.06         |
| 17                  | Uttarakhand    | * -27.92 |              | *        |          |    |    |    |    |    |    |    | *     |    | *        | 86.08         |

|   | 20-21                | 22       | 23 + 24 + 25 | 26       | 27       | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35-36 | 37 | 38       | Total of Five |
|---|----------------------|----------|--------------|----------|----------|----|----|----|----|----|----|----|-------|----|----------|---------------|
| <b>North Eastern States</b>               |                      |          |              |          |          |    |    |    |    |    |    |    |       |    |          |               |
| 18  | Arunachal Pradesh    | * -54.23 |              | *        | *        |    |    |    |    |    |    | *  |       |    | *        | 96.47         |
| 19  | Assam                | *        | *            | *        | * 22.94  |    |    |    |    |    |    |    |       |    |          | 86.5          |
| 20  | Manipur              | *        | * -60.19     | *        | *        |    |    |    |    |    |    |    |       |    | *        | 95.89         |
| 21  | Meghalaya            | *        |              | *        | *34.67   |    |    |    | *  | *  |    |    |       |    |          | 81.08         |
| 22  | Mizoram              | * -38.79 |              | *        | *        |    |    |    |    |    |    | *  |       |    |          | 94.47         |
| 23  | Nagaland             | *        | * -24.27     | *        | *        |    |    |    |    |    |    |    |       |    |          | 89.44         |
| 24  | Sikkim               | *        |              | *        | * -31.11 |    |    |    |    |    |    | *  |       |    |          | 91.53         |
| 25  | Tripura              | *41.72   |              | *        | *        |    |    |    |    | *  |    |    |       |    |          | 92.52         |
| <b>Union Territories and Other States</b> |                      |          |              |          |          |    |    |    |    |    |    |    |       |    |          |               |
| 26  | Andaman & Nicobar    | *        |              | * -30.13 | *        |    |    |    |    |    | *  |    |       |    | *        | 80.73         |
| 27  | Chandigarh           | *        |              | * -31.47 |          |    |    |    |    |    |    | *  | *     |    | *        | 90.15         |
| 28  | Delhi                |          |              | * -37.99 |          | *  | *  |    |    |    |    | *  | *     |    |          | 80.71         |
| 29  | Dadra & Nagar Haveli | *        |              | *        | * -37.57 |    |    |    | *  |    |    | *  |       |    |          | 88.5          |
| 30  | Daman & Diu          |          |              | *        | *        | *  |    |    | *  |    | *  |    |       |    | * -23.86 | 86.14         |
| 31  | Lakshadweep          | *        |              | *        | * -43.12 |    |    |    |    | *  |    | *  |       |    |          | 99.07         |
| 32  | Pondichery           | *        |              | * -24.07 | *        |    |    |    |    |    |    |    | *     |    | *        | 64.73         |
| 33  | Goa                  | *        |              | *        | * -19.58 |    |    |    |    |    |    | *  | *     |    | *        | 75.48         |
| 34  | Himachal Pradesh     | *        | *            | * -25.23 | *        |    |    |    |    |    |    | *  |       |    |          | 89.27         |
| 35  | Jammu & Kashmir      | *        | *            | * -48.72 | *        |    |    |    |    | *  |    |    |       |    |          | 92.14         |
|   | <b>INDIA</b>         | * -      | * -          | * -22.02 | * -      |    |    |    |    |    |    |    |       |    |          | 73.41         |

Note: Figure in parentheses shows the highest share of the industry in the states

Source: NSSO survey on Unorganised Manufacturing (62<sup>nd</sup> Round)

individual states appears to be much more diversified in the case of the former than the latter.

Diversification, however, does not seem to be very wide, as the top five industries accounted for over 80 per cent of employment in 25 states/UTs and between 75 to 80 per cent in 6 states and UTs. By this measure, the unorganised manufacturing shows a narrow, if not narrower, product structure as the organised manufacturing in different states. Tamil Nadu seems to have the most diversified structure with the top five industries contributing about two-thirds of total unorganised manufacturing employment. In the case of the organised manufacturing, the largest five industries contributed less than two-thirds of total employment in as many as seven states.

There appears to be a significant similarity among states in so far as the top five product groups are concerned. Food products, beverages and tobacco, textiles, textile products and wood products which ranked the highest in that order at all India level, accounting for 73 per cent of employment in the unorganised manufacturing, also are the top five groups in the case of Andhra Pradesh, Assam, Kerala and West Bengal. Four of them feature among the top five in Bihar, Himachal Pradesh, Jammu and Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Uttar Pradesh. Three of them feature in rest of the states, except Uttarakhand. The largest industry, however, is obviously different in different states. Textile products is the largest in nine states, food products, wood products and beverages and tobacco in three states each and textiles in one (Tamil Nadu) state. In Gujarat, 'other products' make the largest group.

### ***Top five States***

How are the unorganised manufacturing industries distributed among different states? Here again, we have looked at the shares of the top five states. Taking all industries, the top five states are Andhra Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh and West Bengal together accounting for 55 per cent of the nation-wide employment in unorganised manufacturing, West Bengal being at the top with a share of 15 per cent (*Table 19*). So far as individual industries are concerned, rubber and plastic products is most concentrated in the top five states (Bihar,

**Table 19**  
**Top five States in Unorganised Manufacturing in terms of Number of Workers (2005-06)**

| Industry Code | Andhra Pradesh | Bihar | Gujarat | Haryana | Karnataka | Kerala | Madhya Pradesh | Maharashtra | Orissa | Punjab | Rajasthan | Tamil Nadu | Uttar Pradesh | West Bengal | Chhattisgarh | Jharkhand | Uttarakhand | Arunachal Pradesh | Assam | Manipur | Meghalaya | Mizoram | Nagaland | Sikkim | Tripura | Andaman & Nicobar | Chandigarh | Delhi | Dadra & Nagar Haveli | Daman & Diu | Lakshadweep | Pondicherry | Goa | Himachal Pradesh | Jammu & Kashmir | Total of five top 5 |       |
|---------------|----------------|-------|---------|---------|-----------|--------|----------------|-------------|--------|--------|-----------|------------|---------------|-------------|--------------|-----------|-------------|-------------------|-------|---------|-----------|---------|----------|--------|---------|-------------------|------------|-------|----------------------|-------------|-------------|-------------|-----|------------------|-----------------|---------------------|-------|
| 20-21         | *              | *     |         |         |           |        |                |             | *      |        |           |            | * -17.47      | *           |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 |                     | 58.45 |
| 22            | *              | *     |         |         |           |        | *              |             |        |        |           |            | *             | * 21.44     |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 |                     | 63.07 |
| 23 + 24 + 25  | *              | *     |         |         |           |        |                | *           |        |        |           | * -24.05   | *             | *           |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 |                     | 66.41 |
| 26            | *              |       |         |         |           |        |                | *           |        |        |           | *          | * -21.34      | *           |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 | 61.89               |       |
| 27            | *              | *     |         |         |           |        |                | *           |        |        |           | *          | *             | * -18.42    |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 | 59.78               |       |
| 28            | *              |       |         |         |           |        |                | *           |        |        |           | * -28.38   | *             | *           |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 | 68.33               |       |
| 29            |                |       | *       |         |           |        |                | *           |        |        |           | *          | *             | * -27.34    |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 | 60.53               |       |
| 30            |                | *     |         |         |           |        |                | *           |        |        |           | * -36.62   | *             | *           |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 | 77.12               |       |
| 31            |                |       | *       |         |           |        |                | *           |        |        |           | *          | *             | *           |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 |                     | 62.27 |
| 32            |                |       |         |         |           |        |                | *           |        |        |           | *          | * -17.57      | *           |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 | 52.99               |       |
| 33            |                |       |         |         |           |        |                | *           |        |        |           | *          | *             | * 21.83     |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 | 69.43               |       |
| 34            |                |       |         |         |           |        |                | *           |        |        |           | *          | * -16.99      | *           |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 | 54.21               |       |
| 35-36         |                |       | *       |         |           |        |                | *           |        |        |           | *          | *             | *           |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 | 60.99               |       |
| 37            |                |       |         |         |           |        |                | *           |        |        |           | *          | * -28.28      | *           |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 | 76.39               |       |
| 38            |                |       |         |         |           |        |                | *           |        |        | *         | *          | *             | *           |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |             |     |                  |                 | 68.82               |       |

Note: Figure in parentheses shows the highest share of the states in the industry

Source: Same as Table 18

Karnataka, Tamil Nadu, Uttar Pradesh and West Bengal) accounting for 77 per cent of total employment followed by transport equipment with five top states (Maharashtra, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal) accounting for 76 per cent of total employment in unorganised segment of this industry. Non-metallic mineral products and metal products, on the other side, are most dispersed groups with the top five states contributing 53 and 54 per cent, respectively, of their total employment.

On the whole, unorganised segment of most of the industry groups seems well dispersed among different states. The cases of an individual state claiming a significant share in total employment are not many. Rubber and plastics with 37 per cent of employment in Tamil Nadu, paper products with 28 per cent employment again in Tamil Nadu, transport equipment with 28 per cent employment in Uttar Pradesh and leather products with 27 per cent employment in West Bengal are the only industries where a single state claimed more than one-fourth of total employment. On this basis, metal products, machinery, food products, wood and wood products and non-metallic mineral products are locationally most dispersed as no single state claimed 20 per cent or more of their respective total employment in the unorganised segment.

## **Differences in the Structure of Total Manufacturing Activity: An Account Based on NSSO Employment Data for 2004–05**

### ***Top Five Industries***

Most features of the industrial structure of different states and location pattern of different industries among states in aggregate terms are similar to those revealed by data on organised or unorganised segments of manufacturing, because these two segments also share common characteristics in these respects. As such food products and wood products are featured among the five largest industries (in terms of employment) in 25 out of 35 states/UTs; and textiles products in 24 and textiles in 23 (*Table 20*). Thus, the industrial structure of most states and UTs were similar to the extent of the common importance of these four industries. These industries were also among the top five in the country as a whole, non-metallic

**Table 20**  
**Top Five Industries of the States in terms of Number of Workers (Total) 2004-05**

|                     | 15             | 16       | 17       | 18       | 19       | 20       | 21 | 22 | 23 | 24 | 25 | 26       | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | Total of Five |       |
|---------------------|----------------|----------|----------|----------|----------|----------|----|----|----|----|----|----------|----|----|----|----|----|----|----|----|----|----|----|---------------|-------|
| <b>Major States</b> |                |          |          |          |          |          |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |    |    |               |       |
| 1                   | Andhra Pradesh | *        | *        | *(19.60) | *        |          |    |    |    |    |    | *        |    |    |    |    |    |    |    |    |    |    |    |               | 72.12 |
| 2                   | Bihar          | *        | *(21.55) | *        | *        | *        |    |    |    |    |    | *        |    |    |    |    |    |    |    |    |    |    |    |               | 83.24 |
| 3                   | Gujarat        | *        |          | *        |          |          |    |    |    | *  |    |          |    |    |    |    |    |    |    |    |    |    |    |               | 69.6  |
| 4                   | Haryana        | *        |          | *        | *(14.48) |          |    |    |    |    |    | *        | *  |    |    |    |    |    |    | *  |    |    |    |               | 52.68 |
| 5                   | Karnataka      | *        | *        | *        | *(21.81) | *        |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |    |    |               | 70.78 |
| 6                   | Kerala         | *(19.32) |          | *        | *        | *        |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    | *  |    |               | 74.93 |
| 7                   | Madhya Pradesh | *        | *(31.83) | *        | *        | *        |    |    |    |    |    | *        |    |    |    |    |    |    |    |    |    |    |    |               | 71.85 |
| 8                   | Maharashtra    | *        |          | *        | *(16.37) |          |    |    |    |    |    | *        | *  |    |    |    |    |    |    |    |    | *  |    |               | 57.14 |
| 9                   | Orissa         | *        | *        | *        |          | *(38.98) |    |    |    |    |    | *        |    |    |    |    |    |    |    |    |    |    |    |               | 82.03 |
| 10                  | Punjab         | *        |          | *(23.96) | *        | *        |    |    |    |    |    |          |    |    | *  |    |    |    |    |    |    |    |    |               | 63.82 |
| 11                  | Rajasthan      | *        |          | *(20.92) | *        |          |    |    |    |    |    | *        |    |    |    |    |    |    |    |    |    | *  |    |               | 70.94 |
| 12                  | Tamil Nadu     | *        | *        | *(30.30) | *        |          |    |    |    | *  |    |          |    |    |    |    |    |    |    |    |    |    |    |               | 64.22 |
| 13                  | Uttar Pradesh  | *        |          | *(24.39) | *        | *        |    |    |    |    |    | *        | *  |    |    |    |    |    |    |    |    |    |    |               | 70.36 |
| 14                  | West Bengal    | *        | *        | *(18.32) | *        | *        |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |    |    |               | 67.7  |
| <b>New States</b>   |                |          |          |          |          |          |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |    |    |               |       |
| 15                  | Chhattisgarh   | *        |          | *        | *        | *        |    |    |    |    |    | *(19.17) | *  |    |    |    |    |    |    |    |    |    |    |               | 71.88 |
| 16                  | Jharkhand      | *        | *        | *        |          | *(19.55) |    |    |    |    |    | *        | *  |    |    |    |    |    |    |    |    |    |    |               | 71.09 |
| 17                  | Uttarakhand    | *        |          | *        | *        | *(20.08) |    |    |    |    |    | *        | *  | *  |    |    |    |    |    |    |    |    |    |               | 69.82 |

|   | 15                   | 16       | 17       | 18       | 19 | 20       | 21 | 22 | 23 | 24       | 25       | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36       | 37 | Total of Five |       |
|---|----------------------|----------|----------|----------|----|----------|----|----|----|----------|----------|----|----|----|----|----|----|----|----|----|----|----------|----|---------------|-------|
| <b>North Eastern States</b>               |                      |          |          |          |    |          |    |    |    |          |          |    |    |    |    |    |    |    |    |    |    |          |    |               |       |
| 18  | Arunachal Pradesh    | *(32.98) | *        | *        |    | *        |    |    |    |          |          |    | *  |    |    |    |    |    |    | *  |    |          |    |               | 85.61 |
| 19  | Assam                | *        | *        | *        |    | *(25.61) |    |    |    |          |          |    |    |    |    |    |    |    |    |    |    | *        |    |               | 79.3  |
| 20  | Manipur              | *        | *(58.13) | *        |    | *        |    |    |    |          |          |    |    |    |    |    |    |    |    |    |    | *        |    |               | 93.74 |
| 21  | Meghalaya            | *        | *(32.79) | *(32.79) |    | *        |    |    |    |          |          | *  |    | *  |    |    |    |    |    |    |    | *        |    |               | 89.36 |
| 22  | Mizoram              | *        |          | *(32.14) |    | *        |    |    |    |          |          |    |    | *  |    |    |    |    |    |    |    | *        |    |               | 86.78 |
| 23  | Nagaland             | *        | *(56.37) | *(56.37) |    | *        | *  |    |    |          |          |    |    | *  |    |    |    |    |    |    |    | *        |    |               | 98.61 |
| 24  | Sikkim               | *        | *        | *        |    | *        |    |    |    |          |          |    |    | *  |    |    |    |    |    |    |    | *(22.51) |    |               | 86.69 |
| 25  | Tripura              | *        | *        | *        |    | *(32.05) |    |    |    |          |          | *  |    |    |    |    |    |    |    |    |    | *        |    |               | 88.27 |
| <b>Union Territories and Other States</b> |                      |          |          |          |    |          |    |    |    |          |          |    |    |    |    |    |    |    |    |    |    |          |    |               |       |
| 26  | Andaman & Nicobar    | *        |          | *(36.39) |    | *        | *  |    |    |          |          |    |    |    |    |    |    |    |    |    |    | *        |    |               | 91.27 |
| 27  | Chandigarh           | *        |          | *(20.36) |    |          |    |    |    |          |          |    |    | *  | *  |    |    |    |    |    |    |          |    |               | 59.04 |
| 28  | Delhi                |          |          | *(29.06) |    |          | *  |    |    |          |          |    |    | *  | *  |    |    |    |    |    |    | *        |    |               | 66.04 |
| 29  | Dadra & Nagar Haveli |          |          | *        |    |          |    |    |    | *        | *(32.73) |    | *  | *  | *  |    |    |    |    |    |    |          |    |               | 85.04 |
| 30  | Daman & Diu          |          |          | *        |    |          |    |    |    | *        | *(51.60) |    |    | *  | *  |    |    |    |    |    | *  | *        |    |               | 86.43 |
| 31  | Lakshadweep          | *(42.11) | *        | *        |    |          |    |    |    |          |          |    |    |    |    |    |    |    |    |    |    |          |    |               | 100   |
| 32  | Pondicherry          | *(15.35) | *        | *        |    | *        |    |    |    |          |          | *  |    |    |    |    |    |    |    |    |    |          |    |               | 59.23 |
| 33  | Goa                  | *        | *        | *        |    |          |    |    |    | *(22.52) |          |    |    |    |    |    |    |    |    |    |    | *        |    |               | 70.9  |
| 34  | Himachal Pradesh     | *        | *        | *        |    | *(16.31) |    |    |    |          |          |    |    |    |    |    |    |    |    | *  |    |          |    |               | 58.5  |
| 35  | Jammu & Kashmir      | *        | *(57.02) | *        |    | *        |    |    |    |          |          |    |    | *  | *  |    |    |    |    |    |    |          |    |               | 90.86 |
|   | <b>All India</b>     | *        | *(18.02) | *        |    | *        |    |    |    |          |          |    |    |    |    |    |    |    |    |    |    |          |    |               | 60.18 |

Note: Figure in parentheses shows the highest share of the industry in the states, for detail of the industry code see Appendix-D  
Source: NSSO survey on employment and Unemployment (61<sup>st</sup> Round)

mineral products being the fifth in that group. Textiles', being the largest group at the national level, also was the largest in the case of as many as nine states/UTs. Otherwise, industry with largest share in employment in a state differed widely. So, wood and wood products was the largest industry in Himachal Pradesh, Jharkhand, Orissa, Tripura and Uttarakhand; textile products (wearing apparels, etc.) in Andaman and Nicobar Islands, Chandigarh, Delhi, Karnataka and Maharashtra; paper and paper products in Meghalaya; and, non-metallic mineral products in Chhattisgarh and Rajasthan.

How narrow or diversified is the industrial structure of different states? In the country as a whole the top five industries accounted for 59 per cent of total manufacturing employment. In most states the corresponding figure was much larger. Leaving aside small states and UTs, even some of the larger states, like Bihar, Gujarat, Karnataka and Orissa have a rather narrow base with the top five industries contributing over 75 per cent of state's total industrial employment. Haryana, Kerala, Madhya Pradesh, Maharashtra, Uttar Pradesh and West Bengal, on the other side, have a more diversified industrial structure with the top five industries accounting for less than 60 per cent of total industrial employment in each of them. All the North Eastern states have very narrow industrial base with the top 5 industries accounting for 80 per cent or more of manufacturing employment. Among other smaller states and UTs, Delhi, Himachal Pradesh, Jammu & Kashmir and Pondicherry have relatively diversified industrial structure.

### ***Top Five States***

How are different industries locationally diversified in terms of having dispersed or concentrated location across states? We have attempted to answer this question with reference to five most important states in the case of each industry. Different sets of states feature in the group with largest employment share in individual industries. In most cases, the states featuring are, of course, the larger ones.

Taking the share in total employment in an industry claimed by the top five states as one measure of concentration and dispersal, we find that industry groups manufacture of coke and petroleum products, electrical and electronic machinery,

precision instruments, office equipment including computers, motor vehicles and tobacco products are least dispersed, the five states accounting for 70 to 80 per cent of employment in each of these industries (*Table 21*). In case of petroleum product, a single state, namely Tamil Nadu, accounts for 35 per cent and in the case of office equipment and computing machinery, Tamil Nadu again accounts for 32 per cent of total employment. In electrical machinery, Uttar Pradesh dominates with 32 per cent of total employment. In the case of precision instruments industry 78 per cent of employment is in the top five states and over one-fourth (27%) in a single state, Haryana. Recycling is, however, the most geographically concentrated industry the five top states account for 88 per cent and a single state, West Bengal, 65 per cent of its total employment.

Wood and wood products and leather products, on the other side, have the most dispersed location among states, the top five states accounting for 52 per cent of its total employment. Metal products, general machinery and textiles come next with a 56 per cent share of the top five states in their total employment. Food products and non-metallic mineral products are other groups with relatively lower geographical concentration in their location across the states, with 50 to 60 per cent employment in the top five states.

Which states feature among the top five in respect of the share of employment in an industry? Obviously, the larger states have this privilege more often than the smaller ones. Thus, Maharashtra finds place in this group in respect of 18 (out of 23) industry groups, Uttar Pradesh and West Bengal in respect of 17 and Tamil Nadu in respect of 16 industries. Andhra Pradesh features among the top five states in respect of eight and Karnataka five industries. Smaller states and Union Territories generally do not feature in this group, but we find that Delhi is among the top five in respect of four industries, paper and paper products, rubber and plastic products, office equipment and computing machinery, and, radio, televisions and communication equipment, in the last case accounting for 20 per cent of the total countrywide employment in that industry.

Among the larger states, Bihar does not feature among the top five states in any industry, Haryana features in case of only one industry, Punjab, Kerala and

**Table 21**  
**Top five States in terms of Number of Workers (Total) 2004-05**

|               |                |       |         |         |           |        |                |             |          |        |           |            |               |             |              |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  |       |       |
|---------------|----------------|-------|---------|---------|-----------|--------|----------------|-------------|----------|--------|-----------|------------|---------------|-------------|--------------|-----------|-------------|-------------------|-------|---------|-----------|---------|----------|--------|---------|-------------------|------------|-------|----------------------|-------------|-------------|------------|-----|------------------|-----------------|-------------------|---|--|-------|-------|
| Industry Code | Andhra Pradesh | Bihar | Gujarat | Haryana | Karnataka | Kerala | Madhya Pradesh | Maharashtra | Orissa   | Punjab | Rajasthan | Tamil Nadu | Uttar Pradesh | West Bengal | Chhattisgarh | Jharkhand | Uttarakhand | Arunachal Pradesh | Assam | Manipur | Meghalaya | Mizoram | Nagaland | Sikkim | Tripura | Andaman & Nicobar | Chandigarh | Delhi | Dadra & Nagar Haveli | Daman & Diu | Lakshadweep | Pondichery | Goa | Himachal Pradesh | Jammu & Kashmir | Total of top five |   |  |       |       |
| 15            | *              |       |         |         |           |        | *              | *           |          |        |           | *          | *(17.22)      | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 60.02 |       |
| 16            | *              |       |         |         |           |        | *              |             |          |        |           |            | *             | *(22.11)    | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 71.4  |       |
| 17            | *              |       | *       |         |           |        |                |             |          |        |           | *          | *(20.90)      | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 66.47 |       |
| 18            |                |       |         |         | *         |        |                | *           |          |        |           | *          | *(15.41)      | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 54.79 |       |
| 19            |                |       |         |         | *         |        |                | *           |          |        | *         | *          | *(15.84)      | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 67.89 |       |
| 20            | *              |       |         |         |           |        |                |             | *(15.21) |        |           | *          | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 52.13 |       |
| 21            |                |       |         |         |           |        |                | *           |          |        |           | *          | *(23.05)      | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 63.88 |       |
| 22            |                |       |         |         | *         |        |                | *(19.29)    |          |        |           | *          | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 62.26 |       |
| 23            | *              |       | *       |         |           |        |                | *           |          |        |           | *(35.22)   | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 85.44 |       |
| 24            |                |       | *       |         |           |        |                | *           |          |        |           | *(27.14)   | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 72.6  |       |
| 25            |                |       | *       |         |           |        |                | *(22.66)    |          |        |           | *          | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 68.66 |       |
| 26            | *              |       |         |         |           |        |                | *           |          |        | *         |            | *(23.87)      | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 58.99 |       |
| 27            |                |       | *       |         |           |        |                | *           |          |        |           | *          | *(15.56)      | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 56.24 |       |
| 28            |                |       | *       |         |           |        |                | *           |          |        |           | *          | *(17.42)      | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 56.53 |       |
| 29            |                |       | *       |         |           |        |                | *(16.60)    |          | *      |           | *          | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 59.18 |       |
| 30            |                |       | *       |         |           |        |                | *           |          |        |           | *(33.04)   | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 75.93 |       |
| 31            |                |       | *       |         |           |        |                | *           |          |        |           | *          | *(32.00)      | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 72.87 |       |
| 32            | *              |       |         |         |           |        |                | *           |          |        |           | *          | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  |       | 70.97 |
| 33            |                |       |         |         |           |        |                |             |          |        | *         |            | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   | * |  | 77.57 |       |
| 34            |                |       |         |         |           |        | *              | *(28.32)    |          |        |           | *          | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  | 76.4  |       |
| 35            | *              |       |         |         |           |        | *              | *(18.48)    |          | *      |           | *          | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  |       | 65.79 |
| 36            |                |       |         |         |           |        |                | *           |          |        |           | *          | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  |       | 63.37 |
| 37            |                |       |         |         |           |        |                | *           |          |        |           | *          | *             | *           | *            |           |             |                   |       |         |           |         |          |        |         |                   |            |       |                      |             |             |            |     |                  |                 |                   |   |  |       | 84.91 |

Note: Figure in parentheses shows the highest value of the state in the industry

Source: Same as Table 20

Madhya Pradesh in two each and Rajasthan and Orissa in three each. Among smaller states, Jharkhand is among the top five in three industries and Chhattisgarh in one industry. None among the North Eastern states features in top five.

## VI. Industrial Base and Specialisation of States

The descriptive account of the industrial structure of different states given in the preceding sections is subjected here to some quantitative analysis to measure the industrial base and specialization of different states. Industrial base of a state has been identified in terms of the bunch of industries which claim a higher share in the state's industrial structure than in the industrial structure of the country as a whole and is measured by location quotients of individual industries. Location quotient is one for an industry if its share in the state is the same as in India, is less than one if this share is lower and more than one if it is higher than in India. Industries having quotient value of one or higher are considered to constitute the industrial base of the state. Location quotients for different industries in different states are given in *Table 22*. To simplify the presentation and analysis, we have identified and presented information on industries with location quotient  $\geq 1$  in each state separately (*Table 23*).

It must be noted that the location quotients measure industrial base of a state only relative to the industrial structure of the country. Those industries which have a higher share in the state's than in the country's industrial structure constitute this base and these industries need not necessarily be the largest in the state. Location quotient, in fact, reflects the state's relative specialization vis-à-vis the industrial structure of the country and is identified in terms of value of the quotients, and defines industrial base in a relative and not in absolute sense. It also implies that more industrialised states would have a wider industrial base in terms of having a larger number of industries with value of location quotients higher than one.

Industrial base of Maharashtra is relatively wide consisting of 16 (out of 23) industries. Haryana, Delhi and Chandigarh come next with 14, 13 and 11 industry groups having a higher than one location quotient. Madhya Pradesh has 7 industries with a greater than one location quotient and Assam 6. Manipur has the narrowest industrial base with only two industries having a location quotient higher than one, followed by Arunachal Pradesh and Orissa each with four industries in that category. Jammu and Kashmir, Nagaland and Andaman also have a small number (5

**Table 22**  
**Location Quotients of Industries in Different States (2004-05)**

|                     | Food Product   | Tobacco Prod | Textiles   | Wearing Apparel | Leather Prod | Wood Prod | Paper Prod | Printing | Coke & Petro Prod | Chemical Prod | Rubber Prod | N.M.M. Prod | Basic Metals | Metal Prod | Machinery | Office/Computing Equipments | Electrical & Apparatus | Radio, TV and Communication Equipments | Medical Precision/Optical Instruments | Motor Vehicles | Other Transport Equipment | Furniture/N.E.C | Recycling |     |
|---------------------|----------------|--------------|------------|-----------------|--------------|-----------|------------|----------|-------------------|---------------|-------------|-------------|--------------|------------|-----------|-----------------------------|------------------------|--|---------------------------------------|----------------|---------------------------|-----------------|-----------|-----|
| <b>Major States</b> |                |              |            |                 |              |           |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           |                 |           |     |
| 1                   | Andhra Pardesh | 1.5          | 1.8        | 1.1             | 0.9          | 0.4       | 0.9        | 0.5      | 0.8               | 1.5           | 0.6         | 0.4         | 1.1          | 0.9        | 0.7       | 0.7                         | 0.6                    | 0.2                                    | 1.3                                   | 0.0            | 0.1                       | 1.1             | 0.6       | 0.4 |
| 2                   | Bihar          | 1.2          | 2.5        | 0.2             | 1.2          | 0.6       | 1.9        | 0.0      | 0.2               | 0.0           | 0.2         | 0.1         | 1.7          | 0.1        | 0.3       | 0.6                         | 0.0                    | 0.0                                    | 0.0                                   | 0.1            | 1.8                       | 0.7             | 0.0       |     |
| 3                   | Gujrat         | 0.6          | 0.1        | 1.0             | 1.0          | 1.1       | 0.5        | 0.8      | 0.8               | 2.1           | 2.6         | 2.0         | 0.6          | 1.4        | 0.9       | 1.1                         | 1.0                    | 1.7                                    | 0.0                                   | 0.3            | 0.0                       | 0.1             | 2.9       | 0.0 |
| 4                   | Haryana        | 0.6          | 0.0        | 0.7             | 1.1          | 1.3       | 0.5        | 1.5      | 1.0               | 0.0           | 1.6         | 1.9         | 1.0          | 1.0        | 2.0       | 2.8                         | 0.0                    | 1.2                                    | 1.3                                   | 11.6           | 6.4                       | 1.2             | 0.8       | 0.0 |
| 5                   | Karnataka      | 0.9          | 1.9        | 0.6             | 1.6          | 0.7       | 1.3        | 0.6      | 2.2               | 0.6           | 0.6         | 0.4         | 0.4          | 0.6        | 0.9       | 1.3                         | 0.6                    | 1.1                                    | 2.3                                   | 0.0            | 1.1                       | 0.9             | 0.6       | 0.0 |
| 6                   | Kerala         | 1.9          | 0.5        | 1.0             | 1.3          | 0.2       | 1.0        | 1.5      | 1.3               | 0.4           | 0.9         | 1.1         | 0.4          | 0.1        | 1.0       | 0.5                         | 2.1                    | 0.4                                    | 0.9                                   | 1.0            | 1.0                       | 1.0             | 1.3       | 1.4 |
| 7                   | Madhya Pradesh | 0.9          | 3.7        | 0.3             | 0.8          | 0.4       | 1.1        | 0.0      | 0.5               | 0.0           | 1.2         | 0.4         | 1.1          | 0.6        | 0.8       | 0.5                         | 1.3                    | 1.3                                    | 0.3                                   | 0.0            | 1.6                       | 0.2             | 0.6       | 0.2 |
| 8                   | Maharashtra    | 1.1          | 0.2        | 0.6             | 1.2          | 1.1       | 0.6        | 1.1      | 1.8               | 1.4           | 1.4         | 2.2         | 0.9          | 0.8        | 1.6       | 1.6                         | 1.5                    | 1.1                                    | 1.8                                   | 0.4            | 2.7                       | 1.8             | 1.5       | 0.0 |
| 9                   | Orissa         | <b>0.9</b>   | <b>0.8</b> | 0.5             | 0.3          | 0.0       | 4.0        | 0.8      | 0.2               | 0.0           | 0.1         | 0.3         | 2.1          | 2.3        | 0.6       | 0.2                         | 0.0                    | 0.1                                    | 0.0                                   | 0.0            | 0.0                       | 1.0             | 0.4       | 0.0 |
| 10                  | Punjab         | 0.9          | 0.0        | 1.3             | 1.1          | 1.0       | 0.7        | 0.9      | 0.8               | 0.0           | 0.5         | 1.8         | 0.7          | 1.4        | 1.5       | 3.7                         | 0.4                    | 0.4                                    | 1.1                                   | 0.8            | 1.0                       | 7.0             | 0.5       | 0.8 |
| 11                  | Rajasthan      | 0.7          | 0.2        | 1.2             | 0.9          | 2.2       | 0.8        | 0.8      | 0.8               | 1.1           | 0.4         | 0.5         | 1.9          | 0.2        | 1.2       | 0.5                         | 0.0                    | 0.3                                    | 1.6                                   | 3.3            | 0.2                       | 0.7             | 1.7       | 0.2 |
| 12                  | Tamil Nadu     | 0.7          | 0.8        | 1.7             | 0.8          | 1.4       | 0.7        | 0.8      | 1.4               | 3.2           | 2.4         | 0.7         | 0.5          | 0.5        | 0.9       | 0.9                         | 3.0                    | 0.5                                    | 0.0                                   | 0.4            | 1.8                       | 0.5             | 0.8       | 0.3 |
| 13                  | Uttar Pradesh  | 1.1          | 0.6        | 1.4             | 1.0          | 1.0       | 0.8        | 1.5      | 0.6               | 0.0           | 0.4         | 0.2         | 1.5          | 1.0        | 1.1       | 1.0                         | 0.0                    | 2.1                                    | 0.6                                   | 0.0            | 0.4                       | 0.3             | 0.6       | 0.2 |
| 14                  | West Bengal    | 1.1          | 2.1        | 1.0             | 0.9          | 1.4       | 0.9        | 1.0      | 0.6               | 0.4           | 0.5         | 1.6         | 0.6          | 1.3        | 0.6       | 0.5                         | 0.5                    | 1.1                                    | 0.6                                   | 1.7            | 0.2                       | 1.3             | 0.9       | 6.0 |
| <b>New States</b>   |                |              |            |                 |              |           |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           |                 |           |     |
| 15                  | Chhattisgarh   | 1.4          | 0.9        | 0.1             | 0.8          | 0.2       | 1.6        | 0.2      | 1.1               | 0.0           | 0.2         | 0.0         | 2.3          | 7.0        | 1.8       | 0.3                         | 0.0                    | 0.0                                    | 1.5                                   | 0.0            | 0.2                       | 0.6             | 0.6       | 3.7 |
| 16                  | Jharkhand      | 0.7          | 2.1        | 0.5             | 0.3          | 1.1       | 2.0        | 0.0      | 0.2               | 4.2           | 0.0         | 0.3         | 2.1          | 4.0        | 0.8       | 0.7                         | 2.0                    | 0.2                                    | 0.0                                   | 0.0            | 3.6                       | 0.0             | 0.3       | 4.2 |
| 17                  | Uttarakhand    | <b>1.2</b>   | <b>0.0</b> | 0.1             | 1.3          | 0.0       | 2.1        | 0.6      | 2.4               | 0.0           | 0.9         | 0.5         | 0.9          | 0.6        | 2.6       | 2.7                         | 0.0                    | 1.5                                    | 8.2                                   | 0.4            | 2.3                       | 0.0             | 0.5       | 0.3 |

|                             | Food Product         | Tobacco Prod | Textiles | Wearing Apparel | Leather Prod | Wood Prod | Paper Prod | Printing | Coke & Petro Prod | Chemical Prod | Rubber Prod | N.M.M. Prod | Basic Metals | Metal Prod | Machinery | Office/Computing Equipments | Electrical & Apparatus | Radio, TV and Communication Equipments | Medical Precision/Optical Instruments | Motor Vehicles | Other Transport Equipment | Furniture/N.E.C | Recycling |     |
|-----------------------------|----------------------|--------------|----------|-----------------|--------------|-----------|------------|----------|-------------------|---------------|-------------|-------------|--------------|------------|-----------|-----------------------------|------------------------|--|---------------------------------------|----------------|---------------------------|-----------------|-----------|-----|
| <b>North Eastern States</b> |                      |              |          |                 |              |           |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           |                 |           |     |
| 18                          | Arunachal Pradesh    | 3.2          | 0.0      | 0.8             | 0.4          | 0.7       | 1.3        | 0.0      | 0.7               | 0.0           | 0.7         | 0.0         | 6.1          | 0.0        | 0.0       | 0.0                         | 0.0                    | 0.0                                    | 0.0                                   | 0.0            | 12.5                      | 0.0             | 0.6       | 0.0 |
| 19                          | Assam                | 1.7          | 0.0      | 0.7             | 0.6          | 0.0       | 2.6        | 3.2      | 0.8               | 0.6           | 0.3         | 0.0         | 0.9          | 0.2        | 1.2       | 0.0                         | 0.0                    | 0.2                                    | 0.3                                   | 0.0            | 0.0                       | 0.0             | 2.0       | 3.6 |
| 20                          | Manipur              | 0.5          | 0.0      | 3.2             | 1.2          | 0.0       | 0.7        | 0.0      | 0.8               | 0.0           | 0.3         | 0.0         | 0.2          | 0.7        | 0.2       | 0.0                         | 0.0                    | 0.3                                    | 0.0                                   | 0.0            | 0.0                       | 0.0             | 1.0       | 0.0 |
| 21                          | Meghalaya            | 1.2          | 0.0      | 1.8             | 0.5          | 0.0       | 1.6        | 0.0      | 0.3               | 2.9           | 0.0         | 0.1         | 2.2          | 0.2        | 0.3       | 0.1                         | 0.0                    | 0.0                                    | 0.0                                   | 0.0            | 0.0                       | 0.0             | 1.3       | 0.0 |
| 22                          | Mizoram              | 1.2          | 0.4      | 0.3             | 2.4          | 0.0       | 0.7        | 0.0      | 1.3               | 0.0           | 0.0         | 0.1         | 0.0          | 1.5        | 0.0       | 0.0                         | 0.0                    | 0.0                                    | 3.2                                   | 0.0            | 0.0                       | 0.0             | 3.5       | 0.0 |
| 23                          | Nagaland             | 1.4          | 0.0      | 3.1             | 0.0          | 0.0       | 1.7        | 0.0      | 1.1               | 0.0           | 0.0         | 0.1         | 0.0          | 0.1        | 0.0       | 0.0                         | 0.0                    | 0.0                                    | 0.0                                   | 0.0            | 0.0                       | 0.0             | 1.1       | 0.0 |
| 24                          | Sikkim               | 2.1          | 0.0      | 0.2             | 1.6          | 0.0       | 1.2        | 0.0      | 1.2               | 0.0           | 2.1         | 0.0         | 0.0          | 2.0        | 0.0       | 0.0                         | 0.0                    | 0.0                                    | 0.0                                   | 0.0            | 0.0                       | 0.0             | 2.8       | 0.0 |
| 25                          | Tripura              | 2.5          | 0.3      | 0.2             | 0.7          | 0.0       | 3.3        | 0.3      | 0.2               | 0.0           | 0.2         | 0.4         | 0.5          | 0.9        | 0.3       | 0.0                         | 0.0                    | 0.0                                    | 0.0                                   | 0.0            | 0.0                       | 0.0             | 2.2       | 0.0 |
| <b>Union Territories</b>    |                      |              |          |                 |              |           |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           |                 |           |     |
| 26                          | Andaman & Nicobar    | 1.2          | 0.0      | 0.0             | 2.7          | 0.0       | 1.2        | 0.0      | 8.1               | 0.0           | 0.0         | 0.1         | 0.0          | 0.0        | 0.0       | 0.0                         | 0.0                    | 0.0                                    | 0.0                                   | 0.0            | 0.0                       | 10.9            | 2.1       | 0.0 |
| 27                          | Chandigarh           | 1.3          | 0.0      | 0.4             | 1.5          | 0.0       | 0.5        | 2.1      | 2.9               | 0.0           | 1.2         | 3.6         | 0.0          | 1.5        | 1.8       | 4.1                         | 0.0                    | 3.8                                    | 0.0                                   | 17.9           | 0.0                       | 0.0             | 0.8       | 0.0 |
| 28                          | Delhi                | 0.2          | 0.0      | 0.8             | 2.2          | 2.4       | 0.2        | 5.5      | 1.9               | 0.0           | 0.2         | 3.2         | 0.0          | 0.1        | 1.4       | 2.1                         | 6.2                    | 2.3                                    | 10.0                                  | 4.4            | 0.7                       | 1.5             | 1.3       | 0.2 |
| 29                          | Dadra & Nagar Haveli | 0.2          | 0.0      | 1.4             | 0.1          | 0.0       | 0.0        | 2.9      | 0.0               | 6.5           | 29          | 23.4        | 0.0          | 6.4        | 0.5       | 2.1                         | 6.1                    | 0.5                                    | 0.0                                   | 0.0            | 2.4                       | 0.0             | 0.0       | 0.0 |
| 30                          | Daman & Diu          | 0.5          | 0.0      | 0.1             | 0.7          | 0.0       | 0.0        | 0.9      | 1.2               | 0.0           | 4.3         | 36.9        | 0.0          | 0.0        | 0.5       | 1.0                         | 0.0                    | 3.2                                    | 0.0                                   | 0.0            | 0.0                       | 1.2             | 0.3       | 0.0 |
| 31                          | Lakshadweep          | 4.1          | 0.0      | 0.3             | 2.2          | 0.0       | 0.0        | 0.0      | 0.0               | 0.0           | 0.0         | 0.0         | 0.0          | 0.0        | 0.0       | 0.0                         | 0.0                    | 0.0                                    | 0.0                                   | 0.0            | 0.0                       | 8.9             | 2.1       | 0.0 |
| 32                          | Pondicheri           | 1.5          | 0.1      | 0.7             | 1.0          | 3.4       | 0.6        | 2.1      | 1.4               | 0.0           | 1.7         | 1.5         | 1.1          | 0.0        | 1.2       | 0.7                         | 0.0                    | 4.6                                    | 0.0                                   | 0.0            | 0.0                       | 1.4             | 0.9       | 0.0 |
| 33                          | Goa                  | 1.2          | 0.0      | 0.3             | 0.3          | 0.0       | 0.2        | 0.0      | 8.0               | 0.0           | 6.1         | 0.0         | 0.1          | 3.2        | 0.5       | 1.5                         | 0.0                    | 2.4                                    | 0.0                                   | 11.6           | 0.5                       | 5.5             | 2.0       | 0.0 |
| 34                          | Himachal Pradesh     | 1.2          | 0.0      | 0.6             | 1.0          | 0.3       | 1.7        | 2.6      | 0.8               | 0.0           | 1.7         | 0.1         | 0.7          | 3.6        | 0.8       | 1.2                         | 0.0                    | 0.0                                    | 23.6                                  | 4.1            | 0.0                       | 0.0             | 0.7       | 0.0 |
| 35                          | Jammu & Kashmir      | 0.9          | 0.0      | 3.2             | 0.6          | 0.1       | 1.5        | 1.1      | 0.3               | 0.0           | 0.1         | 0.2         | 0.2          | 0.4        | 0.5       | 0.1                         | 0.0                    | 0.9                                    | 0.2                                   | 4.5            | 0.0                       | 0.0             | 0.1       | 2.7 |

**Table 23**  
**Industrial Base of Different States (Industries with Location Quotients  $\geq 1$ ) 2004-05**

|                     | Specialization Coefficients | Food Product | Tobacco Prod | Textiles | Wearing Apparel | Leather Prod | Wood Prod | Paper Prod | Printing | Coke & Petro Prod | Chemical Prod | Rubber Prod | N.M.M. Prod | Basic Metals | Metal Prod | Machinery | Office/Computing Equipments | Electrical & Apparatus | Radio, TV and Communication Equipments | Medical Precision/Optical Instruments | Motor Vehicles | Other Transport Equipment | Furniture/N.E.C | Recycling |  |
|---------------------|-----------------------------|--------------|--------------|----------|-----------------|--------------|-----------|------------|----------|-------------------|---------------|-------------|-------------|--------------|------------|-----------|-----------------------------|------------------------|--|---------------------------------------|----------------|---------------------------|-----------------|-----------|--|
| <b>Major States</b> |                             |              |              |          |                 |              |           |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           |                 |           |  |
| 1                   | Andhra Pradesh              | 0.14         | 1.46         | 1.09     |                 |              |           |            |          | 1.54              |               |             | 1.05        |              |            |           |                             |                        | 1.29                                   |                                       |                |                           | 1.10            |           |  |
| 2                   | Bihar                       | 0.33         | 1.19         |          | 1.20            |              | 1.95      |            |          |                   |               |             | 1.74        |              |            |           |                             |                        |  |                                       |                |                           | 1.80            |           |  |
| 3                   | Gujrat                      | 0.25         |              |          |                 | 1.15         |           |            |          | 2.10              | 2.58          | 1.99        |             | 1.37         |            | 1.13      |                             | 1.69                   |  |                                       |                |                           |                 |           |  |
| 4                   | Haryana                     | 0.25         |              |          | 1.08            | 1.29         |           | 1.46       |          |                   | 1.61          | 1.91        | 1.04        | 1.04         | 2.00       | 2.83      |                             | 1.24                   | 1.25                                   | *(11.57)                              | 6.39           | 1.18                      |                 |           |  |
| 5                   | Karnataka                   | 0.22         |              |          | 1.62            |              | 1.25      |            | *(2.20)  |                   |               |             |             |              |            | 1.26      |                             | 1.13                   | 2.27                                   |                                       |                |                           |                 |           |  |
| 6                   | Kerala                      | 0.13         | 1.88         |          | 1.31            |              | 1.03      | 1.49       | 1.31     |                   |               | 1.09        |             |              |            |           | *(2.10)                     |                        |  |                                       | 1.10           |                           |                 |           |  |
| 7                   | Madhya Pradesh              | 0.26         |              |          | 1.22            | 1.13         | 1.05      |            | 1.84     | 1.41              | 1.45          | 2.16        | 1.09        |              |            |           | 1.35                        | 1.32                   |  |                                       | 1.63           |                           |                 |           |  |
| 8                   | Maharashtra                 | 0.19         | 1.06         |          |                 |              |           | 1.06       |          |                   |               |             | 2.09        | 2.32         | 1.56       | 1.58      | 1.51                        | 1.07                   | 1.81                                   |                                       | *(2.70)        | 1.76                      | 1.45            |           |  |
| 9                   | Orissa                      | 0.41         |              |          |                 |              | *(4.00)   |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                | 1.02                      |                 |           |  |
| 10                  | Punjab                      | 0.22         |              |          | 1.33            | 1.07         |           |            |          |                   |               | 1.81        |             | 1.37         | 1.46       | 3.73      |                             |                        | 1.10                                   |                                       | 1.03           | *(6.98)                   |                 |           |  |
| 11                  | Rajasthan                   | 0.21         |              |          |                 | 2.25         |           |            |          | 1.05              |               |             | 1.95        |              | 1.20       |           |                             |                        | 1.61                                   | *(3.29)                               |                |                           | 1.75            |           |  |
| 12                  | Tamil Nadu                  | 0.21         |              |          |                 | 1.39         |           |            | 1.39     | *(3.18)           | 2.45          |             |             |              |            |           | 2.98                        |                        |  |                                       | 1.78           |                           |                 |           |  |
| 13                  | Uttar Pradesh               | 0.15         | 1.12         |          | 1.00            | 1.03         |           | 1.49       |          |                   |               |             | 1.55        | 1.01         | 1.13       |           |                             | *(2.07)                |  |                                       |                |                           |                 |           |  |
| 14                  | West Bengal                 | 0.14         | 1.08         | 2.06     | 1.02            | 1.36         |           |            |          |                   |               | 1.64        |             | 1.27         |            |           |                             | 1.09                   |  | 1.70                                  |                | 1.32                      |                 | *(6.04)   |  |
| <b>New States</b>   |                             |              |              |          |                 |              |           |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           |                 |           |  |
| 15                  | Chhattisgarh                | 0.32         | 1.36         |          |                 |              | 1.61      |            | 1.06     |                   |               |             | 2.30        | *(7.00)      | 1.77       |           |                             |                        | 1.46                                   |                                       |                |                           |                 | 3.70      |  |
| 16                  | Jharkhand                   | 0.38         |              |          | 1.09            |              | 2.01      |            |          | 4.19              |               |             | 2.13        | 3.99         |            |           | 2.02                        |                        | *(8.19)                                |                                       | 3.64           |                           |                 | *(4.23)   |  |
| 17                  | Uttarakhand                 | 0.32         | 1.18         |          | 1.31            |              | 2.06      |            | 2.36     |                   |               |             |             |              | 2.57       | 2.68      |                             | 1.49                   |  |                                       | 2.30           |                           |                 |           |  |

|                             | Specialization Coefficients | Food Product | Tobacco Prod | Textiles | Wearing Apparel | Leather Prod | Wood Prod | Paper Prod | Printing | Coke & Petro Prod | Chemical Prod | Rubber Prod | N.M.M. Prod | Basic Metals | Metal Prod | Machinery | Office/Computing Equipments | Electrical & Apparatus | Radio, TV and Communication Equipments | Medical Precision/Optical Instruments | Motor Vehicles | Other Transport Equipment | Furniture/N.E.C | Recycling |         |  |
|-----------------------------|-----------------------------|--------------|--------------|----------|-----------------|--------------|-----------|------------|----------|-------------------|---------------|-------------|-------------|--------------|------------|-----------|-----------------------------|------------------------|--|---------------------------------------|----------------|---------------------------|-----------------|-----------|---------|--|
| <b>North Eastern States</b> |                             |              |              |          |                 |              |           |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           |                 |           |         |  |
| 18                          | Arunachal Pradesh           | 0.48         | 3.20         |          |                 |              | 1.27      |            |          |                   |               |             |             | 6.15         | 1.18       |           |                             |                        |  |                                       |                |                           |                 |           |         |  |
| 19                          | Assam                       | 0.35         | 1.66         |          |                 |              | 2.63      | 3.22       |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           | 2.04            |           | *(3.58) |  |
| 20                          | Manipur                     | 0.42         |              | *(3.22)  | 1.15            |              |           |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           | 1.32            |           |         |  |
| 21                          | Meghalaya                   | 0.35         | 1.25         | 1.82     |                 |              | 1.56      |            |          | *(2.87)           |               |             | 2.16        |              | 1.50       |           |                             |                        | 3.22                                   |                                       |                |                           | *(3.49)         |           |         |  |
| 22                          | Mizoram                     | 0.45         | 1.21         | 2.39     |                 |              | 1.71      |            | 1.31     |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           | 1.14            |           |         |  |
| 23                          | Nagaland                    | 0.51         | 1.41         | 3.13     |                 |              | 1.71      |            | 1.09     |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           | 2.81            |           |         |  |
| 24                          | Sikkim                      | 0.45         | 2.08         |          | 1.59            |              | 1.20      |            | 1.16     |                   | 2.05          |             |             |              | 2.03       |           |                             |                        |  |                                       |                |                           | 2.16            |           |         |  |
| 25                          | Tripura                     | 0.47         | 2.51         |          |                 |              | *(3.29)   |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           |                 |           |         |  |
| <b>Union Territories</b>    |                             |              |              |          |                 |              |           |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           |                 |           |         |  |
| 26                          | Andaman & Nicobar           | 0.55         | 1.21         |          | 2.71            |              | 1.19      |            | 8.10     |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           |                 |           |         |  |
| 27                          | Chandigarh                  | 0.39         | 1.28         |          | 1.51            |              | 2.11      | 2.88       |          |                   | 1.25          | 3.63        |             | 1.46         | 1.83       | 4.10      |                             | 3.83                   |  | *(17.86)                              |                |                           |                 |           |         |  |
| 28                          | Dadra & Nagar Haveli        | 0.61         |              | 1.39     |                 |              | 2.92      |            | 2.88     | 6.51              | 2.90          | *(23.38)    |             | 6.40         |            | 2.10      | 6.09                        |                        |  |                                       |                | 2.36                      |                 |           |         |  |
| 29                          | Daman & Diu                 | 0.62         |              |          |                 |              |           |            | 1.25     | 4.26              | *(36.86)      |             |             |              |            |           |                             | 3.24                   |  |                                       |                |                           |                 |           |         |  |
| 30                          | Delhi                       | 0.38         |              |          | 2.16            | 2.37         |           | 5.48       | 1.92     |                   |               | 3.21        |             |              | 1.36       | 2.09      | 6.18                        | 2.31                   | *(10.00)                               | 4.35                                  |                |                           | 1.51            | 1.27      |         |  |
| 31                          | Lakshadweep                 | 0.63         | 4.09         | 0.25     | 2.24            |              |           |            |          |                   |               |             |             |              |            |           |                             |                        |  |                                       |                |                           | *(8.86)         | 2.12      |         |  |
| 32                          | Pondicheri                  | 0.22         | 1.49         |          | 1.00            | 3.41         |           | 2.12       | 1.42     | 1.66              | 1.49          | 1.12        |             | 3.19         | 1.47       |           |                             | *(4.56)                |  |                                       |                | 1.42                      |                 |           |         |  |
| 33                          | Goa                         | 0.30         | 1.20         |          |                 |              | 1.68      | 2.64       | 8.02     | 6.11              |               |             |             | 3.64         | 1.24       |           |                             | 2.43                   |  | *(11.64)                              |                | 5.48                      | 2.01            |           |         |  |
| 34                          | Himachal Pradesh            | 0.29         | 1.23         |          |                 |              |           |            |          | 1.70              |               |             |             |              |            |           |                             |                        |  | *(23.61)                              |                | 4.09                      |                 |           |         |  |
| 35                          | Jammu & Kashmir             | 0.46         |              | 3.16     |                 |              | 1.53      | 1.10       |          |                   |               |             |             |              |            |           |                             |                        |  | *(4.54)                               |                |                           |                 |           | 2.73    |  |

$$L.Q. = \frac{V_{ij}}{V_j} / \frac{V_t}{V_n}$$

$$SQ = \sum_{i=1}^n \frac{V_{ij}}{V_j} - \frac{V_t}{V_n}$$

Location quotient (L.Q.) is calculated as  $\frac{V_{ij}}{V_j} / \frac{V_t}{V_n}$  and Specialization Coefficient (S.Q.) as  $\sum_{i=1}^n \frac{V_{ij}}{V_j} - \frac{V_t}{V_n}$  where V= Employment, i = i<sup>th</sup> industry, j = j<sup>th</sup> region, N= National Aggregate In both equation~

or 6) of industries in which each one of them specializes. But what is surprising is that some larger states like Andhra Pradesh (7) and Rajasthan (8) also have similarly narrow industrial bases. What is most surprising, however, is the fact that Pondicherry, a small UT, has as many as 11 industries constituting its industrial base, while Tamil Nadu a relatively more industrialised state has only 7 industries and the most industrialised state Gujarat only 8 industries constituting their industrial base.

Let us also see how similar or different the industrial structure of a state is vis-à-vis that of the country as a whole. For this purpose, shares of different industries in the total industrial employment in a state are compared with the corresponding shares at the national level. The differences between the two are summed up in a single statistic: coefficient of specialization. Value of this coefficient is zero if the industrial structure of the state is exactly similarly diversified as that of the country as a whole and one if that state has one industry and that industry is present in that state only. In between, the values of coefficient show the degrees of specialization of states vis-à-vis the industrial structure of the country.

Coefficients of specialization for different states are presented in *Table 23* (first column). If we take the value of specialization coefficient lower than 0.3 as indicating significant similarity of the state's industrial structure with that of the country as a whole, thirteen states (most of them major states) fall in this category. Kerala has the lowest degree of specialization with the value of specialization quotient at 0.13, followed by West Bengal and Andhra Pradesh (with SQ=0.14), Uttar Pradesh (0.15), Maharashtra (0.19), Rajasthan, Tamil Nadu (0.21) and Punjab and Karnataka (0.22), Haryana and Gujarat (0.25) and Himachal Pradesh (0.24) and Madhya Pradesh (0.26). Bihar, Chhattisgarh, Jharkhand, and Uttarakhand have a moderate degree of specialization with coefficient values between 0.30 and 0.40. Only Orissa has a coefficient which is higher than 0.40 (0.41), which is also the highest among all the states except three North Eastern states—all of which have a higher degree of coefficient of specialization. Other smaller states, Himachal Pradesh and Goa have relatively low coefficient of specialization. UTs have high specialization: Lakshadweep and Dadra and Nagar Haveli show a coefficient of specialization at 0.63 and 0.62 respectively and also Daman and Diu (0.62), Andaman and Nicobar (0.55). Delhi and Chandigarh have relatively low coefficient of specialization. Among smaller

states, Goa and Himachal Pradesh have low coefficient of specialization. In general, it may be concluded that the degree of specialization is rather low in most of the states and UTs in India, as their industrial structures are not very different from that of the country as a whole.

## VII. Interstate Productivity

### Differences in Manufacturing

As was noted earlier while comparing shares of gross value added and employment of different states in all-India totals, there are wide differences in productivity in manufacturing among different states. In this section we attempt a comparison of productivity, defined in terms of gross value added per worker, among states, in aggregate manufacturing and in individual 2-digit product groups. Data constraints do not permit such comparison for the entire manufacturing sector, but only for organised and unorganised sectors separately.

### Organised Sector

#### *Extent of Differences*

Per worker productivity in the organised manufacturing sector varied between Rs. 29,000 in Manipur and Rs. 8,20,000 in Maharashtra in 2000–01. Goa with a figure of Rs. 5.39 lakh, Madhya Pradesh (Rs. 3.02 lakh), Himachal Pradesh (Rs. 2.87 lakh) and Gujarat (Rs. 2.16 lakh) were other high productivity states. In Andhra Pradesh, Kerala, West Bengal, Nagaland and Jammu and Kashmir, GVA per worker was less than Rs. 1 lakh. All UTs had relatively high GVA per worker, the highest at Rs. 5.39 lakh in Dadra and Nagar Haveli and lowest in Chandigarh (Rs. 1.93 lakh) and Delhi (Rs. 1.90 lakh). The all-India average was Rs. 1.61 lakh (*Table 24*).

Similar pattern is seen in 2006–07, the latest year for which comparable data are available, with Manipur at the lowest level (GVA per worker at Rs. 33,000) and Maharashtra at the top (GVA per worker at Rs. 17.66 lakh) (*Table 25*). Goa (Rs. 9.59 lakh), Gujarat (Rs. 3.64 lakh) and Himachal Pradesh (6.05) continue to be in the high productivity states, but Madhya Pradesh slides down to below average, while Orissa, Bihar, Karnataka and Rajasthan climb up to the group of states with per worker value added higher than the national average (Rs. 2.55). Kerala (Rs. 0.67 lakh) followed by Uttar Pradesh (Rs. 0.97 lakh) are at the bottom; Punjab, West

**Table 24**  
**Per Worker Productivity of Organised Manufacturing in Rs. Lakh (2000-01)**

|               |                |       |         |         |           |        |             |                |        |        |           |            |               |             |              |           |             |       |         |           |          |         |             |            |       |                        |
|---------------|----------------|-------|---------|---------|-----------|--------|-------------|----------------|--------|--------|-----------|------------|---------------|-------------|--------------|-----------|-------------|-------|---------|-----------|----------|---------|-------------|------------|-------|------------------------|
| Industry Code | Andhra Pradesh | Bihar | Gujarat | Haryana | Karnataka | Kerala | Maharashtra | Madhya Pradesh | Orissa | Punjab | Rajasthan | Tamil Nadu | Uttar Pradesh | West Bengal | Chhattisgarh | Jharkhand | Uttarakhand | Assam | Manipur | Meghalaya | Nagaland | Tripura | A&N Islands | Chandigarh | Delhi | Dadar and Nager Haveli |
| 20-21         | 0.59           | 1.27  | 1.1     | 1.22    | 1.18      | 0.34   | 7.28        | 1.43           | 0.49   | 1.09   | 0.9       | 0.8        | 1.04          | 0.4         | 0.43         | 1.56      | 1.16        | 0.57  | 0.94    | 0.74      | 0.57     | 0.58    | N.E.        | 1.01       | 3.26  | N.E.                   |
| 22            | 0.2            | 1.14  | 1.4     | 1.69    | 4.54      | 0.9    | 1.04        | 0.89           | 0.5    | 1.04   | 1.29      | 1.48       | 2.53          | 1.84        | 0.41         | 0.18      | 0.76        | 0.9   | N.E.    | N.E.      | 0.28     | 32.24   | N.E.        | 3.85       | 1.47  | 0                      |
| 23+24+25      | 1.04           | 0.28  | 1.22    | 0.68    | 1.37      | 0.82   | 4.55        | 2.08           | 0.15   | 1.18   | 1.08      | 1.02       | 0.91          | 0.56        | 1            | 0.54      | 0.06        | 0.41  | N.E.    | N.E.      | N.E.     | N.E.    | N.E.        | N.E.       | 0.56  | 4.84                   |
| 26            | 0.45           |       | 1.09    | 1.45    | 0.59      | 0.75   | 6.13        | 3.13           | 0.44   | 1.18   | 1.95      | 0.87       | 1.28          | 1.52        | 2.44         | N.E.      | 0.92        | N.E.  | N.E.    | N.E.      | N.E.     | 0.55    | N.E.        | N.E.       | 2.56  | 2.72                   |
| 27            | 0.38           | 0.2   | 0.61    | 0.66    | 1.56      | 0.21   | 7.11        | 0.56           | 0.6    | 0.44   | 0.48      | 0.45       | 0.68          | 0.33        | 0.23         | 0.29      | 0.41        | 0.17  | 0.37    | N.E.      | 0.47     | 0.25    | N.E.        | 0.84       | 0.81  | 1.49                   |
| 28            | 1.41           | 1.26  | 1.34    | 1.42    | 1.47      | 1.2    | 7.03        | 1.12           | 1.28   | 0.57   | 0.94      | 2.18       | 1.33          | 1.73        | 0.38         | 1.4       | 2.24        | 2.03  | N.E.    | N.E.      | 0.35     | 0.5     | N.E.        | 2.33       | 2.48  | 2.33                   |
| 29            | 0.58           | 0.52  | 0.55    | 1.01    | 0.69      | 2.87   | 0.41        | 0.92           | N.E.   | 0.68   | 0.94      | 0.49       | 0.63          | 0.96        | 0.3          | N.E.      | N.E.        | N.E.  | N.E.    | N.E.      | N.E.     | N.E.    | N.E.        | N.E.       | 1.59  | N.E.                   |
| 30            | 1.82           | 0.52  | 3.88    | 1.14    | 2.28      | 2.64   | 19.79       | 3.3            | 0.76   | 2.52   | 6.44      | 1.12       | 2.64          | 2.03        | 1.57         | 0.78      | 2.56        | 0.9   | N.E.    | N.E.      | N.E.     | 0.36    | N.E.        | 4.25       | 1.69  | 9.76                   |
| 31            | 2.49           | 1.4   | 4.26    | 2.08    | 2.03      | 3.54   | 33.16       | 2.68           | 1.82   | 0.74   | 3.89      | 3.09       | 3.69          | 0.82        | 1.32         | 0.24      | 4.35        | 6     | N.E.    | N.E.      | N.E.     | 1.02    | N.E.        | 0.62       | 1.15  | 5.35                   |
| 32            | 1.65           | 0.28  | 1.61    | 0.75    | 1.58      | 0.65   | 2.39        | 5.85           | 1.55   | 0.72   | 2.42      | 2.05       | 0.93          | 0.91        | 4.35         | 0.38      | 0.25        | 0.23  | 0.19    | 0.56      | 0.15     | 0.16    | N.E.        | 0.93       | 0.72  | 4.35                   |
| 33            | 2.45           | 3.47  | 3.74    | 2.87    | 3.03      | 2.62   | 1.21        | 19.79          | 3.16   | 0.58   | 2.58      | 1.17       | 3.71          | 1.07        | 2.74         | 3.57      | 0.91        | 1.12  | N.E.    | 3.18      | N.E.     | N.E.    | N.E.        | 2.08       | 0.85  | 3.13                   |
| 34            | 0.76           | 0.72  | 0.86    | 0.94    | 1.61      | 0.4    | 10.08       | 0.82           | 0.68   | 0.8    | 2.98      | 1.54       | 1.09          | 0.95        | 0.27         | 0.75      | 0.55        | 0.49  | N.E.    | N.E.      | 0.58     | 0.34    | N.E.        | 1.46       | 1.47  | 2.95                   |
| 35-36         | 2.13           | 1.46  | 1.79    | 2.69    | 1.99      | 1.49   | 16.59       | 2.32           | 1.28   | 1.68   | 1.8       | 1.84       | 2.08          | 1.56        | 0.95         | 1.62      | 2.88        | 1.46  | N.E.    | N.E.      | N.E.     | 1.66    | N.E.        | 1.92       | 1.41  | 6.09                   |
| 37            | 1.08           | 0.66  | 0.53    | 2.5     | 2.05      | 1.57   | 16.2        | 1.46           | 0.67   | 0.67   | 0.45      | 2.96       | 2.11          | 0.59        | 0.74         | 0.6       | N.E.        | 0.36  | N.E.    | N.E.      | N.E.     | N.E.    | N.E.        | 0.76       | 1.57  | N.E.                   |
| 38            | 0.9            | 0.12  | 0.99    | 1.73    | 1.67      | 0.8    | 35.59       | 0.63           | N.E.   | 0.62   | 1.22      | 1.64       | 1.29          | 1.85        | 0.23         | N.E.      | 1.91        | N.E.  | N.E.    | N.E.      | N.E.     | N.E.    | N.E.        | 0.98       | 1.38  | 1.77                   |
| All           | 0.87           | 1.8   | 2.16    | 1.76    | 1.56      | 0.95   | 8.2         | 3.02           | 1.72   | 1.07   | 2.03      | 1.3        | 1.65          | 0.9         | 2.29         | 2.08      | 1.9         | 1.02  | 0.29    | 1.16      | 0.33     | 1.56    | N.E.        | 1.9        | 1.93  | 5.39                   |

Note: Note estimated  
Source: Annual Survey of Industry, CSO

**Table 25**  
**Per Worker Productivity of Organised Manufacturing in Rs. Lakh (2006-07)**

| Industry Code    | Andhra Pradesh | Bihar       | Gujarat     | Haryana     | Karnataka   | Kerala      | Maharashtra  | Madhya Pradesh | Orissa      | Punjab      | Rajasthan   | Tamil Nadu  | Uttar Pradesh | West Bengal | Chhattisgarh | Jharkhand   | Uttarakhand | Assam       | Manipur     | Meghalaya   | Nagaland    | Tripura     | A&N Islands | Chandigarh  | Delhi       | Dadar and Nagar Haveli | Daman and Diu | Ponducherry | Goa         | Himachal Pradesh | Jammu & Kashmir | India       |
|------------------|----------------|-------------|-------------|-------------|-------------|-------------|--------------|----------------|-------------|-------------|-------------|-------------|---------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------|---------------|-------------|-------------|------------------|-----------------|-------------|
| <b>20-21</b>     | 1.12           | 1.1         | 1.36        | 1.73        | 1.75        | 0.34        | 6.6          | 0.86           | 0.53        | 1.1         | 1.74        | 0.86        | 0.8           | 0.57        | 0.61         | 1.74        | 1.08        | 0.51        | 0.89        | 0           | 0.78        | 1.62        | 0.07        | 0.98        | 2.17        | 18.31                  | 1.01          | 2.4         | 11.97       | 2.98             | 0.86            | <b>1.25</b> |
| <b>22</b>        | 0.21           | 2.12        | 1.51        | 1.78        | 11.47       | 0.09        | 1.76         | 1.41           | 0.23        | 7.27        | 2.69        | 2.19        | 1.72          | 2           | 0.36         | 0.38        | 0.03        | 2.74        | N.E.        | N.E.        | 0.37        | 7.12        | N.E.        | 0.37        | 1.12        | 7.39                   | 2.46          | 2.75        | 5           | 1.43             | 0.69            | <b>1.11</b> |
| <b>23+24 +25</b> | 1.09           | 0.53        | 1.45        | 1.22        | 2.22        | 0.99        | 4.53         | 2.41           | 0.54        | 2.16        | 1.86        | 1.5         | 1.14          | 0.64        | 0.99         | N.E.        | 2.26        | 0.43        | N.E.        | N.E.        | N.E.        | N.E.        | N.E.        | N.E.        | 0.75        | 5.21                   | 2.95          | 0.86        | N.E.        | 2.55             | 1.3             | <b>1.52</b> |
| <b>26</b>        | 0.4            | 0.74        | 1.39        | 1.28        | 0.82        | 1.01        | 45.85        | 5.78           | 0.63        | 1.16        | 1.61        | 0.53        | 0.47          | 1.31        | 0.56         | 0.74        | 5.66        | 0.71        | N.E.        | N.E.        | N.E.        | N.E.        | N.E.        | N.E.        | 1.41        | 1.82                   | 5.38          | 1.19        | 14.12       | 2.23             | 0.41            | <b>0.92</b> |
| <b>27</b>        | 0.78           | 0.34        | 0.69        | 0.26        | 1.01        | 0.41        | 12.92        | 0.44           | 1.44        | 0.5         | N.E.        | 0.56        | 0.39          | 1.02        | 0.44         | 0.65        | 0.75        | 0.29        | 0.29        | N.E.        | 1.2         | 0.71        | 0.38        | 0.49        | 1.22        | 2.47                   | 1.39          | 1.49        |             | 1.86             | 0.24            | <b>0.76</b> |
| <b>28</b>        | 2.14           | 0.72        | 1.38        | 1.71        | 1.83        | 1.99        | 12.92        | 1.06           | 1.99        | 1.65        | N.E.        | 1.49        | 0.71          | 1.63        | 0.58         | 1.27        | 2.21        | 2.38        | N.E.        | 1.59        | 0.48        | 0.84        | N.E.        | 3.03        | 2.03        | 2.5                    | 2.15          | 1.24        | 3.59        | 4.21             | 1               | <b>1.83</b> |
| <b>29</b>        | 0.42           | 1.25        | 1.26        | 1.13        | 1.83        | 1.58        | 2.25         | 0.85           | N.E.        | 0.84        | 0.72        | 0.75        | 0.28          | 1.47        | 0.36         | N.E.        | 2.76        | N.E.        | N.E.        | N.E.        | N.E.        | N.E.        | N.E.        | N.E.        | 1.25        | N.E.                   | N.E.          | 0.76        | N.E.        | 3.32             | 2.09            | <b>0.96</b> |
| <b>30</b>        | 4.07           | 3.83        | 5.15        | 3.09        | 3.19        | 2.4         | 21.31        | 2.97           | N.E.        | 2.66        | 4.02        | 0.84        | 1.62          | 4.09        | 1.03         | 5.77        | 4.78        | 4.86        | N.E.        | 8.06        | N.E.        | 5.24        | N.E.        | N.E.        | 3.81        | 6.6                    | 2.67          | 3.95        | 14.68       | 13.37            | 4.76            | <b>3.83</b> |
| <b>31</b>        | 6.59           | 1.95        | 22.39       | 2.17        | 3.45        | N.E.        | 12.53        | 1.83           | 1.92        | 1.1         | 1.99        | 4.37        | 2.14          | 5.75        | 11.8         | 3.57        | 2.81        | 13.16       | N.E.        | N.E.        | N.E.        | 0           | N.E.        | 2.29        | 1.27        | 3.86                   | 1.84          | 1.32        | 10.35       | 1.81             | 0.55            | <b>10.4</b> |
| <b>32</b>        | 2.01           | 0.46        | 2.02        | 0.73        | 3.3         | 1.06        | 3.27         | 4.27           | 1.61        | 0.63        | 3.34        | 2.26        | 0.33          | 1.25        | 5.05         | 0.93        | 1.19        | 0.44        | 0.27        | 16.76       | 0.23        | 0.28        | N.E.        | 1.01        | 0.73        | 2.82                   | 1.56          | 1.55        | 6.53        | 8.22             | 1.36            | <b>1.97</b> |
| <b>33</b>        | 5.8            | 4.62        | 3.27        | 3.57        | 9.33        | 0.96        | 5.06         | 11.82          | 5.17        | 0.89        | 3.21        | 1.92        | 1.83          | 1.81        | 6.44         | 4.74        | 2.63        | 3.26        | N.E.        | 3.45        | N.E.        | 7.85        | N.E.        | 1.21        | 0.67        | 1.85                   | 2.15          | 1.1         | 13.05       | 1.89             | 2.69            | <b>4.07</b> |
| <b>34</b>        | 1.04           | 1.27        | 2.05        | 1.26        | 1.68        | 0.55        | 13.59        | 0.35           | 0.46        | 0.67        | 1.11        | 1.82        | 0.34          | 0.98        | 1.46         | 1.52        | 1.15        | 0.36        | N.E.        | N.E.        | N.E.        | 2.37        | N.E.        | 0.48        | 1.2         | 1.5                    | 1             | 1.63        | 5.07        | 1.34             | 0.71            | <b>1.45</b> |
| <b>35-36</b>     | 3.46           | 6.35        | 2.57        | 2.82        | 4.39        | 2.01        | 22.55        | 1.72           | 2.22        | 1.88        | 5.52        | 3.18        | 1.32          | 2.24        | 1.25         | 13.9        | 4.6         | 1.05        | N.E.        | N.E.        | N.E.        | 2.13        | N.E.        | 2.19        | 1.52        | 5.74                   | 8.77          | 12.33       | 6.69        | 5.22             | 3.59            | <b>3.56</b> |
| <b>37</b>        | 1.21           | 2.92        | 2.36        | 4.75        | 3.02        | 2.05        | 69.45        | 1.33           | 0.23        | 1.07        | 3.57        | 4.55        | 1.6           | 1.33        | 0.75         | 1.91        | 1.39        | 0.53        | N.E.        | N.E.        | N.E.        | N.E.        | N.E.        | 0.75        | 1.08        | N.E.                   | 2.15          | 3           | 1.98        | 1.27             | 1.28            | <b>3.89</b> |
| <b>38</b>        | 1.25           | N.E.        | 1.53        | 1.36        | 1.39        | 2.5         | 28.93        | 0.18           | N.E.        | 0.9         | 1.81        | 1.64        | 0.93          | 2.18        | 0.25         | N.E.        | 8.03        | N.E.        | N.E.        | N.E.        | N.E.        | N.E.        | N.E.        | 0           | 1.14        | 1.98                   | 2.05          | 2.6         | 3.46        | 7.06             | 0.41            | <b>1.89</b> |
| <b>All</b>       | <b>1.74</b>    | <b>2.83</b> | <b>3.64</b> | <b>2.51</b> | <b>2.62</b> | <b>0.67</b> | <b>17.66</b> | <b>2.39</b>    | <b>2.96</b> | <b>1.36</b> | <b>2.64</b> | <b>1.45</b> | <b>0.97</b>   | <b>1.44</b> | <b>4.39</b>  | <b>3.96</b> | <b>3.18</b> | <b>1.93</b> | <b>0.33</b> | <b>9.47</b> | <b>0.88</b> | <b>0.72</b> | <b>8.95</b> | <b>1.49</b> | <b>1.59</b> | <b>4.63</b>            | <b>3.5</b>    | <b>3.26</b> | <b>9.59</b> | <b>6.05</b>      | <b>2.48</b>     | <b>2.55</b> |

Note: Note estimated  
Source: Annual Survey of Industry, CSO

Bengal and Tamil Nadu being only marginally better. All the three new states were among the better performers in terms of value added per worker in 2006–07, as in 2000–01. Among the North Eastern states, Meghalaya has gone up the ladder being the state with the third highest productivity (RS. 9.47 per worker) among all the states after Maharashtra and Goa in 2006–07; it was among the low productivity states in 2000–01. Tripura and Nagaland are at the bottom. Among UTs, Dadra and Nagar Haveli and Daman and Diu are in the high productivity and Delhi and Chandigarh in low productivity categories.

### ***The Composition Effect***

Overall productivity differences among the states are partly due to varying composition of the manufacturing sector and partly due to differences in productivity in the same product groups. States with larger share of high productivity industries in their product structure would have higher aggregate productivity and *vice versa*. The share of five industries with the highest all-India productivity (viz. Chemical products, basic metals, transport equipment, rubber and plastic products and machinery) was the highest in Meghalaya (85.18%) in 2006–07 (*Table 26*). The state was also among the high productivity category (third highest). Goa and Himachal Pradesh also were among the top five states in terms of both per worker productivity and the share of the five industries with higher productivity. Maharashtra, Gujarat and Uttarakhand were other states with large (>73%) share of the top five industries; they also had high aggregate productivities, though not in the same order in respect of the two variables. Bihar, Kerala, Punjab, Nagaland and Tripura all have a low value added per worker, in organised manufacturing, of less than RS. 1 lakh per year; they also have relatively small share (between 35 to 45, and as low as 7% in Nagaland) of the five high productivity industries. But there are some outliers in this pattern. Chhattisgarh has high productivity (RS. 4.39 lakh), but only a small share (12%) in the top five industries. Jharkhand shows similar pattern with a high figure of RS. 3.96 lakh in productivity and a low (36%) share in five high productivity industries. Manipur generates 71 per cent of its value added from the top five high productivity industries, but its overall productivity is the lowest (RS. 33,000).

**Table 26**  
**Average Share of Five Highest Productivity Industries at all India level in the Gross Value**  
**Added in Organised Manufacturing (2006–07)**

| <b>Major States</b>                       | <b>30</b>    | <b>31</b>    | <b>32</b>   | <b>35–36</b> | <b>37</b>   | <b>Total</b> |
|---|--------------|--------------|-------------|--------------|-------------|--------------|
| Andhra Pradesh                            | 19.70        | 12.93        | 10.40       | 14.64        | 1.55        | <b>59.23</b> |
| Bihar                                     | 3.08         | 6.25         | 4.06        | 14.70        | 4.56        | <b>32.65</b> |
| Gujarat                                   | 28.20        | 32.78        | 4.34        | 8.39         | 1.55        | <b>75.26</b> |
| Haryana                                   | 4.41         | 1.90         | 1.23        | 14.01        | 47.25       | <b>68.80</b> |
| Karnataka                                 | 6.41         | 4.29         | 4.53        | 21.54        | 7.45        | <b>44.22</b> |
| Kerala                                    | 17.49        | 2.20         | 8.00        | 14.23        | 5.41        | <b>47.33</b> |
| Madhya Pradesh                            | 13.70        | 5.33         | 16.05       | 9.97         | 2.98        | <b>48.03</b> |
| Maharashtra                               | 9.37         | 35.26        | 1.55        | 12.89        | 14.31       | <b>73.38</b> |
| Orissa                                    | 0.97         | 2.34         | 6.32        | 2.04         | 0.01        | <b>11.68</b> |
| Punjab                                    | 7.24         | 2.79         | 6.25        | 11.33        | 8.34        | <b>35.96</b> |
| Rajasthan                                 | 9.40         | 2.28         | 26.14       | 14.38        | 3.30        | <b>55.50</b> |
| Tamil Nadu                                | 4.17         | 7.28         | 4.80        | 14.14        | 19.15       | <b>49.54</b> |
| Uttar Pradesh                             | 14.39        | 8.01         | 2.49        | 17.14        | 8.55        | <b>50.59</b> |
| West Bengal                               | 14.26        | 11.11        | 2.26        | 10.81        | 3.24        | <b>41.69</b> |
| <b>New States</b>                         |              |              |             |              |             |              |
| Chattisgarh                               | 0.59         | 1.57         | 8.50        | 1.16         | 0.15        | <b>11.97</b> |
| Jharkhand                                 | 3.02         | 9.60         | 3.47        | 15.03        | 4.68        | <b>35.80</b> |
| Uttarakhand                               | 34.67        | 4.20         | 1.61        | 32.49        | 0.53        | <b>73.50</b> |
| <b>North Eastern States</b>               |              |              |             |              |             |              |
| Arunachal Pradesh                         | N.E.         | N.E.         | N.E.        | N.E.         | N.E.        | -            |
| Assam                                     | 14.94        | 53.97        | 4.00        | 1.05         | 0.02        | <b>73.99</b> |
| Manipur                                   | 0.00         | 0.00         | 71.08       | 0.00         | 0.00        | <b>71.08</b> |
| Meghalaya                                 | 3.76         | 0.00         | 81.42       | 0.00         | 0.00        | <b>85.18</b> |
| Mizoram                                   | N.E.         | N.E.         | N.E.        | N.E.         | N.E.        | -            |
| Nagaland                                  | 0.00         | 0.00         | 7.06        | 0.00         | 0.00        | <b>7.06</b>  |
| Sikkim                                    | N.E.         | N.E.         | N.E.        | N.E.         | N.E.        | -            |
| Tripura                                   | 7.32         | 0.00         | 32.38       | 1.14         | 0.00        | <b>40.84</b> |
| <b>Union Territories and Other States</b> |              |              |             |              |             |              |
| A&N Islands                               | 0.00         | 0.00         | 0.00        | 0.00         | 0.00        | <b>0.00</b>  |
| Chandigarh                                | 0.00         | 1.20         | 3.41        | 34.55        | 3.18        | <b>42.33</b> |
| Delhi                                     | 15.10        | 2.98         | 0.14        | 12.89        | 4.96        | <b>36.07</b> |
| Dadar and Nagar Haveli                    | 25.04        | 17.03        | 1.24        | 17.14        | 0.00        | <b>60.44</b> |
| Daman and Diu                             | 12.49        | 16.63        | 0.22        | 40.62        | 0.42        | <b>70.38</b> |
| Lakshadweep                               | N.E.         | N.E.         | N.E.        | N.E.         | N.E.        | -            |
| Pondicherry                               | 44.02        | 6.93         | 2.11        | 8.05         | 2.29        | <b>63.40</b> |
| Goa                                       | 21.23        | 4.75         | 4.12        | 45.61        | 4.97        | <b>80.67</b> |
| Himachal Pradesh                          | 52.13        | 1.37         | 9.06        | 16.11        | 0.42        | <b>79.09</b> |
| Jammu & Kashmir                           | 48.37        | 0.77         | 4.57        | 10.52        | 0.26        | <b>64.50</b> |
| <b>India</b>                              | <b>13.21</b> | <b>17.73</b> | <b>5.16</b> | <b>13.38</b> | <b>9.94</b> | <b>59.42</b> |

*Source:* Same as Table 1

### ***Differences in Individual Industries***

Thus, while a good part of the interstate productivity differentials in the organised manufacturing as a whole could be attributed to the differences in the structure of industries, part of them is also because there are interstate differences in productivity even in the same product groups. Thus, in chemical products the

group with highest productivity (RS. 10.40 lakh) on an all-India basis, generated a value added of RS. 12.53 lakh per worker in Maharashtra and RS. 10.35 lakh in Goa, the figure was as low as RS. 1.10 lakh for Punjab and RS. 0.55 lakh for Jammu and Kashmir (Table 25). Similarly, basic metals with the next highest figure (RS. 4.07 lakh) of value added per worker in aggregate has a figure as high as RS. 13.05 lakh in Goa, RS. 11.82 lakh in Madhya Pradesh and RS. 9.33 lakh in Maharashtra, but only RS. 93,000 in Kerala, RS. 89,000 in Punjab and RS. 67,000 in Delhi.

Highest productivity in any industry in any state is in transport equipment in Maharashtra (RS. 69.45 lakh), but it has as low a productivity as RS. 23,000 in Orissa and RS. 53,000 in Assam. Industry with lowest productivity (RS. 76,000) on an all-India basis viz. wood products, shows a variation between less than RS. 30,000 in Haryana, Manipur and Jammu and Kashmir and as high as RS. 12.92 lakh in Maharashtra.

Maharashtra had the highest value added per worker in 10 out of the 15 industry groups in which the organised manufacturing was divided. It occupied second place in two cases. Goa topped in two and was at second place in 6 industries. Assam, Bihar, Andhra Pradesh, Uttar Pradesh, Madhya Pradesh, Orissa and Chhatisgarh featured as the states with the lowest or second lowest value added per worker in case of several industry groups. Thus, it appears that besides the difference in composition of industries, there are significantly larger variations across the states in their regional social, economic, technological and labour market characteristics that produce wide variations in productivity in an industry.

### ***Technology and Productivity Differentials***

Does technological variation explain interstate differences in productivity in an industry? Taking capital intensity, measured in terms of capital per worker as the indicator of technology, we attempt to investigate this question. That different industries use different levels of technology in production is very well known. It could also be reasonably assumed that a high technology industry would be so, irrespective of its location in one state or the other. Yet, there could be variations from state to state due, first, to the items within the same product growth that a state specializes in production, and second, possibly because of the choice of

technology—labour versus capital intensive—that the producer in a state may choose to adopt depending on the labour market situation. A look at the figures of capital per worker (Rs. lakh) in different industries and states (*Table 27*) suggests: (i) industries that have high capital intensity show that characteristic in a relative sense across the states and similar is the case with industries with low capital intensity; and (ii) yet, these are significant variations in capital intensity in individual industries across the states.

Thus, industry with highest all-India value of capital per worker (RS. 13.69 per lakh), namely, chemical products, is either the industry with highest capital intensity or among the top few industries in this respect in most states. Similar is the case with the industry with the next highest capital intensity, namely basic metals. Even in a state with very low overall capital intensity (RS. 1.08 lakh), namely Tripura, capital intensity in these two industries (chemical products and basic metals) is as high as RS. 30 lakh and RS.54 lakh respectively. Beverages and leather products have the lowest capital intensity on an average; they also are among industries with lowest capital per worker in most of the states. Even in states with high overall capital intensity like Chhattisgarh (RS. 14.67 lakh), Jharkhand (RS. 13.43 lakh), Orissa (RS. 8.33 lakh) and Gujarat (RS. 7.82 lakh), capital intensity in beverages is low at Rupees 1.15, 1.26, 0.56 and 0.97 lakh respectively and in leather products RS. 0.54 lakh in Chhattisgarh and RS. 1.26 lakh in Gujarat (industry does not appear in Jharkhand and Orissa).

Yet, large variations are observed in capital intensity in the same industry among the states. In the industries mentioned above, for example, it varied between RS. 1.10 lakh in Punjab to RS. 45.26 lakh in Maharashtra in chemical products, between RS. 81.82 lakh in Punjab and RS. 24.98 lakh in Madhya Pradesh in basic metals, between RS. 0.20 lakh in Andhra Pradesh and to RS. 9.49 lakh in Uttarakhand in beverages and relatively less between RS. 0.29 lakh in Bihar to RS. 4.33 lakh in Uttarakhand. Capital intensity seems to explain productivity differences among states to a large extent. In 2000–01, interstate differences in productivity in individual industries were very highly correlated with the differences in capital intensity, among the major states in 2000–01. Coefficients of correlation between the two were higher than +0.75 in 13 out of 15 industry groups (*Table 28*), and more

**Table 27**  
**Capital Labour Ratio in Organised Manufacturing in Rs. Lakh (2006-07)**

| Industry Code    | Andhra Pradesh | Bihar      | Gujarat     | Haryana     | Karnataka   | Kerala     | Maharashtra  | Madhya Pradesh | Orissa      | Punjab      | Rajasthan   | Tamil Nadu  | Uttar Pradesh | West Bengal | Chhattisgarh | Jharkhand    | Uttarakhand | Assam       | Manipur     | Meghalaya   | Nagaland   | Tripura     | A&N Islands | Chandigarh  | Delhi       | Dadar and Nagar Haveli | Daman and Diu | Pondicherry | Goa         | Himachal Pradesh | Jammu & Kashmir | India        |
|------------------|----------------|------------|-------------|-------------|-------------|------------|--------------|----------------|-------------|-------------|-------------|-------------|---------------|-------------|--------------|--------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|------------------------|---------------|-------------|-------------|------------------|-----------------|--------------|
| <b>20-21</b>     | 1.82           | 2.12       | 2.31        | 1.98        | 2.45        | 0.36       | 8.16         | 2.29           | 1.48        | 1.72        | 1.3         | 1.32        | 1.71          | 1.23        | 1.46         | 2.75         | 5.19        | 1.11        | 2.41        | 4.71        | 0.88       | 1.86        | 4.38        | 1.8         | 3.93        | 3.64                   | 1.02          | 3.04        | 4.19        | 2.87             | 1.37            | <b>1.94</b>  |
| <b>22</b>        | 0.2            | 1.13       | 0.97        | 3.4         | 4           | 0.19       | 3.87         | 0.79           | 0.56        | 3.5         | 1.55        | 1.87        | 1.57          | 0.85        | 1.15         | 1.26         | 9.49        | 2.38        | N.E.        | N.E.        | 0.67       | 0.49        | N.E.        | 1.12        | 5.7         | 5.88                   | 5.86          | 5.46        | 7.11        | 1.35             | 1.84            | <b>0.83</b>  |
| <b>23+24 +25</b> | 4.01           | 0.64       | 4.73        | 3.43        | 5.32        | 2.04       | 16.11        | 6.09           | 1.47        | 6.27        | 3.6         | 4.02        | 5.15          | 0.69        | 5.05         | 16.36        | 0.87        | N.E.        | N.E.        | N.E.        | N.E.       | N.E.        | N.E.        | N.E.        | 0.92        | 21.57                  | 13.29         | 3.79        | N.E.        | 7.46             | 3.71            | <b>4.23</b>  |
| <b>26</b>        | 1.46           | 0.35       | 2.66        | 1.87        | 0.59        | 2.17       | 15.9         | 6.14           | 1.55        | 1.4         | 2.38        | 1.15        | 0.62          | 1.37        | 3.13         | 0.43         | 4.46        | 0.35        | N.E.        | N.E.        | N.E.       | N.E.        | N.E.        | N.E.        | 1.47        | 8.66                   | 3.81          | 4.42        | 15.83       | 2.08             | 1.49            | <b>1.63</b>  |
| <b>27</b>        | 1.33           | 0.25       | 0.82        | 1.21        | 1.77        | 0.82       | 15.11        | 1.38           | 0.64        | 1.61        | 1.62        | 0.79        | 0.63          | 1.37        | 0.92         | 0.46         | 16.61       | 0.85        | 0.4         | N.E.        | 0.66       | 0.73        | 1.71        | 0.44        | 0.96        | 1.66                   | 4.07          | 3.03        | N.E.        | 0.89             | 0.36            | <b>1.32</b>  |
| <b>28</b>        | 6.61           | 0.84       | 3.98        | 3.73        | 2.39        | 2.5        | 24.83        | 1.6            | 8.72        | 5.13        | 1.76        | 3.07        | 2.04          | 2.7         | 2.09         | 2.22         | 15.15       | 3.32        | N.E.        | 0.59        | 0.14       | 0.59        | N.E.        | 3.25        | 4.61        | 5.85                   | 7.95          | 3.4         | 3.24        | 3.81             | 1.67            | <b>4.02</b>  |
| <b>29</b>        | 0.94           | 0.49       | 1.26        | 3.15        | 1.18        | 2.13       | 1.5          | 0.71           | N.E.        | 1.66        | 0.85        | 0.75        | 0.58          | 1.85        | 0.54         | N.E.         | 4.33        | N.E.        | N.E.        | N.E.        | N.E.       | N.E.        | N.E.        | N.E.        | 2.29        | N.E.                   | N.E.          | N.E.        | 0.53        | 2.3              | 1.77            | <b>1.14</b>  |
| <b>30</b>        | 6.12           | 8.36       | 11.23       | 3.9         | 5           | 3.92       | 38.91        | 4.85           | 18.41       | 6.92        | 8.52        | 2.23        | 4.48          | 14.92       | 4.77         | 24.68        | 9.75        | 5.1         | N.E.        | 3.09        | N.E.       | 2.74        | N.E.        | N.E.        | 3.61        | 6.76                   | 3.5           | 6.86        | 12.72       | 7.52             | 2.64            | <b>6.96</b>  |
| <b>31</b>        | 9.13           | 8.02       | 49.08       | 3.11        | 18.06       | 8.7        | 45.26        | 5.16           | 5.2         | 1.1         | 6.98        | 7.09        | 10.47         | 13.29       | 32.08        | 2.52         | 13.92       | 30.3        | N.E.        | N.E.        | N.E.       | 30.23       | N.E.        | 4.09        | 2.76        | 6.59                   | 3.95          | 4.26        | 9.93        | 4.36             | 4.02            | <b>13.69</b> |
| <b>32</b>        | 3.43           | 0.92       | 4.86        | 1.48        | 5.12        | 1.64       | 6.75         | 11.31          | 2.73        | 0.25        | 5.08        | 3.95        | 0.71          | 3.52        | 17.69        | 3.64         | 19.59       | 0.41        | 0.25        | 10.76       | 0.08       | 0.12        | N.E.        | 2.94        | 2.31        | 6.15                   | 2.65          | 12.79       | 8.64        | 2.91             | <b>3.41</b>     |              |
| <b>33</b>        | 9.73           | 8.66       | 9.81        | 7.82        | 14.83       | 1.22       | 10.73        | 24.98          | 12.82       | 1.82        | 2.16        | 4.44        | 7.19          | 4.38        | 21.86        | 20.68        | 5.96        | 3.59        | N.E.        | 6.88        | N.E.       | 54.31       | N.E.        | 9.44        | 1.62        | 8.54                   | 4.75          | 4.66        | 16.95       | 3.01             | 0.89            | <b>7.74</b>  |
| <b>34</b>        | 1.51           | 2.44       | 2.54        | 2.07        | 1.45        | 0.89       | 14.89        | 1.09           | 0.61        | 0.73        | 2.4         | 1.12        | 0.46          | 0.58        | 1.14         | 7.55         | 2.29        | 0.17        | N.E.        | N.E.        | N.E.       | 0.86        | N.E.        | 0.8         | 2.36        | 2.24                   | 1.15          | 3.29        | 4.7         | 1.57             | 0.95            | <b>1.47</b>  |
| <b>35-36</b>     | 3.01           | 4.38       | 3.31        | 2.87        | 4.69        | 1.43       | 20.9         | 2.39           | 2.37        | 1.76        | 3.57        | 2.33        | 2.42          | 2.17        | 2.14         | 4.34         | 4.08        | 0.91        | N.E.        | N.E.        | N.E.       | 0.6         | N.E.        | 5.64        | 1.67        | 5.36                   | 3.84          | 3.45        | 8.22        | 4.57             | 0.68            | <b>3.26</b>  |
| <b>37</b>        | 1.41           | 4.78       | 3.9         | 4.56        | 3.97        | 1.18       | 61.14        | 2.14           | 0.51        | 1.44        | 3.46        | 4.94        | 8.66          | 1.34        | 1.64         | 9.7          | 27.82       | 0.38        | N.E.        | N.E.        | N.E.       | N.E.        | N.E.        | 1.45        | 1.25        | N.E.                   | 4.92          | 4.02        | 4.62        | 4.94             | 0.41            | <b>4</b>     |
| <b>38</b>        | 1.03           | N.E.       | 0.81        | 1.92        | 1.95        | 1.19       | 17.61        | 0.18           | N.E.        | 1.03        | 1.41        | 1.43        | 1.1           | 2.59        | 0.5          | N.E.         | 2.17        | N.E.        | N.E.        | N.E.        | N.E.       | N.E.        | N.E.        | 2.26        | 1.8         | 4.09                   | 2.28          | 3.7         | 5.11        | 0.99             | 0.44            | <b>1.32</b>  |
| <b>All</b>       | <b>2.77</b>    | <b>5.1</b> | <b>7.82</b> | <b>3.12</b> | <b>3.65</b> | <b>1.4</b> | <b>19.07</b> | <b>4.94</b>    | <b>8.33</b> | <b>2.22</b> | <b>3.66</b> | <b>2.38</b> | <b>2.7</b>    | <b>2.78</b> | <b>14.67</b> | <b>13.43</b> | <b>8.31</b> | <b>3.67</b> | <b>0.46</b> | <b>8.24</b> | <b>0.5</b> | <b>1.08</b> | <b>4.14</b> | <b>4.65</b> | <b>2.23</b> | <b>10.26</b>           | <b>4.33</b>   | <b>4.95</b> | <b>9.62</b> | <b>5.65</b>      | <b>2.01</b>     | <b>3.86</b>  |

Note: Same as Table 25

Source: Same as Table 25

**Table 28**  
**Coefficient of Correlation between Per Worker Productivity and**  
**Capital Labour Ratio in Organised Manufacturing**

| Industry Code | 2000-01            |                  | 2006-07            |                  |
|---------------|--------------------|------------------|--------------------|------------------|
|               | Among Major States | Among All States | Among Major States | Among All States |
| 20-21         | 0.97               | 0.88             | 0.96               | 0.41             |
| 22            | 0.61               | -0.02            | 0.70               | 0.28             |
| 23+24+25      | 0.96               | 0.88             | 0.95               | 0.91             |
| 26            | 0.98               | 0.88             | 0.97               | 0.80             |
| 27            | 0.99               | 0.96             | 0.99               | 0.64             |
| 28            | 0.94               | 0.78             | 0.96               | 0.82             |
| 29            | 0.42               | 0.66             | 0.38               | 0.65             |
| 30            | 0.88               | 0.74             | 0.97               | 0.70             |
| 31            | 0.76               | 0.65             | 0.92               | 0.80             |
| 32            | 0.97               | 0.77             | 0.93               | 0.51             |
| 33            | 0.84               | 0.82             | 0.93               | 0.65             |
| 34            | 0.98               | 0.94             | 0.99               | 0.90             |
| 35-36         | 0.99               | 0.88             | 0.99               | 0.81             |
| 37            | 0.98               | 0.95             | 0.99               | 0.90             |
| 38            | 0.99               | 0.79             | 0.99               | 0.92             |
| <b>All</b>    | <b>0.76</b>        | <b>0.62</b>      | <b>0.79</b>        | <b>0.65</b>      |

*Source:* Same as Table 26

than +0.90 in 10 cases. Only in the case of leather products the relationship was somewhat weak. Relationship, however, became weaker once all states and UTs were considered; still, in all cases, except beverages where the coefficient was negative though insignificant, it was above +0.65. The relationship is found to be strong in all cases except in the case of leather products in 2006-07, coefficient of correlation being above 0.90 in eleven cases, and above 0.70 in the other three cases, if one considered the 14 major states. Once the analysis is extended to all states and UTs, the relationship becomes weaker, yet is significant in 13 cases including leather products. Thus technology, insofar as it is indicated by capital labour ratio, explains a large part of the interstate variations in productivity in manufacturing industries in the organised sector. Influence of regional factors, including working environment and culture in leading to differences in productivity even with the use of similar technology in an industry, however, cannot be ruled out.

## **Unorganised Sector**

### ***Extent of Differences***

Productivity differences are smaller in the case of unorganised sector than of the organised sector. Still they were quite large. Taking the major states only, per worker value added ranged between the highest of Rs. 21951 in Punjab and Rs.

20530 in Gujarat to the lows of Rs. 3595 in Orissa and Rs. 7791 in Madhya Pradesh, in 2000–01 (Table 29). If all states and UTs were considered, then Sikkim and Arunachal Pradesh show highest productivity at Rs. 34101 and Rs. 31444 respectively. Orissa still has the lowest, but the second lowest place is taken by Chhattisgarh with a value added per worker of Rs. 6409. These figures are not as distant from the national average (Rs. 11649), than the highest and lowest figures in case of the organised sector.

In 2005–06, the latest year for which data are available for the unorganised sector, the variations are between Rs. 28606 in Haryana and 4802 in Orissa, among the major states (Table 30). The second highest productivity is found in Maharashtra (Rs. 27841) and the second lowest in Bihar (Rs. 6995). Including other states and UTs, we find that Arunachal is on the top, with a value added per worker of Rs. 57180, with Pondicherry (Rs. 46251) in the second position. Orissa is still at the bottom with Bihar the second lowest. Deviations from the national average (Rs. 12993) are, however, not as large in the organised as in the unorganised sector, in 2005–06 also.

**Table 29**  
**Per Worker Productivity of Unorganised Manufacturing in Rs. (2000–01)**

| States            | 20–21 | 22    | 23 + 24 +<br>25 | 26    | 27    | 28    | 29    | 30    |
|-------------------|-------|-------|-----------------|-------|-------|-------|-------|-------|
| Andhra Pradesh    | 11158 | 5700  | 5949            | 7976  | 6021  | 17187 | 16819 | 5446  |
| Bihar             | 9138  | 6360  | 9004            | 10574 | 7327  | 14500 | 10127 | 3098  |
| Gujarat           | 16459 | 8802  | 37979           | 15519 | 13765 | 20814 | 13237 | 21818 |
| Haryana           | 19142 | 37654 | 23902           | 18110 | 14991 | 17435 | 16235 | 36650 |
| Karnataka         | 10981 | 4433  | 14314           | 11742 | 8311  | 14687 | 14747 | 5951  |
| Kerala            | 14023 | 6766  | 7413            | 10387 | 12166 | 14387 | 17080 | 16868 |
| Madhya Pradesh    | 10194 | 2436  | 20263           | 11118 | 5790  | 14596 | 9682  | 17348 |
| Maharashtra       | 13679 | 6166  | 29604           | 16235 | 10150 | 25952 | 14062 | 39682 |
| Orissa            | 4954  | 4597  | 4515            | 6921  | 2235  | 8713  | 12529 | 27074 |
| Punjab            | 23444 | 13362 | 15345           | 16050 | 16981 | 22096 | 15151 | 28709 |
| Rajasthan         | 12710 | 3332  | 15310           | 14132 | 12267 | 20289 | 14025 | 15607 |
| Tamil Nadu        | 15885 | 4414  | 12014           | 13196 | 7764  | 18215 | 37333 | 7878  |
| Uttar Pradesh     | 8700  | 2917  | 10652           | 8696  | 7140  | 13502 | 14470 | 6030  |
| West Bengal       | 8924  | 4021  | 8353            | 11713 | 4975  | 9566  | 21581 | 18141 |
| Chhattisgarh      | 7306  | 3463  | 6079            | 8748  | 4192  | 10652 | 8121  | 2193  |
| Jharkhand         | 8179  | 3756  | 5676            | 10992 | 4716  | 8807  | 13205 | 12657 |
| Uttarakhand       | 11388 | 3635  | 5369            | 9500  | 10676 | 14414 | 12219 | 44095 |
| Arunachal Pradesh | 32354 | N.E.  | 27148           | 28050 | 30769 | 541   | N.E.  | N.E.  |
| Assam             | 10029 | 6305  | 10615           | 15322 | 9839  | 13856 | 13706 | 11308 |
| Manipur           | 15809 | 7379  | 6275            | 8624  | 14173 | 19749 | 16636 | 10714 |
| Meghalaya         | 22601 | 12520 | 7358            | 18376 | 7622  | 23005 | 17180 | 17451 |
| Mizoram           | 13415 | 3193  | 44659           | 25306 | 21110 | 62223 | 22413 | N.E.  |
| Nagaland          | 13611 | 12841 | 13080           | 21398 | 12287 | 25969 | 10456 | 14886 |

|                   |              |              |              |              |              |              |              |              |
|-------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Sikkim            | 22664        | 469623       | N.E.         | 18775        | 14894        | 10451        | N.E.         | 33017        |
| Tripura           | 9763         | 4770         | 7950         | 15822        | 5517         | 28697        | 17587        | 3489         |
| A & N Islands     | 9004         | 2581         | N.E.         | 19632        | 24968        | 20091        | 18044        | 18062        |
| Chandigarh        | 23242        | N.E.         | N.E.         | 16054        | 9202         | 15598        | 18201        | 42190        |
| Delhi             | 29776        | 16189        | 24880        | 30493        | 24450        | 26346        | 24434        | 39684        |
| D & Nagar Haveli  | 17183        | N.E.         | N.E.         | 18280        | 12348        | 42141        | N.E.         | N.E.         |
| Daman & Diu       | 29974        | 10957        | N.E.         | 15249        | 13781        | 16642        | 15842        | 34496        |
| Lakshadweep       | 13209        | N.E.         | N.E.         | 21902        | 55699        | 2068         | N.E.         | N.E.         |
| Pondicherry       | 13720        | 15632        | 6919         | 10214        | 10920        | 14712        | 15433        | 22557        |
| Goa               | 20559        | 1909         | 21298        | 13274        | 17557        | 22563        | 4527         | 25009        |
| Himachal Pradesh  | 16356        | 7844         | 10644        | 11701        | 8572         | 24699        | 16654        | 6796         |
| J & K             | 22529        | 15213        | 6513         | 16149        | 19070        | 17092        | 19043        | 27597        |
| <b>India</b>      | <b>10788</b> | <b>4292</b>  | <b>11960</b> | <b>12809</b> | <b>6793</b>  | <b>17763</b> | <b>17198</b> | <b>9913</b>  |
| <b>States</b>     | <b>31</b>    | <b>32</b>    | <b>33</b>    | <b>34</b>    | <b>35-36</b> | <b>37</b>    | <b>38</b>    | <b>ALL</b>   |
| Andhra Pradesh    | 10890        | 9833         | 20075        | 14861        | 18037        | 87700        | 11439        | <b>8381</b>  |
| Bihar             | 19615        | 14008        | 16177        | 13024        | 13129        | 15879        | 11566        | <b>9480</b>  |
| Gujarat           | 31054        | 15410        | 29406        | 22931        | 35020        | 22678        | 21118        | <b>20530</b> |
| Haryana           | 32115        | 9963         | 40723        | 24415        | 27507        | 53534        | 19009        | <b>19327</b> |
| Karnataka         | 15594        | 14979        | 25247        | 19618        | 19059        | 20299        | 14136        | <b>10033</b> |
| Kerala            | 33162        | 23978        | 13130        | 20506        | 20389        | 21549        | 18710        | <b>13427</b> |
| Madhya Pradesh    | 28646        | 7617         | 16333        | 8302         | 10991        | 16634        | 8908         | <b>7791</b>  |
| Maharashtra       | 34911        | 11549        | 33216        | 23009        | 48492        | 38561        | 20475        | <b>18835</b> |
| Orissa            | 7611         | 3177         | 8681         | 6243         | 14680        | 12294        | 5749         | <b>3596</b>  |
| Punjab            | 49899        | 25603        | 41216        | 27684        | 40238        | 42370        | 20613        | <b>21951</b> |
| Rajasthan         | 25531        | 15340        | 29647        | 18028        | 30499        | 25760        | 18520        | <b>14625</b> |
| Tamil Nadu        | 24147        | 12765        | 20579        | 22451        | 37774        | 32288        | 11172        | <b>12817</b> |
| Uttar Pradesh     | 23947        | 11001        | 18198        | 14416        | 17621        | 25844        | 10217        | <b>9384</b>  |
| West Bengal       | 16709        | 16470        | 77945        | 14651        | 19718        | 22334        | 9840         | <b>8701</b>  |
| Chhattisgarh      | 35175        | 4916         | 37999        | 8762         | 14824        | 3769         | 8131         | <b>6409</b>  |
| Jharkhand         | 12776        | 10100        | 11758        | 7085         | 6197         | 22397        | 8536         | <b>7121</b>  |
| Uttarakhand       | 43182        | 6979         | 5440         | 11629        | 18156        | 18582        | 16479        | <b>10228</b> |
| Arunachal Pradesh | N.E.         | N.E.         | N.E.         | 27333        | 18347        | N.E.         | 68361        | <b>31444</b> |
| Assam             | 9312         | 9745         | 22735        | 20527        | 9985         | 36879        | 19534        | <b>10844</b> |
| Manipur           | 17616        | 20138        | 13841        | 15482        | 22671        | N.E.         | 24330        | <b>9635</b>  |
| Meghalaya         | 29806        | 12356        | 17788        | 19615        | 15945        | 59149        | 20825        | <b>13255</b> |
| Mizoram           | 58502        | 47543        | 55318        | 24181        | 20246        | 40335        | 31476        | <b>22838</b> |
| Nagaland          | 15642        | 51562        | N.E.         | 15387        | 22248        | 35732        | 18842        | <b>14665</b> |
| Sikkim            | N.E.         | N.E.         | N.E.         | 7813         | N.E.         | N.E.         | 21588        | <b>34101</b> |
| Tripura           | 10546        | 11456        | 28570        | 19581        | 17501        | N.E.         | 14100        | <b>8598</b>  |
| A & N Islands     | 58870        | 29637        | 35206        | 44555        | 28529        | 27594        | 34374        | <b>18844</b> |
| Chandigarh        | 32663        | 44988        | 168422       | 37389        | 44447        | 34590        | 64907        | <b>43340</b> |
| Delhi             | 59035        | 25389        | 31434        | 28437        | 35515        | 30556        | 36235        | <b>32265</b> |
| D & Nagar Haveli  | 47895        | 13780        | 55652        | 21354        | 27775        | N.E.         | 10962        | <b>22964</b> |
| Daman & Diu       | 77592        | 16777        | 24837        | 26907        | 66746        | N.E.         | 17397        | <b>46127</b> |
| Lakshadweep       | N.E.         | N.E.         | N.E.         | 36348        | N.E.         | N.E.         | N.E.         | <b>28534</b> |
| Pondicherry       | 67063        | 23768        | N.E.         | 17302        | 39243        | N.E.         | 7531         | <b>16562</b> |
| Goa               | 45288        | 15592        | 146005       | 24879        | 35238        | 22166        | 41636        | <b>14501</b> |
| Himachal Pradesh  | 42024        | 82214        | 46957        | 15969        | 60405        | 38625        | 29446        | <b>14871</b> |
| J & K             | 46970        | 19760        | 46850        | 24401        | 30131        | N.E.         | 30997        | <b>15926</b> |
| <b>India</b>      | <b>30319</b> | <b>12002</b> | <b>30246</b> | <b>17455</b> | <b>31324</b> | <b>31246</b> | <b>15473</b> | <b>11649</b> |

*Note:* N.E. Not estimated

*Source:* NSSO Survey on Unorganised Manufacturing (56<sup>th</sup> Round)

**Table 30**  
**Per Worker Productivity of Unorganised Manufacturing in Rs. (2005-06)**

| States            | 20-21        | 22          | 23 + 24<br>+ 25 | 26           | 27          | 28           | 29           | 30           |
|-------------------|--------------|-------------|-----------------|--------------|-------------|--------------|--------------|--------------|
| Andhra Pradesh    | 7239         | 3775        | 12636           | 7409         | 6278        | 12794        | 17415        | 6729         |
| Bihar             | 7752         | 3749        | 5662            | 12249        | 7655        | 7388         | 10358        | 2020         |
| Gujarat           | 17009        | 8461        | 33467           | 15273        | 13715       | 67705        | 11137        | 34755        |
| Haryana           | 30492        | 17830       | 102678          | 23197        | 20309       | 26834        | 17442        | 29639        |
| Karnataka         | 17800        | 2611        | 27976           | 16254        | 11317       | 17916        | 16139        | 8930         |
| Kerala            | 11977        | 5929        | 8063            | 12558        | 16522       | 14521        | 22562        | 5567         |
| Madhya Pradesh    | 10983        | 1632        | 14665           | 11956        | 5647        | 20565        | 16913        | 12307        |
| Maharashtra       | 16593        | 1904        | 33034           | 20576        | 11968       | 40321        | 23243        | 34083        |
| Orissa            | 5403         | 2339        | 10482           | 7829         | 2426        | 11641        | 11754        | 18117        |
| Punjab            | 27936        | 120708      | 17069           | 15899        | 22184       | 30222        | 18595        | 45994        |
| Rajasthan         | 17988        | 6091        | 8601            | 18615        | 10490       | 17344        | 12361        | 27509        |
| Tamil Nadu        | 16940        | 5532        | 15980           | 16024        | 12312       | 11078        | 17874        | 6334         |
| Uttar Pradesh     | 9176         | 2180        | 11557           | 9149         | 7991        | 15934        | 17614        | 5050         |
| West Bengal       | 8608         | 2651        | 9189            | 10395        | 4830        | 8476         | 15993        | 4859         |
| Chhattisgarh      | 7902         | 2111        | 10820           | 9294         | 3666        | 20379        | 18327        | 18439        |
| Jharkhand         | 10327        | 3040        | N.E.            | 11534        | 6824        | 13491        | 11893        | 37557        |
| Uttarakhand       | 12468        | N.E.        | 12945           | 12797        | 13930       | 17861        | 9556         | 10100        |
| Arunachal Pradesh | 56752        | N.E.        | N.E.            | 46741        | 39678       | 13080        | N.E.         | N.E.         |
| Assam             | 11842        | 5873        | 8695            | 14024        | 12159       | 23420        | 14089        | 12447        |
| Manipur           | 16076        | 10550       | 5497            | 11536        | 15827       | N.E.         | 9400         | 7828         |
| Meghalaya         | 24119        | 15341       | 17487           | 22188        | 11244       | 17762        | 27422        | 24835        |
| Mizoram           | 11415        | 10349       | 46788           | 28260        | 23428       | 8372         | N.E.         | N.E.         |
| Nagaland          | 19788        | 17560       | 12493           | 43499        | 14898       | 34929        | 1241         | N.E.         |
| Sikkim            | 17795        | 95649       | N.E.            | 20300        | 11352       | 23163        | N.E.         | 157590       |
| Tripura           | 2248         | 3753        | 5250            | 13400        | 14389       | 86048        | 12367        | 25381        |
| A & N Islands     | 7068         | 4448        | N.E.            | 27528        | 20400       | 7913         | 38219        | 46194        |
| Chandigarh        | 62897        | 37332       | N.E.            | 15806        | 28702       | 33272        | N.E.         | 60585        |
| Delhi             | 30472        | 283342      | 31223           | 31337        | 27930       | 21009        | 22500        | 18888        |
| D & Nagar Haveli  | 28414        | N.E.        | N.E.            | 33039        | 13968       | 35488        | 45831        | 85023        |
| Daman & Diu       | 67881        | 12642       | N.E.            | 18968        | 20124       | 14959        | N.E.         | N.E.         |
| Lakshadweep       | 12111        | N.E.        | N.E.            | 18832        | 16346       | 9873         | N.E.         | N.E.         |
| Pondicherry       | 43961        | 36136       | 11256           | 25477        | 16244       | 21219        | 12704        | 75290        |
| Goa               | 32576        | 25697       | N.E.            | 24150        | 17709       | 34484        | 3334         | 71687        |
| Himachal Pradesh  | 9402         | 5720        | 9150            | 11600        | 7798        | 28982        | 41327        | 12991        |
| J & K             | 21665        | N.E.        | 9603            | 16125        | 24549       | 29713        | 44329        | 85850        |
| <b>India</b>      | <b>11708</b> | <b>3112</b> | <b>16879</b>    | <b>13251</b> | <b>8018</b> | <b>18790</b> | <b>17687</b> | 9230         |
| States            | 31           | 32          | 33              | 34           | 35-36       | 37           | 38           | ALL          |
| Andhra Pradesh    | 18184        | 9856        | 4972            | 13504        | 21167       | 20558        | 10803        | <b>8091</b>  |
| Bihar             | 10443        | 8105        | 8150            | 12104        | 8795        | 13424        | 9129         | <b>6995</b>  |
| Gujarat           | 46400        | 15111       | 29712           | 13254        | 42213       | 25111        | 16377        | <b>20360</b> |
| Haryana           | 67474        | 20081       | 56573           | 35795        | 34837       | 82126        | 19903        | <b>28606</b> |
| Karnataka         | 26717        | 13108       | 53934           | 16187        | 43054       | 42286        | 14433        | <b>14707</b> |
| Kerala            | 27662        | 18859       | 24548           | 15989        | 41016       | 30596        | 17823        | <b>13808</b> |
| Madhya Pradesh    | 33844        | 10468       | 13173           | 6420         | 23904       | 167501       | 15723        | <b>7339</b>  |
| Maharashtra       | 42620        | 13538       | 24310           | 21230        | 62836       | 30010        | 57400        | <b>27841</b> |
| Orissa            | 17511        | 7098        | 71520           | 7272         | 10777       | 34048        | 10129        | <b>4802</b>  |
| Punjab            | 55754        | 14022       | 30082           | 20410        | 31651       | 37591        | 22088        | <b>21790</b> |
| Rajasthan         | 28094        | 11618       | 23199           | 20285        | 23665       | 40848        | 20579        | <b>16069</b> |
| Tamil Nadu        | 22862        | 18548       | 19654           | 21120        | 33038       | 33952        | 12449        | <b>14376</b> |
| Uttar Pradesh     | 41608        | 10075       | 15597           | 21868        | 20374       | 24096        | 12515        | <b>10008</b> |
| West Bengal       | 19275        | 8207        | 28566           | 13558        | 47714       | 15258        | 18950        | <b>8746</b>  |

|                   |              |              |              |              |              |              |              |              |
|-------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Chhattisgarh      | 41686        | 5197         | 256234       | 4488         | 31339        | 29664        | 17716        | <b>8952</b>  |
| Jharkhand         | 39712        | 8803         | 16326        | 9840         | 23731        | 24404        | 23456        | <b>7127</b>  |
| Uttarakhand       | 52123        | 5845         | 39275        | 6106         | 21382        | 37412        | 28353        | <b>12953</b> |
| Arunachal Pradesh | N.E.         | 31050        | 2161         | 99077        | N.E.         | N.E.         | 64644        | <b>57180</b> |
| Assam             | 18117        | 6805         | 208976       | 14594        | 16761        | 13341        | 24730        | <b>11375</b> |
| Manipur           | 16789        | 10987        | 9528         | 19533        | 10244        | N.E.         | 17894        | <b>8789</b>  |
| Meghalaya         | 20306        | 14660        | 17330        | 20093        | 34283        | 47170        | 24742        | <b>17313</b> |
| Mizoram           | 98381        | 11111        | N.E.         | 14039        | 30993        | N.E.         | 30549        | <b>19841</b> |
| Nagaland          | 34821        | 42191        | N.E.         | 11548        | 26684        | 15661        | 12213        | <b>18776</b> |
| Sikkim            | N.E.         | N.E.         | N.E.         | 11744        | N.E.         | N.E.         | 35443        | <b>25000</b> |
| Tripura           | 22723        | 18452        | 13873        | 14334        | 18271        | 17676        | 22667        | <b>8945</b>  |
| A & N Islands     | N.E.         | 49698        | 30505        | 18295        | 76028        | 51531        | 90197        | <b>28264</b> |
| Chandigarh        | N.E.         | N.E.         | 397575       | 20972        | 70177        | 44772        | 32397        | <b>37095</b> |
| Delhi             | 42419        | 59117        | 175897       | 22407        | 38259        | 29411        | 19532        | <b>31130</b> |
| D & Nagar Haveli  | 53742        | 31973        | N.E.         | 26973        | 44445        | N.E.         | 69740        | <b>29177</b> |
| Daman & Diu       | 49815        | 12294        | 143245       | 17879        | 45780        | N.E.         | 33729        | <b>39677</b> |
| Lakshadweep       | N.E.         | 36906        | N.E.         | 9842         | N.E.         | N.E.         | 6001         | <b>16922</b> |
| Pondicherry       | 27013        | 23663        | 23713        | 12911        | 273575       | 13761        | 10246        | <b>46251</b> |
| Goa               | 78879        | 17865        | N.E.         | 22975        | 81074        | 75009        | 22218        | <b>29167</b> |
| Himachal Pradesh  | 280974       | 9188         | 30818        | 12528        | 389097       | 136729       | 41745        | <b>19163</b> |
| J & K             | 41506        | 34474        | 44875        | 24164        | 63073        | 26509        | 31230        | <b>18982</b> |
| <b>India</b>      | <b>33310</b> | <b>11432</b> | <b>42758</b> | <b>17003</b> | <b>40248</b> | <b>32121</b> | <b>22948</b> | <b>12993</b> |

*Note:* Same as Table 29

*Source:* NSSO Survey on Unorganised Manufacturing (62<sup>nd</sup> Round)

### ***The Composition Effect***

How far can the interstate productivity differences be influenced by the structure of industries, i.e. high or low productivity industries dominating a state's unorganised manufacturing sector? We attempt to answer this question by comparing the relative productivity levels of states' with the share of five highest productivity industries (at the all-India level) for the year 2005–06. These five industries (namely chemical products, basic metals, machinery, transport equipment and other manufacturing) accounted for the largest share of unorganised manufacturing in Gujarat (41%), Maharashtra (39%) Haryana (28%) and Punjab (29%) (Table 31) in the group of major states; and these four were also the states with highest productivity. On the other side, Bihar, Andhra Pradesh and Orissa have the lowest shares (4%, 9% and 10%) of these five industries and also were at the bottom of the states ranking by productivity.

### ***Differences in Individual Industries***

Thus, it appears that overall differences in productivity in unorganised manufacturing among states are mainly due to the differences in the composition viz. share of high and low productivity industries. But, at the same time there are

**Table 31**  
**Average Share of Top Five Highest Productivity Industries at All-India level in the Gross Value Added in Unorganised Manufacturing (2005–06)**

|   | 31          | 33          | 35–36       | 37          | 38           | Total        |
|---|-------------|-------------|-------------|-------------|--------------|--------------|
| <b>Major States</b>                       |             |             |             |             |              |              |
| Andhra Pradesh                            | 1.47        | 0.06        | 2.05        | 0.38        | 4.64         | <b>8.60</b>  |
| Bihar                                     | 0.49        | 0.23        | 1.27        | 0.08        | 2.12         | <b>4.18</b>  |
| Gujarat                                   | 2.64        | 0.41        | 15.38       | 0.23        | 22.56        | <b>41.23</b> |
| Haryana                                   | 4.11        | 2.22        | 13.35       | 2.74        | 5.47         | <b>27.89</b> |
| Karnataka                                 | 1.65        | 0.01        | 4.22        | 0.69        | 2.78         | <b>9.35</b>  |
| Kerala                                    | 5.65        | 0.11        | 6.16        | 0.87        | 7.29         | <b>20.07</b> |
| Madhya Pradesh                            | 0.94        | 0.23        | 4.68        | 2.35        | 4.22         | <b>12.43</b> |
| Maharashtra                               | 3.08        | 0.44        | 10.69       | 1.83        | 23.38        | <b>39.43</b> |
| Orissa                                    | 0.52        | 2.81        | 1.32        | 0.87        | 4.20         | <b>9.72</b>  |
| Punjab                                    | 2.09        | 0.15        | 10.40       | 7.73        | 8.47         | <b>28.85</b> |
| Rajasthan                                 | 1.08        | 0.26        | 4.60        | 0.67        | 13.19        | <b>19.80</b> |
| Tamil Nadu                                | 2.08        | 0.82        | 4.46        | 1.09        | 4.66         | <b>13.11</b> |
| Uttar Pradesh                             | 0.99        | 0.45        | 4.52        | 2.61        | 2.89         | <b>11.45</b> |
| West Bengal                               | 0.93        | 1.53        | 8.14        | 0.18        | 10.34        | <b>21.13</b> |
| <b>New States</b>                         |             |             |             |             |              |              |
| Chhattisgarh                              | 3.73        | 18.65       | 5.84        | 1.37        | 1.54         | <b>31.12</b> |
| Jharkhand                                 | 0.35        | 0.03        | 1.32        | 0.18        | 2.78         | <b>4.66</b>  |
| Uttarakhand                               | 0.09        | 0.35        | 8.25        | 0.71        | 11.89        | <b>21.30</b> |
| <b>North Eastern States</b>               |             |             |             |             |              |              |
| Arunachal Pradesh                         | 0.00        | 0.03        | 0.00        | 0.00        | 4.50         | <b>4.54</b>  |
| Assam                                     | 0.09        | 2.93        | 0.37        | 0.05        | 4.81         | <b>8.25</b>  |
| Manipur                                   | 0.31        | 0.83        | 0.25        | 0.00        | 7.82         | <b>9.21</b>  |
| Meghalaya                                 | 9.32        | 0.86        | 0.05        | 4.24        | 2.01         | <b>16.48</b> |
| Mizoram                                   | 1.44        | 0.00        | 0.33        | 0.00        | 1.17         | <b>2.94</b>  |
| Nagaland                                  | 5.17        | 0.00        | 2.33        | 0.04        | 0.33         | <b>7.88</b>  |
| Sikkim                                    | 0.00        | 0.00        | 0.00        | 0.00        | 9.39         | <b>9.39</b>  |
| Tripura                                   | 0.73        | 0.02        | 0.39        | 0.08        | 6.69         | <b>7.91</b>  |
| <b>Union Territories and Other States</b> |             |             |             |             |              |              |
| A & N Islands                             | 0.00        | 5.13        | 4.95        | 8.62        | 20.02        | <b>38.71</b> |
| Chandigarh                                | 0.00        | 10.14       | 12.31       | 1.09        | 5.84         | <b>29.38</b> |
| Delhi                                     | 3.17        | 8.62        | 10.22       | 1.95        | 4.92         | <b>28.87</b> |
| D & Nagar Haveli                          | 24.43       | 0.00        | 5.26        | 0.00        | 2.03         | <b>31.72</b> |
| Daman & Diu                               | 29.57       | 23.52       | 1.29        | 0.00        | 20.28        | <b>74.67</b> |
| Lakshadweep                               | 0.00        | 0.00        | 0.00        | 0.00        | 0.20         | <b>0.20</b>  |
| Pondicherry                               | 3.43        | 0.47        | 51.32       | 1.08        | 1.66         | <b>57.95</b> |
| Goa                                       | 3.31        | 0.00        | 18.43       | 2.31        | 10.46        | <b>34.51</b> |
| Himachal Pradesh                          | 6.39        | 0.77        | 39.18       | 1.02        | 1.60         | <b>48.96</b> |
| Jammu & Kashmir                           | 0.19        | 0.36        | 1.41        | 0.01        | 3.25         | <b>5.22</b>  |
| <b>India</b>                              | <b>2.11</b> | <b>1.07</b> | <b>7.52</b> | <b>1.37</b> | <b>10.04</b> | <b>22.11</b> |

Source and Note: Same as Table 30

significant differences in productivity in the same industry groups. Thus, chemical products had a value added per worker as high as Rs. 67474 in Haryana followed by Rs. 55754 in Punjab, but as low as Rs. 10443 in Bihar and Rs. 17511 in Orissa (Table 30). The range in case of basic metals was between Rs. 71520 in Orissa (and Rs. 397575 in Chandigarh, if all states and UTs are considered) and Rs. 4972 in Andhra Pradesh (and Rs. 2161 in Arunachal Pradesh, if all states/UTs are included in comparison). In machinery, the difference was much less among major states, between Rs. 62836 in Maharashtra and Rs. 8795 in Bihar; the figure for Himachal

Pradesh was, however, way higher at Rs. 389097 if all states/UTs are considered, and in transport equipment differences among major states ranged between Rs. 167501 in Maharashtra to Rs. 13424 Bihar and Rs. 13341 in Assam.

### ***Technology and Productivity Differentials***

Are these differences in individual industries due to differences in technology, as seen in terms of capital intensity indicated by the fixed capital per worker? Capital intensity varies widely across states in the unorganised manufacturing as a whole. In 2005–06, it was the highest in Haryana at Rs. 93450 followed by Punjab at Rs. 59957 and Maharashtra at Rs. 49054. The lowest was in Orissa (Rs. 4546) followed by Bihar (Rs. 8918) (Table 32). Goa (Rs. 68235) and Pondicherry (Rs. 63377) showed higher capital intensity among smaller states and UTs. Variations do not seem very large. But they are larger in the case of individual industries. Thus chemical products, the industry with highest capital intensity (Rs. 82411), had fixed capital per worker of Rs. 203396 in Haryana, and Rs. 245059 in Himachal Pradesh, but only Rs. 12504 in Bihar and Rs. 10733 in Meghalaya. Industry with the next highest capital intensity, namely basic metals: it was Rs. 445787 in Chandigarh and Rs. 378679 in Delhi, but only Rs. 12340 in Jharkhand and Rs. 13635 in Meghalaya.

Yet, the technological differences as indicated by fixed capital per worker seem smaller in the case of unorganised than of the organised industry and they also seem to explain interstate productivity differences to a smaller extent and in a smaller number of industries than in the case of organised industry. And over the years the relationship between capital intensity and productivity seems to have become weaker, though continuing to be significant. In 2000–01, correlation between the two variables was high ( $r \geq 0.80$ ) in 10 out of 15 industries in the 14 major states, but in only one industry if all states/UTs are included. In 2005–06, the relationship is strong ( $r \geq 0.80$ ) in only 8 in the former and in two in the latter grouping (Table 33).

Broad conclusions that emerge from this analysis of interstate differences in productivity are as follows: *One*, difference in aggregate productivity is very large in the organised manufacturing but somewhat smaller in the case of the unorganised manufacturing. *Two*, these differences are due to the differences in composition of

**Table 32  
Capital Labour Ratio in Unorganised Manufacturing in Rs. (2005-06)**

|    |  |       |      |       |       |       |       |       |      |       |                |       |      |      |       |      |       |      |      |       |       |        |       |       |       |       |       |        |      |       |         |        |       |       |        |       |       |        |       |       |         |       |       |       |       |       |       |       |      |       |           |       |       |       |        |       |       |       |       |       |        |       |       |       |       |      |       |       |      |       |                |        |       |       |       |       |       |       |      |       |             |       |       |       |       |      |      |      |     |      |        |        |       |       |       |       |       |       |        |       |        |       |       |       |       |       |       |       |       |       |           |       |      |       |       |       |       |       |      |       |            |       |       |       |       |      |       |       |      |       |               |       |      |       |       |      |       |       |      |       |             |        |       |       |       |      |       |      |      |       |              |       |       |       |       |      |       |      |      |       |           |        |       |       |        |       |       |       |      |       |             |      |      |      |       |       |       |      |       |                   |       |      |      |       |      |       |       |      |       |       |      |      |       |        |       |       |       |       |       |         |       |       |       |       |      |       |      |      |       |           |       |      |      |       |       |       |       |     |       |         |       |      |      |       |       |       |       |       |       |          |      |       |      |       |      |       |      |       |       |        |       |       |       |       |      |       |      |      |      |         |      |       |       |       |       |       |      |      |       |               |      |        |      |       |        |       |      |         |        |            |        |       |       |       |       |       |       |        |        |       |       |       |        |       |      |       |      |      |       |                  |       |      |      |       |       |       |      |       |       |             |      |      |      |       |       |       |      |      |       |             |        |        |       |       |       |       |      |       |       |             |        |        |       |        |       |       |      |       |       |     |        |        |        |        |       |       |       |       |       |                  |       |        |       |        |       |       |       |        |       |       |       |       |       |       |       |       |       |      |       |       |
|----|--|-------|------|-------|-------|-------|-------|-------|------|-------|----------------|-------|------|------|-------|------|-------|------|------|-------|-------|--------|-------|-------|-------|-------|-------|--------|------|-------|---------|--------|-------|-------|--------|-------|-------|--------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|------|-------|-----------|-------|-------|-------|--------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|------|-------|-------|------|-------|----------------|--------|-------|-------|-------|-------|-------|-------|------|-------|-------------|-------|-------|-------|-------|------|------|------|-----|------|--------|--------|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-------|------|-------|-------|-------|-------|-------|------|-------|------------|-------|-------|-------|-------|------|-------|-------|------|-------|---------------|-------|------|-------|-------|------|-------|-------|------|-------|-------------|--------|-------|-------|-------|------|-------|------|------|-------|--------------|-------|-------|-------|-------|------|-------|------|------|-------|-----------|--------|-------|-------|--------|-------|-------|-------|------|-------|-------------|------|------|------|-------|-------|-------|------|-------|-------------------|-------|------|------|-------|------|-------|-------|------|-------|-------|------|------|-------|--------|-------|-------|-------|-------|-------|---------|-------|-------|-------|-------|------|-------|------|------|-------|-----------|-------|------|------|-------|-------|-------|-------|-----|-------|---------|-------|------|------|-------|-------|-------|-------|-------|-------|----------|------|-------|------|-------|------|-------|------|-------|-------|--------|-------|-------|-------|-------|------|-------|------|------|------|---------|------|-------|-------|-------|-------|-------|------|------|-------|---------------|------|--------|------|-------|--------|-------|------|---------|--------|------------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|--------|-------|------|-------|------|------|-------|------------------|-------|------|------|-------|-------|-------|------|-------|-------|-------------|------|------|------|-------|-------|-------|------|------|-------|-------------|--------|--------|-------|-------|-------|-------|------|-------|-------|-------------|--------|--------|-------|--------|-------|-------|------|-------|-------|-----|--------|--------|--------|--------|-------|-------|-------|-------|-------|------------------|-------|--------|-------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|
| 31 |  | 28120 | 8907 | 26742 | 38035 | 11231 | 17337 | 23701 | 8257 | 19090 | Andhra Pradesh | 12504 | 6593 | 8302 | 19119 | 5188 | 15436 | 6331 | 1941 | 15698 | Bihar | 137714 | 48671 | 11853 | 96779 | 24570 | 28719 | 110017 | 7237 | 27497 | Gujarat | 203396 | 64516 | 41658 | 107720 | 64298 | 69527 | 187119 | 58428 | 81012 | Haryana | 59824 | 21911 | 27397 | 60808 | 15396 | 32014 | 31092 | 6219 | 17283 | Karnataka | 61649 | 10642 | 28140 | 135893 | 22322 | 23135 | 10764 | 42119 | 25178 | Kerala | 94568 | 24863 | 20394 | 66160 | 9274 | 29101 | 12161 | 2547 | 25249 | Madhya Pradesh | 107579 | 68429 | 37627 | 91688 | 25398 | 37855 | 62671 | 4360 | 44293 | Maharashtra | 26138 | 54009 | 17629 | 30560 | 1233 | 9385 | 9916 | 813 | 7784 | Orissa | 128767 | 81379 | 33475 | 89061 | 64187 | 43622 | 59958 | 199006 | 76848 | Punjab | 91391 | 19929 | 22712 | 59675 | 20362 | 29398 | 24456 | 10785 | 32059 | Rajasthan | 68857 | 9224 | 34297 | 30671 | 23051 | 39457 | 30476 | 4865 | 39802 | Tamil Nadu | 70629 | 11079 | 23796 | 37016 | 9472 | 12634 | 28713 | 3046 | 21188 | Uttar Pradesh | 36861 | 6070 | 11156 | 15303 | 5178 | 10621 | 10650 | 2875 | 11584 | West Bengal | 128715 | 12896 | 65404 | 64791 | 5355 | 18489 | 4985 | 2013 | 21377 | Chhattisgarh | 76859 | 70933 | 21000 | 67066 | 4807 | 14872 | N.E. | 1336 | 13262 | Jharkhand | 156918 | 33065 | 56505 | 153087 | 20527 | 43894 | 20143 | N.E. | 54973 | Uttarakhand | N.E. | N.E. | N.E. | 51247 | 47338 | 14479 | N.E. | 30548 | Arunachal Pradesh | 27973 | 7596 | 6603 | 50553 | 4287 | 13045 | 10318 | 2199 | 13133 | Assam | 1856 | 4143 | 13834 | 112744 | 12675 | 25304 | 13828 | 26671 | 24015 | Manipur | 10733 | 20383 | 12884 | 37566 | 4896 | 28418 | 8971 | 7461 | 16131 | Meghalaya | 43972 | N.E. | N.E. | 92135 | 31115 | 81778 | 88357 | 479 | 18157 | Mizoram | 27063 | N.E. | N.E. | 67130 | 17871 | 34813 | 18997 | 14428 | 22025 | Nagaland | N.E. | 61559 | N.E. | 58207 | 2322 | 33727 | N.E. | 52947 | 31753 | Sikkim | 81770 | 14128 | 19215 | 40807 | 3984 | 27583 | 5693 | 1183 | 3677 | Tripura | N.E. | 83645 | 62382 | 46670 | 25504 | 37570 | N.E. | 5298 | 25312 | A & N Islands | N.E. | 237806 | N.E. | 53745 | 111580 | 39374 | N.E. | 1052212 | 118381 | Chandigarh | 135367 | 48603 | 48983 | 96195 | 42876 | 53656 | 19187 | 164382 | 143645 | Delhi | 66546 | 31999 | 110833 | 34401 | 4962 | 49596 | N.E. | N.E. | 48237 | D & Nagar Haveli | 31267 | N.E. | N.E. | 24426 | 13884 | 22474 | N.E. | 20842 | 20053 | Daman & Diu | N.E. | N.E. | N.E. | 52963 | 19639 | 28280 | N.E. | N.E. | 25346 | Lakshadweep | 170509 | 157239 | 15148 | 66599 | 41790 | 44479 | 9879 | 56477 | 89904 | Pondicherry | 111944 | 123975 | 78193 | 113038 | 44824 | 93437 | N.E. | 57369 | 79618 | Goa | 245059 | 282952 | 189820 | 121307 | 18371 | 31286 | 26413 | 29383 | 40241 | Himachal Pradesh | 97669 | 226921 | 60342 | 118898 | 24912 | 24249 | 46622 | 109515 | 46725 | J & K | 82411 | 16848 | 26523 | 53551 | 11370 | 23672 | 32322 | 4495 | 23138 | India |
|----|--|-------|------|-------|-------|-------|-------|-------|------|-------|----------------|-------|------|------|-------|------|-------|------|------|-------|-------|--------|-------|-------|-------|-------|-------|--------|------|-------|---------|--------|-------|-------|--------|-------|-------|--------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|------|-------|-----------|-------|-------|-------|--------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|------|-------|-------|------|-------|----------------|--------|-------|-------|-------|-------|-------|-------|------|-------|-------------|-------|-------|-------|-------|------|------|------|-----|------|--------|--------|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-------|------|-------|-------|-------|-------|-------|------|-------|------------|-------|-------|-------|-------|------|-------|-------|------|-------|---------------|-------|------|-------|-------|------|-------|-------|------|-------|-------------|--------|-------|-------|-------|------|-------|------|------|-------|--------------|-------|-------|-------|-------|------|-------|------|------|-------|-----------|--------|-------|-------|--------|-------|-------|-------|------|-------|-------------|------|------|------|-------|-------|-------|------|-------|-------------------|-------|------|------|-------|------|-------|-------|------|-------|-------|------|------|-------|--------|-------|-------|-------|-------|-------|---------|-------|-------|-------|-------|------|-------|------|------|-------|-----------|-------|------|------|-------|-------|-------|-------|-----|-------|---------|-------|------|------|-------|-------|-------|-------|-------|-------|----------|------|-------|------|-------|------|-------|------|-------|-------|--------|-------|-------|-------|-------|------|-------|------|------|------|---------|------|-------|-------|-------|-------|-------|------|------|-------|---------------|------|--------|------|-------|--------|-------|------|---------|--------|------------|--------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|--------|-------|------|-------|------|------|-------|------------------|-------|------|------|-------|-------|-------|------|-------|-------|-------------|------|------|------|-------|-------|-------|------|------|-------|-------------|--------|--------|-------|-------|-------|-------|------|-------|-------|-------------|--------|--------|-------|--------|-------|-------|------|-------|-------|-----|--------|--------|--------|--------|-------|-------|-------|-------|-------|------------------|-------|--------|-------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|

|    |                |        |        |        |        |        |        |        |                   |
|----|----------------|--------|--------|--------|--------|--------|--------|--------|-------------------|
| 32 | Industry Group | 17329  | 24947  | 37617  | 48391  | 25588  | 44140  | 12757  | Andhra Pradesh    |
|    |                | 8918   | 11658  | 22977  | 15177  | 10085  | 22064  | 6243   | Bihar             |
|    |                | 34955  | 13084  | 42626  | 62753  | 38231  | 54483  | 11276  | Gujarat           |
|    |                | 93450  | 164958 | 130796 | 132224 | 106086 | 94240  | 68369  | Haryana           |
|    |                | 24059  | 30728  | 39211  | 85411  | 34051  | 95899  | 77906  | Karnataka         |
|    |                | 28820  | 23257  | 44043  | 73844  | 26982  | 60842  | 48260  | Kerala            |
|    |                | 12309  | 30195  | 88925  | 31220  | 11045  | 28344  | 7637   | Madhya Pradesh    |
|    |                | 49054  | 81692  | 35529  | 60851  | 42784  | 40295  | 22958  | Maharashtra       |
|    |                | 4546   | 11954  | 73092  | 17523  | 7021   | 22625  | 4700   | Orissa            |
|    |                | 59957  | 55442  | 87031  | 98087  | 74660  | 51785  | 32049  | Punjab            |
|    |                | 28671  | 39348  | 147848 | 56617  | 35655  | 49473  | 14656  | Rajasthan         |
|    |                | 29290  | 25819  | 48731  | 79963  | 36351  | 45883  | 20620  | Tamil Nadu        |
|    |                | 17354  | 25153  | 100646 | 50298  | 32858  | 42624  | 8161   | Uttar Pradesh     |
|    |                | 9841   | 20054  | 25298  | 41287  | 26271  | 27135  | 10174  | West Bengal       |
|    |                | 22159  | 119589 | 52173  | 331311 | 11394  | 402369 | 9599   | Chhattisgarh      |
|    |                | 6488   | 28612  | 23718  | 53909  | 5873   | 12340  | 8433   | Jharkhand         |
|    |                | 42774  | 84085  | 161278 | 77477  | 13824  | 37961  | 10836  | Uttarakhand       |
|    |                | 25857  | 14618  | N.E.   | N.E.   | 21032  | 11158  | 23539  | Arunachal Pradesh |
|    |                | 9875   | 32162  | 20077  | 27124  | 11788  | 38592  | 11010  | Assam             |
|    |                | 16732  | 15348  | N.E.   | 6891   | 32867  | 13913  | 1537   | Manipur           |
|    |                | 10422  | 30062  | 22116  | 22711  | 6176   | 13635  | 2848   | Meghalaya         |
|    |                | 40866  | 38854  | N.E.   | 7937   | 60180  | N.E.   | 14085  | Mizoram           |
|    |                | 20267  | 22712  | 25918  | 23132  | 14002  | N.E.   | 45296  | Nagaland          |
|    |                | 26471  | 49184  | N.E.   | N.E.   | 18948  | N.E.   | N.E.   | Sikkim            |
|    |                | 6119   | 41797  | 63272  | 30594  | 18243  | 21079  | 2076   | Tripura           |
|    |                | 38214  | 129188 | 42694  | 27581  | 26190  | 7854   | 23690  | A & N Islands     |
|    |                | 111318 | 138488 | 503373 | 318417 | 68712  | 445787 | N.E.   | Chandigarh        |
|    |                | 72506  | 34643  | 73367  | 145662 | 59256  | 378679 | 176477 | Delhi             |
|    |                | 34016  | 42931  | N.E.   | 81176  | 35354  | N.E.   | 15914  | D & Nagar Haveli  |
|    |                | 35156  | 37902  | N.E.   | 31618  | 8299   | 133130 | 21033  | Daman & Diu       |
|    |                | 21326  | 6392   | N.E.   | N.E.   | 9747   | N.E.   | 14382  | Lakshadweep       |
|    |                | 63377  | 93321  | 16053  | 74537  | 68372  | 91257  | 9766   | Pondicherry       |
|    |                | 68235  | 40082  | 122282 | 71364  | 71135  | N.E.   | 37291  | Goa               |
|    |                | 35921  | 88856  | 537007 | 90468  | 28958  | 124155 | 22952  | Himachal Pradesh  |
|    |                | 35651  | 134092 | 21167  | 172863 | 88786  | 54613  | 29696  | J & K             |
|    |                | 23240  | 35985  | 69834  | 70891  | 32120  | 71365  | 15044  | India             |

Note: N.E. Not estimated  
Source: Same as Table 30

**Table 33**  
**Correlation between Per Worker Productivity and Capital Labour Ratio**  
**in Unorganised Manufacturing**

| Industry Code | 2000-01            |                  | 2005-06            |                  |
|---------------|--------------------|------------------|--------------------|------------------|
|               | Among Major States | Among All States | Among Major States | Among All States |
| 20-21         | 0.94               | 0.71             | 0.92               | 0.54             |
| 22            | 0.86               | 0.79             | 0.97               | 0.07             |
| 23 + 24 + 25  | 0.51               | 0.48             | 0.94               | 0.92             |
| 26            | 0.90               | 0.60             | 0.87               | 0.41             |
| 27            | 0.88               | 0.53             | 0.92               | 0.70             |
| 28            | 0.91               | 0.43             | 0.56               | 0.07             |
| 29            | 0.62               | 0.62             | 0.72               | 0.71             |
| 30            | 0.87               | 0.76             | 0.90               | 0.48             |
| 31            | 0.92               | 0.61             | 0.95               | 0.68             |
| 32            | 0.64               | 0.41             | 0.64               | 0.61             |
| 33            | 0.45               | 0.83             | 0.42               | 0.87             |
| 34            | 0.93               | 0.57             | 0.88               | 0.22             |
| 35-36         | 0.89               | 0.53             | 0.46               | 0.16             |
| 37            | 0.33               | 0.47             | 0.43               | 0.57             |
| 38            | 0.84               | 0.62             | 0.44               | 0.35             |
| <b>ALL</b>    | <b>0.93</b>        | <b>0.66</b>      | <b>0.91</b>        | <b>0.62</b>      |

*Source:* NSSO Survey on Unorganised Manufacturing (56<sup>th</sup> and 62<sup>nd</sup> Round)

industries, much more in the case of unorganised than of the organised manufacturing. *Three*, interstate technological variation in individual industries seem responsible for productivity differentials much more in the case of organised than the unorganised segment. And, therefore, *fourth*, local market and work environment in the states seem to play important roles in making productivity vary across states, but relatively more in the unorganised than the organised segment of manufacturing industry.

## VIII. Conclusions: What Explains Variations?

### Main Findings

Description and analysis of various aspects of industrial development in different states presented in the preceding sections, even though not showing any clear pattern, reveal the following interesting trends:

1. An indicated by the share of manufacturing in GSDP, Tamil Nadu, Maharashtra, West Bengal and Gujarat were the most industrialised states in that order in 1980–81. In 2008–09, the four most industrialised states were: Gujarat, Maharashtra, Tamil Nadu and Haryana, in that order. Gujarat is at the top with 30 per cent of its GSDP originating from manufacturing. Gujarat has also seen the fastest pace of industrialisation, followed by Haryana, Punjab and Himachal Pradesh, while West Bengal, Andhra Pradesh and Tamil Nadu experienced a decline in the share of manufacturing in their respective GSDP. Disparities in the extent of industrialisation have somewhat decline during 1981–2009.
2. Most states have experienced significant shift from agriculture to other sectors, the shift has been the largest in Orissa, Karnataka, Gujarat and Kerala and relatively small in Punjab and West Bengal. Major shift has been in favour of manufacturing particularly in Gujarat, Rajasthan and Orissa. Larger structural changes have generally been accompanied by faster GSDP growth and shift to manufacturing more often than shift to services has contributed to faster growth.
3. Growth rates of manufacturing GSDP have been quite divergent throughout 1981–2009, but especially since 2001. Rates of growth have, however, not necessarily been higher in states with initially high level of industrialisation, except during the period 2001–09. Thus, industrial growth in recent years has led to increasing divergence.

4. The four states with largest share in national manufacturing GDP, namely Maharashtra, Tamil Nadu, West Bengal and Gujarat, have continued to account for over half of the national GVA in manufacturing—Maharashtra remaining at the top, Gujarat replacing Tamil Nadu in the second position and West Bengal receding from third to fourth position. Overall disparity in the shares of different states has slightly declined in 2007–08 from 1980–81. In employment terms, Uttar Pradesh replaces Gujarat among the top four states, which account for 48 per cent in 2004–05, Uttar Pradesh alone accounts for 16 per cent of employment, the other three, namely Maharashtra, Tamil Nadu and West Bengal account for 11 per cent each.
5. Organised sector accounts for major share of the GSDP in manufacturing, in most states, the highest being in Orissa (87%). It is generally higher in less industrialised states. West Bengal is the only state with unorganised sector contributing the major share; it has also seen, along with Haryana, Punjab and Gujarat, a decline in the share of organised sector over the period 1981–2009. Across the states, the shares of organised and unorganised sector in all India are found to be highly correlated.
6. Agro-based industries have declined in importance in most states, except in Kerala with 77 per cent share in employment and 50 per cent in GVA, Karnataka with 60 and 34 per cent, West Bengal with 59 and 32 per cent and Punjab with 46 and 57 per cent of two respectively. These industries generally have lower productivity than others except in Punjab where agro-industries have higher productivity than in other industries. Share of different states in total agro- and non agro-industries are strongly correlated with each other, both in respect of employment and GVA.
7. There is a significant similarity among the states in the pattern of manufacturing industries in terms of presence and importance of different 2-digit product group. Not only most industries are found in all the states, but many of them hold similar importance in the product structure of different states. Thus, the top five industries in terms of employment are common in 23 out of 35 states/UTs. The same five industries are the largest at the

aggregate national level. Thus the industrial structure of most states is similar to that of the country as a whole, indicating a low degree of specialization by individual states. Specialization coefficient is lower than 0.30 for 13 out of 17 major states. Small states, Jharkhand and Orissa and those in the North East, and most UTs show a high degree of specialization.

8. As pointed out earlier, most industries are quite ubiquitous: they are found in most states. Yet, quite a few of them have over 70 per cent of their employment concentrated in just five states. Industrial base of most states is rather narrow, except in few cases (notably Maharashtra and Haryana) where a relatively large number (16 and 14 out of 23) of industries have larger weight in the state's than in the country's industrial structure. Surprisingly, Gujarat and Tamil Nadu with only 7 industries in this category also have narrow industrial bases.
9. Large differences are observed in productivity across states, more so in the organised than in the unorganised sector. Variations in GVA per worker in aggregate among states in the organised sector are largely explained by the composition of the industries and those in individual industries by technology (capital intensity). In the unorganised sector productivity differences seem to be more influenced by local market and work environment rather than technological character and composition of industries.

### ***Explaining Interstate Variations***

Amidst varied findings, as noted above, it is quite clear that states have performed differently from each other in terms of growth of manufacturing industries and changes in their structure. What factors account for such differential performance? It may not be difficult and may even not be very useful to try to explain the differences in the levels of industrial development that have historically existed. What may be more interesting and also useful is to attempt an explanation of the changes that have taken place in the period of last two to three decades, especially since the introduction of economic reforms which removed government regulations on investment and industrial location and which, on the one hand, gave freedom and opportunity to states to base their industrial development on

specialisation (See Dholakia, 2009), and on the other, did away with the central government's use of its control and instrumentality to influence investment and industrial location in favour of industrially less advanced states and regions.

Various factors that could have influenced the differential performance of states in industrial growth during the post-reform period can broadly be divided into the following four broad heads: capital investment, human resources, regulatory framework and infrastructure. A study (Chakravorty and Lall, 2007, Pp. 99–102) looking at the trends in industrial investment in different states over a seven-year period immediately after the economic reforms in 1991 found that the process of cumulative causation was in operation insofar the existing level of industrial investment and activity attracted the new investment. Continuity and clustering were thus found to lead to increasing divergence. This observation is supported by findings of our study, especially for the period 2001–2009.

That, however, does not mean that other factors may have had no influence on the growth of industrial activity in different states—particularly if there was differential progress, in respect of them among states. Let us look at changes in human resource development and regulatory and promotional framework and see if there have been significant differences in terms of changes in them. Going by Human Development Index (HDI) as the summary indicator of development of human resources, there is a general trend towards an improvement: HDI for country as a whole was estimated to be 0.387 in 1999–2000 and to have been improved to 0.467 in 2007–08 (IAMR, 2011, p. 24). Similar improvements have taken place in all the states, so much so that eight states have retained the same ranking in 2007–08, as in 1999–2000, 11 states have changed ranks but only by one or two positions. Only Rajasthan has lost by three positions and Jharkhand and North East (excluding Assam) have gained by 4 and 3 positions respectively. Similarly there has been a general trend towards easing of regulations and promotion of investment-friendly climate in all the states. Various exercises by the World Bank and industry organisations have attempted measurement of the ease and difficulty of “Doing Business” in different states and have found significant differences among states. It is, however, not clear whether the degree of ‘ease’ has changed at different speeds in the post-reform period. In general, states have competed among themselves in

projecting an investment-friendly image and it appears that it has been a zero-sum game rather than any advantage of one over the others. Gujarat and Maharashtra have, no doubt, offered 'best' and Uttar Pradesh and West Bengal 'poor' investment climates (World Bank, 2004). But that is true both of the pre- and post-reform periods. In fact, some other states like Andhra Pradesh and Karnataka have improved their image as investment-friendly. Karnataka has also experienced faster industrial growth, but Andhra Pradesh has not.

One aspect of regulatory framework that has been studied most is labour regulation. A number of studies (e.g., Besley and Burgess 2004; Hasan *et. al.* 2003) conclude that states with 'flexible' labour regions, specially those having amended laws and rules to give greater freedom to employers in modes of use of labour have performed better in respect of industrial growth than others. Several other studies, however, argue that most of these studies are methodologically faulted insofar as they are often based on single legislation and changes in it or on answer to a leading question of impact of labour laws to the complete neglect of other factors such as infrastructure, market, credit, etc. (Bhattacharjea, 2006; Reddy, 2008; Nagraj, 2011). It appears that better industrial relations climate, no doubt, helped some states (e.g. Gujarat Andhra Pradesh and Karnataka) to perform better, but significance of this factor was far overshadowed by other factors, particularly infrastructure. In any case, labour market and industrial relations regulation were a part of the overall governance and regulatory system which, as a whole, was an important factor in encouraging or stifling industrial growth.

Infrastructure is most widely accepted as the reason for differential status and growth of manufacturing industry among the states. Analysis has been attempted to explain such difference in terms of a single infrastructure item such as banking facilities (Burgess and Pande, 2003) and power (Adil, 2010).

Some studies have taken several items of infrastructure as independent variables to explain variations in some indicator (e.g., total factor productivity – TFP – in Mitra *et. al.*, 2002) of industrial performance and found some of them more important than others. For example, the study mentioned above found investment in primary education, financial mobilisation as reflected in deposits and credit disbursal

and power production capacity as the factors significantly influencing industrial productivity. Paul (2011) looked at the impact of banking outreach, physical infrastructure and labour market flexibility on growth of manufacturing industries across 14 major states of India in the post-liberalisation period (1991–92/2002–03) and found that while the first two influenced industrial growth significantly the last had no significant impact.

Often infrastructure items, including physical, economic and social items (like road length and railway length per unit of geographical area, energy consumption, educational facilities, hospitals, banking facilities, post and telecommunications) have been clubbed together to construct an overall “infrastructure index”. Utilising on such index [constructed by Centre for Monitoring Indian Economy (CMIE)] to examine the relationship between infrastructure and the extent of industrialisation (share of manufacturing in the state gross domestic product), it is observed that there is a fairly significant relation between the two. The rank correlation coefficient between the two was 0.36 for the year 1980–81. It was stronger in 1990–91 at 0.42, but grew weaker at 0.33 in 2000–01 (Table 34). Yet it was statistically significant in all three years.

**Table 34**  
**Infrastructure and Level of Industrialisation**

| States                  | 1980–81 Rank                     | % share of manufacturing in GSDP | 1990–91 Rank                     | % share of manufacturing in GSDP | 2000–01 Rank                     | % share of manufacturing in GSDP |
|-------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
|                         | Infrastructure Development Index |                                  | Infrastructure Development Index |                                  | Infrastructure Development Index |                                  |
| Andhra Pradesh          | 8                                | 6                                | 8                                | 8                                | 12                               | 12                               |
| Assam                   | 15                               | 11                               | 13                               | 15                               | 11                               | 16                               |
| Bihar                   | 12                               | 10                               | 15                               | 11                               | 17                               | 15                               |
| Gujarat                 | 5                                | 4                                | 5                                | 2                                | 6                                | 1                                |
| Haryana                 | 4                                | 7                                | 4                                | 4                                | 5                                | 4                                |
| Himachal Pradesh        | 13                               | 16                               | 10                               | 16                               | 10                               | 10                               |
| Jammu and Kashmir       | 11                               | 17                               | 14                               | 17                               | 16                               | 17                               |
| Karnataka               | 10                               | 5                                | 9                                | 5                                | 9                                | 6                                |
| Kerala                  | 3                                | 12                               | 2                                | 14                               | 3                                | 14                               |
| Madhya Pradesh          | 17                               | 9                                | 17                               | 7                                | 20                               | 7                                |
| Maharashtra             | 6                                | 2                                | 6                                | 3                                | 8                                | 3                                |
| Orissa                  | 14                               | 14                               | 12                               | 13                               | 14                               | 13                               |
| Punjab                  | 1                                | 13                               | 1                                | 10                               | 1                                | 9                                |
| Rajasthan               | 16                               | 8                                | 16                               | 12                               | 19                               | 8                                |
| Tamil Nadu              | 2                                | 1                                | 3                                | 1                                | 4                                | 2                                |
| Uttar Pradesh           | 9                                | 15                               | 7                                | 9                                | 7                                | 11                               |
| West Bengal             | 7                                | 3                                | 11                               | 6                                | 13                               | 5                                |
| <b>Rank Correlation</b> | <b>0.36</b>                      |                                  | <b>0.42</b>                      |                                  | <b>0.33</b>                      |                                  |

*Source:* CMIE and ASI

Composite indicators are good for summary description, but not for identifying the relative importance of different infrastructure items. In most studies, transport and power have been identified as the most critical elements of infrastructure influencing the pace of industrial growth in a region or state. We, therefore, attempted an analysis to explain interstate variations in the level of industrialisation and growth of manufacturing GSDP, focussing on railways and road length per square kilometre of area as indicator of transport infrastructure and electricity consumption per capita as the indicator of availability of power. Taking share of manufacturing in GSDP as the indicators of levels of industrialisation of a state we found that it was only the power consumption which had a positive and significant relationship with it, in all the three time points, 1981, 1991 and 2001 for which regression analysis was undertaken. Length of railway line had a positive but not significant coefficient. Road length, surprisingly, came up with a negative coefficient in all the three years. Similar results were obtained when the indicator of the level of industrialisation was changed to per capita manufacturing GSDP, except that the explanatory power of the model improved as also the value of the coefficient of power consumption; and, the coefficient of road length turned out to be positive in one case, that is, in 1981 (*Table 35*). Our attempts to establish

**Table 35**  
**Transport and Power Infrastructure and Level of Industrialisation: Regression Results**

| <b>Dependent Variable: % Share of Manufacturing GSDP to Total GSDP</b> |          |             |         |         |          |
|--|----------|-------------|---------|---------|----------|
| Independent variable/<br>Time period                                   | Constant | Coefficient | t-value | p-value | R-square |
| Railways length_1981   | 9.696    | 0.171       | 1.0200  | 0.3300  | 0.0690   |
| Railways length_1991   | 13.264   | 0.117       | 0.7800  | 0.4500  | 0.0410   |
| Railways length_2001   | 12.727   | 0.157       | 1.1000  | 0.2900  | 0.0750   |
| Road length_1981   | 14.007   | -0.0003     | -0.0800 | 0.9360  | 0.0005   |
| Road length_1991   | 17.282   | -0.002      | -0.4600 | 0.6520  | 0.0149   |
| Road length_2001   | 16.883   | -0.001      | -0.4500 | 0.6570  | 0.0135   |
| Power consumption_1981   | 7.251    | 0.044       | 2.0200  | 0.0630  | 0.2258   |
| Power consumption_1991   | 10.691   | 0.021       | 2.0000  | 0.0660  | 0.2219   |
| Power consumption_2001   | 8.251    | 0.019       | 3.7700  | 0.0020  | 0.4865   |
| Power consumption_2004   | 9.913    | 0.015       | 3.4300  | 0.0040  | 0.4399   |
| <b>Dependent Variable: Per capita Manufacturing GSDP</b>               |          |             |         |         |          |
| Railways length_1981   | 401.280  | 18.930      | 1.6900  | 0.1120  | 0.1600   |
| Railways length_1991   | 967.310  | 16.890      | 0.8500  | 0.4080  | 0.0490   |
| Railways length_2001   | 1297.850 | 27.020      | 1.0200  | 0.3230  | 0.0650   |
| Road length_1981   | 401.280  | 18.930      | 1.6900  | 0.1120  | 0.1600   |
| Road length_1991   | 1492.590 | -0.140      | -0.3300 | 0.7480  | 0.0080   |
| Road length_2001   | 2055.700 | -0.120      | -0.3100 | 0.7620  | 0.0060   |
| Power consumption_1981   | 401.280  | 18.930      | 1.6900  | 0.1120  | 0.1600   |
| Power consumption_1991   | 275.280  | 4.260       | 3.9100  | 0.0020  | 0.5220   |
| Power consumption_2001   | 109.550  | 4.560       | 5.4500  | 0.0000  | 0.6640   |
| Power consumption_2004   | 80.470   | 5.080       | 5.5200  | 0.0000  | 0.6700   |

dynamic relationships between these items of infrastructure and growth of manufacturing industry in different states by estimating regression of base year infrastructure with growth over the next decade or to relate growth in infrastructure with growth in manufacturing GSDP over each of the three periods, however, yielded no significant results.

Outcomes of our statistical exercises, however, do not imply that various items of infrastructure do not influence the pace of industrial development in different states. There could be several reasons for the relationship not showing up significantly. *One*, the specification of the variables may not be the most appropriate. *Two*, the quality of data may vary among states. *Three*, some items may not have significantly large variations across states as over the years a larger degree of convergence has emerged in respect of items like facilities for human development, banking, transport and communications among the states. *Fourth*, where variations are significant, the relationship is also significant. Power availability is one example which is probably a good proxy for all items of infrastructure directly relevant for industry; and it could overshadow the influence of other items. *Five*, after the initial phase of industrialisation, infrastructure may continue to be important but its influence is intermixed with that of agglomeration economies. In other words, new industries go where industries exist which are also the states that have better developed infrastructure. Between states with developed infrastructure but very little industry and those with both developed infrastructure and a good industrial base, the latter attracts more industry than the former. Thus, Kerala with good infrastructure does not attract industry while Gujarat also with high level of industrialisation does. Punjab with highly developed infrastructure has a relatively lower level of industrialisation, but Maharashtra with relatively lower level of infrastructure development has a high level of industrialisation (See *Table 34*). It appears that the pattern of location of new industrial activity is becoming increasingly complex and requires fresh approaches that go beyond the traditional theory of industrial location, to explain it.

## Appendix A

|                       | Percentage Share     |       |         |         |         |       |               |         |         |       |          |         | Trend Growth Rate |      |         |      |         |      |         |      |         |    |         |    |  |
|-----------------------|----------------------|-------|---------|---------|---------|-------|---------------|---------|---------|-------|----------|---------|-------------------|------|---------|------|---------|------|---------|------|---------|----|---------|----|--|
|                       | Agriculture & Allied |       |         |         |         |       | Manufacturing |         |         |       |          |         | Services          |      |         |      |         |      |         |      |         |    |         |    |  |
|                       | 1980-81              |       | 1990-91 |         | 2000-01 |       | 2008-09       |         | 1980-81 |       | 1990-91  |         | 2000-01           |      | 2008-09 |      | 1980-81 |      | 1990-91 |      | 2000-01 |    | 2008-09 |    |  |
|                       | 81                   | 01    | 91      | 01      | 01      | 01    | 09            | 09      | 81      | 91    | 91       | 01      | 01                | 01   | 09      | 09   | 81      | 91   | 91      | 01   | 01      | 01 | 09      | 09 |  |
| <b>Major States</b>   |                      |       |         |         |         |       |               |         |         |       |          |         |                   |      |         |      |         |      |         |      |         |    |         |    |  |
| 1 Andhra Pradesh      | 38.66                | 33.31 | 28.61   | 22.23   | 13.86   | 15.32 | 13.69         | 12.05   | 39.26   | 41.71 | 46.54    | 51.25   | 5.36              | 5.2  | 6.92    | 5.1  | 4.11    | 5.31 | 8.57    | 5.43 |         |    |         |    |  |
|                       |                      |       | 38.43   | 25.74   |         | 9.17  | 13.27         | 13.27   |         |       | 39.76(4) | 45.41   |                   |      | 13.95   |      |         |      | 7.36    |      |         |    |         |    |  |
| 3 Bihar(+)            | 52.45                | 43.84 | (46.56) | (31.62) | 9.92    | 12.56 | (3.73)        | (2.50)  | 28.02   | 31.95 | 3.39     | (51.28) | 6.24              | 3.18 | (1.44)  | 3.94 | 4.57    | 3.2  | (7.17)  | 3.81 |         |    |         |    |  |
| 4 Gujarat*            | 38.21                | 27.02 | 15.19   | 16      | 18.92   | 26.14 | 30.41         | 29.94   | 33.22   | 37.34 | 44.18    | 44.38   | 8.29              | 9.48 | 11.71   | 8.17 | 3.82    | 7.69 | 10.24   | 6.64 |         |    |         |    |  |
| 6 Haryana**           | 49.09                | 42.94 | 32.07   | 23.1    | 13.65   | 19.1  | 20.59         | 20      | 25.39   | 29.81 | 40.18    | 46.43   | 10.42             | 6.8  | 8.13    | 7.33 | 5.97    | 5.13 | 8.6     | 5.94 |         |    |         |    |  |
| 9 Karnataka           | 43.56                | 33.45 | 26.37   | 13.83   | 15.25   | 18.63 | 17.26         | 19.85   | 31.59   | 39.17 | 46.13    | 54.53   | 7.07              | 6.9  | 10.51   | 7.42 | 4.84    | 7.07 | 8.73    | 6.34 |         |    |         |    |  |
| 10 Kerala *           | 41.7                 | 31.16 | 23.64   | 15.68   | 9.52    | 11.11 | 11.68         | 9.96    | 40.92   | 50.35 | 56.09    | 60.73   | 3.26              | 5.92 | 6.19    | 5.12 | 2.46    | 5.57 | 8.38    | 5.27 |         |    |         |    |  |
|                       |                      |       | 24.03   | 23.99   |         | 16.46 | 15.35         | 15.35   |         |       | 39.82    | 38.22   |                   |      | 5.44    |      |         |      | 6.05    |      |         |    |         |    |  |
| 11 Madhya Pradesh (+) | 47.3                 | 38.01 | (25.87) | (26.23) | 11.11   | 15.5  | (15.08)       | (12.73) | 27.99   | 33.36 | (40.55)  | (39.71) | 6.52              | 6.58 | (2.26)  | 5.82 | 3.43    | 4.63 | (5.04)  | 4.43 |         |    |         |    |  |
| 12 Maharashtra*       | 25.53                | 20.73 | 15.49   | 13.35   | 24.92   | 26.08 | 23.93         | 23.46   | 39.94   | 43.86 | 53.36    | 57.2    | 6.79              | 6.27 | 8.64    | 6.29 | 5.84    | 6.49 | 8.39    | 6.44 |         |    |         |    |  |
| 13 Orissa             | 54.59                | 38.69 | 28.22   | 19.24   | 9.08    | 11.29 | 12.13         | 17.04   | 27.16   | 34.76 | 43.38    | 45.07   | 8.78              | 4.17 | 15.6    | 6.68 | 4.03    | 4.02 | 9.19    | 4.42 |         |    |         |    |  |
| 14 Punjab             | 46.41                | 46.02 | 39.21   | 32.55   | 9.21    | 13.61 | 15.96         | 16.05   | 36.18   | 33.48 | 36.92    | 41.27   | 8.98              | 6.43 | 6.18    | 6.49 | 5.02    | 4.69 | 5.39    | 4.67 |         |    |         |    |  |
| 15 Rajasthan          | 43.8                 | 41.11 | 26.73   | 24      | 12.43   | 12.36 | 16.5          | 15.63   | 33.94   | 35.12 | 41.15    | 41.9    | 6.66              | 9.37 | 7.84    | 6.96 | 6.5     | 6.22 | 7.66    | 6.23 |         |    |         |    |  |
| 16 Tamil Nadu         | 25.25                | 22.75 | 17.62   | 10.99   | 31.47   | 28.54 | 24.36         | 23.32   | 36.73   | 39.98 | 47.93    | 57.1    | 4.06              | 5.06 | 7.7     | 4.56 | 5.06    | 6.48 | 7.59    | 5.88 |         |    |         |    |  |
|                       |                      |       | 35.60   | 27.72   |         | 13.85 | 14.02         | 14.02   |         |       | 40.30    | 42.00   |                   |      | 6.26    |      |         |      | 5.81    |      |         |    |         |    |  |
| 17 Uttar Pradesh (+)  | 48.05                | 39.27 | (35.65) | (28.37) | 9.01    | 13.87 | (14.00)       | (14.01) | 33.94   | 37.9  | (40.34)  | (42.44) | 9.53              | 4.8  | (5.85)  | 5.65 | 4.65    | 3.97 | (3.91)  | 4.35 |         |    |         |    |  |
| 18 West Bengal*       | 31.94                | 30.95 | 26.06   | 20.7    | 20.31   | 17.8  | 17.28         | 16.37   | 40.38   | 43.34 | 49.35    | 53.5    | 3.32              | 6.36 | 6.07    | 5.21 | 4.65    | 6.66 | 6.57    | 5.81 |         |    |         |    |  |
| <b>New States</b>     |                      |       |         |         |         |       |               |         |         |       |          |         |                   |      |         |      |         |      |         |      |         |    |         |    |  |
| 19 Chhattisgarh       | -                    | -     | 18.25   | 18.33   | -       | -     | 18.5          | 21.94   | -       | -     | 37.55    | 34.44   | -                 | -    | 11.66   | N.E. | -       | -    | 8.3     | NE   |         |    |         |    |  |
| 20 Jharkhand          | -                    | -     | 23.49   | 15.48   | -       | -     | 19.17         | 32.02   | -       | -     | 33.09    | 35.17   | -                 | -    | 16.88   | N.E. | -       | -    | 7.68    | NE   |         |    |         |    |  |
| 21 Uttarakhand        | -                    | -     | 34.88   | 28.37   | -       | -     | 11.74         | 14.12   | -       | -     | 39.81    | 37.07   | -                 | -    | 12.15   | N.E. | -       | -    | 9.04    | NE   |         |    |         |    |  |

|   | Percentage Share       |              |              |              |              |              |               |              |             |              |             |              | Trend Growth Rate |             |             |            |             |             |               |             |             |         |         |         |           |         |         |  |  |  |  |
|---|------------------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|-------------|--------------|-------------|--------------|-------------------|-------------|-------------|------------|-------------|-------------|---------------|-------------|-------------|---------|---------|---------|-----------|---------|---------|--|--|--|--|
|   | Agriculture & Allied   |              |              |              |              |              | Manufacturing |              |             |              |             |              | Services          |             |             |            |             |             | Manufacturing |             |             |         |         |         | Total GDP |         |         |  |  |  |  |
|   | 1980-81                | 1990-91      | 2000-01      | 2008-09      | 1990-91      | 2000-01      | 2008-09       | 1980-81      | 1990-91     | 2000-01      | 2008-09     | 1980-81      | 1990-91           | 2000-01     | 2008-09     | 1980-81    | 1990-91     | 2000-01     | 2008-09       | 1980-81     | 1990-91     | 2000-01 | 2008-09 | 1980-81 | 1990-91   | 2000-01 | 2008-09 |  |  |  |  |
| <b>North Eastern States</b>               |                        |              |              |              |              |              |               |              |             |              |             |              |                   |             |             |            |             |             |               |             |             |         |         |         |           |         |         |  |  |  |  |
| 21  | Arrunachal Pradesh*    | 44.96        | 31.79        | 28.99        | 16.31        | 3.8          | 2.6           | 3.43         | 2.03        | 29.04        | 23.08       | 34.24        | 23.31             | 8.14        | 7.1         | 2.85       | 6.56        | 11.82       | 3.67          | 9.79        | 6.49        |         |         |         |           |         |         |  |  |  |  |
| 22  | Assam                  | 49.21        | 41.48        | 34.02        | 23.93        | 9.55         | 9.17          | 7.67         | 10.74       | 31.57        | 35.34       | 44.58        | 51.05             | 2.96        | 1.87        | 8.86       | 3.91        | 3.4         | 2.4           | 5.4         | 3.31        |         |         |         |           |         |         |  |  |  |  |
| 23  | Manipur                | 28.76        | 35.44        | 32.89        | 26.36        | 6.41         | 13.53         | 7.93         | 7.48        | 23.13        | 41.59       | 46.24        | 41.03             | 7.81        | 3.37        | 5.19       | 4.46        | 2.82        | 9.98          | 5.43        | 5.52        |         |         |         |           |         |         |  |  |  |  |
| 24  | Meghalaya              | 41.75        | 29.45        | 25.06        | 21.03        | 1.8          | 2.42          | 2.07         | 8.49        | 42.46        | 49.88       | 53.45        | 50.79             | 7.5         | 7.74        | 14.85      | 11.22       | 4.92        | 10.48         | 6.84        | 7.82        |         |         |         |           |         |         |  |  |  |  |
| 25  | Mizoram                | 26.96        | 21.14        | 19.67        | 15.38        | 1.49         | 2.87          | 1.73         | 2.13        | 59.1         | 46.15       | 64.42        | 62.46             | 9.85        | 5.42        | 9.27       | 13.13       | 20.71       | 12.84         | 4.97        | 12.34       |         |         |         |           |         |         |  |  |  |  |
| 26  | Nagaland**             | 27.57        | 24.7         | 33.94        | 35.51        | 5.09         | 3.65          | 1.12         | 1.4         | 52.78        | 59.14       | 53.46        | 48.7              | 11.73       | -0.55       | 8.38       | 6.11        | 18.8        | 8.81          | 6.36        | 12.96       |         |         |         |           |         |         |  |  |  |  |
| 27  | Sikkim                 | 41.08        | 34.75        | 21.86        | 16.66        | 0            | 4.13          | 3.48         | 41.63       | 51.34        | 52.91       | 50           | 50                | N.E.        | N.E.        | 6.55       | 8.44        | 17.18       | 9.85          | 8.36        | 11.25       |         |         |         |           |         |         |  |  |  |  |
| 28  | Tripura*               | 56           | 42.09        | 32.05        | 28.59        | 3.44         | 2.78          | 4.85         | 2.82        | 39.37        | 49.84       | 59.23        | 58.42             | 3.05        | 12.82       | 4.52       | 8.44        | 5.58        | 12.76         | 8.03        | 9.1         |         |         |         |           |         |         |  |  |  |  |
| <b>Union Territories And Other States</b> |                        |              |              |              |              |              |               |              |             |              |             |              |                   |             |             |            |             |             |               |             |             |         |         |         |           |         |         |  |  |  |  |
| 29  | A&N Islands*           | 43.69        | 47.39        | 29.32        | 11.9         | 7.27         | 6.39          | 4.8          | 3.35        | 34.16        | 29.64       | 50.31        | 34.39             | 2.63        | 3.87        | 7.56       | 2.8         | 5.6         | 5.05          | 13.52       | 6.76        |         |         |         |           |         |         |  |  |  |  |
| 30  | Chandigarh             | N.A.         | N.A.         | 1.1          | 0.53         | N.A.         | N.A.          | 15.63        | 12.72       | N.A.         | N.A.        | 72.74        | 72.2              | N.E.        | N.E.        | 9.2        | N.E.        | N.A.        | N.A.          | 11.1        | NE          |         |         |         |           |         |         |  |  |  |  |
| 31  | Delhi                  | 4.28         | 2.98         | 1.31         | 0.63         | 8.25         | 8.94          | 11.49        | 8.8         | 82.32        | 83.06       | 78.72        | 81.88             | 8.04        | 3.35        | 5.83       | 5.47        | 8.67        | 0.13          | 9.84        | 4.57        |         |         |         |           |         |         |  |  |  |  |
| 32  | Dadar and Nagar Haveli | N.A.         | N.A.         | N.A.         | N.A.         | N.A.         | N.A.          | N.A.         | N.A.        | N.A.         | N.A.        | N.A.         | N.A.              | N.E.        | N.E.        | N.E.       | N.E.        | N.A.        | N.A.          | N.A.        | N.A.        |         |         |         |           |         |         |  |  |  |  |
| 33  | Daman and Diu          | N.A.         | N.A.         | N.A.         | N.A.         | N.A.         | N.A.          | N.A.         | N.A.        | N.A.         | N.A.        | N.A.         | N.A.              | N.E.        | N.E.        | N.E.       | N.E.        | N.A.        | N.A.          | N.A.        | N.A.        |         |         |         |           |         |         |  |  |  |  |
| 34  | Lakshadweep            | N.A.         | N.A.         | N.A.         | N.A.         | N.A.         | N.A.          | N.A.         | N.A.        | N.A.         | N.A.        | N.A.         | N.A.              | N.E.        | N.E.        | N.E.       | N.E.        | N.A.        | N.A.          | N.A.        | N.A.        |         |         |         |           |         |         |  |  |  |  |
| 35  | Pondicherry            | 29.08        | 18.9         | 6.95         | 3.52         | 20.39        | 28.74         | 49.1         | 65.49       | 34.56        | 37.44       | 40.77        | 29.38             | 7.44        | 19.53       | 14.02      | 13.05       | 4.15        | 12.18         | 10.63       | 8.38        |         |         |         |           |         |         |  |  |  |  |
| 5   | Goa*                   | 20.55        | 14.53        | 8.44         | 4.46         | 24.24        | 22.29         | 33.26        | 30.08       | 39.53        | 50.61       | 47.94        | 55.88             | 0.71        | 10.68       | 8.68       | 8.08        | 4.65        | 7.15          | 11.2        | 6.4         |         |         |         |           |         |         |  |  |  |  |
| 7   | Himachal Pradesh*      | 44.21        | 35.51        | 23.41        | 18.99        | 3.01         | 7.32          | 15.02        | 13.64       | 33.65        | 38.69       | 41.57        | 40.95             | 14.52       | 14.9        | 6.65       | 12.46       | 4.85        | 6.35          | 7.74        | 5.98        |         |         |         |           |         |         |  |  |  |  |
| 8   | Jammu & Kashmir*       | N.A.         | N.A.         | 32.17        | 28.57        | N.A.         | N.A.          | 5.86         | 8.1         | N.A.         | N.A.        | 51.44        | 48.76             | NE          | NE          | 11.03      | NE          | NE          | NE            | 5.16        |             |         |         |         |           |         |         |  |  |  |  |
| <b>India</b>                              |                        | <b>38.92</b> | <b>31.86</b> | <b>24.76</b> | <b>21.43</b> | <b>15.32</b> | <b>17.58</b>  | <b>17.75</b> | <b>16.7</b> | <b>36.45</b> | <b>40.9</b> | <b>46.86</b> | <b>47.06</b>      | <b>7.44</b> | <b>7.02</b> | <b>8.2</b> | <b>6.77</b> | <b>5.52</b> | <b>6.12</b>   | <b>8.26</b> | <b>6.09</b> |         |         |         |           |         |         |  |  |  |  |

**Appendix B**  
**Classification at 2-digit level (NIC 1987)**

| Division     | Classification at 2-digit level (NIC 1987)  |
|--------------|---|
| <b>20-21</b> | Manufacture of Food Products  |
| <b>22</b>    | Manufacture of Beverages, Tobacco and Related Products  |
| <b>23</b>    | Manufacture of Cotton Textiles  |
| <b>24</b>    | Manufacture of Wool silk and manmade fibre textiles   |
| <b>25</b>    | Manufacture of jute and other vegetable fibre textiles (except cotton)  |
| <b>26</b>    | Manufacture of textile product (including wearing apparel)  |
| <b>27</b>    | Manufacture of wood and wood product; furniture and fixtures  |
| <b>28</b>    | Manufacture of paper products and printing publishing & Allied industries   |
| <b>29</b>    | Manufacture of leather and product of leather, fur & substitutes of leather   |
| <b>30</b>    | Manufacture of basic chemicals and chemical product (except product of petroleum and coal)  |
| <b>31</b>    | manufacture of rubber, plastic, petroleum and coal product; processing nuclear fuels  |
| <b>32</b>    | Manufacture of non-metallic mineral product   |
| <b>33</b>    | Basic metal and alloys industries   |
| <b>34</b>    | Manufacture of metal product and parts, except machinery and equipment  |
| <b>35-36</b> | Manufacture of machinery and equipment other than transport equipment (manufacture of scientific equipment, clock is classified in division 38) photographic/cinematography equipment and watches |
| <b>37</b>    | Manufacture of transport equipment and parts  |
| <b>38</b>    | Other manufacture industries  |
| <b>39</b>    | Repair of capital goods   |

**Appendix C**  
**Concordance between 2-digit level of NIC-87 & appropriate level of NIC-98**  
**(for converting NIC-98 based data in terms of NIC-87)**

| NIC-87 Code  | NIC-98 Code              |
|--------------|--------------------------|
| 20-21        | 151 + 152 + 153 + 154    |
| 22           | 155 + 16                 |
| 23 + 24 + 25 | 171                      |
| 26           | 172 + 173 + 181          |
| 27           | 20 + 361                 |
| 28           | 21 + 22                  |
| 29           | 182 + 19                 |
| 30           | 24                       |
| 31           | 23 + 25                  |
| 32           | 26                       |
| 33           | 27 + 371                 |
| 34           | 2811 + 2812 + 289        |
| 35-36        | 2813 + 29 + 30 + 31 + 32 |
| 37           | 34 + 35                  |
| 38           | 33 + 369                 |
| 39           | 725                      |

*Source:* National Industrial Classification-1998, CSO

**Appendix D**  
**Classification at 2-digit level (NIC 04)**

| Division  | Classification at 2-digit level (NIC 04)  |
|-----------|---|
| <b>15</b> | Manufacture of Food Products and Beverages  |
| <b>16</b> | Manufacture of Tobacco Products   |
| <b>17</b> | Manufacture of Textiles   |
| <b>18</b> | Manufacture of Wearing Apparel Dressing and Dyeing of Fur   |
| <b>19</b> | Tanning and Dressing of Leather Manufacture of Luggage, Handbags, Saddler, Harness and Footwear                             |
| <b>20</b> | Manufacture of Wood and Products of Wood and Cork, Except Furniture, Manufacture of Articles of Straw and Plating Materials |
| <b>21</b> | Manufacture of Paper and Paper Products   |
| <b>22</b> | Publishing, Printing and Reproduction of Recorded Media   |
| <b>23</b> | Manufacture of Coke, Refined Petroleum Products and Nuclear Fuel  |
| <b>24</b> | Manufacture of Chemicals and Products   |
| <b>25</b> | Manufacture of Rubber and Plastic Products  |
| <b>26</b> | Manufacture of Other Non-Metallic Mineral Products  |
| <b>27</b> | Manufacture of Basic Metals   |
| <b>28</b> | Manufacture of Fabricated Metal Products, Except Machinery and Equipments   |
| <b>29</b> | Manufacture of Machinery and Equipments N.E.C   |
| <b>30</b> | Manufacture of Office, Accounting and Computing Machinery   |
| <b>31</b> | Manufacture of Electrical Machinery and Apparatus N.E.C.  |
| <b>32</b> | Manufacture of Radio, Television and Communication Equipments and Apparatus   |
| <b>33</b> | Manufacture of Medical, Precision and Optical Instruments, Watches and Clocks   |
| <b>34</b> | Manufacture of Motor Vehicles, Trailers and Semi-Trailers   |
| <b>35</b> | Manufacture of Other Transport Equipment  |
| <b>36</b> | Manufacture of Furniture; Manufacturing N.E.C.  |
| <b>37</b> | Recycling   |

## References

- Mohammad, Adil (2010), *Manufacturing Sector Productivity in India: All India Trends, Regional Patterns and Network Externalities from Infrastructure on Regional Growth*, Ph.D. Thesis University of Maryland, College Park, (Unpublished).
- Alagh, Yoginder, K.K. Subrahmanian and S.P. Kashyap (1971), "Regional Industrial Diversification in India," *Economic and Political Weekly*, Vol. 6, No.15, Pp. 795–802.
- Awasthi, Dinesh N. (1991), *Regional Patterns of Industrial Growth in India*, New Delhi, Concept Publishing Company.
- Bajpai, N. and Jeffrey D. Sachs (1996), "Trends in Inter-State Inequalities of Income in India," *Development Discussion Paper Number 528*, Harvard Institute for International Development.
- Baran, P. (1957), *The Political Economy of Growth*, New York, Monthly Review Press.
- Barro, R.J. and X. Sala-i-Martin (1990), "Economic Growth and Convergence across the United States," NBER Working Papers 3419, National Bureau of Economic Research, Inc.
- \_\_\_\_\_ (1992) "Convergence", *Journal of Political Economy*, University of Chicago Press, Vol. 100, No. 2, Pp. 223–51.
- \_\_\_\_\_ (1995), *Economic Growth*, New York, McGraw Hill.
- Bhattacharjea, Aditya (2006), "Labour Market Regulations and Industrial Performance in India: A Critical Review of Empirical Evidences," *Indian Journal of Labour Economics*, Vol. 49, No. 2, Pp. 211–232.
- Bhattacharya, B.B. and S. Sakthivel (2004), "Regional Growth and Disparity in India, Comparison of Pre and Post Reform Decades", *Economic and Political Weekly*, Vol. 39, No.10, Pp. 1071–1077.
- Besley, T. and R. Bargess (2004), "Can Labour Regulations Hinder Economic Performance? Evidence from India," *The Quarterly Journal of Economics*, Vol. 119, No. 1, Pp. 91–134.
- Burgess, R. and Rohini Pande (2005), "Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment," *American Economic Review*, Vol. 95, No. 3, Pp. 780–795.
- Chakravorty, S. and S. Lall (2007), *Made in India: The Economic Geography and Political Economy of Industrialization*, Oxford University Press, New Delhi.

- Dhar, P.N. and D.U. Sastry (1967), "Inter-State Variations in Industry, 1951-61," *Economic and Political Weekly*, Vol. 4, No. 12, Pp. 535–538.
- Elizondo, R.L. and P. Krugman (1992), "Trade Policy and the Third World Metropolis," *NBER Working Papers* 4238, National Bureau of Economic Research, Inc.
- Frank, Andre Gunder (1967), *Capitalism and Underdevelopment in Latin America*, New York, Monthly Review Press.
- Hasan, Rana, Debashish Mitra and K.V. Ramaswamy (2003), "Trade Reform, Labor Regulations and Labor-Demand Elasticities: Empirical Evidence from India," *NBER Working Papers* 9879, National Bureau of Economic Research, Inc.
- Hirschman, Albert O. (1958), *The Strategy of Economic Development*, New Haven, Conn.: Yale University Press.
- IAMR (2011), *India Human Development Report 2011*, New Delhi, Institute of Applied Manpower Research and Oxford University Press.
- Kaldor, N. (1967), *Strategic Factors in Economic Development*, Ithaca, New York: Cornell University Press.
- Kuznets, S. (1955), "Economic Growth and Income Inequality," *The American Economic Review*, Vol. 45, No. 1, Pp. 1–28.
- Lipton, M. (1977), *Why Poor People Stay Poor: Urban Bias in World Development*, Cambridge: Harvard University Press.
- Marjit, S. and Sandip Mitra (1996), "Convergence in Regional Growth Rates: Indian Research Agenda," *Economic and Political Weekly*, Vol. 31, No. 33, Pp. 2239–2242.
- Mathur, A. (1983), "Regional Development and Income Disparities in India: A Sectoral Analysis", *Economic Development and Cultural Change*, Vol. 31, Issue 3, Pp. 475–505.
- Mitra, A., S. Varoudakis and M. Veganzones-Varoudakis (2002), "Productivity and Technical Efficiency in Indian States Manufacturing: The Role of Infrastructure," *Economic Development and Cultural Change*, Vol. 50, No. 2.
- Myrdal, G. (1957), *Economic Theory and Underdeveloped Regions*, London: Duckworth.
- Nagaraj, R. (2011), "Growth in Organised Manufacturing Employment: A Comment," *Economic and Political Weekly*, Vol. 46, No. 12, March 19–25.

- Nair, K.R.G. (2005), "Inter-state disparities in Industrial development in India," paper presented in the national seminar on Accelerated Economic Growth and Regional Balance, New Delhi, ISID.
- Paul, Rupayan (2011), "The relative impacts of banking, infrastructure and labour on industrial growth: evidence from Indian states', *Macroeconomics and Finance in Emerging Market Economies*, Vol. 4, Issue 1, Pp. 101–124.
- Piore, M.J. and C.F. Sebel (1984), *The Second Industrial Divide: Possibilities for Prosperity*, New York, Basic Books.
- Reddy, D. Narasimha (2008), "Labour Regulation, Industrial Growth and Employment: A study of Recent Trends in Andhra Pradesh", Vol. 5, in T.S. Papola (Ed.) *Labour Regulations in Indian Industry*, ISID and Bookwell, New Delhi.
- Sardamoni, K. (1969), "Growth of Manufacturing Employment in the States 1950-63," *Economic and Political Weekly*, Vol. 4, No.15, Pp. 655–657.
- Sastry, D.V.S., Balwant Singh, Kaushik Bhattacharya and N.K. Unnikrishnan (2003), "Sectoral Linkages and Growth Prospects: Reflections on the Indian Economy," *Economic and Political Weekly*, Vol. 38, No. 24, June 14–20.
- Williamson, J.G. (1965), "Regional Inequality and the process of national development: A description of the patterns," *Economic Development and Cultural Change*, Vol. 13, No. 4, Pp. 3–45.
- World Bank (2004), *India:: Investment Climate and Manufacturing Industry*, Finance and Private Sector Development Unit, South Asia Region, World Bank, New Delhi.