4. INTRODUCTION:

In the previous chapter we have discussed the existing scenario of WPR of males and females, both at rural and urban levels, first, at all India level and then of the selected six states. In this chapter an attempt has been made to analyse the employment structure of all the three sectors of economy viz. primary, secondary and tertiary. This chapter has been formed to check further which sector is more capable to absorb more workers and what are the shifts in employment structure over the period,

The structure of the workforce in an economy is known to undergo considerable changes with the process of economic development and transformation. Simon Kuznets (1965) has mentioned that as an economy walks on the development path, the share of primary sector declines and at the same time, the share of secondary sector increases in initial phase, subsequently giving way to a rising share of tertiary sector.

Occupational pattern of labour force reflects the pattern of employment and is linked to economic growth of a country/ state. It is generally believed that the process of development brings changes in occupational mobility of labour force, mainly from agriculture to non agriculture sector, productivity of labour and participation in economically gainfully activities increases. Due to fast global changes globalised labour markets are also changing very fast all over the world. These changes are more important for workers in developing countries as they are more vulnerable and less able to protect themselves when hit by adversities.

Table (4a, p.70) shows that in developed countries more than 65 per cent of the workers are employed in tertiary sector about 22 per cent to 31 per cent are employed in industry. Very few of them (ranging from 1.5 per annum to 2.5 per annum) are engaged in agriculture. Japan is the only exception where the share is 5.0 per cent. Opposite to this in most of the emerging economies maximum percentage of the workers around 45 per cent to 58 per cent are employed in agriculture. In secondary sector workforce employed in developed and developing economies is almost same. The major difference is between primary and tertiary sectors which are opposite to each other.
### Table 4(a)
Share of Employment by Economic Activity (Year 2002)

(percentage)

<table>
<thead>
<tr>
<th>Developed Countries</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>1.5</td>
<td>23.5</td>
<td>75.0</td>
</tr>
<tr>
<td>USA</td>
<td>2.0</td>
<td>22.0</td>
<td>76.0</td>
</tr>
<tr>
<td>France</td>
<td>1.5</td>
<td>23.5</td>
<td>75.0</td>
</tr>
<tr>
<td>Japan</td>
<td>5.0</td>
<td>29.0</td>
<td>65.0</td>
</tr>
<tr>
<td>Germany</td>
<td>2.5</td>
<td>31.0</td>
<td>66.0</td>
</tr>
<tr>
<td>Italy</td>
<td>5.5</td>
<td>29.5</td>
<td>65.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emerging Economies</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>49.8</td>
<td>23.5</td>
<td>26.7</td>
</tr>
<tr>
<td>Indonesia</td>
<td>55.5</td>
<td>14.0</td>
<td>31.0</td>
</tr>
<tr>
<td>Thailand</td>
<td>49.0</td>
<td>18.5</td>
<td>32.5</td>
</tr>
<tr>
<td>Philippines</td>
<td>35.0</td>
<td>15.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Malaysia</td>
<td>17.5</td>
<td>31.5</td>
<td>51.0</td>
</tr>
<tr>
<td>Korea Rep.</td>
<td>10.5</td>
<td>26.5</td>
<td>55.5</td>
</tr>
<tr>
<td>Pakistan</td>
<td>58.5</td>
<td>14.5</td>
<td>27.0</td>
</tr>
<tr>
<td>India</td>
<td>57.0</td>
<td>21.0</td>
<td>22.0</td>
</tr>
</tbody>
</table>

Sources: World Development Report (WDR), 2005 Pp 56-58

Note: 1. Data for Indonesia is for 1990-92 as the most recent year given in WDI, 2005
2. Data for India’s sectoral employment share is derived from various sources.

In India, which is passing from the transitional phase from agriculture to industrialization, the expected pattern of employment would be that a large proportion of population dependents on agriculture should shift to secondary and tertiary sectors.

In this chapter, an attempt has been made to study the changes in occupational structure during the pre and post-reform periods. In order to study the trends, estimates of usual status workers of N.S.S 38th (1983), 50th (July 1993-June 94) 55th (July 1999-June 2000) and 61st (July 2004-June 2005) rounds have been taken. **1983 to 1993-94 is taken as**
pre-reform period and 1993-94 to 2004-05 as post-reform period.

This chapter has been divided into three sections. The section I deals with the impact of economic reforms on employment structure in India. Section II deals with employment scenario in the six selected states which are Kerala, Punjab, Karnataka, West Bengal, Assam and Bihar. Section III deals with auto correlation which tells about the correlation between two series of work participation rates of two different periods.

Chart-1
Grouping of Nine-Industrial Categories

<table>
<thead>
<tr>
<th>Primary Sector</th>
<th>Secondary Sector</th>
<th>Tertiary Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>0. Agriculture, hunting, forestry and</td>
<td>2&amp;3. Manufacturing, Processing, Servicing</td>
<td>6. Wholesale and retail trade and</td>
</tr>
<tr>
<td>fishing</td>
<td>and Repair;</td>
<td>restaurant and hotels</td>
</tr>
<tr>
<td></td>
<td>a) Household Industry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Other than household industry</td>
<td></td>
</tr>
<tr>
<td>1. Mining and Quarrying</td>
<td>4. Public Utilities (Electricity, gas,</td>
<td>7. Transport, Storage and</td>
</tr>
<tr>
<td></td>
<td>water, etc )</td>
<td>Communication</td>
</tr>
<tr>
<td></td>
<td>5. Construction</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Financing, insurance, real estate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and business services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. Community, social and Personal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Services,</td>
</tr>
</tbody>
</table>

Section I

The common perception regarding employment is that as the economy moves towards rapid industrialization and urbanization employment in the secondary and the tertiary sectors increased at a faster rate compared to that in the primary sector which
becomes less important in the process. Section I deals with the structural changes occurred in India during 1983 to 2004-05.

4.1 A Broad Industry Classification of Usual Status Workers in India:

The participation of people in the labour markets varies from country to country. The participation in developing countries differs from that of developed countries. Most workers in developing countries work either in agriculture or small service and manufacturing units. For example in all the developing countries of China, Indonesia, Thailand, Philippines, Pakistan and India, agriculture constitute more than 50 per cent share of employment but for the developed countries it is the service sector which dominates in the share of employment as economic activity.

<table>
<thead>
<tr>
<th>Year</th>
<th>Round</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>1983</td>
<td>38th</td>
<td>81.7</td>
<td>8.5</td>
</tr>
<tr>
<td>1993-94</td>
<td>50th</td>
<td>79.0</td>
<td>9.6</td>
</tr>
<tr>
<td>1999-00</td>
<td>55th</td>
<td>76.8</td>
<td>10.9</td>
</tr>
<tr>
<td>2004-05</td>
<td>61st</td>
<td>73.2</td>
<td>13.2</td>
</tr>
</tbody>
</table>

Source: Reports of NSSO 38th, 50th, 55th and 61st Rounds

Table 4.1 demonstrates the distribution of usual status workers in India by broad activity division and region during 1983 to 2004-05. A close perusal of the data shows that in rural India the major proportion of the rural workforce is engaged in agriculture. In 2004-05, primary sector accounted for the highest proportion (73.2 per cent) of the total usually employed workers, followed by tertiary and secondary sectors, which accounted for just 13.6 per cent and 13.2 per cent respectively of the total workers. Over the period the loss of
primary sector is gained and shared by both the secondary and tertiary sectors. The fall in
the rural primary sector workforce is much higher to urban areas. RWP in case of secondary
and tertiary sectors shows a gradual increase. In secondary sector it increased from 8.5 per
cent in 1983 to 9.6 per cent in 1993-94 and further to 13.2 per cent in 2004-05. The
percentage of workers in tertiary sector increased from 9.8 per cent to 11.4 per cent and to
13.6 per cent for said periods.

Similarly, the urban WPR in primary sector which constitute a very small proportion
of total urban employment, declined from the level of 14.6 per cent in 1983 to 9.6 per cent in
2004-05. Urban WPR in secondary sector recorded a negligible decline during 1983 to
1993-94. However, it increased to 33.3 per cent in 2004-05. In tertiary sector, urban work
participation rate increased from 53.0 per cent in 1983 to 55.6 per cent in 1993-94 and to
57.2 per cent in 2004-05.

Given the rising importance of services in Indian economy, its impact on inequality
trends must be assessed. One of the most important elements of a sector’s impact on
inequalities and income distribution is whether the sector is labor intensive enough. Even
though India has experienced profound changes in the relative output shares of different
sectors (agriculture, manufacturing, and services) the same is not true for employment
shares. While agriculture contributes to a declining share of output, there has been little
change in the share of employment in agriculture. The reason might be that the rural
industrialization is quite limited and a large number of women constitute disguised
unemployment in agriculture.

In tertiary sector WPRs over the period has been increasing. Service sector
employment has been influenced by two opposite trends. On the one hand, new service
activities and a generally increasing demand for producer-oriented services has led to
employment creation, and on the other, rationalization processes have led to labour-saving
processes. But the overall trend is positive and the share of service sector in global as well as
in Indian labour market has increased steadily since the 1960s.

4.1.1 Annual Compound Growth Rate of Employment for Usual Status Workers in
India by Residence:

The average annual compound growth rates of employment in India in primary,
secondary and tertiary sectors in rural and urban areas, are given in the table 4.2. During the
earlier rounds, many agriculture dominated states like Punjab, Rajasthan, Madhya Pradesh
etc. recorded either negative or less than 1 per cent growth in employment, owing to severe draught witnessed during 1987-88. Agriculture sector in the post-reform scenario however, has reversed the trend and many of the states have shown good growth in employment.
Table 4.2
Annual Compound Growth Rate of Employment in India for Usual Status Workers by Place of Residence and Sector of Employment: 1983 to 2004-05
(per cent)

<table>
<thead>
<tr>
<th>Period</th>
<th>Rural</th>
<th></th>
<th></th>
<th></th>
<th>Urban</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
<td>Tertiary</td>
<td>Primary</td>
<td>Secondary</td>
<td>Tertiary</td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>1983 to 1993-94</td>
<td>1.72</td>
<td>3.31</td>
<td>3.61</td>
<td>2.65</td>
<td>2.97</td>
<td>3.94</td>
<td>1.72</td>
<td>3.31</td>
</tr>
<tr>
<td>1993-94 to 1999-00</td>
<td>0.16</td>
<td>2.20</td>
<td>1.63</td>
<td>-3.98</td>
<td>2.35</td>
<td>2.66</td>
<td>0.16</td>
<td>2.20</td>
</tr>
<tr>
<td>1999-00 to 2004-05</td>
<td>1.26</td>
<td>4.71</td>
<td>3.27</td>
<td>4.53</td>
<td>3.42</td>
<td>2.44</td>
<td>1.26</td>
<td>4.71</td>
</tr>
<tr>
<td>1993-94 to 2004-05</td>
<td>0.97</td>
<td>4.82</td>
<td>3.42</td>
<td>0.04</td>
<td>4.05</td>
<td>3.61</td>
<td>0.97</td>
<td>4.82</td>
</tr>
<tr>
<td>1983 to 2004-05</td>
<td>1.73</td>
<td>5.32</td>
<td>4.57</td>
<td>1.69</td>
<td>4.59</td>
<td>4.91</td>
<td>1.73</td>
<td>5.32</td>
</tr>
</tbody>
</table>

Source: Calculated from Table 4.1 by using population data of census 1981, 1991, and 2001

The data show that the average annual compound growth rate of employment in post-reform period 1993-94 to 2004-05 in rural and urban primary sector are calculated 0.97 per cent per annum and 0.04 per cent per annum respectively. Higher growth rates are recorded in rural areas though very less as compared to urban areas than that was observed in the pre-reform period i.e. 1.72 per cent in rural areas and 2.65 per cent in urban areas.

On comparing the growth rates during the pre-reform period which were for secondary and tertiary sectors of the order of 3.31 per cent and 3.61 per cent in case of rural areas and 2.97 per cent and 3.94 per cent for urban areas, with that of the growth rate during post-reform period, which were for secondary and tertiary sectors of the order of 4.82 per cent and 3.42 per cent for rural India and 4.05 per cent and 3.61 per cent for urban India. These increased growth rates indicate that economic reforms have been able to promote relatively higher level of employment in secondary sector in case of both areas viz. rural and urban areas. Service sector was the vital growth engine during the nineties. Reflecting its dynamic growth in output, employment figures also vindicate high growth.

In the first half of the post-reform period (1993-94 to 1999-00) in all the three sectors in both the rural and urban India in terms of average annual compound growth rate, which was 0.16 per cent, 2.20 per cent and 1.63 per cent respectively in rural areas and -3.98 per cent, 2.35 per cent and 2.66 per cent respectively for urban areas. Comparative to first-half, in second half growth rates remained higher in all the sectors except primary sector at both
the rural and urban levels.

This concludes that in pre-reform period, at both the rural and urban level, tertiary sector was showing higher annual compound growth rate and in post-reform period growth rate of employment in secondary sector remained high. Primary sector growth rates of employment in both the areas have remained less as compared to secondary and tertiary sectors during all the periods. The fact behind this is, increased employment rate in unorganized private/corporate sector. Workforce shifted from primary sector to low paid service sector, as agriculture was not showing as good results for employment. It may be due to the poor implementation of reforms in the agriculture sector. Secondly this sector by and large has remained unexploited. But diversification of agricultural activities into processing activities has increased the rate of employment opportunities in primary sector in second-half of post-reform period.

Section II

4.2 Changes in Employment Structure at State Level

Many factors, such as demographic, social and economic, affect WPR. That is why WPR varies from state to state. The pattern of shift from one sector to other also differs between rural and urban areas. In order to understand the impact of reforms at the state level, the following exercise has been done.

State I: Kerala

4.2.1 A Broad Industry Classification of Usual Status Workers in Kerala:

Among six selected states; Kerala has remained a paradoxical instance of a low-income agrarian society enjoying high quality of living standards. Even though Kerala ranks high on indicators of demographic progress and social development, it has not experienced similar levels of economic progress. While the state accounts for only 4 per cent of India’s population, its unemployment rates as high as 31 per cent, with 14 per cent of males and 48 per cent are as of the females (N.S.S 2000). Agriculture has been largely stagnant in the state and industrial growth lacklustre.
Table 4.3
Sectoral Distribution of Usual Status Workers in Kerala by Region:
1983 to 2004-05
(per cent)

<table>
<thead>
<tr>
<th>Year</th>
<th>Round</th>
<th>Rural Primary</th>
<th>Rural Secondary</th>
<th>Rural Tertiary</th>
<th>Urban Primary</th>
<th>Urban Secondary</th>
<th>Urban Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>38th</td>
<td>63.8</td>
<td>17.0</td>
<td>18.8</td>
<td>28.6</td>
<td>27.5</td>
<td>43.4</td>
</tr>
<tr>
<td>1993-94</td>
<td>50th</td>
<td>57.9</td>
<td>18.8</td>
<td>23.3</td>
<td>25.8</td>
<td>27.4</td>
<td>46.8</td>
</tr>
<tr>
<td>1999-00</td>
<td>55th</td>
<td>50.0</td>
<td>22.2</td>
<td>28.0</td>
<td>9.8</td>
<td>31.4</td>
<td>58.8</td>
</tr>
<tr>
<td>2004-05</td>
<td>61st</td>
<td>43.3</td>
<td>24.5</td>
<td>32.2</td>
<td>16.2</td>
<td>28.7</td>
<td>55.3</td>
</tr>
</tbody>
</table>

Source: Reports of NSSO 38th, 50th, 55th and 61st Rounds

Table 4.3 reveals that in the primary sector work participation at rural level declined from 63.8 per cent in 1983 to 57.9 per cent in 1993-94 and further to 43.3 per cent in 2004-05. The rates for the same periods at urban levels were 28.6 per cent, 25.8 per cent and 16.2 per cent. The agriculture and service sectors in Kerala are very much dependent on outside factors; the former to international prices and the later to remittances from abroad. Fluctuations and uncertainty in prices have affected their expansion.

Kerala’s rural secondary and tertiary sectors work participation rates have continuously been increasing since 1983 though the increase in work participation rates is not very high. Rural work participation rate for secondary sector jumped from 17.0 per cent in 1983 and to 18.8 per cent in 1993-94 and further to 24.5 per cent in 2004-05 (Table 4.3). For tertiary sector corresponding figures are 18.8 per cent, 23.3 per cent and 32.2 per cent respectively. The corresponding figures for urban secondary sector are 27.5 per cent, 27.4 per cent and 28.7 per cent and for urban tertiary sector 43.4 per cent, 46.8 per cent and 55.3 per cent respectively. As the table 4.3 reveals that at rural level the workers are moved from primary sector to secondary and tertiary sectors but tertiary sector has absorbed more workers as compared to secondary sector in both the periods. At urban level again in tertiary sector WP is much higher than that of secondary sector. In 2004-05 it was almost double to secondary sector WPR. One reason for poor performance of Kerala’s secondary sector is that all the traditional industries are facing serious threat due to unfair terms of trade and substitution of machine-made and synthetic products.

High cost of labour on account of higher than national average wages and resistance
to technological up gradation due to fear of retrenchment, has paralysed both the industrial and agricultural sectors alike and uneconomic returns have caused industries to close down or migrate out of the state.

Since the new economic reforms were initiated in 1991, cottage, small-scale and household industries have been largely affected by unfair competition from bigger players. Lack of product demand had forced the industries either to shut off or generating loss due to sickness. That led to lay off thousands of workers.

Industrial backwardness of the state and limited scope of absorption of more workers in agriculture and the substantial dependence on salaried employment has led to large-scale and growing unemployment in Kerala (Current Daily Status, 1975).

4.2.1.1 Annual Compound Growth Rate of Usual Status Workers in Kerala by Residence:

In India, Kerala is the most literate state with more than 90 per cent of literate population. Still from employment point of view its situation is not good enough. The economy of Kerala has changed from one dominated by the agriculture to one dominated by the services sector. This is due to growth of the public services and to the growth of services necessitated by high remittances from abroad.

Table 4.4
Annual Compound Growth Rate of Employment in Kerala for Usual Status Workers by Place of Residence and Sector of Employment: 1983 to 2004-05
(per cent)

<table>
<thead>
<tr>
<th>Period</th>
<th>Rural</th>
<th></th>
<th>Urban</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
<td>Tertiary</td>
<td>Primary</td>
</tr>
<tr>
<td>1983 to 1993-94</td>
<td>-0.91</td>
<td>1.07</td>
<td>2.22</td>
<td>3.40</td>
</tr>
<tr>
<td>1993-94 to 1999-00</td>
<td>-0.95</td>
<td>3.15</td>
<td>3.39</td>
<td>-11.41</td>
</tr>
<tr>
<td>1999-00 to 2004-05</td>
<td>-0.88</td>
<td>2.54</td>
<td>3.13</td>
<td>7.75</td>
</tr>
<tr>
<td>1993-94 to 2004-05</td>
<td>-1.28</td>
<td>4.05</td>
<td>4.62</td>
<td>-3.72</td>
</tr>
<tr>
<td>1983 to 2004-05</td>
<td>-1.43</td>
<td>3.36</td>
<td>4.49</td>
<td>-0.41</td>
</tr>
</tbody>
</table>

Source: Calculated from Table 4.3 by using population data of census 1981, 1991, and 2001

Table 4.4 shows that the average annual compound growth rates of workers in primary sector have remained negative all the times in both the regions of Kerala except at urban level during pre-reform period. Several changes in the agricultural economy have affected job opportunities in the sector. Aversion to manual labour by the newly educated
youth and keeping of land fallow by even small land holders due to absence of tenancy provisions as well as due to high wages is one of the reasons responsible for declining WPRs in agriculture. Not only has this, changes in cropping pattern towards more perennial crops reduced labour absorption. The pace of modernization of agriculture has been very slow. Kerala was ranked 13 among the states in the index of agriculture modernization in 1998 (Economic Review of Kerala, 2003). Relatively faster growth of agricultural wages in comparison to output prices has made farming less attractive.

Rural secondary sector shows 1.07 per cent growth rate of workers during pre-reform period that increased to 4.05 per cent in post-reform period. But on the other hand urban secondary sector growth rates have been continuously declining. It declined from 4.44 per cent during pre-reform period to 1.06 per cent during post-reform period. It is because of the technological obsolescence and lack of fresh investments in the state. Another interesting fact is that Kerala’s rural tertiary sector average annual compound growth rate of workers has increased much more in post-reform period. Tertiary sector growth rates at rural level increased from 2.22 per cent (1983 to 1993-94) to 4.62 per cent (1993-94 to 2004-05). But at urban level this rate declined from 5.25 per cent to 2.22 per cent in respective periods.

In Kerala social development in the context of demographic transition has led to a mismatch between labour supply and labour demand, resulting a vast educated, young labour force in a stagnant economy, surviving largely on expansion of service sector, facilitated by international remittances.

**State II: Punjab**

**4.2.2 A Broad Industry Classification of Usual Status Workers in Punjab:**

The Punjab state which is considered as one of the most developed states of Indian union, is based on rapid capitalist development of agriculture accompanied by small scale industries, and is facilitated by relative more developed tertiary sector.
### Table 4.5
Sectoral Distribution of Usual Status Workers in Punjab by Region: 1983 to 2004-05
*(per cent)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Round</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>1983</td>
<td>38th</td>
<td>82.0</td>
<td>7.9</td>
</tr>
<tr>
<td>1993-94</td>
<td>50th</td>
<td>74.7</td>
<td>9.6</td>
</tr>
<tr>
<td>1999-00</td>
<td>55th</td>
<td>72.6</td>
<td>12.0</td>
</tr>
<tr>
<td>2004-05</td>
<td>61st</td>
<td>67.0</td>
<td>16.9</td>
</tr>
</tbody>
</table>

*Source: Reports of NSSO 38th, 50th, 55th and 61st Rounds*

Table 4.5 shows that in Punjab in the year 1983 the RWP in primary sector was maximum (82.0 per cent) while the secondary sector was at the lowest with 7.9 per cent of rural workforce. This was basically due to indigenous machinery and means of production totally controlled by rural techniques. In urban primary sector, the work participation in 1983 was less than half of the urban secondary sector work participation rate. Maximum urban population was employed in tertiary sector. Primary, secondary and tertiary sector work participation rates were 13.6 per cent, 31.2 per cent and 52.8 per cent in 1983.

In the year 1993-94, rural primary sector work participation declined to 74.7 per cent from 82.0 per cent in 1983. These persons shifted to secondary and tertiary sectors but the shift of workers was more towards tertiary sector. Thus work participation in tertiary sector increased to 15.8 per cent at rural level and 59.9 per cent at urban level in 1993-94. At rural level secondary sector WPR increased from 7.9 per cent in 1983 to 9.6 per cent in 1993-94; for urban 31.2 per cent to 30.8 per cent. As “The New Economic Reforms” were implemented during 1990-91 and a number of changes introduced in industrial policy. Due to new industrial policy, work participation in industrial sectors started to increased.

In 2004-05, similar trend intended in rural primary sector i.e. WPR decreased to 67.0 per cent in 2004-05 and tertiary sector shown a decline from 15.8 per cent to 13.3 per cent in corresponding periods. On the other side rural secondary sector WP increased to almost to double during 1993-94 to 2004-05. Due to adoption of LPG in 1991-92 in secondary sector,
employment opportunities increased that led people from primary and tertiary sectors to secondary sector. On the other side in urban Punjab, primary sector work participation declined from 9.3 per cent (1993-94) to 5.9 per cent (2004-05), secondary sector work participation increased from 30.8 per cent (1993-94) to 34.6 per cent (2004-05) and tertiary sector did not show any considerable change in WPR during 1993-94 to 2004-05.

This table reveals that there have been significant changes in sectoral distribution of workforce in Punjab during pre and post-reform periods. Data indicates that in pre-reform period in rural and urban areas of Punjab, work participation was turning from primary to tertiary sector. Secondary sector work participation was also increasing with little change. In post-reform years the work participation in Punjab has been moving from primary and tertiary sectors towards secondary sector at both the levels. Workers are shifting from agriculture to other sectors but the shift has been very slow.

4.2.2.1 Annual Compound Growth Rate of Employment for Usual Status Workers in Punjab by Residence

The structure of the Punjab economy continues to be agrarian oriented from employment perspective. Two-fifths (as per Census 2001 estimates) to about half of the workforce (as per NSSO 1999-2000 estimates) continues to be engaged in agriculture sector. Also, the share of employment offered by manufacturing sector is far less than 20 percent of workforce - a norm to declare any state an industrially advanced state. Such a situation has serious implications for the future employment generation scenario in the state.

<table>
<thead>
<tr>
<th>Period</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>1983 to 1993-94</td>
<td>0.72</td>
<td>2.18</td>
</tr>
<tr>
<td>1993-94 to 1999-00</td>
<td>1.12</td>
<td>4.48</td>
</tr>
<tr>
<td>1999-00 to 2004-05</td>
<td>1.07</td>
<td>7.31</td>
</tr>
<tr>
<td>1993-94 to 2004-05</td>
<td>1.55</td>
<td>8.24</td>
</tr>
<tr>
<td>1983 to 2004-05</td>
<td>0.57</td>
<td>6.85</td>
</tr>
</tbody>
</table>

*Source: Calculated from Table 4.5 by using population data of census 1981, 1991, and 2001*
Table 4.6 reveals that the employment growth rate in rural primary sector of Punjab was only 0.72 per cent during 1983 to 1993-94. For their urban counterparts, it was negative. For secondary and tertiary sectors the corresponding values were 2.18 per cent and 5.47 per cent at rural level and 2.86 per cent and 4.29 per cent at urban level.

The growth rates in post reform period for secondary sector increased to 8.24 per cent at rural level and 5.37 per cent per annum at urban level. The growth rate for rural tertiary sector slipped to 0.94 per cent. There is no doubt that globalization and other economic reforms have been able to promote relatively higher level of employment in secondary sector though in unorganized sector and on temporary or the contract basis in case of both the areas but for tertiary sector, its impact in rural areas has remained poor.

Table explains that in pre-reform period, tertiary sector and in post-reform period, secondary sector has provided more employment opportunities at rural level in Punjab. At urban level though the percentage of people employed is more in tertiary sector but growth rate in post-reform period has remained higher in secondary sector. It is at once clear that in secondary sector compound growth rate of employment in rural and urban Punjab during first and second halves for most of the times have remained very high as compared to other states.

Punjab's agrarian sector is facing an unprecedented crisis and has turned away from the path of sustainable growth and employment. Nearly stagnated agricultural production and crop yields, sharply deteriorated land and water resources, reduced profit margins due to rising cultivation costs and procurement crisis of wheat and paddy have added miseries to the resource-poor cultivators in Punjab. As a consequence, the capacity of Punjab agriculture sector to absorb additional labour appears to have declined sharply overtime (Bhalla, 1993; and Sidhu, 2002). Probably, there is already prevails a very high level of underemployment among the persons engaged in agriculture (Gill, 2002). The tertiary sector in Punjab has already overgrown and cannot be expected as the major absorbent of rising labour force. In fact, most government bodies have already planned to 'down-size' or 'right-size' the volume of their employees, more so, in the post-reform phase (Singh Baldev, Singh Sukhwinder and Brar Jaswinder, 2003).

The existence of substantially higher proportion of income in the non-agricultural sector and the higher proportion of population in the agricultural sector is the most pronounced manifestation of the mismatch between the sectoral composition of output and
employment that has cropped up during the process of structural transformation of Punjab economy.

The new economic policy programmes and increasing budgetary deficits of the state added fuel to the already bad employment scenario by freezing the employment growth in public sector. For, even the organised private industry has added few additional employment openings during the post-reform era. The leading employment generating agricultural sector has yielded to the pressures of fast mechanisation of agricultural operations associated with mono-cropping patterns and has consequently, reduced its labour absorption capacity.

**State III: Karnataka**

4.2.3 A Broad Industry Classification of Usual Status Workers in Karnataka:

The employment situation in Karnataka, as in India, is a mixed one. Karnataka is among the top five Industrialised states in the country. The achievements in promoting hi-tech industries in key sectors like electronics, telecommunication, information technology, precision engineering, automobiles, readymade garments, bio-technology and food processing have been noteworthy.

**Table 4.7**

**Sectoral Distribution of Usual Status Workers in Karnataka by Region:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Round</td>
<td>Primary</td>
</tr>
<tr>
<td>1983</td>
<td>38th</td>
<td>84.8</td>
</tr>
<tr>
<td>1993-94</td>
<td>50th</td>
<td>81.9</td>
</tr>
<tr>
<td>1999-00</td>
<td>55th</td>
<td>82.9</td>
</tr>
<tr>
<td>2004-05</td>
<td>61st</td>
<td>81.4</td>
</tr>
</tbody>
</table>

*Source: Reports of NSSO 38th, 50th, 55th and 61st Rounds*

Table 4.7 demonstrates that in 1983, 84.8 per cent of the total rural workforce of Karnataka was engaged in the primary sector which declined to 81.9 per cent in 1993-94, and further to 81.4 per cent in 2004-05. The proportion of rural workers engaged in the secondary sector increased from 7.9 per cent in 1983 to 8.4 per cent in 1993-94 and 8.3 per
The share of rural workers in tertiary sector has been continuously increasing since 1983. It is also revealed that in pre-reform period, in rural Karnataka, workers were moving from primary sector towards secondary and tertiary sectors. In post-reform period, primary sector WPR has remained almost stable at 81.4 per cent; secondary sector performance has also not shown any change but in tertiary sector work participation rate increased to 10.4 per cent in 2004-05. It clears that in post-reform period, in rural areas, workers shifted from primary to tertiary sector only.

As expected there was a decline in the primary sector’s share in urban employment from 19.9 per cent to 19.1 per cent and further to 8.5 per cent in 1983, 1993-94 and 2004-05. The percentage of workers in secondary and tertiary sectors have risen by around 1 and 10 percentage points respectively during 1993-94 to 2004-05 at urban level. The data shows that in post-reform period, in urban Karnataka workforce has shifted from primary to tertiary sector with minor increase in secondary sector. Whereas during 1983 to 1993-94 the percentage of urban workers engaged in primary sector remained almost same. WPR in secondary sector declined by almost 2 percentage points and in tertiary sector increased by 5 percentage points. It is clear that during pre-reform period urban workers were shifting from secondary to tertiary sector and in post-reform period from primary to tertiary sector.

The majority of farmers in Karnataka have small holdings and are at the mercy of the monsoon. On the other hand declining organised sector employment whose relative share in the aggregate employment is about 8 per cent is matter of concern. One of the reasons for declining organized sector employment is closure of small scale industries (Shri Dharam Singh 2007). The tremendous growth notwithstanding, there has been a general deceleration in Industrial activity in the country, which, over the last few years, has had its impact on the industrial sector of Karnataka too. The setback to the Asian economies added in no small measure, to the problems of the core sector industry such as steel, cement, automobiles etc. The policy framework may therefore have to give impetus to a steady recovery in industrial production in the coming years. Due to limitations of land availability and expansion of the irrigation potential, industrial development, particularly in the rural and backward areas, is critical for augmenting employment in the non-farm sector.
4.2.3.1 Annual Compound Growth Rate of Employment for Usual Status Workers in Karnataka by Residence:

**Table 4.8**
Annual Compound Growth Rate of Employment in Karnataka for Usual Status Workers by Place of Residence and Sector of Employment: 1983 to 2004-05

<table>
<thead>
<tr>
<th>Period</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>1983 to 1993-94</td>
<td>1.85</td>
<td>2.84</td>
</tr>
<tr>
<td>1993-94 to 1999-00</td>
<td>0.27</td>
<td>-2.41</td>
</tr>
<tr>
<td>1999-00 to 2004-05</td>
<td>2.06</td>
<td>4.99</td>
</tr>
<tr>
<td>1993-94 to 2004-05</td>
<td>1.59</td>
<td>1.53</td>
</tr>
<tr>
<td>1983 to 2004-05</td>
<td>2.23</td>
<td>2.81</td>
</tr>
</tbody>
</table>

*Source: Calculated from Table 4.7 by using population data of census 1981, 1991, and 2001*

As evident from the table 4.8, employment in primary sector in rural areas show a positive growth during both the periods with the magnitude being more in the first period. Whereas in urban Karnataka primary sector employment growth rates entered in negative territory in post-reform period. Performance in secondary and tertiary sectors at rural level declined in post-reform period but in urban Karnataka show positive and rising trend across the two periods. For the period 1993-94 to 2004-05, the growth rates of employment in tertiary sector are much higher than that in secondary sector. The estimates of growth rates of employment in the different sectors during the period 1983 to 2004-05 indicate a significant shift in the urban occupational structure in favour of the tertiary sector in Karnataka.

During the first half (1993-94 to 1999-00) of post-reform period, table shows a very less average annual compound growth rates at rural level.

In second half (1999-00 to 2004-05) the performance of all the sectors has improved. At rural level primary, secondary and tertiary sectors rates have remained 2.06 per cent, 4.99 per cent and 2.32 per cent a respectively, which is much higher than first half of post-reform period. Urban secondary sector performance has declined and a negligible increase has come in urban tertiary sector average annual compound growth rate of employment.
State IV: West Bengal

4.2.4 A Broad Industry Classification of Usual Status Workers in West Bengal:

The macroeconomic forces which contributed to the slowdown in employment elsewhere in the country, such as reduced public investment and expenditure on public services, effects of import competition on manufacturing activity, and inadequate flows of bank credit to small producers in all sectors, are also in operation in West Bengal.

Table 4.9
Sectoral Distribution of Usual Status Workers in West Bengal by Region, 1983 to 2004-05

(\textit{per cent})

<table>
<thead>
<tr>
<th>Round</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>1983 (38th)</td>
<td>73.5</td>
<td>11.7</td>
</tr>
<tr>
<td>1993-94 (50th)</td>
<td>63.5</td>
<td>18.6</td>
</tr>
<tr>
<td>1999-00 (55th)</td>
<td>63.9</td>
<td>18.9</td>
</tr>
<tr>
<td>2004-05 (61st)</td>
<td>62.9</td>
<td>17.5</td>
</tr>
</tbody>
</table>

Source: Reports of NSSO 38th, 50th, 55th and 61st Rounds

Table 4.9 shows that even a relatively dynamic sector like agriculture has been successful in creating very few additional jobs. It has been seen that in pre-reform period the structure of urban work force was almost the reverse of the rural work force. Significantly 73.5 per cent of the rural workers and 5.4 per cent of urban workers were engaged in primary sector in 1983. In other words, 26.5 per cent of rural work force and 94.6 per cent of urban workforce was engaged in non-farming occupations. Among non-primary sectors, 11.7 per cent of the rural workforce was in secondary sector and 13.9 per cent in tertiary sector. The difference between two figures is just of 2.2 percentage points, which is not very high. But at urban level this difference is quite large i.e. of 17.1 percentage points between two corresponding figures 38.5 per cent for secondary sector and 55.6 per cent for tertiary sector.

Further it is stated that in 1993-94, at rural level, percentage of workers in primary sector decreased to 63.5 per cent and in secondary and tertiary sectors, increased to 18.6 per
cent and 17.8 per cent respectively. On the other side in urban areas changes in WPR during 1983 to 1993-94 were very less. Data show that in pre-reform period in rural West-Bengal the workers were shifting to secondary and tertiary sectors and in urban areas towards primary and tertiary sectors only. In post-reform period in rural as well as in urban areas the shift is from primary and secondary sectors to tertiary sector.

4.2.4.1 Annual Compound Growth Rate of Usual Status Workers in West Bengal by Residence:

Table 4.10
Annual Compound Growth Rate of Employment in West Bengal for Usual Status Workers by Place of Residence and Sector of Employment: 1983 to 2004-05 (per cent)

<table>
<thead>
<tr>
<th>Period</th>
<th>Rural</th>
<th></th>
<th></th>
<th>Urban</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Primary</td>
<td>Secondary</td>
<td>Tertiary</td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>1983 to 1993-94</td>
<td>0.87</td>
<td>7.21</td>
<td>4.91</td>
<td>6.32</td>
<td>2.75</td>
<td>3.40</td>
</tr>
<tr>
<td>1993-94 to 1999-00</td>
<td>0.33</td>
<td>0.46</td>
<td>-0.19</td>
<td>-7.03</td>
<td>-0.20</td>
<td>0.16</td>
</tr>
<tr>
<td>1999-00 to 2004-05</td>
<td>2.05</td>
<td>1.18</td>
<td>4.08</td>
<td>2.62</td>
<td>3.04</td>
<td>4.95</td>
</tr>
<tr>
<td>1993-94 to 2004-05</td>
<td>1.63</td>
<td>1.13</td>
<td>2.60</td>
<td>-3.51</td>
<td>1.90</td>
<td>3.45</td>
</tr>
<tr>
<td>1983 to 2004-05</td>
<td>1.63</td>
<td>5.27</td>
<td>4.84</td>
<td>1.49</td>
<td>3.01</td>
<td>4.45</td>
</tr>
</tbody>
</table>

Source: Calculated from Table 4.7 by using population data of census 1981, 1991, and 2001

However, unlike most of the rural India, rural West Benagal did not experience an absolute decline in agricultural employment, which continued to grow, albeit at a slower rate. Table 4.10 reveals that in pre-reform period growth rates of rural workforce in West Bengal in three sectors primary, secondary and tertiary were 0.87 per cent, 7.21 per cent and 4.91 per cent respectively. At rural level secondary sector has remained the major contributor in employment generation during 1983 to 1993-94. From a good secondary and tertiary sectors growth rates of 7.21 per cent and 4.91 per cent registered at rural level during 1983 to 1993-94, the same fell drastically to 1.13 per cent and 2.60 per cent during 1993-94 to 2004-05.

It shows that the economic reforms have reduced the growth rate of overall employment in West Bengal. In post-reform period, average annual compound growth rates of WP in all the sectors have declined except urban tertiary sector where it remained almost fixed.

In first half of post-reform period, rural tertiary sector and urban primary and secondary sectors show negative average annual compound growth rate of employment. But in second half of
post-reform period, growth rates in all the sectors improved at both the levels viz. rural and urban. Highest growth rate has been shown by tertiary sector i.e. 4.08 per cent at rural level and 4.95 per cent at urban level.

It concludes that in pre-reform period at rural level secondary sector was providing maximum employment opportunities which were shifted to rural tertiary sector in post-reform period. Similarly at urban level in pre-reform period, primary sector was generating maximum employment opportunities but in post-reform period, tertiary sector performed better than the other sectors.

Hence further, states performing at middle ranks (w.r.t. HDI 2001), it can be said that, in post-reform period, tertiary sector has remained dominant for employment point of view as compared to the secondary sector excluding primary sector at rural level.

State V: Assam

4.2.5 A Broad Industry Classification of Usual Status Workers in Assam

The next state of study is Assam which accounts 26.64 million people and account for 2.59 percent of the country's total population. Agriculture plays a very important role in the economy of the state. This is because of the engagement of large chunk of workers in this sector and its major contribution to the NSDP. The principal occupation of the rural people, who constitute close to 90 per cent of the total population of Assam, is agriculture and allied activities. In rural Assam primary sector work participation has remained very high in both the periods (2001 Census).

Table 4.11

<table>
<thead>
<tr>
<th>Year</th>
<th>Round</th>
<th>Rural</th>
<th></th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Primary</td>
<td>Secondary</td>
<td>Tertiary</td>
</tr>
<tr>
<td>1983</td>
<td>38th</td>
<td>78.9</td>
<td>4.8</td>
<td>15.3</td>
</tr>
<tr>
<td>1993-94</td>
<td>50th</td>
<td>79.4</td>
<td>4.5</td>
<td>16.1</td>
</tr>
<tr>
<td>1999-00</td>
<td>55th</td>
<td>68.0</td>
<td>5.9</td>
<td>26.2</td>
</tr>
<tr>
<td>2004-05</td>
<td>61st</td>
<td>74.6</td>
<td>5.7</td>
<td>19.7</td>
</tr>
</tbody>
</table>

Source: Reports of NSSO 38th, 50th, 55th and 61st Rounds

In rural Assam, primary sector WPR increased from 78.9 per cent in 1983 to 79.4 per cent in 1993-94. Secondary sector shows a very small decline in WPR from 4.9 per cent to 4.5 per cent and tertiary sector shows small increase from 15.3 per cent to 16.1 per cent. On the other side the urban primary sector work participation increased from 8.6 per cent in
1983 to 9.1 per cent (1993-94). Urban secondary sector WPR declined by 4.1 percentage points and tertiary sector WPR increased by 3.2 percentage points.

The sectors where proportion of workers have moved up during post-reform period (1993-94 to 2004-05) are rural secondary and tertiary sectors where the percentage increased to 5.7 per cent and 19.7 per cent in 2004-05 respectively. But at urban level only secondary sector WPR increased to 18 per cent.

Here the point of attention is that as Assam is the most industrialized state of the North-East, accounting for nearly 70 per cent of industry of the region. But from the employment point of view, very less percentage of workers is engaged in secondary sector. The reason behind this is the poor industrial growth in Assam and North-East region of India. They lack good infrastructure and adequate markets. Local market does not provide enough demand. Outside the region, they have not been able to compete because of the high transportation cost. Geographical isolation of the region is also one of the reasons of slow industrial growth. Private investment outside the state is also not certain all the times.

It makes clear that in pre-reform period in Assam, workers were shifting from secondary to primary and tertiary sector in both the areas. And in post-reform period, in rural areas the shift was from primary to secondary and tertiary sectors and in urban areas from primary and tertiary sectors to secondary sector.

4.2.5.1 Annual Compound Growth Rate of Employment for Usual Status Workers in Assam by Residence:

Table 4.12

<table>
<thead>
<tr>
<th>Period</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>1983 to 1993-94</td>
<td>3.41</td>
<td>2.53</td>
</tr>
<tr>
<td>1993-94 to 1999-00</td>
<td>-0.95</td>
<td>4.67</td>
</tr>
<tr>
<td>1999-00 to 2004-05</td>
<td>4.04</td>
<td>2.21</td>
</tr>
<tr>
<td>1993-94 to 2004-05</td>
<td>2.00</td>
<td>4.93</td>
</tr>
<tr>
<td>1983 to 2004-05</td>
<td>3.49</td>
<td>4.89</td>
</tr>
</tbody>
</table>

As far as growth rates of employment in rural areas, are concerned in primary sector in pre-reform period, it was 3.41 per cent but declined to 2.0 per cent in post-reform period. Whereas at urban level the corresponding figures were 5.15 per cent and (−)0.02 per cent. The fragmentations of holdings, low irrigation coverage and the limited adoption of new technologies and practices are some of the constraining factors for less employment generation in primary sector. Moreover the regular occurrence and increasing intensity of floods prevents the farmers from taking risks and making investments in land improvement. On the other side the average annual compound growth rate of rural workforce employed in secondary sector, increased from 2.53 per cent in pre-reform period to 4.93 per cent in post-reform period. At urban level it was 1.76 per cent and 6.48 per cent respectively. Though the growth rates in secondary sector in both the areas have increased still Assam is at the top amongst the industrially under-developed states. There are a few modern industries but they operate in an enclave type economy, with few backward and forward linkages. Surpluses generated by the industries have not been invested in the state, especially in the last two decades, marked as they were by periods of strife. Infrastructural problems as well as the shortage of capital have also meant slow growth in this sector (Human Development Report of Assam, 2003).

The annual compound growth rate of employment of rural tertiary sector increased from 3.87 per cent (1983 to 1993-94) to 4.59 per cent (1993-94 to 2004-05). But the urban tertiary sector growth rate declined from 5.01 per cent in (1983 to 1993-94) to 3.94 per cent (1993-94 to 2004-05).

Data show that during post-reform years in rural areas secondary and tertiary sectors performances have increased and in urban areas only secondary sector’s growth rate are satisfactory.

On comparing the first half of post-reform period with second half among three sectors at rural level, tertiary sector shows highest decline in annual compound growth rate in employment in second half of post-globalization period. It reduced from 7.65 per cent in pre-reform period to -1.31 per cent in post-reform period. Rural secondary sector shows decline from 4.67 per cent to 2.21 per cent in corresponding period. At urban level the scenario is totally different. Here secondary sector annual compound growth rate increased from 2.09 per cent (1993-94 to 1999-00) to 7.30 per cent (1999-00 to 2004-05) and tertiary sector shows a decline from 3.82 per cent to 1.69 per cent for the same period.

State VI: Bihar
4.2.6 A Broad Industry Classification of Usual Status Workers in Bihar:

One of the long-standing problems in Bihar’s economy has been lack of economic diversification. More than 80 per cent of the rural population is engaged in the agriculture sector. There are very limited occupational opportunities outside the agriculture sector in rural Bihar. Successive Bihar governments have attempted to facilitate development in the rural non-farm sector, but a poor investment climate has discouraged prospective investors from selecting rural Bihar for investment purposes.

Table 4.13

Sectoral Distribution of Usual Status Workers in Bihar by Region:
1983 to 2004-05

<table>
<thead>
<tr>
<th>Year</th>
<th>Round</th>
<th>Rural</th>
<th></th>
<th>Urban</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Primary</td>
<td>Secondary</td>
<td>Tertiary</td>
<td>Primary</td>
</tr>
<tr>
<td>1983</td>
<td>(38th)</td>
<td>84.4</td>
<td>6.5</td>
<td>8.8</td>
<td>18.1</td>
</tr>
<tr>
<td>1993-94</td>
<td>(50th)</td>
<td>84.8</td>
<td>5.0</td>
<td>10.1</td>
<td>15.3</td>
</tr>
<tr>
<td>1999-00</td>
<td>(55th)</td>
<td>81.1</td>
<td>8.4</td>
<td>10.5</td>
<td>15.2</td>
</tr>
<tr>
<td>2004-05</td>
<td>(61st)</td>
<td>78.0</td>
<td>8.3</td>
<td>13.6</td>
<td>20.7</td>
</tr>
</tbody>
</table>

Source: Reports of NSSO 38th, 50th, 55th and 61st Rounds

The pattern of employment observed in percentage contribution of different sectors during the post-reform period in Bihar is not very much significantly different from that observed in the pre-reform period. The primary sector, as usual, was seen to be the major source of employment covering 78 per cent to 85 per cent of employment in the rural areas and 18 per cent to 21 per cent in urban areas over all the rounds. The secondary sector is the next important sector absorbing 6 to 8 per cent of total workforce at rural level and 18 to 26 per cent at urban level. But in this sector where in rural areas WPR has increased from 5 per cent in 1993-94 to 8.3 per cent, there in urban Bihar it has declined from 25.1 per cent (1993-94) to 18.8 per cent (2004-05).

The trend observed in the changes over the rounds is that the proportion of persons employed in the tertiary sector both in the rural and urban areas has seen to increased; this increment is more pronounced at rural level during post-reform period and at urban level during pre-reform period. On the other hand, employment in primary sector in pre-reform period remained almost stable in rural areas and declined by 2.8 percentage points in urban
areas but in post-reform years in rural areas declined by 6.8 percentage points and in urban areas increased by more than 5 percentage points.

Regarding employment in secondary sector, it has observed that in the urban areas, it gradually declined over the rounds and major fall of 6.3 percentage points noticed in post-reform years but in rural areas it increased during post-reform period by 3.5 percentage points despite a decline during the pre-reform period.

Bihar with total population of 82.88 million, roughly 28 million people (34 per cent of the population) (census 2001) is engaged in primary sector for their livelihood.

The sectoral composition of Bihar’s economy reveals the important role of agriculture in aggregate employment. In rural Bihar maximum percentage of the workers are engaged in the agriculture in all the periods. Total RWP in Bihar’s primary sector increased from 84.4 per cent in 1983 to 84.8 per cent in 1993-94 but declined and 78.0 per cent in 2004-05. Bihar lost most of its industry and mining to Jharkhand after the bifurcation of the state. Bihar’s industrial sector is the smallest among India’s major states and employing fewer than 10 per cent of the total workforce. The tertiary sector is Bihar’s largest, generating 49 per cent of the state’s GSDP, mainly in trade and transport services, finance, real estate and government public administration.

4.2.6.1 Annual Compound Growth Rate of Employment for Usual Status Workers in Bihar by Residence:

Table 4.14
Annual Compound Growth Rate of Employment in Bihar for Usual Status Workers by Place of Residence and Sector of Employment: 1983 to 2004-05 (per cent)

<table>
<thead>
<tr>
<th>Period</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>1983 to 1993-94</td>
<td>0.86</td>
<td>-1.80</td>
</tr>
<tr>
<td>1993-94 to 1999-00</td>
<td>-1.15</td>
<td>6.35</td>
</tr>
<tr>
<td>1999-00 to 2004-05</td>
<td>-1.55</td>
<td>-1.81</td>
</tr>
<tr>
<td>1993-94 to 2004-05</td>
<td>-1.88</td>
<td>3.76</td>
</tr>
<tr>
<td>1983 to 2004-05</td>
<td>-0.72</td>
<td>1.32</td>
</tr>
</tbody>
</table>

Source: Calculated from Table 4.13 by using population data of census 1981, 1991, and 2001
Table 4.14 reveals that the average annual compound growth rate of rural workers in primary sector of Bihar has remained either very less or negative in all the periods. The corresponding figures for rural secondary sector are -1.80 per cent, 3.76 per cent and for rural tertiary sector are 2.18 per cent and 1.72 per cent for said period.

Urban sector performance has also remained very poor for whole of the study period. Except primary sector, both of the two sectors have been showing negative growth rates in post-reform years. Secondary sector growth rate for pre-reform years was 0.39 per cent and for tertiary sector 1.38 per cent. The corresponding figures for post-reform years declined to -5.35 per cent and -2.56 per cent. Bihar’s economic performance has been improving, driven mainly by the secondary and tertiary sectors. In post-reform period at rural level, secondary and tertiary sectors performance have been improving though the growth rates are very poor.

The high growth performance of the national economy during the economic reform period also bypassed Bihar and, in complete contrast with southern and western states, growth had decelerated in the state. As a result, Bihar remained at the bottom in terms of both human development and economic infrastructure. Industrialization of any region depends on natural endowment, infrastructural support, local availability of skilled manpower, size of market including export markets, and industrial policies of the central and state governments. In undivided Bihar, all these factors, except natural endowment, were not favourable for industrial development. Infrastructure, both trunk and arterial, are very critical for industrial development. The power plants and transmission network, major highways, waterways, railways, airports and telecommunications are broadly trunk infrastructure. For industrial development in any region, this trunk infrastructure needs to be supplemented by adequate and well developed arterial infrastructure. In the absence of their proper network, the states' economy remained unchanged, rather it became worst. Again, the industry specific special infrastructure like cold storages, dry ports, etc. is quite inadequate posing problems in industrialization of the state. The poor roads and transport conditions served as a major deterrent for private investments. The inadequate and irregular power supply forced many of the industrial units to flee out of the state. On the other hand, the units which ventured to stay back, many of them are either sick or closed due to paucity of fund and proper marketing facilities. Over and above, the banks' apathetic attitude and their poor spread is also against employment creation environment.
Agro-based industries have a place of prominence in the overall industrial scenario of Bihar. There are great potentials in food processing, sugarcane, dairy, leather and leather products in the state. The size of non-agro-based industries in the state is very small, most of them catering to local demands. Again, the artisan based industries including handloom have started showing better prospects in the state due to the initiatives of the state government. This sector requires support of finance, marketing, training, designing, etc. for better income and employment generation.

Section III

4.3 Auto Correlation Coefficient of Work Participation Rates by Broad Sectoral Division in Six States by Rural-Urban Residence:

Methodology:

Table 4.15 shows the Auto Correlation between 1983 with 1993-94, 1999-00 and 2004-05. 1983 is taken as base year.

1983 = t₀, 1993-94 = t₁, 1999-00 = t₂, 2004-05 = t₃.

Six states, Kerala, Punjab, Karnataka, West Bengal, Assam and Bihar are taken as m₁, m₂, m₃, m₄, m₅, m₆ respectively.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Rural Person</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t₀ and t₁</td>
<td>t₀ and t₂</td>
<td>t₀ and t₃</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>0.9364***</td>
<td>0.9766***</td>
<td>0.94889***</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>0.8755***</td>
<td>0.9164***</td>
<td>0.9174***</td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>0.9126***</td>
<td>0.9449***</td>
<td>0.9569***</td>
<td></td>
</tr>
</tbody>
</table>

Note: *** significant at 1per cent
 ** significant at 5per cent
  * significant at 10per cent
Correlation coefficient between the work participation rates of primary, secondary and tertiary sectors of six selected states in 1983 with the three survey periods i.e. 1993-94, 1999-00 \((t_0\) and \(t_2\)) and 2004-05 \((t_0\) and \(t_3\)) show that at rural level the WPRs are highly correlated. The correlation coefficients are positive and significant at 1per cent level of significance. This is true for correlation coefficient obtained for urban persons also except for the year 1999-00 and 2004-05 for primary sector which is significant at 5per cent level of significance instead of 1per cent.

**Table 4.16**

Coefficient of Variation between Occupational Distribution of Work Participation Rates for Six States by Rural-Urban Residence

<table>
<thead>
<tr>
<th>Sector</th>
<th>1983</th>
<th>1993-94</th>
<th>1999-00</th>
<th>2004-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary (m1 to m6)</td>
<td>9.5</td>
<td>13.3</td>
<td>15.9</td>
<td>18.6</td>
</tr>
<tr>
<td>Secondary (m1 to m6)</td>
<td>43.3</td>
<td>44.7</td>
<td>46.3</td>
<td>51.7</td>
</tr>
<tr>
<td>Tertiary (m1 to m6)</td>
<td>33.5</td>
<td>30.2</td>
<td>38.8</td>
<td>39.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sector</th>
<th>1983</th>
<th>1993-94</th>
<th>1999-00</th>
<th>2004-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary (m1 to m6)</td>
<td>48.7</td>
<td>45.9</td>
<td>38.9</td>
<td>60.1</td>
</tr>
<tr>
<td>Secondary (m1 to m6)</td>
<td>21.9</td>
<td>25.7</td>
<td>26.5</td>
<td>24.9</td>
</tr>
<tr>
<td>Tertiary (m1 to m6)</td>
<td>17.2</td>
<td>15.6</td>
<td>14.8</td>
<td>10.5</td>
</tr>
</tbody>
</table>

Table 4.16 reveals that the Coefficient of Variation of the occupational structure of WPRs of persons at rural level ranges between 9 to 19 per cent, 43 to 52 per cent and 30 to 40 per cent for primary, secondary and tertiary sectors respectively. Whereas in urban areas it ranges from 38 to 60 per cent, 22 to 27 per cent and 10 to 17 per cent for primary, secondary and tertiary sectors respectively. It is clear that rural areas primary sector coefficient of variation is relatively less dispersed but for secondary and tertiary sectors it is relatively more dispersed.

**Figure-4(a) : Rural Work Participation Rate in Primary Sector**
Figure 4(b): Rural Work Participation Rate in Secondary Sector

Figure 4(c): Rural Work Participation Rate in Tertiary Sector
Figure-4(d) : Urban Work Participation Rate in Primary Sector
Summing Up:
From the proceeding discussion it is observed that the WPR in primary sector has seen to decline both in the rural and urban areas in post-reform period, and the percentage decline is more in the rural areas with two exceptions; Karnataka and West Bengal where decline at rural level is almost negligible but at urban level, it is much higher. On the other hand in least developed state Bihar, at urban level WPR in primary sector in post-reform period has increased despite decrease in rural areas.

Again, the decline in primary sector WPR in the post-reform period has remained more than that in pre-reform period at both the levels with some exceptions. At rural level, in Karnataka and West-Bengal decline in pre-reform period was much higher than post-reform period. In Punjab also decline at urban level was more in pre-reform period but difference to post-reform period was not very high. But Bihar is a state where in post-reform period, increase in primary sector WPR is very high in post-reform period.

In **pre-reform period rural secondary sector** WPR increased at all India level as well as in selected top and middle states. But in least developed states it declined for said period. Rural WPR in **post-reform period** in secondary sector has increased in India and selected states except in Karnataka where it is declined. More increase in rural secondary sector WPR has been observed in post-reform period than to pre-reform period.

Except in Karnataka and West Bengal **urban secondary sector** WPR in India as well as in selected states declined during pre-reform period. In India it declined by 1.5 percentage points. The maximum decline of around 4.0 percentage points has been observed in Assam. In rest of the states it remained between 1 to 2 percentage points.

At urban level in all the states except West Bengal and Bihar secondary sector shows increase in secondary sector WPR in post-reform period. Increase in secondary sector WPR is higher at rural level except in Assam. On comparison of increase in WPR in urban and rural areas, more increase has been noticed in rural areas.

In pre-reform period urban WPRs in India and in all the selected states, recorded higher increase at urban level except in Kerala and West Bengal where rural tertiary sector recorded more increase in WPR. In Punjab and Assam increase in tertiary sector WPR in urban areas is negligible even Bihar has more increase in tertiary sector WPR than to Punjab and Assam.
Thus it is very clear about primary and secondary sectors that primary sector WPR is declining and secondary sector’s WPR is increasing and this decrease and increase in WPRs is higher at rural level.

If each selected state is analysed individually then the following results come out.

**Rural Areas: Post-Reform Period**

In rural Kerala more workers have shifted to tertiary sector and in rural Punjab to secondary sector. In Karnataka and West-Bengal the workers have shifted from primary to tertiary sector only. In rural Assam relative to tertiary sector, fewer workers have moved to secondary sector and in rural Bihar percentage increase in secondary and tertiary sectors are almost same.

**Urban Areas: Post-Reform period**

In Kerala tertiary sector and in Punjab secondary sector is attracting more workers. or employment point of view in Karnataka and West-Bengal tertiary sector is shining. In Assam more workers are shifting in secondary sector and in Bihar tertiary sector is the important one.

This chapter tells the scenario of total persons WPR in India and selected states. But whether the trends in total WPR does tally with female WPR or not. The next chapter deals with female employment and their occupational distribution.