CHAPTER III

EMPLOYMENT PATTERN IN NORTHEAST INDIA AND STRUCTURAL TRANSFORMATION

3.1 Introduction

Our previous chapter is helpful to take some inferences. Firstly, from the very beginning of our reference period contribution of agricultural sector is continuously falling and the share of service sector is continuously rising. Secondly, there is clear evidence that the strength of manufacturing sector has decreased even if share of primary sector over the years has been falling by its share. Thirdly, a strong influence of construction related activities in secondary sector are noticed. Fourthly, Granger tests confirm that tertiary sector has provided inspiration to flourish secondary sector in some states and since construction is the only sub-sector having rising trend throughout, tertiary sector has obviously taken active role behind the growth of construction sector. Typical structural changes starting from agricultural sector are determined by push and pull forces (Flury, 2002). Farmers always take steps against the variations in the prices, costs, direct payment and regional labor market. The decisions they take to adjust with the new situation are the guiding forces behind structural change. "The ratio between prices, direct payment and costs determine relevant pressure for farmers to adopt their structures (push force). The speed with which structures can be adjusted depends critically on the mobility of agricultural work force. In the medium and long term, mobility is high when alternative employment opportunities in the manufacturing and service sectors are available (pull forces). The analysis brings forth a serious question. The question is: In the absence of proper marketing structure and well established manufacturing sector can pull and push forces work properly? If not then that will be simply sectoral dynamics of zero sum game without influencing employment pattern.

3.2 Relationship between Growth and Employment

In general, rising worker population ratio is a good indication for any economy. It may rise even if population growth rate is rising. As per Lewis, reinvestment of surplus capital automatically increases the employment and output level during the transfer of labour from traditional sector to modern sector. One implicit assumption is that the increased output supply will be automatically supported by increased demand. But in reality demand may not rise automatically. The growth experience of Japan during 1955-70 can be explained by rising domestic demand which in turn is an outcome of rising population and household number. As per Punzo (2001) "in Japan population flow was a cause as well as a result of economic growth". In Appendix I we have shown that growth trends of population in northeastern states are comparatively higher than all India average or many other states. On the other hand Appendix Table 1 has exhibited that growth rate of urban population has declined sharply in the decade of 1990's compared to the previous period in Arunachal Pradesh, Manipur, Mizoram and Tripura. These are trends against urbanization process. As per Table 3.1 below worker population ratio (WPR) in terms of main workers is continuously decreasing in total (rural+urban), rural and urban area of all northeastern states, even in post-reform period. If we take into consideration the marginal workers, trends of WPR ratio have become almost stagnant implying gradual enhancement in the size of marginal workforce. Employment elasticity has been calculated in the last column over two time periods: 1980-81/1990-91 and 1990-91/2000-01 with respect to GSDP at current market price. We can notice that the decade of reform provides lower employment elasticity compared to previous one in all states except Nagaland and Sikkim. The fall of employment elasticity does not necessarily mean rising unemployment. It may result also through rising productivity. However, if both worker population ratio and employment elasticity are falling then rising unemployment is indicated. On this matter ideal value of elasticity is

prescribed in the range of 0.5 to 0.6 (Bhalla, 1998). Along with falling WPR falling employment elasticity means growth did not favour employment generation.

Table 3.1: Worker Population Ratio and Employment Elasticity

States	1	2	3	4	5	6	7
Arunachal Pradesh	-	-	-	.49 .45 .37	.50 .47 .39	.41 .36 .31	-
Manipur	.43 (81) .42 (91) .44 (01)	.45 .45 .46	.35 .34 .38	.40 .38 .31	.43 .42 .32	.32 .30 .28	0.08 (1980-81/1990-91) 0.02 (1990-91/2000-01)
Meghalaya	.45 (81) .42 (91) .41 (01)	.48 .45 .44	.32 .32 .28	.43 .40 .32	.46 .42 .34	.32 .31 .25	0.07 (1980-81/1990-91) .008 (1990-91/2000-01)
Mizoram	.45 (81) .48 (91) .52 (01)	.48 .51 .57	.35 .46 .48	.41 .42 .40	.45 .46 .44	.33 .38 .36	0.11 (1980-81/1990-91)
Nagaland	.48 (81) .42 (91) .42 (01)	.50 .44 .45	.34 .32 .31	.47 .42 .35	.50 .44 .38	.35 .33 .29	0.08 (1980-81/1990-91) 0.08 (1990-91/2000-01)
Sikkim	.48 (81) .41 (91)	.49 .41	.41 .39	.46 .40 .39	.47 .40 .39	.41 .38 .37	0.03 (1980-81/1990-91) 0.08 (1990-91/2000-01)
Tripura	.32 (81) .31 (91) .36 (01)	.32 .31 .37	.27 .28 .32	.30 .29 .28	.30 .29 .28	.26 .28 .30	0.11 (1980-81/1990-91) 0.02 (1990-91/2000-01)

Source: Calculated from Census Reports 1981, 1991, 2001 and Economic Survey, 1998-99.

(Note: 1=> WPR for Main and Marginal workers, 2=> WPR for Main and Marginal workers in Rural area; 3=> WPR for Main and Marginal workers in Urban area; 4=> WPR for Main workers in Rural and Urban area; 5=> WPR for Main workers in Rural area; 6=> WPR for Main workers in Urban area; 7=> Employment Elasticity. The first figure in column 7 indicates Employment Elasticity over 1980-81/1990-91 and second figure indicates Employment Elasticity over 1990-91/2000-01).

The Pearson correlation coefficient is calculated between compound annual growth of main workers and NSDP over two time periods 1980-81/90-91 and 1990-91/2000-01. Results reveal that there is no significant correlation between growth of employment and NSDP in both the periods (given below the Table 3.3)

Table 3.2: Compound Annual Growth (CAG) of Main Workers and NSDP (Current Price)

States	CAG of NSDP (1980-81/90-91)	CAG of Main Workers (1981/ 1991)	CAG of NSDP (1990-91/00-01)	CAG of Main Workers (1991/ 2001)
Arunachal Pradesh	16.8	2.41	13.2	.30
Manipur	13.8	2.09	13.2	-
Meghalaya	15.6	2.14	15.8	.38
Mizoram	17.3	3.74	-	-
Nagaland	19.06	3.33	18.4	3.19
Sikkim	15.8	1.1	15.3	2.5
Tripura	13.2	2.61	18.1	1.10

Table 3.3: Correlation Coefficient between the Growth of NSDP and Employment

Period	Pearson Correlation Coefficient	p value
1981-91	.484	.271
1991-01	.548	.260

Source: Estimated from Table 3.2.

3.3 Sectoral Employment and Structural Retrogression

The progress in the economic status of any group of workers associated with any particular sector depends on the relative strength of the workforce and income generated under this sector. In this connection employment elasticity is a very

useful tool to discuss about the connection between growth of income and employment. Employment elasticity of all sectors over 1981-91 and 1991-2001 shown in Table 3.1 has proved even in post-reform period growth has provided least opportunities for the main workers. We shall discuss employment elasticity of different sub-sectors in the post-reform period later on with the help of NSSO data.

Table 3.4 gives sectoral income share and corresponding employment share in 1981 and 1991. Visibly the trends do not follow strictly structural progression or a strong positive correlation between income share and employment share for any individual sector. Figures within the brackets indicate changes in the percentage shares of employment and income of three sectors over 1981-91. In Manipur income share of primary sector has decreased by -11.08%, whereas employment share has increased by +0.4%. Consequently only 38.02% of total income is enjoyed by 70% of total workers in 1991, which is a deterioration compared to the status of 1981 (Table 3.5). In Meghalaya, primary sector's contribution has decreased by -11.04% against the fall of the employment share only by -4.95%. Taking into consideration primary and secondary sector both 84.19% workers occupied 64.57% income in 1981. The situation has deteriorated in 1991 as, 78.55% workers generated 50.88% income at that time. Manipur and Nagaland too experienced negative relationship between the changes in income and employment share under primary sector. What is more disappointing for Nagaland is that, employment share in tertiary sector has fallen by -0.94 percentage point, even if there has been a massive rise of income share in this sector by +16.51%. In this state cumulative share of income under primary and secondary sector has fallen from 57.72% to 41.21%, whereas cumulative share of employment absorbed under these two sectors has risen from 73.49% to 74.42%. Large discrepancies are also noticed in Tripura between the variations of income and employment shares over the period in primary sector (-22.21%, -6.1%) and service sector (+22.51%, +7.13%). As expected, negative relationship

among cumulative shares of both sectors is clearly visible. One fact from the Table 4.4 is very much sure. That is economic status of the workers associated with the primary activities has gradually deteriorated as their proportional shares in common NSDP pool is gradually falling. For the opposite reason economic status of non-agricultural workers has gradually improved.

Table 3.4: Sectoral Income and Employment Share (%) 1981, 1991

State	Sectoral Share 1981	Employment Share 1981	Sectoral Share 1991	Employment Share 1991	Sectors
Arunachal	47.28	75.28	46.19 (-1.09)	67.44(-7.84)	P
Pradesh	22.21	8.92	21.56 (-0.65)	8.66 (-0.26)	S
	30.51	15.80	32.25 (+1.74)	23.90 (+8.1)	T
Manipur	49.10	69.60	38.02 (-11.08)	70.00 (+0.4)	P
	7.65	13.35	10.20 (+2.55)	9.66 (-3.69)	S
	43.25	17.05	51.78 (+8.53)	20.34 (+3.29)	T
Meghalaya	44.62	79.76	33.58 (-11.04)	74.81 (-4.95)	P
	19.95	4.23	17.00 (-2.95)	3.74 (-0.49)	S
	35.43	16.01	49.42 (+13.99)	21.45 (+5.44)	T
Nagaland	42.86	72.03	29.07 (-13.79)	73.01 (+0.98)	P
	14.86	1.46	12.14 (-2.72)	1.41 (-.05)	S
	42.28	26.51	58.77 (+16.51)	25.57 (-0.94)	T
Sikkim	48.68	65.98	40.79 (-7.89)	68.40 (2.42)	P
	51.32	34.02	59.21 (7.89)	31.6 (- 2.42)	S + T
Tripura	60.22	70.18	38.01 (-22.21)	64.08 (-6.1)	P
	8.50	7.40	8.20 (-0.3)	6.37 (-1.03)	S
	31.28	22.42	53.79 (+22.51)	29.55 (+7.13)	T

Source: Das (2005)

Note: P- Primary sector; S- Secondary sector; T- Tertiary sector

To measure this economic disparity brought by structural retrogression and sectoral dynamics first we have calculated cumulative shares of State Domestic Product against cumulative shares of workers engaged in three broad sectors, viz., primary, secondary and tertiary sectors. To measure exactly the extent of economic inequality among the workers absorbed under three sectors Gini coefficient is calculated. Theoretically higher the value of Gini coefficient higher is the extent of inequality. The coefficient is obtained through using the following formula:

$$G = 1 - \sum P_i (Z_i + Z_{i-1})$$

P_i= proportion of workers under any particular sector

Z_i = cumulative income shares of primary, secondary and tertiary sectors

Table 3.5: Cumulative (Sectoral) Income and Employment Shares 1981, 1991

States	Cumulative income share 1981	Cumulative Employment share 1981	Cumulative income share 1991	Cumulative Employment share 1991
Arunachal Pradesh	47.28 69.49 100.00	75.28 84.20 100.00	46.19 67.75 100.00	67.44 76.10 100.00
Manipur	49.10 56.75 100.00	69.60 82.95 100.00	38.02 48.22 100.00	70.00 79.66 100.00
Meghalaya	44.62 64.57 100.00	79.76 84.19 100.00	33.58 50.58 100.00	74.81 78.55 21.45
Nagaland	42.86 57.72 100.00	72.03 73.49 100.00	29.07 41.21 100.00	73.01 74.42 100.00
Sikkim	48.68 100.00	65.98 100.00	40.79 58.90 100.00	68.4 79.5 100.00
Tripura	60.22 68.72 100.00	70.18 77.58 100.00	38.01 46.21 100.00	64.08 70.45 100.00

Source: Calculated from previous Table

The values of G are given by Table 3.6. For all states except Arunachal Pradesh the value of G is increasing over 1981-91. This means during structural transformation over this period economic concentration among the workers associated with three sectors has been enhanced.

Given the fact that income share of agricultural activities is falling, more the employment share in this sector more will be the economic inequality among the agricultural and non-agricultural workers. In this case the higher the number of workers in manufacturing and service sectors the higher the productivity and the higher the number of employees in agriculture, forestry, fisheries etc. the lower the productivity of any region. In a study of Azzoni and Andrabe (2005) it is examined that the problem of economic disparity in south Brazil is not severe compared to any other parts of the country due to larger participation of workers into growing service sector.

We computed correlation coefficient between Gini coefficient and employment share in primary sector for the reference years 1981, 1991 and 2001 across the states (Table 3.7). The value of Pearson correlation coefficient was 0.606 in 1981 (significant at 10% level of significance). This positive relationship between Gini coefficient and primary sector employment share was further strengthened in 1991 as the value of Pearson correlation coefficient was 0.811 (significant at 5% level of significance).

Census report 2001 does not provide categorically the worker shares under three broad sectors. We have taken percentage of employment under agriculture and non-agriculture sector and their respective income shares to calculate the value of Gini coefficient. It can be observed for Arunachal Pradesh, Sikkim and Tripura that the value of G is rising over 1991-2001 vindicating rising inequality in the distribution of State Domestic Product among the workers of agricultural and non-agricultural field. Like 1981 and 1991 in 2001 Pearson correlation coefficient across the states between Gini coefficient and agricultural employment share is positive (+0.730) and this is also significant at 5% level of significance.

Table 3.6: Gini coefficients on Sectoral income distribution

States	Gini Coefficients
Arunachal Pradesh	.29 (1981), .21 (1991), .31 (2001)
Manipur	.26 (1981), .36 (1991), .29 (2001)
Meghalaya	.28 (1981), .40 (1991), .40 (2001)
Nagaland	.28 (1981), .42 (1991), .37 (2001)
Sikkim	.18 (1981), .30 (1991), .35 (2001)
Tripura	.12 (1981), .28 (1991), .30 (2001)

Source: Calculated from Table 3.5

Table 3.7: Correlation Coefficient between Gini coefficient and Primary Sector Employment Share

Year	Pearson correlation coefficient
1981	.606 [Significant at 10% level of Significance]
1991	.811 [Significant at 5% level of Significance]
2001	.730 [Significant at 5% level of Significance]

Source: Estimated from Table 3.6

3.4 Disparity in Rural–Urban Occupational Patterns

We have seen before significant relationship between Gini coefficient and employment shares under agricultural activities. That may help to get the reason behind economic disparity between rural and urban workers as well as people. In this section we will examine the occupational pattern in different sectors/sub-sectors. For that we have made use of data from the Census Reports 1981, 1991 & 2001 and NSSO Reports 50^{th}, 55^{th} & 61^{st} round.

Table 3.7 suggests that among the main workers much higher percentage of workers is absorbed within non-agricultural sector in urban area compared to

rural area for all northeastern states. The gaps between urban-rural employment shares of non-agricultural sector against Census Report 1981 are 86.12 for Arunachal Pradesh, 37.59 for Manipur, 77.27 for Meghalaya, 56.4 for Mizoram, 74.53 for Nagaland, 71.73 for Sikkim and 67.48 for Tripura. So the figure is highest for Arunachal Pradesh and lowest for Mizoram. The dominance of urban workers over rural workers can be also observed in 1991 and 2001 Census figures. As per Census figures 1991 maximum gap between employment share of urban and rural people engaged in non-agricultural activities is observed in Meghalaya. Over 1981-91, we notice in all states except Arunachal Pradesh a falling trend of urban employment share in non-agricultural sector. Over this period in Arunachal Pradesh percentage of rural people in non-agricultural sector is drastically rising.

Table 3.7 gives us per 1000 distribution of workers under agriculture, manufacturing, construction, trade, hotel and restaurant, transport, storage & communication and other service sector corresponding to NSSO Report 50th round (1993-94), 55th round (1999-2000) and 61st round (2003-04). For any particular sector to realise the disparity between rural and urban employment scenario, information about the gap between rural-urban employment level under that sector are sufficient. On that account some facts are clear from Table 3.7.

For agricultural sector in all states much larger proportions of workers have been absorbed in rural area compared to urban area. In Arunachal Pradesh number of rural agricultural labour is continuously falling where as urban agricultural labour is rising. Hence the gap is actually falling. This is an indication of the transformation of agrarian economy into non-agrarian economy. In Assam rural-urban employment disparity under primary sector has initially improved over 1993-2000. After that the situation has degraded during 2000-04. Manipur has shown significant improvement on this matter as employment share in traditional sector is falling from 75.3% to 69.3%, keeping urban share in this field constant. In Mizoram, both urban and rural proportions of agricultural labour are falling

during 1993-2000, but both are again falling during 2000-04. This is a reflection of reducing growth of employment opportunities in other sectors. For Nagaland the above mentioned gap has initially increased from 687 (50th round) to 713 (55th round).

Table 3.8: Per 1000 Distribution of the Workers on principal status in Rural (R) and Urban (U) area under Agriculture (A), Manufacturing (M), Construction (C), Trade hotel & restaurant (THR), Transport, storage & communication (TSC) and Other Service (OS) sectors

States	Year	A	M	C	THR	TSC	OS
Arunachal Pradesh	1993-4	864 (R)	8	26	2	16	72
		79 (U)	133	93	150	53	454
	1999-00	834 (R)	28	44	6	1	83
		87 (U)	4	112	335	10	434
	2004-5	819 (R)	4	40	23	6	98
		111 (U)	36	81	232	23	515
Assam	1993-4	792 (R)	35	7	69	13	79
		30 (U)	104	28	290	75	406
	1999-00	677 (R)	40	18	81	27	154
		60 (U)	72	52	300	83	422
	2004-5	743 (R)	31	25	90	24	83
		48 (U)	98	55	276	126	357
Manipur	1993-4	638 (R)	123	28	45	15	146
		293 (U)	144	26	137	31	355
	1999-00	753 (R)	74	9	37	14	107
		283 (U)	105	42	199	36	324
	2004-5	693 (R)	86	31	66	21	97
		283 (U)	148	44	200	40	286
Meghalaya	1993-4	860 (R)	10	16	38	11	58
		30 (U)	22	80	252	17	587
	1999-00	865 (R)	7	16	42	11	52

		13 (U)	38	105	222	48	571
	2004-5	818 (R)	37	22	55	11	41
		20 (U)	60	49	152	50	651
Mizoram	1993-4	889 (R)	5	12	19	1	72
		410 (U)	44	48	146	13	332
	1999-00	855 (R)	10	11	30	1	91
		303 (U)	38	94	187	29	344
	2004-5	874 (R)	9	10	35	5	67
		361 (U)	52	51	172	27	336
Nagaland	1993-4	749 (R)	2	18	45	6	171
		62 (U)	41	78	220	37	552
	1999-00	797 (R)	6	8	28	13	140
		84 (U)	62	52	117	3	675
	2004-5	793 (R)	21	17	49	14	103
		129 (U)	66	35	404	51	302
Sikkim	1993-4	586 (R)	44	35	59	20	226
		9 (U)	81	71	354	10	468
	1999-00	608 (R)	25	38	63	26	204
		21 (U)	67	53	336	49	433
	2004-5	605 (R)	26	80	86	39	144
		2 (U)	93	99	336	56	409
Tripura	1993-4	476 (R)	54	68	107	32	257
		60 (U)	87	28	173	60	577
	1999-00	457 (R)	40	80	118	23	282
		27 (U)	37	41	246	49	598
	2004-5	432 (R)	51	114	109	37	257
		41 (U)	78	64	272	43	498

Source: NSSO 50th 55th and 61st Round; Employment Unemployment Situation in India.

round) and in 61st round report it has increased to 664. Much variation is not noticed in the proportion of rural agricultural workers, which is noticed for urban agricultural workers (significantly rising). This means some of the workers who

migrated from agriculture to other field, came back again and restarted their agri-based life. The same conclusion may be drawn on the rural employment trend during 1993-2004. Returning to the original occupation simply means other opportunities have not been proved sufficiently lucrative. Our study suggests that in some cases unskilled

Table 3.9: Percentage of Workers in Non-agricultural and Tertiary Activities

States	Region	1981 Census	1991 Census	2001 Census	1993-4 NSSO	1999-00 NSSO	2003-4 NSSO
Arunachal Pradesh	Urban	90.22	90.73	92.25	65.8	77.9	77.00
	Rural	4.1	25.26	27.47	9.00	9.00	12.7
Manipur	Urban	60.66	50.23	72.51	52.3	55.9	52.6
	Rural	23.07	20.85	34.75	20.6	15.8	18.4
Meghalaya	Urban	94.37	88.89	89.62	85.6	84.1	85.3
	Rural	17.1	13.14	25.37	10.7	10.5	10.7
Mizoram	Urban	72.2	48.38	66.87	49.1	56.0	53.5
	Rural	15.8	14.51	18.25	9.20	12.2	10.7
Nagaland	Urban	93.01	85.33	93.26	80.9	79.5	75.7
	Rural	18.48	15.26	22.60	22.2	18.1	16.6
Sikkim	Urban	98.26	92.55	99.81	83.2	81.8	80.1
	Rural	26.53	24.98	37.95	30.5	29.3	26.9
Tripura	Urban	93.48	87.40	96.45	81.00	89.3	81.3
	Rural	26.00	26.44	40.62	39.60	42.3	40.3
Assam	Urban	-	-	-	77.1	80.5	75.9
	Rural				16.1	26.2	19.7

Source: NSSO 50th, 55th, 61st round; Census Report 1981, 1991, 2001.

workers have not been able to adjust with modern industrial or any other sector and were compelled to be engaged into their original occupation (Mundle, 1993). Without going into detail only one fact is to be observed for Sikkim and Tripura. In these states proportion of urban agricultural workers are highly insignificant in comparison with the same of rural area in all the three rounds reports of NSSO. So, regarding the employment scenario in primary sector in post-reform period some facts are understandable. Firstly, employment under agricultural field in rural area is much higher than urban area. Secondly, the states, which have shown a declining trend in the rural agricultural employment share, are Arunachal Pradesh, Assam, Meghalaya, Mizoram and Tripura. There is a serious doubt whether this decline has increased the productivity of agricultural labour as expected (Oberoi and Singh, 1983). To fulfill the expectation mechanization, irrigation or other infrastructural facilities have to be extended. All these have limited options as discussed in the previous chapter in case of northeastern states. Actually declining trends of employment in primary sector have been associated with declining outlay shares on this field. Meagre share of investment has been identified as a major reason behind reducing employment trend in traditional sector all over India (Rao, 1998). Thirdly, the states, which have shown a declining trend in the gap between rural-urban agricultural workers during 1993-2004 are Arunachal Pradesh, Assam, Meghalaya, Nagaland and Tripura.

The contribution of manufacturing sector as observed in the last chapter was continuously falling and the experiences of northeastern states went against the reform policies. In urban areas for all states greater participation of workers in this sector are noticed compared to rural area. The states in which urban-rural differences of employment share under manufacturing sector are rising over 1993-2004 are Manipur, Meghalaya, Mizoram and Sikkim. In other states these differences are rising. Construction sector too, with a lion's share in total SDP is dominated by urban workers in all states except Tripura. In this sector urban

workers have shown increasing dominance on rural workers in Assam, Manipur and Mizoram. Similarly urban workers dominate rural workers in growing other service sector comprising of trade, hotel and restaurant; transport, storage and communication; public administration; banking finance and insurance sub-sectors (Table 3.8).

Concentration of service sector related workers in the urban area brings a much better economic status of urban people than rural people since before, Gini coefficient measuring sectoral income inequality among the workers showed a significant positive correlation coefficient with proportional agricultural workers across the states. Process of urbanization may determine the direction of economic concentration through structural change. A test of Dani Rodrick (1965) proved that urbanization is positively associated with inequality. Simple reason behind this is the circulation of money at a higher level in urban area due to concentration of economic activities related with trade and commerce, public sector undertakings, tourism, education and health sector etc. Consumerism is a by-product of urbanization, which accelerates expenditure on semi-essential purpose and thus provides a higher income velocity of money in urban area than rural area. The disparity brought through urbanisation process involves two elements: a) the multiplication of points of concentration and b) the increase in the size of individual concentration. This disparity can be brought by uneven distribution in the number of urban areas. Knowledge intensive services such as film industry, business consultancy, engineering, legal consultancy, arts/theatre, banking have a common tendency of geographical concentration. It is found that increasing localization of fast growing industries takes an important role behind the spatial pattern of the economy. Urban areas have some favourable environment to flourish knowledge services. There are sufficient supply of skilled labour, transport and communication facility and "many opportunities for cooperation between the immediate neighborhoods, companies and local research scenes. Agglomeration and dynamics of knowledge intensive services

can boost the economic growth of large metropolitan regions" (Geppert, Gorning & Werwatz 2006). In the long run Drehnan (1990) argues, the secular shifts in the composition of national demand are able to influence the number and size of urban areas.

Urbanisation is associated with the rural-urban migration during economic transition from agricultural activities to modern industrial activities, which are likely to be concentrated in urban area (Davis, 1965). Commonly, degree of urbanization is defined as the relative number of people who live in urban areas (Datta, 2007).

From many such literatures urban literacy, decadal growth rate of population, proportion of urban population, have been identified as the reason behind higher absorption rate of urban workers in service sector. However, across states linear regression results have not shown any significant relationship between shares of urban workers in service sector and urban literacy or decadal growth of population as per Census data 1981, 1991 and 2001 for north-eastern states. We have found significant relationships between share of urban workers in service sector and proportion of urban population. In the Table given below dependent variable is urban employment share in service sector and proportion of urban population is the independent variable.

The results are following:

Table 3.10: Regression Results between Share of Urban Population and Share of Urban Workers in Service Sector

Census Year	Regressor Coefficient	SE	t	R^2	p value
1981	-1.51	.571	-2.64	.583	.046*
1991	-1.404	.306	-4.59	.809	.006**
2001	-.86	.049	-17.46	.981	.000**

* Significant at 5 % level of significance. ** Significant at 1% level of significance

Source: Estimated from Census Reports 1981, 1991 and 2001.

3.5 Employment Elasticity

We calculated annual compound growth rate of rural and urban main workers subject to the main worker levels provided by Census Reports 1991 and 2001 for each state. For that we applied the CAG formula $Y_t = Y_0 (1+ r)^t$. Thereafter the total numbers of rural and urban main workers are calculated corresponding to the reference periods 1993-94 and 1999-2000. Taking these figures into consideration total number of rural and urban workers on principal status basis in those two periods under agriculture (A), manufacturing (M), construction (C), trade hotel and restaurant (THR), transport storage and communication (TSC) and other service (OS) sectors are obtained with the help of NSSO reports of 1993-94 and 1999-2000 which give per 1000 distribution of workers in the above mentioned sectors. Summing up rural and urban figures we get total number of workers on usual status basis in any individual sector corresponding to 1993-94 and 1999-2000.

Table 3.11: Percentage Growth of Different Subsectors and Corresponding Employment Over the Period 1993-2000

States	A	M	C	THR	TSC	OS
Arunahal	42.7	16	115.96	221.12	-83.63	49.28
Pradesh	6.31	6.15	-13.73	101.70	-10.33	77.75
Manipur	79.44	-4.45	-11.2	61.81	50	18.27
	15.03	54.80	118.79	39.71	27.69	53.24
Meghalaya	55	38.6	46.04	19.34	100	0.096
	55.33	26.24	89.72	47.87	55.97	41.52
Mizoram	-21.29	18.75	101.23	55.45	155.56	27.28
	65.56	NG	238.79	32.90	152.57	167.02
Nagaland	29.06	135.89	-34.5	-28.53	38.18	17.68
	74.43	NG	63.66	7.15	18.11	21.22

Sikkim	21.68 NG	47.19 5.85	86.3 52.34	198.36 132.71	233.33 NG	93.92 96.62
Tripura	-0.32 25.35	-28.15 -7.77	27.27 192.27	28.33 53.64	-18.85 38.04	17.83 71.56

Source: Calculated from NSSO 50th, 55th round, Employment unemployment situation in India and NEDFi Journal 2006

[Note: In each column 1st figure is employment growth and 2nd figure is SDP growth under respective subsectors] ; NG means negative growth of income share in the respective sub-sector]

Based on the Table 3.10 we get the employment elasticity in any sector for each state during 1993-2000 in the Table 3.11. This is not always less than unity as it is expected to be because productivity of a person is supposed to increase over time, which implies "employment increases proportionately lower than output" (Mathew, 2006). In some cases subsectoral growth is negative, for example, Agriculture sector in Sikkim, manufacturing sector of Mizoram and Nagaland and Transport storage & communication sector in Sikkim. In the Table 3.11, ## indicates the subsectors which have shown negative growth in employment but positive growth in SDP share. For instance, transport, storage and communication of Arunachal Pradesh and manufacturing of Tripura exhibits negative growth. Other service sectors include banking and insurance, real estate, ownership of dwelling and business services, public administration and other sub-sectors. In this sector for all states employment growth is much lower compared to SDP growth. Apart from that the sub-sectors which have experienced the same trend like other service sector are agriculture (Nagaland Tripura), manufacturing (Manipur and Tripura) construction (Manipur, Meghalaya, Nagaland and Tripura), trade, hotel and restaurant (Meghalaya, Nagaland andTripura) and transport, storage and communication (Arunachal Pradesh and Tripura).

Table 3.12: Employment Elasticity Over the Period 1993-2000

States	A	M	C	THR	TSC	OS
Arunachal Pradesh	6.77	2.60	Negative growth of SDP share	2.17	##	0.63
Manipur	5.28	-0.08	-0.09	1.55	1.80	0.34
Meghalaya	0.99	1.46	0.51	0.40	1.78	0.002
Nagaland	0.39	Negative growth of SDP share	-0.54	-3.99	2.10	0.83
Sikkim	Negative growth of SDP share	8.06	1.64	1.49	Negative growth of SDP share	0.97
Tripura	-0.012	##	0.14	0.52	-0.49	0.24

Source- Calculated from previous table

3.6 Labour Productivity (1993-2000)

Table 3.13: Growth Rate of Labour Productivity During 1993-2000

States	A	M	C	THR	TSC	OS
Arunachal Pradesh	-0.26	-0.09	-0.6	-0.72	11.32	0.19
Manipur	-0.35	0.62	1.46	-0.21	-0.06	0.29
Meghalaya	0.0021	-0.089	0.29	0.306	-0.26	0.26
Mizoram	1.06	-0.21	0.68	-0.14	-0.011	1.09
Nagaland	0.35	-0.85	1.49	0.65	-0.22	0.03
Sikkim	-0.28	-0.28	-0.18	-0.67	-0.30	.013
Tripura	0.25	0.28	1.29	0.07	0.89	0.45

Labour productivity can be obtained through dividing the sectoral domestic product by number of workers absorbed in that sector. Normally it gives a broad idea of the trend prevalent in the productivity (Hari, 2003). We computed labour productivity for 1993-94 and 1999-2000 of different subsectors and corresponding growth rates subject to constant price level of 1993-94 (Table 3.12). We observe that in both the periods labour productivity under agricultural sector is lowest among all sub-sectors in all states. Similarly, in many cases the same is highest in construction sector. Agriculture sector has shown negative growth in labour productivity in Arunachal Pradesh, Manipur, Sikkim and Tripura. Manufacturing sector also has shown negative trend in all states except Manipur and Tripura. Only Arunachal Pradesh and Sikkim have experienced falling trend in construction sector. Besides, the states having decreasing profile of trade, hotel and restaurant sector are Arunachal Pradesh, Manipur, Mizoram and Sikkim. On the other hand, all states except Arunachal Pradesh and Tripura have been identified with negative growth of labour productivity in transport, storage and communication sector. It can be noticed that only other service sector in all states has got a trend of positive growth in all states. In most of the states construction sector has achieved the maximum growth of labour productivity. It seems on the basis of usual status (PS+ SS) workers levels, construction and other service sectors have received much more benefits compared to any other subsectors.

3.7 Summary

The performances on employment generation in terms of worker population ratio and employment elasticity for main workers are not satisfactory in all states over two decades 1981-91 and 1991-2001.

Gini coefficient is calculated for 1981, 1991 and 2001 subject to income and employment shares under primary, secondary and tertiary sectors. According to the obtained values of Gini coefficient, except in Arunachal Pradesh, we have

noticed rising income inequality in all states among the workers absorbed by three broad sectors over the period 1981-91. Similarly, this income inequality is rising in all states barring Nagaland and Manipur during 1991-2001. The across state correlation tests between Gini coefficient and employment share of agricultural sector have confirmed that greater participation of workers in agriculture sector has brought greater economic disparity in northeast India.

Across state correlation coefficients between proportion of urban workers engaged in service sector and proportion of urban population are found statistically significant in 1981, 1991 and 2001.

In the post-reform period (1993-2000) growth of labour productivity under manufacturing sector is negative in all states except Tripura. Construction sector has provided positive growth of labour productivity for all states except Arunachal Pradesh and Sikkim. It is the other service sector, which has achieved maximum benefit in terms of labour productivity in all states with positive growth trend. This sector includes banking and insurance, real estate, dwelling and business services and public administration.