

ECONOMIC REFORMS AND JOBLESS GROWTH IN INDIA IN THE 1990s

- B.B. Bhattacharya & S. Sakthivel*

Executive Summary

This paper presents alternative estimates of employment and employment elasticity at aggregate and sectoral levels for the overall economy as well as for state major Indian states. We therefore try to reconcile the controversy surrounding the contradictions in employment growth rate and the resultant employment elasticity based on alternative concepts of employment in different studies. For comparative analysis of employment elasticity with respect to output we have derived a consistent time-series on State Domestic Product through appropriate adjustments in Gross State Domestic Product series 1980-81 corresponding to the same in 1993-94 series.

Results from this study suggest that aggregate employment elasticity at All-India level for the period between 1983 (38th round) and 1993-94 (50th round) was around 0.51. It collapsed to 0.15, more than three-fold decline during the post-reform period [between 1993-94 (50th round) and 1999-00 (55th round)]. Similar decline was witnessed across states and across all broad sectors, particularly primary sector. Although output growth (GDP growth) had accelerated to some extent between the 1980s and 1990s, employment growth has virtually collapsed, leading to low employment elasticity in the post-reform years. This is evident in all measures of employment from the NSS data namely, Usual Principal and Subsidiary Status, Current Daily Status and Current Weekly Status. Clearly there is a delinking of growth and employment in the post-reform period. In the light of these results, it casts a serious doubt on the employment targets envisaged in the plan.

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1. Introduction

Expansion and creation of employment opportunities has been the unstated objectives of economic reforms being followed since the early 1990s in India. As industrial controls and trade restrictions are lifted, it is argued that this would result in higher output growth leading to creation of new employment opportunities and a visible fall in poverty and inequality. But the emerging evidence in India in the 1990s on the employment front has been rather dismal. The concern arising out of sharp deceleration, particularly in rural employment, has been well documented by now. The constitution of several committees within a span of four-five years on employment by the Indian Government (Planning Commission) is itself a proof of the concern arising out of declining employment growth in the post-reform period¹.

While *The Task Force* (2001) harped on the virtues of organised sector employment with service sector taking the lead, *The Special Group* (2002) extolled the idea of a big push to the unorganised sector with agriculture at the core of employment expansion. The former had put the growth rate of employment at 0.98 percent during 1993-94 and 1999-2000 while in the later it was estimated at 1.07 percent. However, the growth rate registered for the period 1983 and 1993-94, using NSS data reveals that based on Current Daily Status (CDS) it was as high as 2.7 percent, as reported in *The Report of the Special Group*, while in *The Task Force Report*, the Usual Principal and Subsidiary Status (UPSS) based growth rate was at 2.04 percent. In view of this, estimated employment elasticity at the aggregate had witnessed significant fall from 0.41 during 1983 - 1993-94 to 0.15 during 1993-94 – 1999-00.

Therefore, the controversy surrounding the contradictions in employment growth rate and the resultant employment elasticity has thrown in lot of confusion among the researchers. The present paper attempts to provide alternative estimates of employment and its growth. Apart from this, we also correct for Gross State Domestic Product (GSDP) base changes from 1980-81 to 1993-94. This has necessitated a correction for

the quantum and price changes in 1993-94 series in comparison to 1980-81 series in State Domestic Product (SDP).

The paper is organised as follows : The following Section provides a brief literature from past studies on employment growth and elasticity. Section-3 would examine broad sectoral and aggregate SDP growth in states. Alternative concepts and employment estimates are given in Section-4; while broad sectoral and aggregate employment growth and employment elasticity at all-India are presented in Section-5. State-level employment growth by broad sectors and employment elasticity is provided in Section-6. Summary and conclusion are given in Section-7.

II. Brief Review of Past Literature

One of the earliest influential paper on the issue of sharp declining trend in workforce growth in the post-reform period (involving 50th and 55th rounds), was reported by Sundaram (2001a and 2001b). His estimates suggested that based on Usual Principal and Subsidiary Status (UPSS), the workforce growth during the period 1993-94 to 1999-00 was at 0.81 as against the projected growth of population of over 1.75 percent per annum. Picking up the thread, the Planning Commission alarmed over the trends in employment in the 1990s, constituted a *Task Force* to report on this matter. The Task Force endorsed the trend of decline in employment and a consequent rise in unemployment. Harnessing the criteria of UPSS, *The Task Force* had put aggregate employment growth at 0.98 percent during 1993-94 to 1999-00 as against 2.04 percent during 1983 to 1993/94.

The Task Force further notes that the distress employment trend in the 1990s appears to have been triggered by the negative growth in agriculture, mining & quarrying and electricity, gas & water supply. As a result, the estimated aggregate employment elasticity fell down drastically from 0.41 during 1983 – 1993/94 to 0.15 during 1993/94 to 1999/00. Earlier, higher employment elasticity during the 1980s was also observed by Bhattacharya and Mitra (1993). Using census data on employment and NAS on output for the period during 1981-91, they found all-India aggregate employment elasticity to be at 0.45. In addition, they also estimated employment elasticity in six broad sectors across 14 major Indian states.

The Task Force is of the view that declining employment elasticity reflects rising productivity growth per person, which in turn “is a desirable outcome”. The Report further notes that “employment elasticities may be very low in sectors where there is a great deal of under-employment, which means there is considerable room for output to expand without an expansion in measured employment.”² The Task Force asserts that the low employment elasticity observed during the 1990s was a reflection of true picture of underemployment in agricultural sector. However, results emanating from Bhattacharya and Mitra (1993) for the 1980s show that primary sector elasticity stood at as high as 0.74 in contrast to, for instance, manufacturing which was only 0.19.³

The sharp slowdown in employment was also noted by *The Report of Special Group* constituted later by the Planning Commission. Based on Current Daily Status (CDS) criteria, the results of *The Special Group* reveal that the observed workforce growth dropped down from 2.7 percent between 1983 – 1993/94 to 1.07 percent per annum between 1993/94 – 1999/00. This has happened against a rising GDP growth from 5.2 to 6.7 percent respectively for the same period. In view of this, the Special Group found aggregate labour intensity (measured as employment elasticity) decelerating from 0.52 to 0.16 during this period and most of other sectors also showing similar trend. Such similar trend was also noted by others (such as, Hirway (2002), Chadha & Sahu (2002)). The observed slowdown in employment elasticity had led the Special Group to voice concern over this issue. It states that “this means that over this period, there has been a reduction in the labour intensity of output of the order of 31 percent i.e., 5.5 per cent per annum. This is indeed much higher than the reduction in the labour intensity at the rate of 1.96 per cent per annum in the earlier periods i.e., between 1983 and 1993-94.” It further observes that, “The overall decline in the employment elasticity is to a large extent due not only to the changes in the broad 9 sector composition of the output, but also in the intra-sectoral composition and technology impacts of labour capital substitution. A separate study shows that the capital intensity in Indian economy in almost all the sectors, including even the small unorganised sectors and services, is increasing over time.”⁴

III. Growth of State Domestic Product in the Pre and Post-Reform Era

In this section, we analyse the growth performance at all-India and also at state level and by broad sectors, namely, primary, secondary and tertiary sector. The analysis is done here for 18 major states. Jammu & Kashmir is excluded because of political disturbance during 1990s. Union territories and six smaller states of North-East are excluded because they are too small to reflect general economic behaviour of states in India. Three newly created states, namely, Chattishgarh, Jharkhand and Uttaranchal are also excluded because there are no time-series data on these states. Bihar, M.P. and U.P. therefore refer to undivided states.

Currently, the Central Statistical Organisation (CSO) has released Gross State Domestic Product (GSDP) data for all the Indian states based on 1993-94 prices, which are consistent with Gross Domestic Product (GDP) 1993-94 series. The GSDP series based on 1993-94 prices for all states with sectoral break-down are available only from 1993-94 onwards. The same for the earlier years are available for 1980-81 prices. The 1993-94 revision incorporates not only price changes but also quantum changes corresponding to the UN System of National Accounts (1993). In order to derive a consistent time-series for the pre and post-reform period, we have extended backwards the 1993-94 GSDP series through appropriate price and quantum factor corrections. The price and quantum correction factors are computed separately for each state and each sector. The detailed methodology and the limitations of using state-level GSDP data are given in Bhattacharya and Sakthivel (2003).

The estimate on growth rate presented in Table 1 relates to the period for which quinquennial rounds of employment were carried out.⁵ States' overall growth rates have displayed a fair degree of variation for the period under consideration. While some states have witnessed rapid and phenomenal growth, the rest lagged behind the all-India growth rate. During the 1980s, the all-India growth rate was about 5.6 percent while in the 1990s, it is around six percent. As the table suggests, the growth rate for the period 1983 to 87/88 and 1987/88 to 1993/94, which broadly comprises of the 1980s were 4.26 and 5.31 percent respectively. But in view of the severe drought that occurred during 1987/88, the growth rate fell sharply at all-India as well at state-level. In order to, therefore, have a consistent and comparable period devoid of any major disturbances, we

have calculated growth rates for the period involving 1983-93/94 and between 1993/94-1999/00. Additionally, we have analysed the long-run growth involving the period 1983-1999/00.

Table 1
Growth of GSDP in Major Indian States in the 1980s and 1990s

(Annual Average in Percent)

<i>States</i>	<i>1983-87/88</i>	<i>1987/88-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1983-99/00</i>
Andhra Pradesh	2.63	4.91	5.28	5.21	5.27
Assam	3.03	4.15	1.95	3.83	3.20
Bihar	4.25	2.56	4.60	3.43	3.45
Delhi	10.25	7.31	9.55	9.25	7.01
Goa	4.33	8.22	10.44	7.93	8.06
Gujarat	0.20	7.33	7.16	5.69	7.03
Haryana	4.82	10.48	5.67	8.73	8.00
Himachal Pradesh	6.10	5.49	7.00	5.54	6.16
Karnataka	5.20	6.58	8.05	6.52	6.77
Kerala	4.57	7.49	5.14	6.65	6.48
Madhya Pradesh	4.26	6.56	4.93	6.45	6.10
Maharashtra	4.82	8.73	6.11	7.72	7.45
Orissa	3.31	2.80	3.53	3.95	3.44
Punjab	5.57	4.49	4.99	4.87	4.73
Rajasthan	1.78	7.87	8.43	7.37	7.49
Tamil Nadu	6.03	6.90	6.47	6.75	6.77
Uttar Pradesh	4.79	4.68	5.40	5.58	5.02
West Bengal	4.72	6.01	7.22	5.46	6.26
All-India	4.26	5.31	6.60	5.37	5.79

Source : Raw data obtained from CSO and then base transformation carried out as outlined in section-III.

The all-India average growth rate for the period 1983-1993/94 stood at 5.37 percent, which is close to 5.6 percent achieved for the 1980s, and the growth accelerated to 6.6 percent for the period 1993/94-1999/00. It may be seen that except few states - Assam, Bihar, Orissa and Punjab - all the other major states had recorded over five percent growth during the 1983-93/94, against the all-India growth rate of 5.37 percent per annum. Delhi, Goa, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Haryana, Tamil Nadu and Rajasthan have progressed rapidly during the 1980s with over six percent per annum growth, with Delhi, Haryana, Goa, Maharashtra and Rajasthan recording the highest with above seven percent. In general, there was a comparatively balanced regional growth during the 1980s, even though the disparity widened across the states. However, the 1990s (essentially the period involving 1993/94-1999/00) belongs to the relatively small and industrialised states. Highly industrialised states like, Gujarat, Delhi,

Goa and Rajasthan, grew at over eight and nearly seven percent per annum respectively. Assam, Orissa and Bihar continue to lag behind the all-India average. Unlike the aggregate GSDP, sectoral growth of GSDP displays enormous fluctuations between sectors and intra-sector. Sectoral growth rates of GSDP among states are presented in Table 1.1 at the appendix.

IV. Alternative Employment Estimates

1. Alternative Concepts of Employment

According to the National Sample Survey (NSS), the economic activity status of persons are captured in terms of usual status approach or current status approach. While the former takes into consideration the number of persons in the workforce, the later on the other hand, denote to the number of mandays. A person is included as employed in the usual status approach if he/she had pursued gainful economic activity for a relatively longer time span in the period immediately preceding one year (365 days) prior to the date of the NSS survey. This is known as Usual Principal Activity Status. And if a person had spent relatively shorter time span in the period preceding one year (365 days) prior to the date of the NSS survey is accounted under the head Usual Subsidiary Activity Status. Both Principal and Subsidiary Activity Status together constitute Usual Activity Status Approach (UPSS).

The current status approach however assigns a unique activity status for a person engaged in gainful economic activity for the period preceding one week or the previous day of the survey, depending upon the status used. For instance, a person is considered to be employed under Current Weekly Status (CWS) approach if he/she pursued any one or more gainful economic activity for atleast one hour during the preceding week. In the Current Daily Status (CDS) approach, a person is considered to be employed if he/she had spent four hours or more during the previous day of the survey. The above concepts have been in use since the 27th round of NSS, although the current daily status approach was then called 'labour time disposition'. It may be noted that there is a considerable variation in employment measured through these alternative criteria.

The Task Force on Employment headed by Montek Singh Ahluwalia of Planning Commission and Special Group on Employment headed by S.P. Gupta of Planning

Commission arrived at two different employment estimates. The former measured employment through UPSS criteria while the later measured on CDS basis. Justifying the use of CDS criteria to arrive at employment estimates, the S.P. Gupta report claims that “At the moment, there is a large unemployed and under-employed workforce i.e., not having any gainful employment, although by using the measurement on UPSS basis, several of them are declared employed. This results in over-estimation of the level of employment.”⁶ In a country where workforce is essentially engaged in primary activities that are rural based, the activity pattern is largely driven by seasonal fluctuations. Hence, the phenomenon of underemployment may be better measured by CDS. To quote NSSO, “Some of the persons categorised as usually employed do not have work throughout the year due to seasonality in work or otherwise and their labour time is not fully utilised, they are, therefore, underemployed.”⁷

Current Weekly Status and Current Daily Status particularly attempts to capture the changes in the activity pattern even during the week which otherwise was not possible by usual status approach. By placing the activity pattern of current daily status workers among the usually employed, the NSS notes “that the proportion of person-days of the usually employed utilised for work was quite low for females compared to males in all the survey years”. “During 1999-2000, for females, it was about 68 per cent in rural India and 79 per cent in urban India as against 90 and 94 per cent for rural and urban males respectively during 1999-2000. It is also observed that when work is not available, a large proportion of females withdraw from labour force rather than report themselves as unemployed.”⁸

2. Alternative Employment Estimates

The above clearly underlines the importance of measuring employment based on current status approach than on usual status basis. However, it is worthwhile to compare the same to bring out the changes in pattern of employment over the years. It may also indicate the extent of seasonal unemployment, especially in the rural areas. In this analysis, we shall compare employment in four quinquennial rounds, namely, 38th round (1983), 43rd round (1987-88), 50th round (1993-94) and 55th round (1999-00) to make an assessment of employment growth in pre and post-reform period. We furnish in Table 2

alternative estimates of employment involving four quinquennial rounds with all three criteria classified by gender and by rural-urban categories. The table reveals that employment estimate based on UPSS is the highest among all categories – whether computed by gender or by rural-urban categories – compared to employment estimate based on current weekly and daily status. Between CDS and CWS, the former turns out to give the lowest estimate of employment. This is valid for all four quinquennial rounds.

Table 2
Alternative Estimates of Employment – 1980s and 1990s
(All-India)

(Million Persons)

<i>Year</i>	<i>RM</i>	<i>RF</i>	<i>RP</i>	<i>UM</i>	<i>UF</i>	<i>UP</i>	<i>TM</i>	<i>TF</i>	<i>TP</i>
C U R R E N T D I A L Y S T A T U S									
1983	134.6	52.4	187.0	42.7	08.5	51.2	177.3	60.9	238.2
1987-88	153.6	59.8	213.4	50.1	10.3	60.3	203.7	70.1	273.7
1993-94	171.5	70.1	241.7	61.7	13.4	74.8	233.2	83.5	316.5
1999-00	179.0	72.2	250.5	71.6	14.6	85.7	250.5	86.8	336.2
C U R R E N T W E E K L Y S T A T U S									
1983	143.0	60.1	203.1	44.4	09.4	53.8	187.3	69.5	256.9
1987-88	154.5	63.6	218.1	51.6	11.1	62.7	206.2	74.7	280.8
1993-94	180.7	85.4	266.1	63.6	15.5	78.8	244.3	100.9	345.2
1999-00	191.0	89.5	279.7	74.3	16.8	90.7	265.3	100.6	371.6
U S U A L P R I N C I P A L A N D S U B S I D I A R Y S T A T U S									
1983	152.3	87.0	239.2	45.9	11.7	57.6	198.2	98.60	296.8
1987-88	165.3	93.3	258.6	53.1	14.2	67.3	218.4	107.5	325.9
1993-94	188.1	105.0	293.2	64.8	17.3	81.9	253.0	122.2	375.2
1999-00	198.8	105.8	303.7	75.6	18.3	93.5	274.5	124.1	398.5

Notes : i) The numbers are obtained by first working out Work Force Participation Rate (WFPR) for four categories, namely a) RM; b) RF; c) UM; d) UF from CD-ROM of relevant rounds of NSS. Further, we applied WFPR for each rounds to the total population of each category (RM, RF, UM & UF) estimated from the interpolation for inter-census period.

ii) The following are the abbreviations : RM – Rural Male; RF – Rural Female; RP – Rural Persons; UM – Urban Male; UF – Urban Female; UP – Urban Persons; TM – Total Male; TF – Total Female and TP – Total Persons.

Source : Extracted from CD-ROM of relevant rounds of NSS and Census.

To probe further, we present in Table 3, the estimate of gap between different measures of employment. We note that the gap between UPSS-CDS is the highest and

lowest between CWS-CDS basis. For instance, between UPSS-CDS estimates, it appears that over sixty million workers in the year 1999-00 who were enumerated as being part of workforce based on UPSS were actually not found under CDS category. So, UPSS overestimated workforce very significantly.

Table 3
Estimate of Gap Between Different Measures of Employment
– 1980s and 1990s (All-India)

(Million Persons)

Year	RM	RF	RP	UM	UF	UP	TM	TF	TP
C D S - U P S S									
1983	17.7	34.5	52.2	3.3	3.2	6.4	20.9	37.7	58.6
1987-88	11.6	33.5	45.2	3.0	3.9	7.0	14.7	37.4	52.1
1993-94	16.7	34.9	51.5	3.1	3.9	7.1	19.8	38.8	58.8
1999-00	19.8	33.6	53.2	4.1	3.7	7.8	23.9	37.3	62.3
C W S - C D S									
1983	8.4	07.7	16.1	1.7	0.9	2.6	10.1	08.6	18.6
1987-88	0.9	03.7	04.7	1.6	0.8	2.4	2.5	04.6	7.1
1993-94	9.2	15.4	24.4	1.9	2.1	4.0	11.1	17.4	28.8
1999-00	12.0	17.3	29.1	2.8	2.2	5.0	14.8	19.6	35.4
U P S S - C W S									
1983	9.3	27.9	36.1	1.6	2.3	3.8	10.8	29.1	39.9
1987-88	10.7	29.8	40.5	1.5	3.1	4.5	12.2	32.8	45.0
1993-94	7.5	19.5	27.1	1.2	1.8	3.1	8.7	21.3	30.0
1999-00	7.9	16.3	24.0	1.3	1.4	2.8	9.2	17.7	26.9

Notes : The following are the abbreviations : RM – Rural Male; RF – Rural Female; RP – Rural Persons;
UM – Urban Male; UF – Urban Female; UP – Urban Persons; TM – Total Male;
TF – Total Female and TP – Total Persons.

Source : As in Table 2

The overestimation was higher in the case of females (37 million) as compared to male workers (24 millions) for the 55th round (1999-00). Curiously, the gap is constant at around 50-60 million throughout the four quinquennial rounds under consideration. On

the other hand, the estimate of gap found between UPSS-CWS varied in the range of 25 – 45 million during the four quinquennial rounds.

It appears from the tables 2 and 3, that there is considerable variations in the measure of employment based on alternative concepts used by the NSSO. The UPSS tends to give a higher magnitude of employment, while the CWS and CDS tends to show a lower magnitude of employment. At the aggregate level (total persons), CDS turns out to be about 82-85 percent of UPSS estimate. In other words, the UPSS overestimates employment in the economy on an average by about 15-20 percent. Further, the gap between the two, seems to have remained virtually unchanged over the years.

Between the rural and urban areas, the gap between the UPSS and CDS appears to be much higher in the rural areas. This is consistent with general expectations, where seasonal unemployment is likely to be more in the rural than compared to the urban areas. Female labourers seems to be more sensitive to seasonal variations in employment. In 1983, the employment among females in the rural areas as per CDS was only about 60 percent as per UPSS. The ratio has marginally improved to 68 percent in 1999-2000. The hypothesis that females bear the brunt of casualisation and job market uncertainty seems to be true.

The Growth of employment also varies between alternative measures of employment. At the aggregate level, according to CDS (total persons), employment has grown by 33 percent and six percent respectively between 1983 to 1993-94 and 1993-94 to 1999-00. The same on the basis of UPSS turns out to be 26 percent and six percent respectively. Thus notwithstanding the alternative measures of employment, there is a clear deceleration in the growth of employment in the post-reform years.

V. All-India Employment Growth and Elasticity

1. Aggregate and Sectoral Employment Growth

Having examined alternative employment estimates and the differences arising out of different concepts on employment, we next move on to present below employment growth during the last four quinquennial rounds – at aggregate and sectoral levels – across 18 major Indian states based on all three criteria, viz., CDS, CWS and UPSS. Although we have estimated growth rates of employment and elasticity across states and all-India

for five periods, viz., i) 1983-1987/88 (38th to 43rd round); ii) 1987/88 to 1993/94 (43rd to 50th round); iii) 1993/94 to 1999/00 (50th to 55th round); iv) 1983-1993/94 (38th to 50th round) and v) 1983-1999/00 (38th to 55th round), we present below results involving (iii) and (iv) only. Since the year 1987/88 was a severe drought period, any analysis relating output or employment would throw distorted picture and hence we ignore the 43rd round figures for this analysis.

As evident from Table 4, aggregate employment growth at all-India level declined sharply from 2.26 percent during the pre-reform period (1983 to 1993-94) to 1.01 percent during the post-reform period (1993-94 to 1999-00), on the basis of UPSS. The same measured through CDS fell from 2.74 percent between 38th and 50th rounds to 1.02 percent during the period involving 50th and 55th rounds. As has already been argued earlier, since employment estimates involving CDS criterion brings out seasonality and underemployment associated with it, the sharp slowdown in the growth of employment reflects the dismal scenario on the employment front in the post-liberalisation era.

The declining trend is more striking in the primary sector. According to UPSS criterion, the employment growth in primary sector has declined from a high of 1.61 percent between 38th and 50th rounds, to 0.04 percent, virtually a stagnant agricultural workforce in the reform period. In fact, the gloomy picture gets worse with growth rate taking a severe beating to a near-zero level at 0.01 percent during the post-reform period as against 2.63 percent registered in the pre-liberalisation era, on the CDS basis. However, it may be noted that although the growth rate of employment has declined in the primary sector, the elasticity of employment is still highest in the pre-reform period in the primary sector as would be shown later. The sharp fall in it in the post-reform period bringing it to virtual zero level is a matter of serious concern keeping in view that the bulk of population still lives in the rural areas and they depend on agriculture for the primary source of livelihood.

Secondary sector employment in India, is probably, the only silver lining in the gloomy employment outlook. The growth rate (CDS basis) which stood at 2.35 percent during 1983-93/94, jumped up a little over three percent during 1993/94 – 1999/00. Again trends in the tertiary sector employment do not auger well for the economy in the post-reform years. Tertiary sector employment growth, which stood at 3.33 percent

during 1983-1993/94 based on CDS, took a battering by more than one percentage point to 2.26 percent for the period 1993/94 – 1999/00. The sharp decline in tertiary sector employment comes at a time when the share of value-added in services as a proportion to GDP is increasing quite dramatically across states and India as a whole, as evident in the earlier section.

Table 4

All-India Employment Growth in the 1980s and 1990s

(Annual Average in Percent)

<i>Sectors</i>	<i>Aggregate</i>	<i>Primary</i>	<i>Secondary</i>	<i>Tertiary</i>
C U R R E N T D A I L Y S T A T U S				
1983 - 1993/94	2.74	2.63	2.35	3.33
1993/94 – 1999/00	1.02	0.01	3.03	2.26
C U R R E N T W E E K L Y S T A T U S				
1983 - 1993/94	2.85	2.68	2.73	3.44
1993/94 – 1999/00	1.19	0.54	1.53	2.76
U S U A L P R I N C I P A L A N D S U B S I D I A R Y S T A T U S				
1983 - 1993/94	2.26	1.61	3.00	3.94
1993/94 – 1999/00	1.01	0.04	2.37	2.80

Notes : Primary sector here includes 1) agriculture & animal husbandry; 2) Forestry & Logging and 3) Fishing. Secondary sector contains 4) Mining & Quarrying; 5) Registered and Unregistered Manufacturing; 6) Construction; 7) Electricity, Gas & Water Supply. Tertiary sector denotes 8) Transport, Storage & Communication; 9) Trade, Hotel & Restaurant; 10) banking & Insurance; 11) Real Estate, Ownership of Dwellings & Business Services; 12) Public Administration and 13) Other services.

Source : As in Table 2

2. Employment Elasticity at all-India Level

Employment elasticity is measured as the ratio between the growth in employment to growth in output (GSDP or GDP, as may be the case). Simply stated, it indicates employment per unit of output. We present in Table 5 aggregate and three broad sectoral employment elasticity relating to the period involving 1980s and 1990s across 18 major Indian states.

Table 5

All-India Employment Elasticity in the 1980s and 1990s

<i>Sectors</i>	<i>Aggregate</i>	<i>Primary</i>	<i>Secondary</i>	<i>Tertiary</i>
C U R R E N T D A I L Y S T A T U S				
1983 - 1993/94	0.51	0.85	0.36	0.50
1993/94 – 1999/00	0.15	0.00	0.26	0.36
C U R R E N T W E E K L Y S T A T U S				
1983 - 1993/94	0.53	0.87	0.42	0.52
1993/94 – 1999/00	0.18	0.18	0.13	0.44
U S U A L P R I N C I P A L A N D S U B S I D I A R Y S T A T U S				
1983 - 1993/94	0.42	0.52	0.46	0.60
1993/94 – 1999/00	0.15	0.01	0.20	0.45

Note : Obtained by dividing growth of employment by growth of GDP

Aggregate employment elasticity at the All-India level (involving CDS in the pre-reform years) for the period between 38th and 50th round suggests that it was around 0.51. It collapsed to 0.15, more than three-fold decline during the post-reform period (between 50-55th rounds). Although output growth (GDP growth) had accelerated to some extent between the 1980s and 1990s, employment growth has virtually collapsed, leading to low elasticity estimate. However, on the UPSS basis, the decline was not as sharp as CDS. In the case of the former, employment elasticity had witnessed a fall from 0.42 to 0.15 during the same period. As far as employment elasticity based on CWS is concerned, it was little higher than both the other estimates during the period under consideration.

Now, what triggered the distress situation causing such a low employment elasticity? Agriculture bore the brunt of decline in employment. While primary sector output growth had almost stabilised at 3.08 percent growth during 1983 – 1993/94 and three percent during 1993/94 – 1999/00, employment growth was almost negligible (0.01 percent during the 1990s as against a robust 2.63 percent during the 1980s – 1983-1993/94, on the basis of CDS). From a situation of a robust employment elasticity estimate of 0.85 in the pre-reform years, the liberalisation era had witnessed a virtual stagnation in growth of employment in the primary sector.

Tertiary sector too displayed decline in employment elasticity (measured by CDS) from 0.50 between 38th and 50th rounds to 0.36 for the period involving 50th and 55th rounds. Although tertiary sector output growth had seen mild decrease, much of the decline in tertiary sector employment elasticity is accounted for by a significant reduction in employment growth from 3.33 to 2.26 for the period under consideration.

Interestingly, it is the industrial sector, which appears to have improved employment elasticity in the post-reform years. A causal glance at the table reveals that while employment growth in the secondary sector had witnessed notable rise from 2.35 in the 1980s to 3.03 in the 1990s (estimated by CDS), output increase has actually doubled between these periods from a moderate 6.58 to 11.70 percent, which essentially pulled down secondary sector employment elasticity. The high growth in the industry's output (of 11.70 percent) was due to low growth in 1993-94 and a huge jump in 1999-00.

VI. Employment Growth and Elasticity Estimates Across States

1. Aggregate Employment Growth in Major States

Employment growth varies among states and according to the measures of employment, namely CDS, CWS and UPSS. In general, we witness a slowdown in employment growth in the post-reform years (1993-94 to 1999-00) in comparison to the pre-reform era (1983 to 1993-94). Table 6 provides employment growth in all major states as well as for all-India based on the alternative measures of employment in the pre and post-reform periods. In terms of CDS, which is very close to CWS, there has been a sharp deceleration in the employment growth in the post-reform period. However, there has been some noticeable exceptions. In the case of Assam, Gujarat, Punjab and West Bengal there has been a decline of employment in the pre-reform period and a modest to significant growth in the post-reform years. On the other hand, in states like Kerala, Goa, Andhra Pradesh, Himachal Pradesh, Rajasthan and Tamil Nadu, there had been a big fall in employment growth. Although the magnitudes differ, the broad trends are similar in CWS.

We have noted elsewhere (Bhattacharya and Sakthivel, *forthcoming*)⁹ that there has been an acceleration of growth of output in Maharashtra, West Bengal and Tamil Nadu in the post-reform period. Out of this, only Gujarat and West Bengal have recorded a

significant rise in employment growth. In contrast, employment growth rate fell drastically in Maharashtra, Tamil Nadu, Rajasthan and Himachal Pradesh. Curiously, Punjab which stagnated in terms of output growth in the post-liberalisation era, has shown a big improvement on the employment front during the same period.

In terms of UPSS measure of employment, the relative behaviour seems to be quite different. For instance, West Bengal, Punjab, Gujarat, Assam and Delhi which have recorded negative employment growth as per CDS measure in the pre-reform period have performed very well as per UPSS measure. On the other hand, states like Maharashtra, Kerala and Karnataka which have above all-India average employment growth in the pre-liberalisation period as per CDS measure, have performed modestly as per UPSS measure.

Table 6
Growth of Aggregate Employment in Major Indian States

(Annual Average in Percent)

<i>Criteria</i>	<i>C</i>	<i>D</i>	<i>S</i>	<i>C</i>	<i>W</i>	<i>S</i>	<i>U</i>	<i>P</i>	<i>S</i>	<i>S</i>
<i>States</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>
Andhra Pradesh	3.07	0.42	3.04	0.53	2.61	0.26				
Assam	-4.32	1.67	-3.80	1.78	2.67	1.86				
Bihar	1.11	1.48	1.16	2.13	1.35	1.97				
Delhi	-1.86	2.59	-1.87	3.01	3.99	3.59				
Goa	1.32	-0.96	1.16	-0.82	-0.34	-1.33				
Gujarat	-0.50	1.71	2.36	1.86	2.07	1.81				
Haryana	0.34	2.31	1.27	2.13	2.79	1.18				
Himachal Pradesh	2.54	0.30	3.23	0.37	2.70	-0.03				
Karnataka	2.76	1.41	2.72	1.31	2.39	0.79				
Kerala	3.28	-0.07	3.01	0.21	1.32	1.12				
Madhya Pradesh	2.18	1.21	2.33	1.31	2.14	1.09				
Maharashtra	2.86	1.26	2.76	1.53	2.29	1.05				
Orissa	0.62	0.93	0.77	1.39	2.01	0.75				
Punjab	-3.59	1.94	-4.32	2.55	1.05	5.72				
Rajasthan	2.59	0.72	2.82	0.72	2.57	2.38				
Tamil Nadu	2.45	0.52	2.40	0.47	1.72	1.66				
Uttar Pradesh	0.83	0.96	0.97	0.68	1.94	1.08				
West Bengal	-4.51	0.24	-3.18	0.13	2.38	0.76				
All-India	2.74	1.02	2.85	1.19	2.26	1.01				

Source : As in Table 2

In the post-reform period, two comparatively small states namely Goa and Himachal Pradesh have recorded negative employment growth. On the other hand, Punjab, Rajasthan and Delhi have recorded very high employment growth in the post-reform era, as per UPSS measure.

It appears therefore that two pictures emerge on employment at the state level. CDS and CWS provide one version of employment growth in the pre and post-reform years and the UPSS measure gives another pattern. The two are often dissimilar. At the all-India level however, the three measures are quite similar, especially in the post-reform period. Thus, no matter how one measures employment, there is a very clear evidence of deceleration in the employment growth in the post-reform years.

2. Primary Sector Employment Growth in States

Tables 7, 8 and 9 show growth rate of employment in all-India and major states for primary, secondary and tertiary sectors respectively. In primary sector, there was a virtual stagnation (growth 0.01 percent per annum in the post-liberalisation years). Even the alternative measures of employment do not change it very much. It appears therefore that agriculture, which dominates primary sector, has saturated in terms of employment potential. It may be noted that the growth of primary sector output during this period at three percent per annum was not much lower than 3.1 percent attained in the pre-reform period (1983 to 1993-94). The sharp fall in the primary sector employment without a structural change in output growth therefore requires a serious attention. It may be noted that even after the stagnation in primary sector employment generation, the primary sector still remains as the dominant sector in providing employment in the economy. The controversy between the two Planning Commission Studies (*The Report of the Task Force* and *The Report of the Special Group*) on this issue therefore needs a special attention in planning and public policy.

Among major states, many have recorded negative growth of employment in the primary sector based on CDS criterion. The most serious case is that of Kerala, where employment growth has declined from 3.98 percent per annum in the pre-reform era to negative 4.94 percent in the post-liberalisation period. Goa also witnessed a similar reversal in employment growth in the primary sector.

Among the major states, also there has been a noticeable reversal (negative growth in the post-reform period in the primary sector employment). In fact, except in Bihar, Gujarat, Haryana, Punjab and Orissa, there has been either a stagnation or decline in employment growth in the primary sector in the post-reform years. Although magnitude differs, the broad trends are similar between CDS and CWS. In agriculturally dynamic economies of West Bengal, post-reform years recorded more employment in primary sector. Even in Punjab where there has been a sharp decline in agricultural output growth in recent years, the employment growth has risen higher than in the previous period. There are therefore some riddles in the growth of employment across states in the primary sector, which needs detailed investigation before a policy decision is taken on employment in the primary sector.

Table 7
Growth of Primary Sector Employment in Major Indian States

(Annual Average in Percent)

<i>Criteria</i>	<i>C D S</i>		<i>C W S</i>		<i>U P S S</i>	
	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>
Andhra Pradesh	3.41	-0.16	3.29	0.28	2.33	-0.18
Assam	-4.55	-0.42	-3.84	-0.39	2.53	-0.82
Bihar	2.36	1.13	2.38	2.05	1.41	1.15
Delhi	-3.06	1.15	-4.06	-6.94	-4.69	1.56
Goa	4.18	-11.78	4.01	-10.85	-4.05	-11.56
Gujarat	0.99	1.13	1.06	1.89	0.66	1.88
Haryana	1.55	1.37	2.94	1.28	1.51	-0.16
Himachal Pradesh	2.20	-0.71	3.26	-0.54	1.93	-1.65
Karnataka	2.76	0.56	2.57	0.90	1.82	0.07
Kerala	3.98	-4.94	2.61	-3.82	-0.15	-2.70
Madhya Pradesh	2.20	0.56	2.42	0.78	1.97	0.24
Maharashtra	2.86	-0.21	2.81	0.36	1.33	0.14
Orissa	1.86	0.62	1.86	1.46	2.07	0.05
Punjab	-3.61	0.98	-4.25	2.38	-0.40	6.62
Rajasthan	1.77	-0.13	2.21	-0.20	1.54	2.16
Tamil Nadu	2.31	-2.34	2.22	-1.79	0.66	0.54
Uttar Pradesh	2.03	-0.12	2.23	-0.14	1.64	-0.32
West Bengal	-4.87	-0.41	-5.62	0.04	0.84	0.36
All-India	2.63	0.01	2.68	0.54	1.61	0.04

Source : As in Table 2

In terms of UPSS measure too there has been a sharp decline in employment growth in primary sector in the post-reform period. Interestingly, Punjab recorded a very high rate of growth of employment (6.62 percent per annum) in the post-reform period.

West Bengal, which recorded negative or almost zero growth of employment as per CDS and CWS measures respectively, has witnessed a positive, *albeit* mild employment growth in the post-reform years. Like in CDS and CWS, UPSS also recorded a deceleration in primary sector employment in the post-reform period in all but few states notably Gujarat and Punjab.

3. Secondary Sector Employment Growth in States

The post-reform period has witnessed a rise in secondary sector growth at the all-India level. However, only CDS measure shows a rise in employment growth in the post-reform years in comparison to pre-reform era. In contrast, both CWS and UPSS measures show a deceleration in secondary sector employment in the post-reform period. In this respect, CWS is different from CDS. Among the states recording high growth of manufacturing output in the post-reform period, Maharashtra, Gujarat, Karnataka and M.P. show significant acceleration in employment growth as per CDS measure. Punjab, U.P., Orissa, Haryana, Assam and Bihar have also shown very secondary sector employment growth in the post-liberalisation period. In contrast, there has been a deceleration in secondary sector employment growth in the post-reform period in Tamil Nadu, West Bengal, Andhra Pradesh and Rajasthan.

In terms of UPSS measure, secondary sector employment has accelerated in the post-reform period only in a few states, notably Assam, Bihar, Kerala, Orissa, Punjab and U.P. In all other states, it has decelerated in post-reform period. Once again, we find a divergence between output growth and employment growth in the secondary sector in both pre and post-reform years. It appears that there are many structural factors influencing the relationship between the two at the aggregate and at the disaggregated level. One of them could be real wage, which is expected to influence employment significantly especially in the post-reform period. We shall examine this in a separate study later.

Table 8

Growth of Secondary Sector Employment in Major Indian States*(Annual Average in Percent)*

<i>Criteria</i>	<i>C</i>	<i>D</i>	<i>S</i>	<i>C</i>	<i>W</i>	<i>S</i>	<i>U</i>	<i>P</i>	<i>S</i>	<i>S</i>
<i>States</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>
Andhra Pradesh	2.01	1.91		2.20	0.41		2.87	0.16		
Assam	-5.09	6.28		-3.86	3.40		2.29	3.52		
Bihar	-3.49	5.86		-3.43	5.33		-0.69	7.60		
Delhi	-1.68	-0.68		-2.12	1.00		4.76	0.35		
Goa	-1.19	4.24		-1.96	2.37		1.10	4.87		
Gujarat	-1.35	2.57		5.53	-0.39		4.94	-0.51		
Haryana	0.43	7.34		0.78	4.82		4.63	4.83		
Himachal Pradesh	3.86	4.19		3.33	4.21		6.09	5.37		
Karnataka	1.62	3.35		2.33	0.69		2.72	0.75		
Kerala	2.62	3.63		3.39	2.45		2.44	3.68		
Madhya Pradesh	0.25	2.67		0.00	2.00		0.76	3.69		
Maharashtra	0.60	4.42		0.81	2.13		2.53	1.64		
Orissa	-1.90	5.65		-0.85	3.62		1.21	4.80		
Punjab	-4.01	4.40		-5.15	2.56		2.23	5.21		
Rajasthan	4.66	2.61		4.28	2.41		5.11	3.49		
Tamil Nadu	2.78	2.17		2.67	1.76		3.01	2.89		
Uttar Pradesh	-0.82	4.54		-0.70	2.60		2.02	5.18		
West Bengal	-4.04	-0.15		0.16	-1.57		4.57	0.20		
All-India	2.35	3.03		2.73	1.53		3.00	2.37		

Source : As in Table 2

4. Tertiary Sector Employment Growth in States

It has already become a controversy at the policy level whether tertiary sector can absorb the surplus labour in the primary sector. If we look at table 9, then it becomes clear that there has been a deceleration in the growth of employment in the tertiary sector in the post-reform period at the all-India level. This is evident in all three measures of employment. It is well known that high growth in the post-reform years was sustained mainly through an acceleration of GDP from tertiary sector. The contrasting behaviour in employment and output growth therefore needs a detailed investigation. Perhaps a disaggregated analysis of output and employment in the tertiary sector, especially in the dynamic tertiary activities, such as, information and communication technology, finance, telecommunications, etc. can provide a clear picture on this.

Table 9

Growth of Tertiary Sector Employment in Major Indian States*(Annual Average in Percent)*

<i>Criteria</i>	<i>C D S</i>		<i>C W S</i>		<i>U P S S</i>	
	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>
Andhra Pradesh	2.75	1.18	2.88	1.41	3.45	1.73
Assam	-3.48	5.75	-3.65	7.13	3.24	8.15
Bihar	-0.84	0.58	-0.75	0.65	2.31	2.63
Delhi	-1.92	4.30	-1.66	4.22	4.10	5.41
Goa	1.23	1.27	1.73	2.10	2.79	0.50
Gujarat	-2.76	2.36	3.42	3.84	4.26	3.55
Haryana	-1.54	0.85	-1.21	2.17	4.92	1.64
Himachal Pradesh	3.41	2.01	2.96	2.18	5.36	3.47
Karnataka	3.63	2.41	3.60	3.08	4.26	3.03
Kerala	2.66	3.84	3.36	3.58	3.37	4.46
Madhya Pradesh	3.62	3.27	3.85	3.43	4.35	3.87
Maharashtra	4.31	2.28	4.18	3.60	4.88	2.69
Orissa	-1.56	-1.78	-1.65	-1.03	2.37	0.82
Punjab	-3.30	2.21	-3.94	2.89	4.06	4.10
Rajasthan	4.60	2.21	4.45	2.90	5.74	2.17
Tamil Nadu	2.46	3.87	2.53	3.55	3.09	2.78
Uttar Pradesh	-1.55	2.13	-1.53	2.11	3.07	3.02
West Bengal	-4.30	1.48	-0.74	1.72	3.63	1.87
All-India	3.33	2.26	3.44	2.76	3.94	2.80

Source : As in Table 2

At the state-level, we observe a sharp acceleration in tertiary sector employment in post-reform period in Assam, Delhi, Gujarat, Kerala, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal as per CDS measure. In contrast, there has been a significant decline in employment growth in tertiary sector in Karnataka, Madhya Pradesh, Maharashtra and Rajasthan in the post-reform years. Interestingly, Karnataka, which is the leading state in information technology, have recorded slower employment growth in tertiary sector in the post-liberalisation era by all the measures of employment. Andhra Pradesh, another upcoming information technology state, has also witnessed a similar fall. On the other hand, in Tamil Nadu, tertiary sector employment growth increased in post-reform period as per CDS and CWS criteria, but declined as per UPSS measures. In Maharashtra, tertiary sector employment decelerated in the post-reform period sharply as per CDS and UPSS measures and mildly as CWS measure. In Gujarat, on the other hand, there has been a big rise in tertiary sector employment as per CDS measure, a mild rise as per CWS measure and a significant fall as per UPSS measure. Once again it appears that

the three measures of employment provides three different patterns of employment growth. One cannot therefore generalise except to state that there has been a deceleration in employment in the tertiary sector employment in the post-reform period.

5. Aggregate Employment Elasticity Across States

The employment elasticity with respect to output is measured as the ratio between the growth of employment and growth of output. This measure gives an average employment intensity of output and it subsumes all other factors affecting employment, such as wage rate, technology and labour productivity. Further, the average employment elasticity measured in this manner can sometime create confusion at the policy level; if the employment elasticity of output rises then it may on the one hand indicate more employment generation and on the other hand, it may indicate a decline in average labour productivity. A rigorous analysis of employment elasticity should be therefore done on the basis of production function, relating output to labour, capital, technology, etc. Pending that, an average measure of employment elasticity will only give a broad indication of absorption of labour across states and sectors.

Table 10 shows employment elasticity of output at the all-India and in all major states. The same in primary, secondary and tertiary sectors are given in Tables 11, 12 and 13 respectively. At the all-India level, there has been a significant decline of employment elasticity in the post-reform period corresponding to all measures of employment. The estimated elasticity in the post-reform years is now below 0.2, in comparison to about 0.5 in the pre-reform period. In CDS measure, the employment elasticity has risen in Gujarat, Haryana, Orissa, Punjab and West Bengal. It has fallen in most other states. As per CWS criterion, it has risen in Assam, Bihar, Haryana and Punjab in the post-reform period. Except in Assam, in no other states, the employment elasticity of output is now close to unity. In some states, notably in West Bengal, Tamil Nadu, Uttar Pradesh, Rajasthan and Andhra Pradesh, it is almost negligible (below 0.1).

In terms of UPSS measure, the employment elasticity of output has fallen in some and risen in other states. Punjab and Assam has almost unitary elasticity in the post-reform years. It may be noted that a rise in employment elasticity can occur either due to acceleration in employment growth or due to a deceleration in output growth rate. The

high employment elasticity in Assam and Punjab is solely on account of the latter, i.e., deceleration in output growth. If we expect an average growth of labour force of at about two percent per annum, then according to the employment elasticity observed in the post-reform years, whether measured through any alternative employment concepts, then output must grow atleast at about 12 percent to absorb the entire labour force. Given the present GDP growth of about six percent per annum, this appears to be a tall order. A structural change in employment behaviour, is therefore a precondition for attaining full employment.

Table 10

Employment Elasticity Across Major Indian States

<i>Criteria</i>	<i>C</i>	<i>D</i>	<i>S</i>	<i>C</i>	<i>W</i>	<i>S</i>	<i>U</i>	<i>P</i>	<i>S</i>	<i>S</i>
<i>States</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>
Andhra Pradesh	0.59	0.08		0.58	0.10		0.50	0.05		
Assam	-1.13	0.86		-0.99	0.91		0.70	0.95		
Bihar	0.32	0.32		0.34	0.46		0.39	0.43		
Delhi	-0.20	0.27		-0.20	0.31		0.43	0.38		
Goa	0.17	-0.09		0.15	-0.08		-0.04	-0.13		
Gujarat	-0.09	0.24		0.41	0.26		0.36	0.25		
Haryana	0.04	0.41		0.15	0.38		0.32	0.21		
Himachal Pradesh	0.46	0.04		0.58	0.05		0.49	0.00		
Karnataka	0.42	0.17		0.42	0.16		0.37	0.10		
Kerala	0.49	-0.01		0.45	0.04		0.20	0.22		
Madhya Pradesh	0.34	0.25		0.36	0.27		0.33	0.22		
Maharashtra	0.37	0.21		0.36	0.25		0.30	0.17		
Orissa	0.16	0.26		0.20	0.40		0.51	0.21		
Punjab	-0.74	0.39		-0.89	0.51		0.22	1.15		
Rajasthan	0.35	0.09		0.38	0.09		0.35	0.28		
Tamil Nadu	0.36	0.08		0.36	0.07		0.25	0.26		
Uttar Pradesh	0.15	0.18		0.17	0.13		0.35	0.20		
West Bengal	-0.83	0.03		-0.58	0.02		0.44	0.10		
All-India	0.51	0.15		0.53	0.18		0.42	0.15		

Source : Estimated by dividing employment growth by GSDP growth

6. Primary Sector Employment Elasticity

The employment elasticity of output in the primary sector is almost zero in the post-reform period in both CDS and UPSS measures. Only CWS criterion shows a positive elasticity at the all-India level. In almost all the states, there has been a sharp fall in employment elasticity in the post-reform years in the primary sector. In some states, notably, Andhra Pradesh, Assam, Bihar, Kerala, Tamil Nadu, Uttar Pradesh and West

Bengal there is a negative elasticity. The CWS measure shows a slightly better result but even under this measure, employment elasticity turns out to be negative (in some cases highly negative in the post-reform period). Traditionally, the primary sector has provided the bulk of employment in the economy. As mentioned earlier, there has been no significant decline in the primary sector output growth in the post-reform years. It appears therefore either the sector has reached its saturation in terms of employment potential or the primary sector is becoming increasingly capital intensive. One conclusion that may be drawn from this is that in the long-run there has to be a rise in employment elasticity in non-agricultural activities to reduce the overall unemployment in the economy.

Table 11

Primary Sector Employment Elasticity Across Major Indian States

<i>Criteria</i>	<i>C D S</i>		<i>C W S</i>		<i>U P S S</i>	
	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>
Andhra Pradesh	0.99	-0.10	0.96	0.17	0.68	-0.11
Assam	-2.11	-1.46	-1.79	-1.36	1.18	-2.84
Bihar	-3.53	-2.56	-3.55	-4.66	-2.10	-2.61
Delhi	-0.46	0.45	-0.61	2.75	-0.71	-0.62
Goa	1.16	-10.24	1.11	-9.43	-1.13	-10.05
Gujarat	1.10	0.51	1.18	0.85	0.73	0.84
Haryana	0.22	0.92	0.42	0.86	0.21	-0.11
Himachal Pradesh	0.72	-2.19	1.06	-1.66	0.63	-5.09
Karnataka	0.73	0.14	0.68	0.22	0.48	0.02
Kerala	0.87	-5.15	0.57	-3.98	-0.03	-2.81
Madhya Pradesh	0.73	0.33	0.80	0.47	0.65	0.14
Maharashtra	0.57	-0.14	0.56	0.25	0.26	0.10
Orissa	2.95	1.78	2.96	4.17	3.28	0.13
Punjab	-0.81	0.50	-0.95	1.21	-0.09	3.36
Rajasthan	0.46	-0.02	0.57	-0.04	0.40	0.41
Tamil Nadu	0.39	-1.72	0.37	-1.32	0.11	0.40
Uttar Pradesh	0.67	-0.04	0.73	-0.05	0.54	-0.12
West Bengal	-0.99	-0.11	-1.14	0.01	0.17	0.09
All-India	0.85	0.00	0.87	0.18	0.52	0.01

Source : Estimated by dividing employment growth by GSDP growth

7. Employment Elasticity in Industrial Sector Across States

We have noted earlier that there has been a spurt in the industrial growth in the post-reform period at the all-India and also in major industrial states. In contrast, however, there is no evidence of rise in employment intensity in the secondary sector in the post-

reform period, if at all there is a decline. There are however, some positive indications. For instance, in Maharashtra, the employment elasticity has risen significantly in the post-liberalisation period as measured by CDS. By UPSS criterion, however, there has been a decline in employment elasticity in the secondary sector in Maharashtra. In Haryana, Bihar, Assam, Kerala, Madhya Pradesh, Punjab and Uttar Pradesh also there has been a rise in secondary employment elasticity as per CDS measure. As per UPSS measure, there has been a fall in employment elasticity in almost all states in the post-reform period. It is interesting to note that while secondary sector employment elasticity was in general lower than the primary sector employment elasticity in the pre-liberalisation era, in the post-reform period the secondary sector employment elasticity has become higher. If this trend continues then India may start following the general development pattern of gradual shift of employment from primary to secondary sector. However, the employment elasticity in the secondary sector even after the post-reform period has been quite moderate and therefore it cannot as yet bring down the overall unemployment rate in the near future.

Table 12

Secondary Sector Employment Elasticity Across Major Indian States

<i>Criteria</i>	<i>C D S</i>		<i>C W S</i>		<i>U P S S</i>	
	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>
<i>States</i>						
Andhra Pradesh	0.36	0.29	0.39	0.06	0.51	0.02
Assam	-2.43	3.17	-1.84	1.72	1.09	1.78
Bihar	-0.72	0.86	-0.71	0.79	-0.14	1.12
Delhi	-0.16	-0.16	-0.21	0.24	0.46	0.08
Goa	-0.17	0.35	-0.29	0.19	0.16	0.40
Gujarat	-0.18	0.31	0.73	-0.05	0.65	-0.06
Haryana	0.03	1.03	0.06	0.67	0.34	0.67
Himachal Pradesh	0.46	0.39	0.40	0.39	0.72	0.50
Karnataka	0.21	0.35	0.30	0.07	0.35	0.08
Kerala	0.52	2.60	0.67	1.75	0.48	2.63
Madhya Pradesh	0.03	0.47	0.00	0.35	0.09	0.65
Maharashtra	0.09	0.63	0.12	0.30	0.37	0.23
Orissa	-0.26	2.22	-0.12	1.42	0.16	1.88
Punjab	-0.65	0.60	-0.84	0.35	0.37	0.72
Rajasthan	0.45	0.24	0.41	0.22	0.49	0.32
Tamil Nadu	0.44	0.38	0.42	0.31	0.48	0.60
Uttar Pradesh	-0.12	0.56	-0.10	0.32	0.29	0.64
West Bengal	-0.77	-0.02	0.03	-0.24	0.87	0.03
All-India	0.36	0.26	0.42	0.13	0.46	0.20

Source : Estimated by dividing employment growth by GSDP growth

8. Tertiary Sector Employment Elasticity Across States

We have already observed that corresponding to output growth, the employment growth in the tertiary sector has been quite moderate. Further, we witness a deceleration in tertiary sector employment elasticity at the all-India level in all three measures of employment. On the positive side however, even after deceleration, the employment elasticity in the tertiary sector turns out to be higher than in the secondary sector. This is true for all measure of employment. While in general there has been a deceleration in tertiary sector employment elasticity across states in the post-reform years, the notable exceptions are Kerala, Punjab, Uttar Pradesh and West Bengal as per CDS measure and Assam, Haryana, Punjab and Uttar Pradesh as per CWS measure. In terms of UPSS measure, the deceleration in tertiary sector employment elasticity has been sharper. The only major exception in this regard is Assam, which seems to have recorded a very high elasticity in the post-reform period, probably due to a sharp deceleration in output growth.

Table 13

Tertiary Sector Employment Elasticity Across Major Indian States

<i>Criteria</i>	<i>C D S</i>		<i>C W S</i>		<i>U P S S</i>	
	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>	<i>1983-93/94</i>	<i>1993/94-99/00</i>
Andhra Pradesh	0.41	0.17	0.44	0.20	0.52	0.25
Assam	-0.46	1.65	-0.49	2.05	0.43	2.34
Bihar	-0.09	0.08	-0.08	0.08	0.25	0.34
Delhi	-0.21	0.37	-0.18	0.36	0.45	0.46
Goa	0.12	0.11	0.16	0.18	0.26	0.04
Gujarat	-0.30	0.28	0.38	0.45	0.47	0.41
Haryana	-0.19	0.09	-0.15	0.23	0.59	0.18
Himachal Pradesh	0.56	0.23	0.48	0.25	0.88	0.40
Karnataka	0.42	0.24	0.42	0.30	0.50	0.30
Kerala	0.29	0.45	0.37	0.42	0.37	0.52
Madhya Pradesh	0.37	0.44	0.39	0.46	0.44	0.52
Maharashtra	0.44	0.32	0.43	0.50	0.50	0.38
Orissa	-0.22	-0.24	-0.24	-0.14	0.34	0.11
Punjab	-0.69	0.30	-0.82	0.39	0.85	0.56
Rajasthan	0.45	0.24	0.43	0.32	0.56	0.24
Tamil Nadu	0.32	0.41	0.33	0.37	0.41	0.29
Uttar Pradesh	-0.20	0.33	-0.20	0.33	0.40	0.47
West Bengal	-0.72	0.15	-0.12	0.18	0.61	0.19
All-India	0.50	0.36	0.52	0.44	0.60	0.45

Source : Estimated by dividing employment growth by GSDP growth

Like in the case of secondary sector, the tertiary sector would have to grow at a much faster rate to absorb the surplus labour from the primary sector. Although we have not analysed the disaggregated employment behaviour in the tertiary sector, it may be noted that a gradual decline in public sector employment, especially in public administration, is likely to slowdown the tertiary sector employment in the coming years. Thus, unless there is a countervailing rise in private services, the tertiary sector employment growth and elasticity may not be sustainable in the coming years.

VII. Summary and Conclusion

This paper presents growth rate of employment based on alternative measures of employment used by the National Sample Survey Organisation, namely, Current Daily Status, Current Weekly Status and Usual Principal & Subsidiary Status. Our main objective has been to compare the employment behaviour in the pre and post-reform period. Since 1987 was a bad agricultural year, the growth rate of employment in that year compared to a good agricultural year of 1983 turned out to be very poor. In view of this, we have compared the growth rate of employment between NSS rounds 1983 (38th round) to 1993-94 (50th round) – defined as pre-reform period with NSS rounds 1993-94 (50th round) to 1999-00 (55th round) – defined as post-reform years. From these NSS rounds, we have computed detailed data on employment for primary, secondary and tertiary sectors for both all India and 18 major states. We have also computed growth rate of Gross State Domestic Product (GSDP) for the corresponding period for estimating the employment elasticity of output. Since 1993-94 based GSDP series are available only from that year, we have therefore extended it backwards by applying appropriate price and quantum correction factors on the 1980-81 GSDP series.

Our results indicate that while there has been a mild acceleration in the output growth rate in the post-reform period, there has been a sharp deceleration in the employment growth rate during the same years. This is evident not only at the all-India level but also across states and sectors. There are however some variations among states. What is more significant is that broad pattern of decline in employment growth is invariant with respect to different measures of employment. There is therefore a clear evidence of a deceleration in employment growth in the 1990s.

Traditionally, the primary sector recorded the highest employment elasticity. In the post-reform years however, the employment elasticity in the primary sector has become virtually nil. The employment elasticity in the secondary and tertiary sector has also declined in the post-reform period. Currently, the tertiary sector registered the highest employment elasticity, followed by the secondary sector. There are however considerable variations across states and by alternative measures of employment. In general, the employment performance has been worse even in states registering very high growth in the post-reform years. Finally, given the current state of employment behaviour, it appears that the jobless growth has become now a serious problem in the Indian economy.

Notes

1. The first of such committee headed by Montek Singh Ahluwalia, “Report of the Task Force on Employment Opportunities” was constituted in January 1999 and submitted its report on July 2001. While S.P. Gupta in May 2002 and the third one “Working Group on Employment Monitoring”, under the chairmanship of Prof. Y.K. Alagh submitted the second report of “Special Group on Targeting Ten Million Employment Opportunities Per Year” has since started its work.
2. Government of India (2001), p. 44.
3. See Bhattacharya and Mitra (1993), p. 1992.
4. Government of India (2002), p. 24.
5. For a detailed analysis of disparity of growth across states in the pre and post-reform era, see Bhattacharya and Sakthivel (2003).
6. See Government of India (2002), p. 20.
7. See NSSO (2000), p. 36.
8. See NSSO (2000), p. 37.
9. Bhattacharya, B.B. and Sakthivel, S. “Regional Growth and Disparity in India : A Comparison of Pre and Post-Reform Decades”, *Economic and Political Weekly*, Forthcoming.

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