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**Working Paper**

## Northern states versus Southern states: A Comparative analysis

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WORKING PAPER NO. 134

**NORTHERN STATES VERSUS SOUTHERN STATES:  
A COMPARATIVE ANALYSIS**

**MATHEW JOSEPH**

May, 2004



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**MATHEW JOSEPH**

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## **Foreword**

The reforms of the 1990s significantly improved the growth rate of the Indian economy but their impact has not been uniform across all states. Southern states grew faster while northern states, which were at the forefront of the growth performance in the 1980s, grew much slower. On the human development front as well the North lagged behind in the post-reform period. The experience of the 1990s has also brought out that reforms at the state level has become crucial to the future growth and well being of the country.

The study undertakes a deep analysis of the post-reform developments in the states of both northern and southern regions. It examines the developments in these states with regard to sector-wise economic performance, social progress, state finances, banking infrastructure, power, IT & biotechnology, and the reform initiatives undertaken in different areas including e-governance. The study also proposes important policy measures needed for reviving agriculture and industry in these states as well as improving their finances.

**Arvind Virmani**  
Director & Chief Executive  
ICRIER

May 2004

# **Northern States versus Southern States: A Comparative Analysis**

Mathew Joseph <sup>\*</sup>

## **Abstract**

The performance of the northern states deteriorated economically and more so socially in the last decade or so while the states in the South surged ahead in the post-reform period. Southern states led by Andhra Pradesh and Karnataka have undertaken wide-ranging reforms for some time now whereas northern states have initiated reforms in a limited way. States in both the regions have a long way to go in restoring fiscal balance and revitalising their agriculture and industry.

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<sup>\*</sup> The author would like to thank Bibek Debroy, N.J. Kurian and Rupa Rege Nitsure for their valuable comments on an earlier draft of the paper.

## **I Introduction**

The performance of India depends on the performance of its constituent states. Yet all major indicators of performance are collected, compiled and analysed separately for the country and for the states. However, there is an increasing realisation that unless each state performs on its own, India cannot do well at all. The focus of attention has been moving to the happenings in the states<sup>1</sup>. The Tenth Five Year Plan (2002-07), for the first time, specifies targets of overall and by broad sector, the growth rate for each state to be consistent with the national target of growth rate at 8 percent per annum.

The last decade or so following reforms saw an improvement in economic growth and social development in the country as a whole. The performance of all the states, however, has not been uniform during this period and a number of states have underperformed. While southern states and, to some extent, western states made significant progress, northern states in general did not do well. This has pushed down their relative position *vis-à-vis* other states and sharpened inter-state disparities. This is a matter of serious concern for planners and policy makers. The past tepid performance of northern states is reflected in a number of areas and has important implications on the ability of the country to climb further up the development ladder. An attempt has been made in this paper to understand the various facets of underperformance of the northern states in comparison with other regions particularly the southern states and all-India, and suggest the possible ways by which these states could raise their future economic and social performance.

## **II Size and Population**

Rajasthan is the largest state in the country with 10.8 per cent of India's geographical area and Uttar Pradesh the fifth largest with 7.6 per cent area. Uttar Pradesh is the most populous state with 16.2 per cent of India's population. Haryana and Punjab

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<sup>1</sup> The need to pay greater attention to growth performance of individual states and the role of state government policies in determining state level performance has been well articulated in Ahluwalia (2002). This paper compares the economic performance of major states in the post-reform period up to 1997-98 in comparison with their performance in the 1980s.

registered a fast growth in urbanisation in the last decade with the ratio of the urban population going up from 24.6 per cent in 1991 to 29.0 per cent in 2001 for the former and from 29.5 per cent to 33.9 per cent for the latter. Chandigarh and Delhi are predominantly urban with the urban population ratio touching 90 per cent and 93 per cent respectively in 2001. The rest of the northern states have had low and slow urbanisation with Himachal Pradesh at just 9.8 per cent in 2001, Uttar Pradesh 20.8 per cent, Rajasthan 23.4 per cent and Jammu & Kashmir at 24.9 per cent, all below the national average of 27.8 per cent.

Annual population growth during 1991-2001 has been higher than the national average in all northern states and UTs except Himachal Pradesh and Punjab where the growth has been 1.6 per cent and 1.8 per cent per annum respectively against the national growth of 1.9 per cent per annum in the last decade. Being fast growing cities, Chandigarh and Delhi registered a high population growth of 3.4 per cent and 3.8 per cent per annum respectively during the last decade. In Haryana, Jammu & Kashmir, Rajasthan and Uttar Pradesh, the rate of population growth either increased or remained the same in the range of 2.3 to 2.6 per cent per annum in the last decade. The northern states, as a whole, remained the area of highest population growth of 2.4 per cent and it is unique in not registering any fall during the last decade where as it declined in all other regions in this period.

The density of population in 2001 remained significantly above the national average of 324 persons per sq. km. in Uttar Pradesh (689 persons), Punjab (482) and Haryana (477) which occupied the fourth, fifth and sixth positions respectively in this regard among the states. Delhi (9294 persons per sq. km) and Chandigarh (7903 persons) remained the first and second densely populated among the UTs in 2001. On the contrary, Himachal Pradesh, Jammu & Kashmir, Rajasthan and Uttranchal are sparsely populated having density of population much below the national average.

Andhra Pradesh is the biggest south Indian state with an area that comes fourth in India and a population that is fifth in the country. In size, Karnataka comes next to Andhra Pradesh among the southern states, and in population, third after Andhra Pradesh and



Tamil Nadu. Thus Kerala is the smallest south Indian state in size and population. Kerala, however, has the highest population density in the South, which is the third in the country after West Bengal and Bihar. Andhra Pradesh and Karnataka are sparsely populated states with density of population lower than the all-India average.

Tamil Nadu is the most urbanised state in the country with about 44 per cent of population living in urban areas in 2001 (34 per cent in 1991) against 42 per cent for Maharashtra (39 per cent in 1991). Urbanisation grew slowly in Karnataka during the last decade to 34 per cent in 2001 from 31 per cent in 1991. In Andhra Pradesh and Kerala the process of urbanisation has come to a virtual stand still at 26 to 27 per cent with no change in the last decade.

All south Indian states except Karnataka have made substantial progress in population control with Kerala registering the lowest growth in population in the country of 0.9 per cent per annum during the last decade followed by Tamil Nadu (1.1 per cent) and Andhra Pradesh (1.3 per cent). Karnataka's annual population growth also declined in the last decade to 1.6 per cent from 1.9 per cent and remains below the all-India growth.

### **III Growth and its Pattern**

Table 1 gives an account of the growth performance and its sectoral composition for the states and UTs in northern and southern regions during the last two decades in comparison with the average growth and its pattern in other regions. This brings out some interesting facts. Firstly, there has been an all-round deterioration in the growth rates of the northern and northeastern regions during the 1990s, while growth performance improved in all other regions in this period. Secondly, the South showed improved performance by a full percentage point from 5 per cent per annum in 1980s to 6 per cent in the 1990s, and this has been reflected in the better performance in all the three sectors: agriculture, industry and services. Thirdly, the West and East could improve its growth record only marginally in the 1990s and this is due to the poor show of their agriculture sector in this period.

Looking more closely at the individual northern states, we note the following facts: The growth in all the northern states except Himachal Pradesh and Jammu & Kashmir decelerated in the 1990s; the growth of agriculture in all the northern states except perhaps in Jammu & Kashmir either deteriorated significantly (except Uttar Pradesh) or remained stagnant at low levels (Uttar Pradesh); industrial growth also suffered in all the states except Himachal Pradesh and Rajasthan where growth accelerated in fact in the 1990s; the growth in the services sector also worsened in the last decade in all northern states except Punjab and perhaps Jammu & Kashmir. This is in sharp contrast with individual southern states where growth accelerated in the 1990s except a mild deceleration in the case of Andhra Pradesh.

<b>Table 1: Growth in Gross State Domestic Product by Sector at Constant Prices: Northern and Southern States &amp; UTs (% Per Annum)</b>								
	<b>1981-90</b>				<b>1990-01</b>			
	<b>Agriculture</b>	<b>Industry</b>	<b>Services</b>	<b>Total</b>	<b>Agriculture</b>	<b>Industry</b>	<b>Services</b>	<b>Total</b>
Haryana	3.9	8.4	8.1	6.1	2.7	5.9	7.5	5.2
Himachal Pradesh	2.8	6.3	7.0	5.0	0.7	10.3	6.2	5.7
Jammu & Kashmir	n.a	n.a	n.a	3.1	4.5	1.2	7.8	5.4
Punjab	5.5	7.7	4.6	5.7	2.6	6.7	5.6	4.6
Rajasthan	5.0	6.9	8.4	6.5	2.0	8.4	6.6	5.4
Uttar Pradesh	2.5	7.9	6.5	4.9	2.5	4.9	4.6	3.9
Chandigarh	n.a	n.a	n.a	n.a	-1.9	10.1	9.5	9.4
Delhi	3.9	8.7	7.6	7.8	-3.7	5.9	7.1	6.6
<b>Total NORTH</b>	<b>3.6</b>	<b>7.8</b>	<b>6.9</b>	<b>5.6</b>	<b>2.4</b>	<b>6.1</b>	<b>5.8</b>	<b>4.8</b>
<b>Total WEST</b>	<b>3.1</b>	<b>6.3</b>	<b>7.2</b>	<b>5.6</b>	<b>0.4</b>	<b>7.0</b>	<b>7.6</b>	<b>5.8</b>
Andhra Pradesh	3.9	5.4	6.3	5.1	2.7	6.0	6.0	4.9
Karnataka	3.2	6.5	7.5	5.6	4.9	7.0	8.9	7.1
Kerala	1.2	3.3	5.0	3.3	3.2	5.9	7.2	5.8
Tamil Nadu	4.4	4.6	6.6	5.4	3.3	6.2	7.8	6.3
Pondicherry	0.3	4.7	5.4	4.2	0.6	8.4	10.0	7.4
<b>Total SOUTH</b>	<b>3.4</b>	<b>5.0</b>	<b>6.5</b>	<b>5.0</b>	<b>3.5</b>	<b>6.3</b>	<b>7.4</b>	<b>6.0</b>
<b>Total EAST</b>	<b>3.2</b>	<b>5.0</b>	<b>5.2</b>	<b>4.4</b>	<b>1.3</b>	<b>4.4</b>	<b>7.1</b>	<b>4.5</b>
<b>Total NORTHEAST</b>	<b>2.8</b>	<b>6.6</b>	<b>5.8</b>	<b>4.7</b>	<b>1.7</b>	<b>3.9</b>	<b>4.9</b>	<b>4.0</b>
<b>TOTAL: All States/U.Ts</b>	<b>3.4</b>	<b>6.1</b>	<b>6.5</b>	<b>5.2</b>	<b>2.0</b>	<b>6.2</b>	<b>6.9</b>	<b>5.3</b>
<b>ALL-INDIA</b>	<b>3.4</b>	<b>7.0</b>	<b>6.9</b>	<b>5.6</b>	<b>2.7</b>	<b>5.9</b>	<b>7.4</b>	<b>5.6</b>
<i>Note: For Chandigarh, the growth rates in the nineties pertain to the period 1994-01.</i> <i>Source: Computed from CSO data.</i>								

While a sharp fall in the share of agriculture in state economies over the past decades has happened also in the northern states, the agriculture sector remains more

important than industry in all the northern states (except Himachal Pradesh and Rajasthan), an attribute that is shared with the states in the East and Northeast (Table 2). Punjab had about 39 per cent of GSDP originating from agriculture in 2000-01, Uttar Pradesh 32 per cent, for Haryana 31 per cent and Jammu & Kashmir at 29 per cent. In contrast, there has been substantial industrialisation in the states of Himachal Pradesh and Rajasthan in the last decade leading to the share of industry in these states rising from less than a fourth at the end of 1980s to nearly a third in recent years. For the UTs of Chandigarh and Delhi, services sector is preeminent with 71 per cent and 80 per cent of their economies respectively, and agriculture sector constituting hardly 2 per cent in 2000-01.

The sectoral compositions of the economies of the four southern Indian states show a diverse mix (Table 2). Among these states, Tamil Nadu has the biggest industrial sector share (33 per cent) in 2000-01, almost equal to that in Maharashtra, and Kerala, the smallest (22 per cent) and the other two states in between at about 25 per cent each which is some what lower than the all-India share of about 27 per cent. Tamil Nadu has relatively the smallest agriculture sector in the state economy (16 per cent) whereas Andhra Pradesh has the highest (30 per cent), followed by Karnataka (27.5 per cent) and Kerala (24 per cent). Thus for Andhra Pradesh and Karnataka, agriculture is more dominant in their economies than in the national economy where its share is about 25 per cent. The relative importance of the services sector in the state economy is highest for Kerala (54.5 per cent) followed by Tamil Nadu (51.5 per cent) and Karnataka (47 per cent). Andhra Pradesh has the smallest services sector in the South constituting only 45 per cent of the total. The share of services sector in both Andhra Pradesh and Karnataka is smaller than for the all-India average (48 per cent) in 2000-01. It may be noted that a rapid tertiarisation of the Kerala economy has occurred in recent years since 1996-97 along with an equally rapidly shrinking of its agricultural sector.

<b>Table 2: Sectoral Distribution (%) of Gross State Domestic Product: Northern and Southern States &amp; U.Ts</b>									
	<b>1980-81</b>			<b>1989-90</b>			<b>2000-01</b>		
	<b>Agriculture</b>	<b>Industry</b>	<b>Services</b>	<b>Agriculture</b>	<b>Industry</b>	<b>Services</b>	<b>Agriculture</b>	<b>Industry</b>	<b>Services</b>
Haryana	53.4	19.8	26.8	43.1	24.7	32.2	31.3	29.9	38.7
Himachal Pradesh	46.8	20.1	33.1	35.4	24.7	39.9	26.7	33.2	40.1
Jammu & Kashmir	n.a	n.a	n.a	n.a	n.a	n.a	29.4	18.4	52.2
Punjab	49.1	20.0	30.9	45.0	23.0	32.0	39.1	24.5	36.4
Rajasthan	48.9	20.9	30.1	42.1	22.1	35.7	27.3	30.3	42.4
Uttar Pradesh	50.4	16.9	32.8	39.5	23.0	37.5	32.3	23.8	43.9
Chandigarh	n.a	n.a	n.a	n.a	n.a	n.a	1.3	28.0	70.6
Delhi	4.0	25.3	70.7	4.3	25.6	70.2	1.6	18.9	79.6
<b>All NORTH</b>	<b>46.3</b>	<b>19.0</b>	<b>34.6</b>	<b>37.7</b>	<b>23.3</b>	<b>38.9</b>	<b>28.1</b>	<b>25.2</b>	<b>46.7</b>
<b>All WEST</b>	<b>34.4</b>	<b>31.9</b>	<b>33.7</b>	<b>28.4</b>	<b>33.4</b>	<b>38.2</b>	<b>15.9</b>	<b>35.7</b>	<b>48.5</b>
Andhra Pradesh	42.9	20.1	37.0	35.2	23.5	41.3	29.6	25.1	45.2
Karnataka	43.1	23.3	33.6	34.5	26.3	39.1	27.5	25.5	47.0
Kerala	36.6	25.3	38.1	30.4	27.6	42.1	23.6	21.9	54.5
Tamil Nadu	24.3	35.0	40.7	20.8	34.8	44.4	15.7	32.8	51.5
Pondicherry	18.5	54.3	27.2	15.7	46.2	38.1	7.1	44.2	48.7
<b>All SOUTH</b>	<b>36.2</b>	<b>26.4</b>	<b>37.4</b>	<b>29.9</b>	<b>28.3</b>	<b>41.8</b>	<b>23.8</b>	<b>27.2</b>	<b>49.0</b>
<b>All EAST</b>	<b>39.1</b>	<b>27.5</b>	<b>33.4</b>	<b>36.2</b>	<b>28.5</b>	<b>35.3</b>	<b>30.1</b>	<b>23.2</b>	<b>46.7</b>
<b>All NORTHEAST</b>	<b>44.7</b>	<b>14.7</b>	<b>40.6</b>	<b>35.8</b>	<b>27.5</b>	<b>36.8</b>	<b>33.2</b>	<b>22.3</b>	<b>44.5</b>
<b>TOTAL: All States/U.Ts</b>	<b>39.3</b>	<b>25.7</b>	<b>35.0</b>	<b>32.9</b>	<b>28.4</b>	<b>38.7</b>	<b>24.0</b>	<b>28.3</b>	<b>47.7</b>
<b>ALL-INDIA</b>	<b>38.9</b>	<b>24.5</b>	<b>36.6</b>	<b>31.3</b>	<b>27.6</b>	<b>41.2</b>	<b>24.9</b>	<b>26.6</b>	<b>48.5</b>
<i>Source: Constructed from CSO data.</i>									

The predominance of the services sector in Kerala is expected to pick up further speed in the future with the emphasis on tourism, technical education and health care services in the state. The World Travel and Tourism Council (WTTC) and Oxford Economic Forecasting (OEF) group study has forecast a near tripling of the current level of tourist arrivals (domestic and foreign combined) from 0.7 million to 2 million by 2012. It has estimated an 11.6 per cent annual growth in tourist arrivals in Kerala in the next decade, overtaking Turkey who is currently the fastest growing tourist destination.

Kerala government has opened up technical education to private enterprise in 2001. As a result, the number of engineering colleges sanctioned has increased from 17 in 1999 to 71 in 2002 and the number of engineering seats from about 6000 to 16,000. This change has come too late for Kerala as its neighboring states have made significant strides in technical education by allowing private sector to set up large number of engineering colleges long ago. A number of engineering seats are now vacant in Kerala and as the state is going to allow students from other states also to seek admission in engineering colleges

of Kerala, the vacancy position in engineering colleges of other southern states who are currently facing overcapacity will further aggravate<sup>2</sup>.

With high per capita income, the long tradition of nursing and paramedical education and NRI doctors, Kerala has become an ideal place for setting up super-speciality hospitals. A number of such medium and large hospitals have already come up in cities like Kozhikode in Kerala, which are funded by NRI money, and many more are expected<sup>3</sup>.

The North as a whole has been able to preserve its share in aggregate domestic product at about 27 to 28 per cent of all-States & UTs during the last two decades. This is similar to the West, which although had raised its share to almost 30 per cent in the mid-1990s came down to 28 per cent in 2000-01 (Table 3). Only the South improved its share continuously over the last two decades from about 23 per cent in 1980-81 to nearly 27 per cent in 2000-01. The East lost its share from about 18 per cent in 1980-81 to 15 per cent in 2000-01 and the Northeast marginally from above 3 per cent to less than 3 per cent in the same period.

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<sup>2</sup> The vacant seats in the engineering colleges of Tamil Nadu were 24 per cent during 2001-02 and 13 per cent in Karnataka. (See The Economic Times, Mumbai, 15 May 2003).

<sup>3</sup> See The Economic Times, Mumbai, 16 May 2003.

<b>Table 3: Share (%) in Aggregate Gross Domestic Product of Northern &amp; Southern States/U.Ts (At Current Prices)</b>					
	<b>1980-81</b>	<b>1989-90</b>	<b>1993-94</b>	<b>1996-97</b>	<b>2000-01</b>
Haryana	2.9	2.9	3.0	3.1	3.2
Himachal Pradesh	0.7	0.6	0.7	0.7	0.8
Jammu & Kashmir	1.0	0.9	0.9	0.8	0.8
Punjab	4.3	4.5	4.1	3.9	4.0
Rajasthan	3.9	4.2	4.5	5.0	4.5
Uttar Pradesh	13.2	12.4	11.0	11.2	10.7
Chandigarh	n.a	n.a	0.2	0.2	0.2
Delhi	2.3	2.6	2.8	2.9	3.4
<b>Total NORTH</b>	<b>27.3</b>	<b>27.2</b>	<b>27.1</b>	<b>27.8</b>	<b>27.6</b>
<b>Total WEST</b>	<b>27.4</b>	<b>28.0</b>	<b>29.6</b>	<b>29.8</b>	<b>28.0</b>
Andhra Pradesh	7.0	7.5	7.9	7.9	8.1
Karnataka	5.3	5.3	5.6	5.7	6.2
Kerala	3.6	3.2	3.6	3.9	4.1
Tamil Nadu	6.9	7.2	7.8	7.8	8.1
Pondicherry	0.2	0.1	0.1	0.2	0.2
<b>Total SOUTH</b>	<b>22.9</b>	<b>23.4</b>	<b>25.0</b>	<b>25.4</b>	<b>26.7</b>
<b>Total EAST</b>	<b>18.3</b>	<b>17.1</b>	<b>15.2</b>	<b>14.2</b>	<b>14.9</b>
<b>Total NORTHEAST</b>	<b>3.0</b>	<b>3.4</b>	<b>3.1</b>	<b>2.8</b>	<b>2.8</b>
<b>TOTAL: All States/U.Ts</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Source: Worked out from CSO data</i>					

In the North, the shares of all the states in aggregate domestic product have declined in the last two decades except for Haryana, Himachal Pradesh and Rajasthan where there has been some increase. Uttar Pradesh has lost its share substantially from about 13 per cent in 1980-81 to 10 ½ per cent in 2000-01. Still, it continued to be the second biggest state economy in the country after Maharashtra whose share have gone up from about 14 per cent to 15 per cent over the last two decades. Delhi improved its share from just above 2 per cent in 1980-81 to above 3 per cent in 2000-01. Punjab, the second biggest economy in the North in the 1980s, has yielded that place now to Rajasthan whose share in aggregate GDP increased from just under 4 per cent in 1980-81 to 5 per cent in the mid-1990s before falling to 4.5 per cent in 2000-01.

In the South, the shares of all the states/UT in aggregate domestic product have increased in the last two decades. The increasing shares of the southern states/UT have

been steady in the 1980s and 1990s except for Kerala and Pondicherry which registering diminished shares in the 1980s, recovered more than those declines in the 1990s.

The growth in per capita income, a function of growth in both state domestic product (SDP) and population, declined significantly in the 1990s in real terms in all the northern states except Himachal Pradesh and Jammu & Kashmir (Table 4). Region-wise, the Northeast is the only other region where deceleration in real per capita income occurred during the 1990s. While in the 1980s the per capita income growth in the northern region was only marginally lower than that of the all-India average, in the 1990s the per capita income growth in the northern region has slipped much below that of the national average. Southern states recorded the highest growth in per capita real income growth in the 1990s as in the 1980s. Among the southern states, Andhra Pradesh alone suffered a decline in the average growth in per capita real income in the 1990s in comparison with the 1980s.

<b>Table 4: Growth in Per Capita Net State Domestic Product at Constant Prices: All Northern &amp; Southern States (% Per Annum)</b>		
	<b>1981-90</b>	<b>1990-01</b>
Haryana	3.6	3.0
Himachal Pradesh	3.1	3.3
Jammu & Kashmir	-0.3	2.0
Punjab	3.8	2.5
Rajasthan	3.8	2.7
Uttar Pradesh	2.5	1.4
Chandigarh	n.a	5.8
Delhi	3.4	4.1
<b>ALL NORTH</b>	<b>3.1</b>	<b>2.3</b>
<b>ALL WEST</b>	<b>3.1</b>	<b>3.4</b>
Andhra Pradesh	4.3	3.7
Karnataka	3.4	5.4
Kerala	1.4	4.7
Tamil Nadu	3.8	5.1
Pondicherry	1.2	5.1
<b>ALL SOUTH</b>	<b>3.5</b>	<b>4.7</b>
<b>ALL EAST</b>	<b>2.2</b>	<b>2.4</b>
<b>ALL NORTHEAST</b>	<b>2.0</b>	<b>1.7</b>
<b>ALL-INDIA (Per Capita NNP)</b>	<b>3.2</b>	<b>3.5</b>
<i>Note: Regional averages are computed using GSDP shares of respective states/U.Ts in the base years as weights. For Chandigarh, the growth rate in the 1990s pertains to the period, 1994-01.</i>		
<i>Source: Worked out from CSO data.</i>		

#### **IV      Agriculture**

Uttar Pradesh is a major producer of diverse agricultural crops in the country. It is the largest producer of wheat, pulses, sugarcane, tobacco, potato and milk; the second largest producer of rice, fruits & vegetables; and the third largest producer of coarse grains. For wheat, sugarcane, potato and tobacco, the share of Uttar Pradesh varies from 30 to 40 per cent of the country's production. Punjab has concentrated its agricultural production on a select few crops like wheat for which it is the second largest in the country; and rice, cotton and potato for all of which it is the fourth largest producer. Punjab is also the second largest producer of milk in the country after Uttar Pradesh. Haryana comes next in the North for agricultural production and is the third biggest producer of wheat, cotton and rapeseed & mustard in the country. Rajasthan is the third largest producer of milk in the county and also the largest producer of some relatively minor products like bajra and rapeseed & mustard.

India is a major producer of a number of agricultural crops. It is first in the production of tea, pulses, and milk; second in the production of rice, wheat, groundnut, sugarcane, onion, and fruits & vegetables; and third in the production of potato and tobacco. Although India is a major producer of a number of agricultural crops, the productivity levels of agricultural crops in India is much lower than the international average levels except for wheat, sugarcane and tobacco where Indian yields are comparable with the world levels. While Uttar Pradesh is a major producer of a large number of agricultural crops, the productivity levels are the highest for Punjab: Punjab ranks highest in yield per unit of land in the country for rice, wheat, coarse cereals, and cotton. For oilseeds and potato, Punjab while being a very small producer, ranks third and fourth in yield respectively. Haryana ranks second in the county for yield in wheat, oilseeds and cotton. Uttar Pradesh has the highest yield in the country for pulses and tobacco and third highest yield in potato and onion. Rajasthan comes very low in yield in all the agricultural crops.



There is a distinct contrast between the agricultural sector of Kerala and that of other southern states; for Kerala, commercial crops dominate its agriculture whereas for the other three states it is more balanced between food crops and cash crops. Kerala produces over 90 per cent of India's natural rubber, over 95 per cent of pepper, over 70 per cent of cardamom, over 40 per cent of coconut, about 20 per cent of coffee beans and cashew nut, and slightly less than 10 per cent of India's tea output. Steep fall in prices of most of the commercial crops since the mid-nineties till very recently affected Kerala's agriculture severely.

Andhra Pradesh is the biggest producer of groundnut in the country (33 per cent of India's output in 2000-01) and eggs (20 per cent), second biggest producer of cotton (17 per cent) and cashew nut (19%), and third biggest producer of rice, sunflower, onion, tobacco and fruits & vegetables. The state's fertile regions are north and south coastal zones and Nellore, but they are afflicted by drainage, salinity, cyclones and floods. Andhra Pradesh has large livestock population and rich aqua resources. Karnataka is the largest producer of maize and sunflower; second largest producer of jowar and onion; and third largest producer of groundnut, coconut, and sugarcane. The state has a large arid zone, second only to Rajasthan in the country. Nearly one-sixth of the cultivable area is under horticulture crops. Karnataka has ten different agro-climatic zones offering huge potential for horticulture. Kerala is the biggest producer of raw rubber, spices and coconut, second biggest producer of cashew nut, and third biggest producer of fish after West Bengal and Gujarat. Tamil Nadu is the second largest producer of groundnut, coconut and eggs.

Tamil Nadu scores over other southern states in agricultural productivity. It has the highest yield in the country for jowar, bajra, groundnut and sugarcane in 2000-01 and second highest yield after Punjab in rice. Karnataka is the most efficient producer of maize in the country and the second most efficient producer of sugarcane. Andhra Pradesh is the most efficient producer of none of the major agricultural produce but the second most efficient producer of groundnut (after Tamil Nadu), onion (after Gujarat), tobacco (after Uttar Pradesh), and cashew nut (after Maharashtra). Kerala, the biggest producer of

coconut in the country has lost out heavily to Tamil Nadu and Andhra Pradesh in productivity.

The yield structure of agricultural crops has been related to the irrigation coverage in the respective states. Northern states are blessed with high irrigation intensity topped by Punjab at 92 per cent in 1998-99 followed by Haryana at 80 per cent and Uttar Pradesh at 66 per cent (Table 5). Rajasthan and Himachal Pradesh are less irrigated at 32 per cent and 20 per cent respectively in 1998-99, much below the low national average of 39 per cent.

<b>Table 5: Irrigation Coverage &amp; Irrigation through Canals and Tanks, 1998-99</b>		
	<b>Irrigated Area (%)</b>	<b>Canals &amp; Tanks (%)</b>
Haryana	79.8	50.6
Himachal Pradesh	18.8	2.9
Jammu & Kashmir	41.4	92.9
Punjab	92.2	32.4
Rajasthan	31.8	30.0
Uttaranchal	43.8	n.a
Uttar Pradesh	66.4	25.2
Delhi	80.0	7.7
<b>Total North</b>	<b>58.1</b>	<b>30.9</b>
<b>Total West</b>	<b>23.7</b>	<b>36.3</b>
Andhra Pradesh	44.7	53.9
Karnataka	25.3	48.4
Kerala	14.4	38.7
Tamil Nadu	54.9	50.5
<b>Total South</b>	<b>37.4</b>	<b>51.0</b>
<b>Total East</b>	<b>34.5</b>	<b>29.0</b>
<b>Total Northeast</b>	<b>15.2</b>	<b>4.2</b>
<b>All-India</b>	<b>39.2</b>	<b>36.3</b>
<i>Source: Ministry of Agriculture, Govt. of India and CMIE.</i>		

Southern states, on the whole, are less irrigated than the all-India average. However, Tamil Nadu has the largest coverage under irrigation in southern region at about 55 per cent followed by Andhra Pradesh at about 45 per cent. Karnataka has a low coverage of irrigated area at 25 per cent, which is much lower than the all-India average of 39 per cent. Kerala is the least irrigated state in the South with about only 14 per cent

coverage, which can be compared only to northeastern states. The share of irrigated area moved up substantially in the case of Tamil Nadu in the 1990s whereas the pace of irrigation was slower in other southern states.

There has been a progressive decline in the share of irrigation through government sources, predominantly from canals and tanks, at all-India level from more than half in the early 1970s to just above a third in the late 1990s. In the case of northern states, the average share of public irrigation has come down even lower to about 30 per cent and below by 1998-99 for all states except Haryana and Jammu & Kashmir (Table 5). This is also reflected in the low proportion of government expenditure on irrigation, particularly on capital expenditure, which has continued to decline through the 1990s in almost all the northern states (Table 6).

<b>Table 6: Government Expenditure on Irrigation and Flood Proportion of Aggregate Expenditure</b>			
	1991-	1996-	2001-
A. Total spending on			
	10.5	6.2	6.7
Himachal	1.4	2.4	1.8
Jammu &	3.2	2.9	3.1
	6.3	4.9	5.3
	8.4	8.9	6.1
Uttar	7.9	8.5	4.4
	1.4	0.9	0.7
Total	7.0	6.7	4.5
<b>All-</b>	<b>8.5</b>	<b>7.4</b>	<b>5.1</b>
B. Capital spending on			
	3.7	2.7	1.9
Himachal	0.7	1.2	0.9
Jammu &	1.5	0.9	1.3
	3.7	2.0	3.1
	4.4	4.6	2.1
Uttar	1.7	2.2	2.0
	0.8	0.4	0.3
Total	2.6	2.4	1.9
<b>All-</b>	<b>4.0</b>	<b>3.4</b>	<b>2.6</b>
*1992-93 for All-States & 1993-94 for Delhi @ Includes also Source : CMIE and			

Despite the high level of irrigation coverage in the northern states, productivity levels, which are relatively high in certain states have either stagnated or slowed down due to several reasons. There has been a secular shift to private irrigation from public sources,

deterioration of soil quality with excessive use of chemical fertilizers and pesticides, repetition of same crops year after year and the fall in underground water table due to indiscriminate use of pump-sets.

The sluggish growth in irrigation in the country is reflected in the fall in investment in agriculture from about 1.6 per cent of GDP in 1993-94 to 1.3 per cent in 2001-02 (Economic Survey 2003, p.172). While the state government capital expenditure on irrigation & flood control had risen by a satisfactory 14 to 15 per cent per annum during 1999-02 in Andhra Pradesh and Tamil Nadu, the growth in that expenditure in Karnataka and Kerala had been just 4 per cent per annum during the same period. For the states as a whole, the capital expenditure on irrigation & flood control had gone up by about 7 per cent per annum during 1999-02.

In the 1990s, the share of public investment in agriculture declined sharply to 28 per cent from 45 per cent in the 1980s. This is mainly due to the enlarging government subsidies on food, fertilisers, and power for farmers, which together accounted for 2.4 per cent of GDP in 2001-02. While the private sector investment in agriculture has been rising to partly compensate the falling public sector investment, the former has been in minor irrigation like tube wells and pump sets as against the large and medium irrigation done by the public sector in the form of canals and tanks. With no price for water and low or no price for electricity, that had led to the overexploitation of ground water bringing water tables down and waterlogging. Many studies have indicated that any subsidy meant for the poor is captured mostly by the better-off sections of society (Mohan, 2000; and Howes and Murgai, 2003). One politically feasible solution for reducing input subsidies to the farmer has been made by Rao (2003a and 2003b). The suggestion is to empower Water Users' Associations (WUAs) and panchayati raj institutions (PRIs) to charge and collect water and electricity rates from the farmers and, if needed, to give subsidy at a flat rate on the estimated use of electricity on holdings up to one or two hectares either to all farmers or to the small and marginal farmers. This will reduce the massive waste that characterises the present system of open-ended and opaque subsidies to farmers.

During the 1990s, the share of agriculture in the state economies has come down in most states except West Bengal and Orissa (Soman, 2002). Along with this, the share of employment in agriculture also declined in all the states. Among the northern states, the decline in the share of agriculture has been the smallest in the case of Punjab (less than 5 percentage points) and largest in Rajasthan (17 percentage points) followed by Haryana (12.5 percentage points) (Table 7). In contrast, the decline in the share of employment in agriculture has been highest in Punjab (about 16 percentage points) and lowest for Rajasthan (less than 3 percentage points) followed by Haryana (6 percentage points). This reflects the sharply falling labour intensity of agriculture in the most agrarian state in the country and this distinguishes Punjab from the rest of the northern states as well as all other states in the country. This is also corroborated by the fastest urbanisation in Punjab among the northern states, which went up from 29.5 per cent in 1991 to 34 per cent in 2001.

<b>Table 7: Share of Agriculture in GSDP and Employment &amp; Rate of Urbanisation in Northern &amp; Southern States (%)</b>						
	<b>GSDP</b>		<b>Employment</b>		<b>Urbanisation Ratio</b>	
	<b>1990-91</b>	<b>2000-01</b>	<b>1991</b>	<b>2001</b>	<b>1991</b>	<b>2001</b>
Haryana	43.8	31.3	57.8	51.6	24.6	29.0
Himachal Pradesh	33.9	26.7	n.a	n.a	8.7	9.8
Punjab	44.0	39.1	55.3	39.4	29.5	33.9
Rajasthan	44.5	27.3	68.8	66.0	22.9	23.4
Uttar Pradesh	40.7	32.3	72.2	65.6	19.8	20.8
Andhra Pradesh	35.6	29.6	68.6	62.3	26.9	27.1
Karnataka	34.2	27.5	63.1	55.9	30.9	34.0
Kerala	30.1	23.6	37.8	23.3	26.4	26.0
Tamil Nadu	18.8	15.7	59.5	49.5	34.2	43.9
<b>All-India</b>	<b>31.3</b>	<b>24.9</b>	<b>64.8</b>	<b>58.4</b>	<b>25.7</b>	<b>27.8</b>
<i>Source: CSO and Soman (2002)</i>						

Among the southern states, the decline in employment in agriculture has been sharper in Tamil Nadu and Kerala in relation to the fall in importance of agriculture in these state economies than in Andhra Pradesh and Karnataka. This indicates the high relative labour productivity of agriculture in Tamil Nadu and Kerala in comparison with the Andhra Pradesh and Karnataka agriculture. For Tamil Nadu the high labour productivity could be due to the high irrigation coverage and for Kerala, it could be due to the predominance of commercial crops, which are more remunerative. With regard to the

overall share of employment in agriculture, in Tamil Nadu, Karnataka and Andhra Pradesh about 50 to over 60 per cent of employment still originates from agriculture. This is similar for the country as a whole where nearly 60 per cent of employment is still in agriculture. In sharp contrast, in Kerala the share of employment in agriculture is below a fourth.

## **V      Industry**

We saw earlier that industrial growth slowed down in most of the northern states in the 1990s except Himachal Pradesh and Rajasthan where there had been a substantial hastening of industrial growth in the last decade resulting in a sharp rise in the share of industry in these two states. However, at least in the case of Rajasthan, employment generation has continued to be predominantly in agriculture (Table 7).

The Annual Survey of Industries (ASI) being conducted by the Central Statistical Organisation (CSO) is the most comprehensive source for nationwide and state-wise manufacturing data covering all power-driven factories employing 10 or more workers and manufacturing units employing 20 or more workers without using power. Table 8 summarises the regional shares of manufacturing value added of industries under major groupings with detailed break-ups for the northern states. It indicates that the North has a share of only about 19 per cent while the West dominates the manufacturing sector with a share of about 45 per cent of the value added, followed by a distance by the South at 26 per cent.

Among the northern states, Uttar Pradesh has the highest share in manufacturing value added of nearly 7 per cent, which is the fifth highest in the country. This, however, as we have seen earlier, is much lower than Uttar Pradesh's share in aggregate gross domestic product at about 10 ½ per cent. Next is Haryana with over 4 per cent share in manufacturing value added, followed by Punjab at 3 per cent and Rajasthan closely behind at 2 ½ per cent.

**Table 8: Share in Gross Value Added in Manufacturing of Northern States, 1999-00 (%)**

	North								West	South	East & Northeast	Total
	Haryana	HP	J&K	Punjab	Rajasthan	UP	Delhi	Total*				
Food products & beverages	3.4	0.5	0.4	6.3	2.7	9.3	3.3	26.5	41.6	24.4	7.5	100.0
Tobacco products	0.1	1.6	0.0	0.0	0.7	18.6	0.7	21.6	21.3	45.4	11.7	100.0
Textiles	2.7	1.7	0.2	8.5	4.8	4.2	0.4	22.5	40.5	28.3	8.6	100.0
Wearing apparel	12.7	0.0	0.0	0.1	1.4	5.4	16.3	35.9	11.3	52.1	0.7	100.0
Leather and products	8.0	0.3	0.0	4.4	0.7	9.5	1.9	24.8	5.6	54.6	15.0	100.0
Wood and products	39.1	0.0	0.4	0.6	6.0	14.0	0.3	61.2	10.0	11.1	17.7	100.0
Paper and products	2.8	0.1	0.1	2.4	0.9	9.4	1.3	21.5	36.7	35.6	6.2	100.0
Publishing printing & media	0.3	0.1	0.0	0.4	3.0	10.0	3.9	20.6	39.0	30.0	10.4	100.0
Coke & refinery products	0.0	0.0	0.0	0.0	4.0	0.0	0.0	4.0	38.5	21.5	36.0	100.0
Chemicals and products	0.2	0.3	0.0	1.0	1.8	5.1	1.7	10.2	61.3	28.0	0.5	100.0
Rubber and plastic products	5.4	0.4	0.0	1.5	1.3	9.4	0.7	18.8	54.2	24.0	2.7	100.0
Other mineral products	3.1	3.9	0.2	0.4	11.7	5.4	0.1	25.2	32.8	30.1	12.0	100.0
Basic metals	1.4	0.2	0.9	1.7	1.4	7.7	0.6	14.0	34.0	14.0	38.0	100.0
Metal products	4.5	0.4	0.2	3.6	0.7	3.4	2.0	15.0	49.3	28.8	6.9	100.0
Machinery and equipment	7.6	0.5	0.1	4.5	3.3	5.5	0.7	22.8	48.9	24.2	4.2	100.0
Office machinery	14.0	2.1	0.0	0.0	0.6	25.2	0.0	40.6	22.6	36.6	0.2	100.0
Electrical machinery	31.7	0.1	0.0	0.6	0.7	4.9	1.2	41.0	33.4	21.4	4.2	100.0
Radio, TV & communication equipment	2.3	1.6	1.3	3.8	0.0	11.9	2.6	23.2	49.5	23.2	4.0	100.0
Instruments, watches and clocks	8.2	1.6	0.0	0.4	2.3	4.3	4.3	21.7	37.4	38.2	2.7	100.0
Motor vehicles	0.4	0.4	0.0	3.2	0.7	7.8	1.7	14.3	47.2	33.1	5.4	100.0
Other transport equipment	16.6	0.0	0.0	9.8	3.8	9.0	0.3	39.6	39.4	17.8	3.2	100.0
Furniture manufacture	0.5	0.1	0.0	3.3	2.8	8.3	0.8	15.8	77.9	4.7	1.6	100.0
Others	0.3	0.2	0.0	0.8	0.3	3.9	2.1	7.9	65.2	19.7	7.2	100.0
<b>Total</b>	<b>4.1</b>	<b>0.6</b>	<b>0.2</b>	<b>3.0</b>	<b>2.6</b>	<b>6.6</b>	<b>1.8</b>	<b>19.2</b>	<b>45.1</b>	<b>26.3</b>	<b>9.5</b>	<b>100.0</b>
<i>*Including Uttarakhand and Chandigarh.</i>												
<i>Source: Worked out from Annual Survey of Industries (ASI) data, CSO.</i>												

Uttar Pradesh, which produces a wide variety of manufacturing products, is the biggest manufacturer of office machinery in the country (25 per cent); second biggest in wood & products (14 per cent) and furniture (8 per cent); and third biggest producer in tobacco products (19 per cent), leather & products (9 ½ per cent) and food products & beverages (9 per cent). Haryana is number one in the country for the manufacture of wood & products (39 per cent) and electrical machinery (32 per cent); number two for the manufacture of transport equipment other than motor vehicles (16 ½ per cent); and number three for office machinery (14 per cent). Punjab's major industries are transport equipment other than motor vehicles for which the state is the third biggest producer (10 per cent of country's manufacturing value added), textiles (8 ½ per cent), and food products & beverages (6 per cent). While weak in manufacturing, Rajasthan is the largest producer in the country of mineral products including cement contributing to 12 per cent of the manufacturing value added. Delhi is not a major manufacturing centre but it accounts for over 16 per cent of India's manufacture of wearing apparel, being the third largest for that in the country.

Tamil Nadu, Andhra Pradesh and Karnataka have a balanced mix of large, medium and small industries, producing a large spectrum of industrial products. Kerala, on the other hand, has predominantly medium and small industries (except the large number of state and central public enterprises) concentrating on a narrow range of products (food products, textile products, wood products, chemicals and rubber products) that are relatively less capital intensive. Data from the Annual Survey of Industries (ASI) indicate that the industry in Kerala has a low capital-output ratio and labour-capital ratio in comparison with the industry in other southern states and for all-India (Table 9). Labour productivity as measured by the value of output per unit wage in all southern states is surprisingly lower than the all-India average and much below most of the northern states and Gujarat. Here Karnataka is at the bottom among the southern states, followed by Andhra Pradesh.



ASI data for 1999-00 also show that capital efficiency of industry, which is the reciprocal of capital-output ratio, is higher in Haryana, J & K, Punjab, Chandigarh and Delhi than the national average (Table 9). Labour efficiency as measured by the value of output per worker is higher in Haryana, Himachal Pradesh, Punjab, Rajasthan, Uttar Pradesh and Delhi than the national average. Capital intensity vis-à-vis labour is lower in Punjab, Chandigarh and Delhi than the national average. More interestingly, the value of output in industry per unit wage in almost all the northern states and U.Ts, (except Jammu & Kashmir, Uttaranchal and Chandigarh) has been higher than the national average. In short, by most of the indicators on manufacturing efficiency, the northern states score over the average for the rest of India.

<b>Table 9: Capital and Labour Ratios of Industry in Various States and U.Ts, 1999-00</b>				
	<b>Capital-output ratio</b>	<b>Capital per worker (Rs. lakh)</b>	<b>Value of output per worker (Rs. lakh)</b>	<b>Value of output per unit wage (Rs.)</b>
Haryana	0.48	7.19	14.89	21.86
Himachal Pradesh	0.78	10.34	13.20	26.74
Jammu & Kashmir	0.36	2.22	6.26	14.44
Punjab	0.47	5.27	11.27	24.50
Rajasthan	0.82	10.52	12.77	23.13
Uttaranchal	0.70	6.37	9.15	16.72
Uttar Pradesh	0.83	8.90	10.68	19.18
Chandigarh	0.34	3.63	10.65	14.55
Delhi	0.29	3.73	13.03	23.08
Gujarat	0.72	10.43	14.41	23.96
Maharashtra	0.58	8.60	14.90	17.67
Andhra Pradesh	0.66	4.25	6.43	17.36
Karnataka	0.85	7.38	8.64	14.52
Kerala	0.40	3.27	8.20	18.49
Tamil Nadu	0.57	4.91	8.57	18.34
<b>ALL-INDIA</b>	<b>0.63</b>	<b>6.93</b>	<b>10.99</b>	<b>18.77</b>
<i>Source: Worked out from Annual Survey of Industries, CSO as reported in Economic Times, October 14, 2002 and September 1, 2003.</i>				

Table 10 summarises the regional share of manufacturing value added of industries under major groupings with detailed break-ups for the four southern states as given in ASI data. Among the southern states, Tamil Nadu has the highest share of 9.1 per cent, followed closely by Karnataka at 8.6 per cent, and Andhra Pradesh at 5.7 per cent and Kerala coming last at just 2.4 per cent of the manufacture value added. Tamil Nadu is number one in the country for textiles, wearing apparel, and leather goods contributing 18

per cent, 34 per cent and 49 per cent respectively of the gross value added in these sectors in the county; number two in paper & products (12.5 per cent), metal products (14 per cent), instruments, watches & clocks (19.5 per cent) and motor vehicles (22 per cent). Andhra Pradesh is the biggest in value added for tobacco products (24 per cent), and second biggest in food products & beverages (10 per cent) and mineral products (11 per cent). Karnataka is the second largest producer in tobacco products (20 per cent of gross valued added), wearing apparel (17 per cent), and radio, TV & communication equipment (15 per cent); and third largest in chemicals and products (16 per cent), coke & refinery products (8 per cent), electrical machinery (9 per cent), instruments, watches & clocks (12 per cent), and motor vehicles (7 per cent). As mentioned earlier, Kerala's industrial base is not strong. However, the state has a few agro-based industries such as food products & beverages (6 per cent), wood & products (8 per cent), and rubber & plastic products (6 per cent). In fact, the share of Kerala in value added of the factory sector in the country declined from 3.3 per cent in 1980-81 to 2.3 per cent in 1999-00, and in capital invested in the factory sector also from 2.9 per cent to 1.8 per cent in the same period (Jeromi, 2003).

Despite the indicators of a relatively higher manufacturing efficiency, the northern region lags behind the West and the South in attracting corporate investment. Its share in domestic industrial investment proposals during the post-liberalisation period up to June 2003 had been about 20 per cent against the shares of 47 per cent and 24 per cent respectively for the West and South (Table 11). With regard to the foreign direct investment (FDI) approvals, the share of the North had been still lower at 17 per cent against the West's share of 28 per cent and South's share of 22 per cent in the same period. However, Uttar Pradesh ranked four with about 7 per cent share of post-liberalisation industrial investment proposals after Maharashtra (21 per cent), Gujarat (16 per cent), and Andhra Pradesh (11 per cent). Punjab's share in domestic industrial investment proposals has been 4 ½ per cent, followed by Rajasthan at 3 ½ per cent and Haryana at nearly 3 per cent. Delhi although not attracting much domestic investment proposals, has obtained about 12 per cent of FDI approvals in the country during the post-liberalisation period, second only to Maharashtra (17 per cent). However, all the northern states obtained very

limited foreign direct investment approvals with Uttar Pradesh accounting for the largest at just less than 2 per cent share in the country.

<b>Table 10: Share in Gross Value Added in Manufacturing of Southern States, 1999-00 (%)</b>									
	North	West	South					East & Northeast	Total
			Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	Total*		
Food products & beverages	26.5	41.6	9.9	3.7	6.3	4.1	24.4	7.5	100.0
Tobacco products	21.6	21.3	23.7	20.0	0.3	1.4	45.4	11.7	100.0
Textiles	22.5	40.5	5.9	2.3	1.6	18.2	28.3	8.6	100.0
Wearing apparel	35.9	11.3	0.1	17.3	0.3	34.4	52.1	0.7	100.0
Leather and products	24.8	5.6	0.2	3.9	0.5	48.7	54.6	15.0	100.0
Wood and products	61.2	10.0	0.0	2.1	7.6	1.9	11.1	17.7	100.0
Paper and products	21.5	36.7	7.7	9.9	4.6	12.5	35.6	6.2	100.0
Publishing printing & media	20.6	39.0	13.3	3.0	4.4	9.1	30.0	10.4	100.0
Coke & refinery products	4.0	38.5	2.8	8.3	4.1	6.3	21.5	36.0	100.0
Chemicals and products	10.2	61.3	3.9	16.0	1.8	5.5	28.0	0.5	100.0
Rubber and plastic products	18.8	54.2	4.4	3.6	5.8	9.6	24.0	2.7	100.0
Other mineral products	25.2	32.8	11.0	6.6	2.0	9.8	30.1	12.0	100.0
Basic metals	14.0	34.0	6.2	3.2	1.1	3.3	14.0	38.0	100.0
Metal products	15.0	49.3	3.7	9.3	0.8	14.2	28.8	6.9	100.0
Machinery and equipment	22.8	48.9	5.0	6.2	0.6	12.2	24.2	4.2	100.0
Office machinery	40.6	22.6	2.2	11.0	3.4	2.1	36.6	0.2	100.0
Electrical machinery	41.0	33.4	8.0	9.0	0.3	3.9	21.4	4.2	100.0
Radio, TV & communication equipment	23.2	49.5	2.8	14.6	3.2	2.6	23.2	4.0	100.0
Instruments, watches and clocks	21.7	37.4	1.5	12.5	3.8	19.5	38.2	2.7	100.0
Motor vehicles	14.3	47.2	3.5	7.1	0	22.3	33.1	5.4	100.0
Other transport equipment	39.6	39.4	2.6	3.3	2.7	8.7	17.8	3.2	100.0
Furniture manufacture	15.8	77.9	0.0	1.1	0.6	3.1	4.7	1.6	100.0
Others	7.9	65.2	2.5	4.8	2.1	10.3	19.7	7.2	100.0
<b>Total</b>	<b>19.2</b>	<b>45.1</b>	<b>5.7</b>	<b>8.6</b>	<b>2.4</b>	<b>9.1</b>	<b>26.3</b>	<b>9.5</b>	<b>100.0</b>
*Including Pondicherry.									
Source: Worked out from Annual Survey of Industries (ASI) data, CSO									

Industry has been sluggish in Kerala for long since mid-1970s due to militant trade unionism, high-cost labour, bureaucratic over-regulation and poor economic infrastructure

including the shortage of power<sup>4</sup>. All these factors can be summed up as poor investment climate. Andhra Pradesh along with Tamil Nadu and Karnataka are now termed as “good climate” states for investment by the World Bank-CII study (2002) based on a survey of business managers in India in selected 10 states. These states are just behind Maharashtra and Gujarat, which are termed as “best climate” states. Kerala along with West Bengal and Uttar Pradesh are called as “poor climate” states by the study. Delhi and Punjab are credited with an investment climate termed as “medium”. This is also reflected in the share of industrial investment proposals and foreign direct investment approvals received by these states during the post-liberalisation period (Table 11).

<b>Table 11: Share of Industrial Investment Proposals and Foreign Direct Investment Approvals during August 1991 to June 2003</b>						
	<b>Industrial Investment Proposals</b>			<b>Foreign Direct Investment Approvals</b>		
	<b>Rs. Billion</b>	<b>% to Total</b>	<b>Rank</b>	<b>Rs. Billion</b>	<b>% to Total</b>	<b>Rank</b>
<b>NORTH</b>	<b>2339.94</b>	<b>19.9</b>		<b>492.43</b>	<b>17.2</b>	
Haryana	341.8	2.9	13	36.59	1.3	11
Himachal Pradesh	99.9	0.8	17	11.74	0.4	16
Jammu & Kashmir	17.16	0.1		0.08	0.0	
Punjab	544.63	4.6	7	19.68	0.7	13
Rajasthan	412.47	3.5	10	30.06	1.0	12
Uttaranchal	66.2	0.6	20	1.26	0.0	20
Uttar Pradesh	787.99	6.7	4	48.58	1.7	10
Chandigarh	4.58	0.0		1.9	0.1	17
Delhi	65.21	0.6	21	342.54	12.0	2
<b>WEST</b>	<b>5579.43</b>	<b>47.4</b>		<b>795.91</b>	<b>27.8</b>	
<b>SOUTH*</b>	<b>2761.59</b>	<b>23.5</b>		<b>637.84</b>	<b>22.3</b>	
Andhra Pradesh	1278.91	10.86	3	133.03	4.64	6
Karnataka	586.12	4.98	6	237.78	8.30	4
Kerala	107.07	0.91	16	15.31	0.53	14
Tamil Nadu	708.24	6.01	5	239.27	8.35	3
<b>EAST</b>	<b>970.82</b>	<b>8.2</b>		<b>181.54</b>	<b>6.3</b>	
<b>NORTHEAST</b>	<b>104.36</b>	<b>1.0</b>		<b>0.75</b>	<b>0.0</b>	
Others (unspecified)	3.95	0.0		757.83	26.4	
<b>All-India</b>	<b>11774.72</b>	<b>100.0</b>		<b>2866.28</b>	<b>100.0</b>	
<i>* Including Pondicherry and Lakshadweep.</i>						
<i>Source: SIA Statistics &amp; Newsletter, Ministry of Industry, Govt. of India, July 2003.</i>						

<sup>4</sup> The *ET-CMIE State Infrastructure Survey* released in May 2003 has placed Kerala third in 2000 after Delhi and Goa, an improvement from fourth (Punjab in third position) in 1991 and 1995. The survey has taken the indicators of power infrastructure as the proportion of electrified villages and the proportion of domestic electricity consumers, which do not capture the shortage and frequent load shedding that characterises the Kerala power scene. The Survey has given Tamil Nadu the fifth rank, Karnataka the eighth rank (improvement from 12 in 1995) and Andhra Pradesh the tenth rank. (The Economic Times, Mumbai, 30 May 2003)

## VI State Level Public Enterprises (SLPEs)

In tune with the thinking of the times and the practice at the central government level, state governments directly invested in a wide range of industries to help the industrialisation of the states. But over a period of time, these enterprises accumulated huge losses and have become a drag on the economy and finances of these states. Data on SLPEs are released with a long lag and financial results of these enterprises in most states are not available beyond 1999-00 or 2000-01. Even for those years, only 25-30 per cent of the companies might have finalised their accounts. The government of India's ministry of disinvestment publishes in its website the broad numbers regarding SLPEs for each state including their position on disinvestments. The important indicators of state public enterprises in northern and southern states and their respective position regarding divestment as available so far are given in Table 12.

Table 12: State Level Public Enterprises: Status of Disinvestment in Northern States									
	No. of Enterprises	Total Investment (Rs. Bn.)	Accumulated loss* (Rs. Bn.)	Loss-making Companies	Non-working Companies	Identified for disinvestment/ wind up/re-structuring	Companies where process initiated	Companies privatised	Companies closed down
Haryana	45	4.43	3.84	10	4	8	6	1	4
Himachal Pradesh	21	47.31	6.05	13	2	15	8	3	2
Jammu & Kashmir	20	19.48	5.87	16	1	7	2	0	0
Punjab	53	133.84	14.35	25	28	11	11	1	6
Rajasthan	28	115.76	3.15	11	8	10	6	1	1
Uttar Pradesh	41	177.73	53.27	21	19	25	25	1	14
Delhi	15	109.64	69.95	3	0	0	1	1	0
Andhra Pradesh	128	487.94	29.19	62	9	87	79	13	38
Karnataka	85	278.13	18.88	30	7	39	20	2	12
Kerala	111	164.29	35.10	52	13	55	40	0	10
Tamil Nadu	59	61.92	22.92	33	12	29	29	0	7
<b>All-India</b>	<b>1036</b>	<b>2522.42</b>	<b>505.51</b>	<b>507</b>	<b>209</b>	<b>399</b>	<b>300</b>	<b>36</b>	<b>111</b>
*Relates to only those enterprises which have finalised their accounts which could be only 25-30% of the total companies.									
Source: Ministry of Disinvestment, Govt. of India.									

Among the northern states, Uttar Pradesh, Punjab and Rajasthan are large investors in state level public enterprises (SLPEs). Still, the total investments in SLPEs by these states are lower than those by the states like Andhra Pradesh, Gujarat, Maharashtra, Karnataka and West Bengal. Uttar Pradesh's total investment up to 1999-00 has been

about Rs. 178 billion in 41 SLPEs, followed by Punjab at Rs. 139 billion in 53 units and Rajasthan at Rs. 116 billion in 28 enterprises. Himachal Pradesh has invested about Rs. 47 billion in 21 public sector units. Haryana's public enterprises are relatively small units with a total investment of a modest Rs. 4 billion in 45 enterprises. In Uttar Pradesh, out of 41 public enterprises, 21 are chronically loss making and 19 are nonworking. They have a huge net accumulated loss of Rs. 53 billion by 1999-00. The union territory of Delhi with 15 public enterprises of total investment of Rs. 110 billion have a net accumulated loss of Rs. 70 billion nearly equal to the largest cumulative loss of 71 billion for SLPEs in West Bengal. In Punjab, out of 53 SLPEs 25 are loss making and the remaining 28 are not working. They have a net accumulated loss of over Rs. 134 billion. Rajasthan has relatively less number of loss making SLPEs (11 out of 28) and non-working (8) companies and a low net accumulated loss of about Rs. 3 billion. Himachal Pradesh and Haryana have 13 and 10 loss-making companies respectively and had a net accumulated loss of about Rs. 6 billion and Rs. 4 billion respectively. J & K has 20 SLPEs with a total investment of about Rs. 19 billion but also a small accumulated loss of less than Rs. 6 billion.

Coming to the southern states, Andhra Pradesh has the largest number of SLPEs in the country (128 enterprises) with the largest investment of about Rs. 488 billion and Tamil Nadu the lowest number among the southern states (59 enterprises) with the lowest investment of about Rs. 62 billion. Kerala has the second largest number of SLPEs in the country (111 SLPEs) having a total investment of about Rs. 164 billion. Kerala has the largest accumulated loss among the southern states amounting to about Rs. 35 billion followed by Andhra Pradesh at about Rs. 29 billion. In all the southern states except Karnataka about half the number of the SLPEs is perpetually loss making.

All the four southern state governments had realised the need to reform their public enterprises and have taken steps towards restructuring them. They all set up their own Public Sector Reforms/Restructuring Committee/Commission for the purpose. Andhra Pradesh is the most advanced in this regard in the country with the process of disinvestment initiated in 79 companies and 13 companies have already been privatised.

The state government has also put in place a social safety net programme with the assistance from World Bank to minimize the impact of redundancy on workers. Karnataka is the next best in the South with the disinvestment process underway in the case of 20 companies and 2 companies already privatised. Kerala and Tamil Nadu started late but have initiated the process for 40 and 25 companies respectively. They are however yet to privatise any unit although closed down 10 and 7 companies respectively.

All the northern states have initiated steps to bring about reform in SLPEs through privatisation, restructuring or closing down in a phased manner. Haryana has already closed down 4 companies, privatised one company and have identified 8 companies for divestment/wind up/restructuring. Himachal Pradesh has sold three companies to the private sector, and has identified 15 companies for privatisation/wind up/ restructuring. Punjab has closed down 6 companies and the process of disinvestment has been initiated in the case of 11 companies of which one is privatised recently. Rajasthan has privatised one company and closed down another and have decided to close down/privatise another 10 companies. Uttar Pradesh has closed down 14 companies and privatised one and is in the process of disinvestment/closure of 25 public enterprises. Jammu & Kashmir has already decided to close down 7 non-viable units and has initiated steps to close down two. Delhi has already privatised power distribution and proposes to unbundle and privatise Delhi Transport Corporation (DTC). DTC had incurred a loss of Rs. 8.5 billion in 2001 and had borrowed about Rs. 7.2 billion from the government of Delhi which remain unpaid for the last 5 years.

## **VII Power Sector**

Power is most critical to the growth of the economy but this sector is bristling with problems in all the states. The basic issue is that power is predominantly produced by government entities and distributed by them at much below costs to agriculture and household sectors partly compensated by prohibitive prices charged on industry and commercial sectors. The overall returns on these public utilities are chronically negative – commercial loss without subsidy reached an alarming Rs. 332 billion, equivalent of 1.5 per cent of GDP, in 2001-02 - on account of several factors including huge pilferage,

transmission & distribution loss and low level of metering and collection. The restoration of financial viability of state power entities is the crux of the problem and this is crucially dependent on the progress of distribution reforms. Future private investments in the power sector also hinges on the solution of the distribution issues.

The capacity growth during the Ninth Plan (1997-02) has been nominal in all northern states except Punjab and Rajasthan and virtually no private sector capacity addition took place in any of these states. The plant load factor (PLF) of thermal plants in 2001-02 of most of the northern states also had been much lower than the all-India level except for Punjab and Rajasthan. The officially reported T & D loss has been quite high at 47 per cent in J & K in 2001-02, 45 per cent in Delhi, 39 per cent in Uttar Pradesh and 33 per cent in Haryana, all much higher than the national average of about 28 per cent. Himachal Pradesh and Punjab have reported lower T & D loss of about 17 per cent and Rajasthan at 28 per cent, equal to all-India average. Punjab, Haryana and Delhi have per capita consumption of power much higher than the national average. Other northern states have lower per capita power consumption than the all-India average and Uttar Pradesh in particular has abysmally low per capita consumption of 176 Kwh in 2001-02, just half of the all-India average of 355 Kwh.

The average power tariff realised in almost all the northern states except Uttar Pradesh and Delhi has been lower than the all-India average particularly because of the high proportion of agricultural power consumption which is priced substantially low in most of these states or given free (till very recently in Punjab). In Haryana, agricultural consumption of power constituted 47 per cent of total power consumption in 2001-02, in Rajasthan 40 per cent, and in Punjab over 35 per cent, all much above the all-India consumption by agriculture of 29 per cent. In Himachal Pradesh, J & K, Uttar Pradesh, and Delhi, agriculture constitutes a low proportion of power consumption ranging from less than 1 per cent for Himachal Pradesh to 18 per cent for Uttar Pradesh but these states/U.T. have a large domestic sector (households) which also pay low tariff and consumes about 20 per cent (Himachal Pradesh) to 42 per cent (J & K) of power.



The cost of power supply is much higher than the national average in most northern states other than Himachal Pradesh and Punjab where the cost is low due to the low rate charged on power purchase by the state from central power utilities. A major reason for the rising cost of power supply has been the falling share of hydro power which is cheaper to produce. The share of hydel generation has come down from 51 per cent in 1992-93 for Haryana to 4 per cent in 2001-02, for Punjab from 55 per cent to 20 per cent, Rajasthan from 43 per cent to 5 per cent and Uttar Pradesh from 23 per cent to 9 per cent. Power generation is only hydel in Himachal Pradesh and J & K and is 100 per cent thermal in Delhi.

The power entities of all the northern states incur huge commercial losses. The highest loss (without state subsidy) was registered by Uttar Pradesh at Rs. 27 billion in 2001-02, followed by Rajasthan at Rs. 24 billion, Haryana at Rs. 19 billion, Punjab Rs.16 billion, J & K and Delhi each at Rs. 11 billion and the least by Himachal Pradesh at less than Rs.1 billion. The return of power entities in these states are all negative topped by Haryana at minus 79 per cent in 2001-02, followed closely behind by J & K and Rajasthan at about minus 75 per cent, Delhi at minus 44 per cent, Uttar Pradesh and Punjab at about minus 20 per cent and Himachal Pradesh at just minus 4 per cent.

Among the southern states, per capita consumption of electricity is very low in Kerala at 262 kWh during 1999-00, which is even much below the all-India average of 355 kWh, reflecting the low level of industrialisation of the state. Tamil Nadu, on the other hand, has the highest per capita power consumption in the South at 484 kWh, much above the country average, thanks to the advanced stage of industrialisation in the state. The low pricing of electricity to agriculture and domestic sectors and high pricing of industry, over the years has led to the share of the former sectors rising while the share of the latter sector falling particularly as the industrial sector has been moving to captive generation. An exception is Kerala where agriculture sector remained a marginal consumer of power (below 5 per cent) stemming from the sharp diminishing share of agriculture in the state economy and the low irrigation coverage. Domestic sector, however, is the largest sector in Kerala accounting for just under half the power consumption in 2001-02 followed by

industry consuming slightly above a third. For both Andhra Pradesh and Karnataka, agriculture is the biggest consumer of power representing two fifths of total consumption. Tamil Nadu has a more reasonable consumption share for industry accounting for the largest share of 36 per cent in 2001-02 down from 40 per cent in 1996-97. However, the share of agriculture in power consumption in Tamil Nadu at about 28 per cent in 2001-02 (26 per cent in 1996-97) is high in relation to its share in GSDP (16 per cent in 2000-01), and is a result from free power to this sector till very recently.

As already noted, a major reason for the rising cost of power supply has been the falling share of hydroelectricity, which is relatively cheap to produce. This decline in the hydel-thermal mix has been also sharp in the case of southern states. In Andhra Pradesh the share of hydropower in total power generation declined from 48 per cent in 1992-93 to 17 per cent in 2001-02 and Karnataka from 79 per cent to 44 per cent in the same period. In Kerala the hydropower share declined to a lesser extent from 100 per cent to 90 per cent and Tamil Nadu from 33 per cent to 15 per cent in the same period. At the

all-India level, the fall in hydel share has been much less from 23 per cent to 14 per cent. The plant load factor (PLF), an index of efficiency of the thermal power plants, has been much higher in the

South in relation to the all-India average. Andhra Pradesh recorded the highest PLF among all states at 86 per cent in 2001-02. Karnataka and Tamil Nadu registered a PLF of 81 per cent and 78 percent respectively. These are considerably higher than the all-India average of about 70 per cent.

Among the southern states, the cost of power supply is lowest in Tamil Nadu (Paise 310/KWh in 2001-02) despite the high proportion of thermal generation (85 per cent). This is perhaps due to a lower transmission and distribution (T & D) loss at 16 per cent in Tamil Nadu compared to the national average of 28 per cent. Andhra Pradesh and Karnataka power sectors have high levels of T & D losses estimated at 33 per cent 36 per cent respectively. Low level of metering is a serious problem in both Andhra Pradesh and Karnataka where it is estimated at about only 40 per cent or below. Although Kerala has

low T & D loss of 17 per cent and a high hydropower component, its cost of power supply shot up dramatically in recent years perhaps due to decline in labour productivity. From the lowest among the southern states and much below the all-India average in 1996-97, Kerala's unit cost of power supply in 2001-02 has been more than that in Tamil Nadu but still lower than in Karnataka and Andhra Pradesh and nearly equal to the all-India average.

Commercial loss of electricity boards of these states without subsidy from the respective governments has ranged from Rs. 13.54 billion for Kerala (lowest) during 2001-02 to Rs. 28.20 billion for Andhra Pradesh (highest). The negative return on capital without subsidy was also highest at -102 per cent for Andhra Pradesh, followed by Karnataka at -81 per cent. Tamil Nadu has had the highest return on capital at -33 per cent in 2001-02, which is even higher than the all-India average of -44 per cent. The subsidy from the state government to partly cover the commercial loss has been highest from Karnataka government at Rs. 24.26 billion in 2001-02 followed by Andhra Pradesh government at Rs. 16.26 billion. Tamil Nadu government made the lowest subsidy contribution to its electricity board at Rs. 2.50 billion in 2001-02.

During the last five years, 1997-02, Andhra Pradesh made the largest addition to installed capacity among the southern states at 1495 MW followed closely by Karnataka at 1461 MW. Tamil Nadu added capacity of 895 MW and Kerala the lowest addition of 638 MW. What has been the record of reforms in the power sector in these states?

Andhra Pradesh has been one of the pioneering states to launch power sector reforms by enacting the reform law in October 1998. Andhra Pradesh State Electricity Board (APSEB) has been reorganized into two corporations under the Companies Act: APGENCO in charge of generation and APTRANSCO in charge of transmission and distribution with effect from February 1999. In April 2000 the distribution business has been separated from transmission and made into four subsidiary companies. The privatisation of distribution is being planned. An independent statutory Regulatory Commission came into place in April 1999 and has been delivering tariff orders every year from 2000-01. World Bank has sanctioned a loan of US\$ 1 billion to be drawn in five

*tranches* under the Adaptable Programme of Lending (APL) for strengthening the transmission and distribution network of APTRANSCO. The government has also secured funds from DFID, UK (Rs. 5.42 bn.) and JBIC, Japan (Rs. 7.01 bn.) for revamping distribution system and for certain evacuation schemes respectively. The state government has also obtained assistance from the Government of India under the Accelerated Power Development Programme (Rs. 1.95 bn.) for improvement in the distribution system, and renovation and modernization of existing plants. The government passed legislative amendment effective end-July 2000 providing for stringent penalties for power theft and has registered several cases since then leading to improved revenue collection. There has been a massive campaign for regularisation of unauthorised connections leading to legalisation of nearly 2 million connections in the household sector and over a quarter million in the agriculture sector. The state has achieved 85% consumer metering by end of 2002-03. Andhra Pradesh stood first in the comprehensive performance rating of state power sectors carried out by CRISIL and ICRA recently scoring 71.5 out of 100<sup>5</sup>. However, the state is yet to undertake rationalisation of the tariff structure, a necessary prerequisite for reaching financial viability, and the agriculture sector is paying on an average only 14 paise per kWh.

Karnataka followed Andhra Pradesh in introducing the power reform law in June 1999 and in setting up the Regulatory Commission in November 1999. Karnataka Electricity Board was dissolved and in its place Karnataka Power Transmission Corporation Ltd. (KPTCL), a transmission & distribution company, and Visvesvaraya Vidhyut Nigam Ltd. (VVNL), a generating company, have been incorporated under the Companies Act effective April 2000. The separation of transmission and distribution has also been effected and four distribution companies have started functioning from June 2002. Privatisation of distribution is planned in the current financial year. The Electricity (Amendment) Act, 2001 was passed to check theft, pilferage and wastage of electricity with stringent penal provisions. This came into effect from April 2002 after which many

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<sup>5</sup> This is done at the instance of Ministry of Power, Government of India, based on a number of parameters such as business risk (25 points), state government related matters (20 points), matters relating to the state electricity regulatory commission (20 points), financial risk of the boards/utilities (30 points) and other factors (5 points) (See ICRA-CRISIL Report, 2003).

cases were detected for power theft and proceeded against. Power tariffs were raised twice in recent years over 15 per cent each. The state has achieved 100% consumer metering by end of last year, an incredible achievement. Karnataka stood second in the country after Andhra Pradesh, scoring 68 out of 100 in the comprehensive rating carried out by CRISIL and ICRA.

The power sector has become a big drag on the Karnataka fisc as the subsidy given by the state government of about Rs. 25.00 billion is about three quarters of the revenue deficit of the state government in 2001-02. Although electricity is supplied to the agriculture sector at heavily subsidised rate, the recoveries from this sector are hardly 10 per cent<sup>6</sup>. It is largely due to the inability of the power sector to deliver on the reform parameters that the state could not draw the third *tranche* of the Karnataka Economic Restructuring Loan of Rs. 12.00 billion from the World Bank last year.

Tamil Nadu and Kerala are latecomers in the power reform area. Both the governments have signed a Memorandum of Understanding with the Ministry of Power, Government of India, committing to power reform and have also set up state regulatory commissions recently. The Kerala state carried out a 25 per cent hike in power tariff in 2001 and another similar hike very recently. Kerala government plans to reorganise the SEB into three separate profit centres for generation, transmission and distribution. Also, the government wants the distribution to be further split into three separate profit centres. Tamil Nadu Electricity Board's proposal for a tariff hike across the board including a positive tariff of 50 paise per unit for the agriculture sector was cleared by the Tamil Nadu Electricity Regulatory Commission in March 2003. The state proposes to undertake reforms with technical and financial assistance from Power Finance Corporation (PFC). Tamil Nadu is below the halfway score getting 47.5 out of 100 in the CRISIL-ICRA comprehensive rating exercise. Kerala is way behind with a rating score of 32.5 out of 100 meaning that it is far away from reaching a satisfactory performance.

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<sup>6</sup> Karnataka State Budget (2003).

The thrust of reforms in the power sector has been in the distribution sector and states in the northern region have stepped up reform in recent years. They have all signed MOUs with the central government to carry forward the reform process starting with Uttar Pradesh in February 2000 followed by other northern states and finally Delhi in March 2003. Excepting J&K, all these states and Delhi have constituted state electricity regulatory commissions (SERCs) starting with Haryana in as early as 1998. All these SERCs have issued tariff orders including the very recent one in September 2003 from the SERC of Uttaranchal reducing for the first time in the country power tariffs for industrial and household consumers. Reform law in the power sector has been passed in northern states first by Haryana in 1998 followed by Uttar Pradesh in 1999. However, Himachal Pradesh, J&K and Punjab are yet to enact the reform legislation. Among the nine states, which have unbundled and corporatised their power utilities in the country, include the four northern states and Delhi. The northern states of Himachal Pradesh, J & K, and Punjab have not unbundled their power utilities although The Power Reforms Committee set up by the Punjab government has recommended it for that state.

Delhi is the second in the country to undertake privatisation of power distribution in July 2002 after Orissa in 1998. Uttar Pradesh is the only state in northern region which has enacted the anti-theft law bringing in stringent punishment for the offence of stealing electricity. Only five states in the country have this in place so far. Punjab though not enacted the anti-theft legislation, has made a one-time anti-theft drive in certain important cities recently. Haryana, Himachal Pradesh and Delhi have the distinction of being among just five states/U.T., which have achieved 100 per cent consumer metering so far. The other states are Karnataka and Kerala. J & K and Uttar Pradesh have a poor consumer metering of about 40 per cent and 59 per cent respectively against the national average of 84 per cent, Uttaranchal has reached 84 per cent, Punjab 85 per cent and Rajasthan a high 97 per cent.

Both Haryana and Rajasthan scores 64 out of 100 in the rating coming third in the country after Andhra Pradesh and Karnataka who scored 71.5 and 68 respectively. Delhi

gets just above the halfway score of 52.5 out of 100, Himachal Pradesh 49.4, Punjab 45 and Uttar Pradesh 42.8 and J&K a poor score of 32.5.

## **VIII State Finances**

Indian public finances at the centre began to deteriorate in the early 1980s. The persistent high levels of revenue and fiscal deficits became unsustainable by the early 1990s resulting in a full-blown economic crisis with a collapse in growth, high inflation and India on the brink of an external payments default. The finances of the state governments, which were, sound in the 1980s with revenue surpluses till mid-1980s, began to deteriorate from the early 1990s and reached unsustainable levels by the late 1990s. By the early 2000s, all-States average revenue deficit stayed over 2.5 per cent GDP, fiscal deficit in the range of 4 to 4.5 per cent of GDP and outstanding debt rising to about 28 per cent of GDP by the end of 2002-03. The combined finances of the centre and states, after indicating an improvement in the first half of the 1990s deteriorated thereafter. The combined centre and states fiscal situation in India has worsened in recent years and the levels of government deficits and public debt have overtaken the previous worst of the early 1990s.

Table 13 gives the position of revenue and fiscal deficits of individual northern states and the average for all-States during the 1990s and the early 2000s. In the northern region, except Delhi and, to some extent, Haryana the finances of all other states are in a very precarious condition. The worst case is Himachal Pradesh, where the revenue deficit has been in the range of 6 to 10 per cent GSDP and fiscal deficit in the range of 10 to 14 per cent in the last few years (1999-03). This is followed by J & K, where, while revenue deficit appears to have been brought under control, fiscal deficit remains in the range of 4.5 to 14 per cent of GSDP. In both Himachal Pradesh and J & K, the state governments' outstanding debt has been alarmingly high at about 60 per cent of GSDP. Punjab has the next high deficits of 3.5 to 5 per cent of GSDP on the revenue account and 6 to 7 per cent of GSDP on the fiscal account and an outstanding debt of over 45 per cent of GSDP. Rajasthan has also equally high revenue and fiscal deficits of 3.5 to 4.5 per cent of GSDP

and 5.5 to 7.5 per cent respectively during the period 1999-03 with outstanding debt of over 40 per cent of GSDP. Uttar Pradesh also has high deficits above all-States average in the range of 2.5 to 4 per cent of GSDP on the revenue side and 4.5 per cent to 6 per cent of GSDP on the fiscal account and an outstanding debt nearing 40 per cent of GSDP. In contrast, the union territory of Delhi has been having a revenue surplus of 2 to 3 per cent of GSDP, a low fiscal deficit of 2.5 to 3 per cent of GSDP, and an outstanding debt of only about 12 per cent GSDP. The state of Haryana also has been in a relatively better fiscal position with a revenue deficit of 1 to 2 per cent of GSDP, a fiscal deficit of 4 to 4.5 per cent and an outstanding debt of below 30 per cent of GSDP.

Besides the high outstanding debt, some of the northern states have been extending large amount of guarantees for borrowing by their respective state enterprises. For Haryana, Himachal Pradesh and Rajasthan, the outstanding guarantees reached about 15 per cent of their GSDP by end-March 2001 and for Punjab about 9 per cent, all above the all-States' average of 8.1 per cent, and J & K about 8 per cent of GSDP. Uttar Pradesh government has been able to limit the outstanding guarantees to just 3.5 per cent of GSDP by end-March 2001.



Table 13: Fiscal Deficit Indicators: Northern States												
	Haryana				Himachal Pradesh				Jammu & Kashmir			
	Revenue deficit		Fiscal deficit		Revenue deficit		Fiscal deficit		Revenue deficit		Fiscal deficit	
	Rs. crore	% GSDP	Rs. crore	% GSDP	Rs. crore	% GSDP	Rs. crore	% GSDP	Rs. crore	% GSDP	Rs. crore	% GSDP
1991-92	32	0.2	375	2.3	-9	-0.3	224	6.8	-104	-2.5	449	10.9
1992-93	2	0.0	444	2.6	93	2.4	312	8.2	-267	-5.9	203	4.5
1993-94	-80	-0.4	480	2.2	-114	-2.4	152	3.2	-459	-7.2	88	1.4
1994-95	390	1.5	535	2.0	308	5.3	620	10.6	-702	-10.1	-23	-0.3
1995-96	347	1.2	986	3.3	150	2.2	521	7.8	-741	-9.2	97	1.2
1996-97	719	2.0	1099	3.1	155	2.0	572	7.4	-792	-8.7	166	1.8
1997-98	719	1.9	1128	2.9	529	6.0	1202	13.6	-808	-7.9	444	4.3
1998-99	1540	3.5	2240	5.1	1022	9.6	1662	15.5	400	3.2	1054	8.4
1999-00	1185	2.5	2132	4.4	106	0.9	190	1.6	542	4.0	1338	9.8
2000-01	608	1.1	2265	4.2	1331	10.3	1845	14.3	1259	8.3	2166	14.3
2001-02 (R.E)	1170	2.0	2686	4.5	831	5.8	1468	10.2	-736	-4.4	748	4.4
2002-03 (B.E)	1056	1.6	2618	4.0	1186	7.4	1860	11.7	-77	-0.4	1613	8.6
	Punjab				Rajasthan				Uttar Pradesh			
	Revenue deficit		Fiscal deficit		Revenue deficit		Fiscal deficit		Revenue deficit		Fiscal deficit	
	Rs. crore	% GSDP	Rs. crore	% GSDP	Rs. crore	% GSDP	Rs. crore	% GSDP	Rs. crore	% GSDP	Rs. crore	% GSDP
1991-92	481	2.1	1150	5.0	49	0.2	792	3.4	725	1.1	2837	4.4
1992-93	636	2.4	1252	4.8	110	0.4	1159	4.3	1014	1.4	3711	5.2
1993-94	767	2.5	1493	4.9	301	0.9	1467	4.4	1149	1.4	3166	3.9
1994-95	742	2.2	1785	5.2	425	1.0	1763	4.2	2003	2.1	4766	5.1
1995-96	450	1.2	1365	3.5	702	1.5	2574	5.4	2341	2.2	4381	4.1
1996-97	1357	3.1	1465	3.3	866	1.5	2506	4.4	3179	2.5	5956	4.6
1997-98	1484	3.0	2478	5.1	582	0.9	2552	4.0	4624	3.4	7576	5.5
1998-99	2629	4.7	3779	6.8	2996	4.1	5151	7.0	8696	5.6	11632	7.5
1999-00	2727	4.4	3195	5.1	3640	4.5	5361	6.7	7253	4.3	11099	6.5
2000-01	2337	3.4	3904	5.7	2634	3.4	4313	5.6	6289	3.5	10180	5.6
2001-02 (R.E)	3842	5.1	5257	6.9	3510	4.1	5753	6.7	7757	3.9	12431	6.2
2002-03 (B.E)	3018	3.6	4970	5.9	3852	4.2	6956	7.6	5276	2.4	9744	4.5
	Delhi				All-States							
	Revenue deficit		Fiscal deficit		Revenue deficit		Fiscal deficit					
	Rs. crore	% GSDP	Rs. crore	% GSDP	Rs. crore	% GDP	Rs. crore	% GDP				
1991-92	n.a	n.a	n.a	n.a	5651	0.9	18900	2.9				
1992-93	n.a	n.a	n.a	n.a	5114	0.7	20891	2.8				
1993-94	-59	-0.3	232	1.1	3812	0.4	20596	2.4				
1994-95	-550	-2.1	389	1.5	6156	0.6	27697	2.7				
1995-96	0	0.0	1004	3.6	8201	0.7	31426	2.6				
1996-97	-764	-2.3	690	2.1	16114	1.2	37251	2.7				
1997-98	-1159	-2.8	726	1.8	16333	1.1	44200	2.9				
1998-99	-820	-1.7	959	2.0	43642	2.5	74254	4.3				
1999-00	-751	-1.4	1382	2.6	53797	2.7	91480	4.7				
2000-01	-1748	-3.0	1610	2.8	53569	2.5	89532	4.3				
2001-02 (R.E)	-1381	-2.2	2009	3.1	60540	2.6	106595	4.6				
2002-03 (B.E)	-2139	-3.0	1765	2.5	48223	1.9	102848	4.0				
Source: CMIE, State Governments, CSO and RBI.												

Table 14 gives an analysis of the growth in broad components of the budgets of the northern states and for all-States during the nineties and the early 2000s divided into two sub-periods. This clearly brings out the factors behind the deterioration of the finances since the mid-1990s. For the states of Haryana, Himachal Pradesh, Rajasthan and Uttar Pradesh the growth in non-tax revenues has either sharply declined or remained stagnant at low levels. For the states of Haryana and J & K, there has been a marked decline in the growth in transfers of central tax and grants. For the states of Punjab and Uttar Pradesh, there has been substantial growth in expenditure, both revenue and capital. For Himachal Pradesh and J & K, there has been substantial growth in revenue expenditure in the latter

period while revenue growth deteriorated. In all most all the states, expenditure on administrative services, pensions and interest payments has shot up in the latter period. While capital expenditure in most of the states has decelerated, it grew substantially in states like Haryana and Punjab to make up for the past stagnation or decline.

<b>Table 14: Fiscal Scene: Northern States (% CAGR)</b>								
	<b>Haryana</b>		<b>Himachal Pradesh</b>		<b>J &amp; K**</b>		<b>Punjab</b>	
	<b>1992-97</b>	<b>1997-02</b>	<b>1992-97</b>	<b>1997-02</b>	<b>1992-97</b>	<b>1997-02</b>	<b>1992-97</b>	<b>1997-02</b>
Revenue receipts	22.0	5.5	15.0	13.0	17.8	13.2	8.4	11.6
Own tax revenue	10.5	18.4	16.4	14.5	12.0	24.3	12.1	12.7
Own non-tax revenue	41.8	-10.6	14.7	6.2	6.0	14.2	3.4	10.0
Central tax share & grants	14.3	8.4	14.6	13.2	19.3	11.9	11.0	11.5
Total expenditure	22.3	8.2	16.1	15.0	13.2	14.6	7.6	16.2
Revenue expenditure	24.4	6.1	16.9	16.0	13.8	16.1	10.5	14.2
Adm. services	13.4	14.3	13.9	10.9	22.6	22.0	13.9	11.4
Pensions	23.8	21.9	19.4	30.1	19.0	40.3	19.5	23.8
Interest	17.3	19.0	16.2	26.9	4.8	17.3	35.3	14.0
Capital expenditure	2.1	31.9	12.3	8.8	11.6	9.2	-30.6	67.3
Revenue deficit	86.3	10.2	*	39.9	50.0	-1.5	23.1	23.1
Gross fiscal deficit	24.0	19.6	20.6	20.7	-18.0	35.1	5.0	29.1
	<b>Rajasthan</b>		<b>Uttar Pradesh</b>		<b>Delhi**</b>		<b>All States</b>	
	<b>1992-97</b>	<b>1997-02</b>	<b>1992-97</b>	<b>1997-02</b>	<b>1994-97</b>	<b>1997-02</b>	<b>1992-97</b>	<b>1997-02</b>
Revenue receipts	12.9	10.9	10.6	11.6	70.2	18.9	13.7	12.1
Own tax revenue	15.1	13.0	12.5	12.8	66.4	15.0	14.7	13.4
Own non-tax revenue	13.2	2.8	4.0	4.4	48.8	80.1	13.1	6.2
Central tax share & grants	10.7	11.7	10.5	11.6	n.a	19.7	12.7	12.8
Total expenditure	15.4	12.8	11.9	12.8	63.4	20.0	13.9	14.7
Revenue expenditure	15.6	13.9	13.1	13.0	58.7	21.0	14.4	14.4
Adm. services	13.5	11.6	13.3	8.7	25.6	1.1	13.9	13.6
Pensions	22.2	28.3	25.0	20.2	n.a	n.a	22.4	23.2
Interest	20.3	20.3	-20.7	75.5	n.a	36.8	18.5	20.3
Capital expenditure	14.3	6.5	5.6	11.0	71.0	18.4	10.0	16.6
Revenue deficit	*	32.3	34.4	19.5	134.8	12.6	23.3	30.3
Gross fiscal deficit	25.9	18.1	16.0	15.9	43.8	23.8	14.7	23.3
*For Himachal Pradesh and Rajasthan, revenue surpluses have turned into deficits during this period. **For J&K and Delhi, %CAGRs are for revenue surpluses and not deficits.								
Source: CMIE and RBI.								

Table 15 brings out the trends in revenue and fiscal deficits of southern states from 1993-94. Among the southern states, Kerala has been in the worst financial condition. The revenue deficit of Kerala state had been in the range of 4 to 5 ½ per cent of GSDP during the three years up to 2000-01 and during the same period, the fiscal deficit had been in the range of 5 to 7 per cent of GSDP. The deficits, however, came down drastically in 2001-02 and 2002-03. This is more due to the inability to clear the expenditure commitments, as

funds were not available. The revenue deficit of Andhra Pradesh has been low as a proportion of GSDP and even lower than Tamil Nadu and Karnataka, but its fiscal deficit has been very high at about 4 ½ to 5 per cent of GSDP in the last three years. Karnataka and Tamil Nadu have almost similar fiscal deficit ratios. For Tamil Nadu, the deficit ratios after dipping for two years, 2000-01 and 2001-02, more due to artificial compression of expenditure<sup>7</sup>, have again spurted thereafter.

Table 15: Fiscal Deficit Indicators: Southern States												
	Andhra Pradesh				Karnataka				Kerala			
	Revenue deficit		Fiscal deficit		Revenue deficit		Fiscal deficit		Revenue deficit		Fiscal deficit	
	Rs. Bn	% GSDP	Rs. Bn	% GSDP	Rs. Bn	% GSDP	Rs. Bn	% GSDP	Rs. Bn	% GSDP	Rs. Bn	% GSDP
1993-94	-2.32	-0.4	18.33	3.2	-1.16	-0.3	12.54	3.1	3.71	1.4	9.35	3.6
1994-95	7.28	1.1	23.48	3.4	2.96	0.6	15.13	3.2	4.00	1.3	11.09	3.5
1995-96	7.39	0.9	24.17	3.0	-0.62	-0.1	14.57	2.6	4.03	1.0	13.03	3.4
1996-97	31.99	3.5	28.12	3.1	5.79	0.9	19.44	3.0	6.43	1.4	15.42	3.5
1997-98	7.03	0.7	24.28	2.5	2.77	0.4	16.10	2.2	11.23	2.3	24.14	4.9
1998-99	26.84	2.3	57.06	5.0	12.15	1.4	31.12	3.5	20.30	3.6	30.12	5.4
1999-00	12.33	1.0	49.76	4.0	23.25	2.4	42.76	4.4	36.24	5.6	45.37	7.0
2000-01	35.95	2.6	73.06	5.3	18.62	1.8	42.19	4.0	31.47	4.2	38.78	5.1
2001-02	28.81	1.9	67.23	4.5	32.85	3.0	58.70	5.4	26.06	3.4	32.70	4.3
2002-03 (R.E)	31.65	1.9	73.41	4.5	34.06	2.9	57.60	4.9	18.99	2.3	28.45	3.4
2003-04 (B.E)	21.32	1.2	73.38	4.0	21.35	1.6	60.33	4.6	26.65	2.9	33.07	3.6
	Tamil Nadu				All- States							
	Revenue deficit		Fiscal deficit		Revenue deficit		Fiscal deficit					
	Rs. Bn	% GSDP	Rs. Bn	% GSDP	Rs. Bn	% GSDP	Rs. Bn	% GSDP	Rs. Bn	% GSDP	Rs. Bn	% GSDP
1993-94	6.92	1.2	14.33	2.5	38.12	0.4	205.96	2.4				
1994-95	4.16	0.6	14.96	2.2	61.56	0.6	276.97	2.7				
1995-96	3.11	0.4	12.56	1.6	82.01	0.7	314.26	2.6				
1996-97	11.04	1.2	24.45	2.7	161.14	1.2	372.51	2.7				
1997-98	13.64	1.3	21.22	2.0	163.33	1.1	442.00	2.9				
1998-99	34.37	2.9	47.77	4.0	436.42	2.5	742.54	4.3				
1999-00	44.00	3.5	53.82	4.2	537.97	2.7	914.8	4.7				
2000-01	34.36	2.5	50.76	3.7	535.69	2.5	895.32	4.3				
2001-02	27.39	1.9	47.39	3.2	605.40	2.6	1065.95	4.6				
2002-03 (R.E)	59.17	3.8	81.05	5.1	482.23	1.9	1028.48	4.0				
2003-04 (B.E)	39.33	2.3	69.44	4.1	n.a	n.a	n.a	n.a				

Source: CMIE, RBI and State Budget documents.

The worsening fiscal and revenue deficit positions of the state governments are reflected in the debt and guarantee positions of these governments. Table 16 gives a snapshot picture in this regard for the southern states. Kerala's debt situation is the most serious recording a growth about 19 per cent per annum in the past five years to reach a high of 35 per cent of its GSDP at the end of 2001-02. Kerala state's debt ratio is estimated to go up further to 37 per cent by the end of 2003-04. Andhra Pradesh and Karnataka had a debt stock of over 28 per cent and 30 per cent respectively of their GSDP at the end of 2001-02. The debt ratios are estimated to go up further to 31 and 34 per cent

<sup>7</sup> Tamil Nadu State Budget (2003).

respectively by end of 2003-04. The outstanding debt of Andhra Pradesh has been rising by over 20 per cent per annum in the past 5 years. Tamil Nadu's debt position is the least serious among the southern states, having had a total debt amounting to only 23 per cent of GSDP at the end of 2001-02 up from about 16 per cent in 1997-98. State guarantees also have been mounting and have reached 15.5 per cent GSDP for Kerala 11 per cent for Karnataka and 10 per cent for Andhra Pradesh by the end of 2001-02. These are all above the all-states guarantees ratio of 7.2 per cent.

<b>Table 16: Debt and Guarantees of Southern States, End-March 2002</b>					
	<b>Andhra Pradesh</b>	<b>Karnataka</b>	<b>Kerala</b>	<b>Tamil Nadu</b>	<b>All-States</b>
Total debt (Rs. Bn.)	424.92	329.40	269.51	338.08	5892.18
% of GSDP	28.3	30.1	35.4	23.1	25.7
Guarantees (Rs. Bn.)	148.55	122.79	118.18	123.88*	1661.16
% of GSDP	9.9	11.2	15.5	9.0*	7.2
*End-March 2001.					
<i>Source: Reserve Bank of India and State government documents.</i>					

Table 17 provides the growth in the broad components of the budgets of the four southern states during the last decade divided into two sub-periods. The data brings out the sharp deterioration that has taken since the mid-1990s. However, there is a major distinction between what has been happening in the states of Karnataka, Kerala & Tamil Nadu on the one hand, and what has been happening in Andhra Pradesh, on the other.

Table 17: Fiscal Scene: Southern States (% CAGR)										
	Andhra Pradesh		Karnataka		Kerala		Tamil Nadu		All States	
	1992-97	1997-02	1992-97	1997-02	1992-97	1997-02	1991-96	1996-01	1992-97	1997-02
Revenue receipts	12.2	14.6	15.0	10.6	16.6	10.2	15.8	11.7	13.7	12.1
Own tax revenue	9.8	19.0	14.0	11.9	18.4	11.1	18.0	11.9	14.7	13.4
Own non-tax revenue	10.6	12.7	16.7	-2.0	16.9	6.9	17.6	10.8	13.1	6.2
Central tax share & grants	15.8	10.0	14.9	12.9	12.9	9.0	10.4	11.2	12.7	12.8
Total expenditure	15.4	14.3	13.9	12.2	16.1	10.7	13.8	15.3	13.9	14.7
Revenue expenditure	17.4	11.8	15.5	13.2	16.1	11.8	14.1	15.4	14.4	14.4
Salaries	11.2	13.7	14.8	19.4*	13.6	11.2	12.5@	15.1	13.9	13.6
Pensions	19.6	18.0	19.2	20.4	17.3	19.0	19.6	30.0	22.4	23.2
Interest	21.5	21.4	18.6	18.6	18.0	15.6	23.2	18.3	18.5	20.3
Capital expenditure	-0.9	37.1	6.4	8.6	15.9	1.0	10.5	14.5	10	16.6
Revenue deficit	79.8	-1.3	26.5	39.0	12.1	24.0	-10.9	66.0	23.3	30.3
Gross fiscal deficit	20.1	21.1	16.2	21.5	13.9	12.8	2.2	35.7	14.7	23.3
*For 1997-00 @For 1992-96. Source: CMIE and Budget documents of respective state governments.										

In these three states, the growth in revenue receipts under all major items has sharply declined in the second period whereas they have improved in the case of Andhra Pradesh. This is primarily due to the accrual from taxes on Indian made foreign liquor (IFML) in Andhra Pradesh following the lifting of prohibition in 1997 after its introduction two years ago. Among the different items under revenue receipts, the growth in the component of central tax share & grants to states, however, has declined in the second period for all states except for Tamil Nadu, where there has been a marginal improvement in the second period. On the expenditure side, there has been a dip in the second period from an already high growth in the earlier period in all the southern states except Tamil Nadu. Tamil Nadu, on the other hand, registered a higher growth in expenditure in the latter period both on the capital and revenue accounts. Among the other states where expenditure growth slowed down in the second period, it was due to slowdown in revenue expenditure in Andhra Pradesh and Karnataka. In these states, capital expenditure that was growing sluggishly in the early period did really pick up in the latter period and very strongly in the case of Andhra Pradesh.

Andhra Pradesh had, in fact, a negative growth in capital expenditure during 1992-97 solely due to the disruption and collapse in capital outlay in 1996-97 to just Rs. 1.31 billion from Rs. 24.22 billion in the previous year. Capital outlay picked up gradually

thereafter to cross the 1995-96 level only in 2000-01 at Rs. 32.52 billion. Andhra Pradesh has the highest average ratio of capital expenditure to total expenditure in the southern states of about 14 per cent in the last three years ending 2002-03 followed by Karnataka at about 12 per cent. Tamil Nadu and Kerala are in contrast making too little capital spending at an average of only 8 and 6 per cent respectively of total expenditure in the last three years reflecting the acute fiscal crises in their states.

In Andhra Pradesh, the moderate growth in revenue expenditure during the past five years (1997-02) has been achieved despite high growth in salaries, pensions and interest indicating that the government has put in place an expenditure control mechanism that could bring down revenue deficits from the previous high levels. This is in sharp contrast to the massive growth in revenue deficits in the other three southern states being driven by the explosive growth in salaries, pensions, interest payments and subsidies. Kerala's case is standing out as up to 2000-01 revenue expenditure grew explosively and capital expenditure declined in absolute terms. The government had to bring down the runaway expenditure by pruning plan outlay by 25 per cent in 2000-01 and 2001-02 and delaying revenue expenditure like salaries, contractors' payment, unemployment assistance and pensions. This has led to considerable reduction in revenue and fiscal deficits in 2001-02 and further in 2002-03 (Table 15).

All the southern state governments are acutely conscious of the need to bring the fiscal situation under control. Andhra Pradesh, Karnataka and Tamil Nadu have introduced medium-term fiscal programmes with targets for eliminating revenue deficits and bringing down the fiscal deficit to below 2 to 3 per cent of GSDP over a period of over four to five years. Andhra Pradesh proposes to eliminate power subsidy by 2005-06. It has introduced food coupons to better target the rice subsidy. It set up a Sinking Fund in 1999-00 to service the debt obligations and later a Guarantee Redemption Fund. Andhra Pradesh government also has imposed a cap on fresh recruitment except for certain specialised jobs. Karnataka has enacted the Fiscal Responsibility legislation in August 2002, the first state in the country to do so. This will provide legal and administrative backing towards the

achievement of fiscal balance. The government has also introduced legislation to restrict the future guarantees to 80 per cent of revenue receipts of the previous two years.

Tamil Nadu government recognises the gravity of fiscal situation and has reiterated the need for reforms to bring fiscal consolidation in a medium-term framework. The recent Budget contains a number steps based on recommendations of the Tax Reforms and Revenue Augmentation Commission under the chairmanship of Dr. Raja J. Chelliah. This included, besides the proposal to shift to state VAT, contained rationalisation of electricity tax, introduction of a 'Green Tax' on old motor vehicles, revision of vehicle tax and introduction of a state tax on cable TV operators. The Staff and Expenditure Reforms Commission had identified surplus employees and the government proposes to abolish existing vacant posts against the surplus posts. It has also proposed to introduce a contributory pension scheme for all new government employees recruited from April 2003 against the earlier decision to do it for employees recruited from December 2001. Tamil Nadu government had last year announced strict control of administrative expenditure based on the recommendations of the Staff and Expenditure Reforms Commission. Zero-base budgeting; rationalization of subsidies, block grants and grants-in-aid to institutions; and targeting of subsidies to the needy have also been proposed. Last year's abolition of the "free sari and dhoti" scheme involving the withdrawal of about Rs. 1.4 billion of subsidies indicates the determination of the government to implement the above proposals. The government had also proposed legislation to restrict government guarantees to a certain percentage of its revenue receipts and to set up a Guarantee Redemption Fund. This year Budget has announced the plan to introduce a bill on Fiscal Responsibility in the current session of the Legislative Assembly. The Budget has also announced the determination for disinvestment and restructuring of public sector and co-operative sector enterprises in the manufacturing sector. A VRS scheme for employees in these undertakings has been implemented to facilitate such restructuring.

Kerala government had released the White Paper on State Finances in June 2001 and also proposed a Fiscal Accountability Bill in 2002-03 Budget. This year's Budget also repeated the promise of placing the bill in the Assembly. A bill to cap guarantees is

introduced and a Sinking Fund for redeeming public debt has been created. The recent hike in electricity tariff following a similar one in the previous year is a step in the right direction. Kerala government has received the first *tranche* of Rs. 601 crore under the Kerala 'Modernising Government Programme' (MGP) and Fiscal Reforms Package financed by the Asian Development Bank (ADB) and the government of Netherlands. The scheme aims to help the government, among other things, to improve quality of governance by streamlining administration, ensuring accountability and transparency, and reducing or eliminating deficits and subsidies.

## **IX Banking and Institutional Finance**

The banking infrastructure in certain northern states and U.Ts is reasonably good. In Himachal Pradesh, Punjab, Uttaranchal, and U.Ts of Chandigarh and Delhi, the banking intensity (measured by the inverse of population per branch) is much higher than the national average (Table 18). Uttar Pradesh while having the largest number of bank branches in the country has one of the lowest banking intensity in the country similar to some of the states in East and Northeast. Rajasthan too has a low banking intensity, lower than the national average. The northern region as a whole had mobilised nearly a third of bank deposits by end-March 2002 but had got disbursed a lower proportion of 27 per cent of bank credit in the country accounting for a lower credit-deposit ratio<sup>8</sup> (CD ratio) of 48.6 per cent against the all-India ratio of 58.4 per cent. The average CD ratio of the North is markedly lower than those of all other regions except the East<sup>9</sup>. The CD ratios of Himachal Pradesh, Uttaranchal and also Uttar Pradesh have been abysmally low at 32.5 per cent, 26.0 per cent and 34.3 per cent respectively. In sharp contrast, the U.T of Chandigarh has registered a very high CD ratio of 102 per cent. Delhi's CD ratio is about the same as the

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<sup>8</sup> The credit-deposit ratio used here is based on actual utilisation of credit within the respective states which includes not only the credit utilised in the state of sanction but also that out of the credit sanctioned in other states.

<sup>9</sup> The average CD ratios of the South have been 68.9 per cent, West 68.8 per cent, East 41.4 per cent and the Northeast 53.2 per cent as at end-March 2002.



all-India average but it alone accounted for about 11 per cent of bank deposits as well as bank credit in the country up to end-March 2002.

If we take into account the investments of commercial banks in the form of holdings of state-level securities such as state government loans; and shares, bonds, debentures etc. of regional rural banks, co-operative institutions, state electricity boards, municipal corporations, port trusts, SFCs, SIDCs, housing boards, state transport corporations, etc.; we find that the states of Rajasthan and, to some extent, Haryana have a comfortable investment plus credit-deposit ratio of 74 per cent and 63 per cent respectively against the national average of 66 per cent.

Given the relatively larger importance of rural sector in northern states, the regional rural banks (RRBs) play an important role in these states. Nearly 40 per cent of deposits gathered by RRBs in the country come from this region. The credit distributed by RRBs in the region had been lower at 31 per cent by end-March 2001 and the credit-deposit ratio of northern RRBs had been about 31 per cent (about the same as the average for the East and Northeast) against the all-India ratio of 41.5 per cent. However, Haryana has a higher proportion of RRB credit than RRB deposits deployed leading to a fairly high RRB CD ratio of about 50 per cent. Rajasthan has a nearly equal proportion of deposits for and credit from RRBs leading to a CD ratio equal to the national average. RRBs from Uttar Pradesh mobilise over a quarter of deposits accruing to all RRBs in the country and provide just 18 per cent of credit disbursed by all RRBs.

Northern states attracted nearly 21 per cent of the cumulative disbursements by all-India financial institutions up to end-March 2002 of which about half is accounted for by Delhi and Uttar Pradesh which had a share of 6.2 and 4.5 per cent respectively. In per capita terms, Uttar Pradesh has got very low cumulative disbursements of just Rs. 1564 and Delhi a very high of Rs. 19087 against the national average of Rs. 4588. Himachal Pradesh, Haryana and Chandigarh have received a larger per capita cumulative disbursement than the national average and the rest of the northern states below the national average.

<b>Table 18: Banking and Institutional Finance in Northern States, 2001-02</b>						
	<b>Haryana</b>	<b>Himachal Pradesh</b>	<b>Jammu &amp; Kashmir</b>	<b>Punjab</b>	<b>Rajasthan</b>	<b>Uttar Pradesh</b>
1. No. of bank branches (end-Mar 2002)	1549	784	824	2559	3329	8178
2. Population per branch	13611	7752	12221	9492	16964	20305
3. Share in deposits (%)	2.1	0.8	1.0	4.6	2.8	8.8
4. Share in credit (%)	2.0	0.4	0.7	3.4	2.7	5.2
5. Credit-deposit ratio (%)	55.0	32.5	40.9	43.9	55.4	34.3
6. Investment <i>plus</i> credit-deposit ratio*	63.1	45.4	50.1	49.2	74.3	46.1
7. No. of RRB branches (end-Mar 2001)	292	130	263	203	1025	2824
8. Share in RRB deposits (%)	2.7	1.3	1.2	1.6	6.2	25.8
9. Share in RRB credit (%)	3.2	0.8	0.7	1.4	6.1	18.3
10. RRB credit-deposit ratio (%)	50.2	39.2	23.4	36.4	41.1	30.8
11. Share in AIFI disbursements@ (%)	2.4	0.9	0.2	2.3	3.2	4.5
12. Per capita AIFI disbursements#(Rs.)	5286	7206	833	4442	2787	1564
	<b>Uttaranchal</b>	<b>Chandigarh</b>	<b>Delhi</b>	<b>All-North</b>	<b>All-India</b>	
1. No. of bank branches (end-Mar 2002)	842	179	1456	19700	66276	
2. Population per branch	10071	5033	9466	n.a	15496	
3. Share in deposits (%)	1.0	0.8	10.8	32.6	100.0	
4. Share in credit (%)	0.5	1.4	10.9	27.1	100.0	
5. Credit-deposit ratio (%)	26.0	102.3	59.1	48.6	58.4	
6. Investment <i>plus</i> credit-deposit ratio*	27.6	102.3	59.2	n.a	65.6	
7. No. of RRB branches (end-Mar 2001)	170	0	0	4907	14313	
8. Share in RRB deposits (%)	n.a	0	0	38.8	100.0	
9. Share in RRB credit (%)	0.8	0	0	31.3	100.0	
10. RRB credit-deposit ratio (%)	n.a	0	0	34.1	41.5	
11. Share in AIFI disbursements@ (%)	0.9	0.1	6.2	20.7	100.0	
12. Per capita AIFI disbursements# (Rs.)	102	5484	19087	n.a	4588	
*Investment represents holdings of state govt. loans and shares, bonds, debentures etc. of RRBs, co-operative institutions, SEBs, municipal corporations, port trusts, SFCs, SIDCs, housing boards, State Transport Corporations, etc. up to end-Mar 2001.						
@ Cumulative up to end-March 2002. #Cumulative up to end-March 2001.						
Note: RRB - Regional rural bank; AIFI - All-India financial institution.						
Source: RBI, NABARD and IDBI.						

Southern states are blessed with an excellent banking infrastructure. Andhra Pradesh has the largest number of commercial bank branches (5208 at end-March 2002) in the South (Table 19) and the third largest in the country after UP (8178) and Maharashtra (6306). However, population per bank branch is lowest in Kerala (9604), fourth lowest state in the country after Goa (4123), Himachal Pradesh (7752) and Punjab (9492). Population per branch is highest in Andhra Pradesh in the South followed by Tamil Nadu but all the southern states have much lower population per bank branch than the all-India average of 15496.

<b>Table 19: Banking and Institutional Finance in Southern States, 2001-02</b>						
	<b>Andhra Pradesh</b>	<b>Karnataka</b>	<b>Kerala</b>	<b>Tamil Nadu</b>	<b>All-South</b>	<b>All-India</b>
1. No. of bank branches (end-Mar 02)	5208	4776	3315	4751	18141@	66276
2. Population per branch	14541	11041	9604	13073	12317@	15496
3. Share in deposits (%)	5.8	5.8	4.8	6.8	23.4@	100.0
4. Share in credit (%)	5.7	5.6	3.3	9.2	23.9@	100.0
5. Credit-deposit ratio (%)	67.7	68.9	43.7	88.5	68.9@	58.4
6. No. of RRB branches (end-Mar 01)	1101	1093	325	212	2731	14313
7. Share in RRB deposits (%)	8.1	6.4	2.1	1.3	17.9	100.0
8. Share in RRB credit (%)	12.9	12.5	6.1	2.0	33.5	100.0
9. RRB credit-deposit ratio (%)	65.9	81.4	120.9	63.6	77.7	41.5
10. Share in AIFI disbursements* (%)	6.3	6.3	1.5	7.7	21.8	100.0
11. Per capita AIFI disbursements* (Rs.)	3914	5637	2230	5876	4414	4588
<i>Note: RRB - Regional rural bank; AIFI - All-India financial institution; *Cumulative up to end-March 2001.  @Including Lakshadweep and Pondicherry.  Source: RBI, NABARD and IDBI.</i>						

The four southern states had 23 percent total bank deposits in the country in March 2002 and their share in bank credit was somewhat larger at about 24 per cent. Their credit-deposit (CD) ratio, therefore, had been higher at 68.9 per cent at end-March 2002 against 58.4 per cent for all-India. Tamil Nadu had a very high CD ratio of 88.5 per cent in March 2002 which was even higher than the ratio in Maharashtra at 77.5 per cent, the highest for a state in the country. Kerala, in contrast, had the lowest CD ratio in South at 43.7 per cent, which was way below the all-India CD ratio of 58.4 per cent. Andhra Pradesh had a CD ratio of 67.7 per cent and Karnataka at 68.9 per cent, both much above the all-India ratio.

Regional rural banks (RRBs) have also taken deep roots in the South for disbursing credit to the rural areas. While their deposit share has been about 18 per cent of the all-India level, their share in credit has been over a third. This is reflected in the high credit-deposit ratio of about 78 per cent in the south in March 2001 against the national average of 41.5 per cent. In sharp contrast to the commercial banking scene, where Tamil Nadu had a very high CD ratio, for RRBs, it had the lowest CD ratio of about 64 per cent against southern average of 78 per cent. Kerala, most surprisingly, had the highest RRB CD ratio in the country of 121 per cent followed by Karnataka at 81 per cent, which is the third highest in the country after Kerala (121 per cent) and Arunachal Pradesh (107 per cent). Andhra Pradesh had a RRB CD ratio of about 66 per cent, which is lower than the all-India ratio.

Tamil Nadu had the highest share among the southern states in cumulative disbursements from all-India financial institutions (AIFIs) at 7.7 per cent up to 2000-01, followed by both Andhra Pradesh and Karnataka almost equal at 6.3 per cent. Kerala got a meagre 1.5 per cent of AIFI disbursements. In per capita terms as well, Tamil Nadu got the highest AIFI cumulative assistance up to 2000-01 at Rs. 5876 followed by Karnataka at Rs. 5637 against an all-India average of Rs. 4588. Andhra Pradesh obtained a lower Rs. 3914 per capita AIFI assistance and Kerala a very low Rs. 2230, both much below the all-South and all-India average.

## **X Social Sector**

Planning Commission has been constructing decadal Human Development Index (HDI) for all-India and for all major states of India and the latest such index is available for 2001 (Planning Commission, 2002b). This is a composite measure of a number of indicators relating to health, educational and economic attainments. Table 20 lays out the comparative position with regard to the HDI and certain individual social indicators for the northern states and it also compares the regional average for the northern states with the average for the rest of the regions.

HDI for only four states (Haryana, Punjab, Rajasthan and Uttar Pradesh) in the northern region are available from 1981 through 2001 and while the average HDI for these states has been rising rapidly, the average HDI in 2001 still remained lower than those for the southern and western regions. More importantly, the gap between the average HDI for the North and the all-India average widened steadily over the last two decades, from 8 per cent in 1981 to 11 per cent in 2001. However, Punjab stood second among the major states in HDI through out the period, 1981 to 2001 and similarly Haryana in the fifth place all through this period. Rajasthan improved its position in HDI from 12 in 1981 to 9 in 2001 but continued to remain below the national average. Uttar Pradesh slipped down from 13<sup>th</sup> place in 1981 to 14<sup>th</sup> in 1991 but restored its rank to 13<sup>th</sup> in 2001.

Considering individual social indicators, for literacy, the average rate for the northern region is much lower than that for the West, South and Northeast. Excluding the U.Ts of Chandigarh and Delhi which have a high literacy rate of about 82 per cent each, Himachal Pradesh is the most literate in the northern region at 77 per cent followed by Uttaranchal (72 per cent) and the least literate among the northern region is J & K (54 per cent) followed by Uttar Pradesh (57 per cent). Rajasthan while having a relatively low literacy rate of about 61 per cent in 2001, recorded the highest growth in literacy in the last decade from just below 39 per cent in 1991. For life expectancy, the North's average number is lower than that for the South, West and East. While Punjab (68 per cent) followed by Haryana (64 per cent) have life expectancy at birth above the national average (61 per cent), Rajasthan (60 per cent) and Uttar Pradesh (58 per cent) have lower life expectancy than the national average. The data in this regard is not available for states like Himachal Pradesh, J & K and Uttaranchal and the U.Ts of Chandigarh and Delhi. With regard to infant mortality rate (IMR), the average for the North in 1998 is higher than that for any other region in the country. This is due to the high IMR in Uttar Pradesh (85 per 1000 live births) and Rajasthan (83 per 1000 live births).

Table 20: Social Indicators of Northern States and Union Territories									
	Human Development Index Value (Rank)			Literacy Rate		Life Expectancy at Birth		Infant Mortality Rate (per 1000 live births)	
	1981	1991	2001	1991	2001	1981-85	1993-97	1991	1998
Haryana	0.360 (5)	0.443 (5)	0.509 (5)	55.85	68.59	60.3	64.1	52	69
Himachal Pradesh	n.a	n.a	n.a	63.86	77.13	n.a	n.a	82	64
Jammu & Kashmir	n.a	n.a	n.a	n.a	54.46	n.a	n.a	n.a	45
Punjab	0.411 (2)	0.475 (2)	0.537 (2)	58.51	69.95	63.1	67.7	74	54
Rajasthan	0.256 (12)	0.347 (11)	0.424 (9)	38.55	61.03	53.5	60.0	87	83
Uttar Pradesh	0.255 (13)	0.314 (14)	0.388 (13)	41.60	57.36	50.0	57.6	99	85
Uttaranchal	n.a	n.a	n.a	n.a	72.28	n.a	n.a	n.a	n.a
Chandigarh	n.a	n.a	n.a	77.81	81.76	n.a	n.a	48	32
Delhi	n.a	n.a	n.a	75.29	81.82	n.a	n.a	54	51
Total NORTH	0.278	0.345	0.419	45.42	61.68	52.7	59.5	89	77
Total WEST	0.321	0.403	0.475	56.85	71.14	56.8	61.2	96	66
Total SOUTH	0.353	0.442	0.495	58.95	70.29	60.0	64.7	57	53
Total EAST	0.267	0.349	0.416	47.37	58.65	54.5	60.4	79	67
Total NORTHEAST	0.272	0.348	0.386	54.41	65.72	51.9	56.7	84	68
All-INDIA	0.302	0.381	0.472	52.21	65.38	55.5	61.1	77	71
	Per Capita Income at Current Prices (Rs.)			Sex Ratio (Females per 1000 Males)		Poverty Ratio			
	1980-81	1989-90	2000-01	1991	2001	1993-94	1999-00		
Haryana	2370	6233	23742	865	861	25.05	8.74		
Himachal Pradesh	1704	4375	18920	976	970	28.44	7.63		
Jammu & Kashmir	1776	3618	12399	896	900	25.17	3.48		
Punjab	2674	7624	25048	882	874	11.77	6.16		
Rajasthan	1222	3241	11986	910	922	27.41	15.28		
Uttar Pradesh	1278	3087	9721	876	896	40.85	31.15		
Uttaranchal	n.a	n.a	n.a	936	964	n.a	n.a		
Chandigarh	n.a	n.a	44397	790	773	11.35	5.75		
Delhi	4030	10019	38864	827	821	14.69	8.23		
Total NORTH	1910	5006	18163	883	896	33.06	21.38		
Total WEST	2070	5536	20290	926	927	35.93	23.47		
Total SOUTH	1478	4066	18652	979	988	28.87	17.86		
Total EAST	1403	3386	12251	921	936	46.78	32.76		
Total NORTHEAST	1310	3740	11464	926	937	39.63	34.72		
All-INDIA	1741	4693	16707	927	933	35.97	26.10		
Notes:									
1. Regional averages are computed using poulation shares as weights except for p. c. income for which GSDP shares are the weights.									
2. Figures in parenthesis under Human Development Index are ranks of the respective states included in the index.									
Source: Planning Commission, Census of India, Economic Survey and CSO.									

With regard to per capita income, the regional average for the North had been just below the West in the early 1980s but by the late 1990s, the South has overtaken the North to be just below the West. Nonetheless, Punjab continued to be the second richest state after Goa and, Haryana the fourth after Maharashtra. Chandigarh and Delhi are the richest union territories in the country in that order. Himachal Pradesh progressed from a

per capita income below the national average in the 1980s to above the national average by the early 1990s. The per capita income in Rajasthan continued to be way below the national average through out the 1980s and the 1990s. Uttar Pradesh also lagged far behind the national average in per capita income and, more importantly, its gap with the national average progressively widened over the last two decades, from 27 per cent in 1980-81 to 42 per cent in 2000-01. Jammu & Kashmir slipped down from a higher per capita income than the national average in the early 1980s to below the national average thereafter.

Sex ratio (females per 1000 males) is also another social development index and the average sex ratio is most adverse (the lowest) for the northern region (896 in 2001) and is much below the national average (933). In fact among the states, Haryana has the lowest sex ratio (861) where the ratio has been declining in the last two decades followed by Punjab (874) where it declined in the last decade. The states of Himachal Pradesh and the new state of Uttaranchal have relatively better sex ratios of 970 and 964 respectively in 2001. The northern U.Ts of Chandigarh and Delhi also have extremely adverse sex ratios of 773 and 821 respectively in 2001, both lower than those in 1991. The official data indicate substantial reduction in poverty ratio during the nineties and the pace of reduction has been sharpest in the South, followed by the North and West almost by an equal proportion (Table 20). The level of poverty ratio in 1999-00 is the lowest in the South at 18 per cent followed by the North at 21 per cent, both below the national average poverty ratio of about 26 per cent. There has been substantial reduction in poverty ratio in the 1990s in almost all the northern states and U.Ts except in Uttar Pradesh where the decline has been moderate from about 41 per cent in 1993-94 to 31 per cent in 1999-00. Except Uttar Pradesh, all the states and U.Ts in northern region have poverty ratios much lower than the all-India average.

With regard to social aspects, there is no doubt that Kerala scores over not only all other southern states but also all Indian states). Kerala has been number one in HDI from 1981, the earliest date for which the index is available. However, the distance between the HDI of Kerala and the all-India average HDI has been narrowing from two-thirds to about

one-third over the last two decades. Tamil Nadu<sup>10</sup> which was number seven in HDI in 1981 rapidly improved to number three in 1991 and continued to be in that position in 2001 with Punjab remaining at number two place through out. Karnataka, which had 6th rank in HDI in 1981, slipped to 7<sup>th</sup> rank in both 1991 and 2001. Andhra Pradesh had been in the 9<sup>th</sup> position in both 1981 and 1991 and her position deteriorated to 10<sup>th</sup> place in 2001.

Table 21 indicates the comparative position of the southern states based on certain key individual social indicators besides the human development index. On literacy rate, Andhra Pradesh is not only having the lowest ratio in South, but its ratio is lower than the all-India average. Tamil Nadu is the second most literate state in South after Kerala but her all-India position is 6<sup>th</sup>. Karnataka's literacy rate is not much above the all-India average.

Table 21: Social Sector in Southern States										
	Year	Andhra Pradesh		Karnataka		Kerala		Tamil Nadu		All-India
		Quantity	Comments	Quantity	Comments	Quantity	Comments	Quantity	Comments	
1. Human development index	2001	0.416	10th rank	0.478	7th rank	0.638	1st rank	0.531	3rd rank	0.472
2. Literacy rate (%)	2001	61.1	Lowest in South	67.0	Not high	90.9	Highest	73.5	6th highest	65.4
3. Per capita NSDP at current price (Rs.)	2000-01	16373	Lowest in South	18041		21046	Highest in South	19889		16707 (NNP)
4. Life expectancy at birth	1993-97	62.40	Lowest in South	63.3	Not high	73.30	Highest	64.1	4th highest among major states	61.1
5. Infant mortality rate (per 1000)	1999	66	Highest in South	58	6th lowest	14	Lowest	52	3rd lowest among major states	70
6. Sex ratio (Females to 1000 males)	2001	978	4th highest	964	7th highest	1058	Highest	986	2nd highest	933
7. Poverty ratio (%)	1999-00	15.8	9th lowest	20.0	11th lowest	12.7	6th lowest	21.1	Highest in South	26.1
Source: (1) National Human Development Report 2001, Planning Commission, Govt. of India, (2) Economic Survey 2001-02, Govt. of India, and (3) CSO, Govt. of India.										

<sup>10</sup> Dreze (2003) recounts the pleasant experience of the visits he made in April 2003 to primary schools, health centres and ration shops in the rural areas of three districts of Tamil Nadu, which he found to be a sharp contrast to the depressing experience of his several earlier visits to north Indian villages. He poses the question why social services function so much better in Tamil Nadu or Kerala than in the bulk of north India and the difference according to him partly relates to the role of women in society.



## **XI IT and E-Governance**

Information technology (IT) has revolutionalised the economy and life in recent times and has become the new source of comparative advantage in this age of knowledge and information. While developed countries are in a significantly advantageous position to exploit the productivity gains from IT, India is placed in a unique position to be part of the information revolution due to her vast reservoir of skilled human resources. The World Economic Forum in its latest Global Information Technology Report (2003-04) has placed India at 45, six places above China (rank 51) among 102 countries considered for the computation of their “networked readiness index”, a measure for the nation’s preparedness to capture the benefits of information and communication technologies.

While at the national level India has demonstrated her IT power through huge growth in the software and related services, state governments have been vying with each other in offering an enabling environment for the growth of IT sector in their respective states. Indian software industry is increasingly export-oriented with domestic sales constituting less than a quarter of total sales in 2002-03. Karnataka (Rs. 141 billion out of total software exports of Rs. 475 billion in 2002-03), followed by a distance, Tamil Nadu (Rs. 75 billion) and Maharashtra (71 billion)<sup>11</sup> dominates software exports from the country. Uttar Pradesh (Rs. 45 billion) and Delhi (Rs. 44 billion) are now the fourth and fifth largest software exporters respectively above Andhra Pradesh (Rs. 41 billion). Haryana (Rs. 27 billion) has also now become a large software exporter mostly from its city of Gurgaon. Punjab, Rajasthan and Chandigarh, however, had exported less than Rs. 1 billion each.

All southern state governments are actively engaged in promoting information technology (IT) industry in their respective states and in the use of IT in government. Andhra Pradesh, Karnataka and Tamil Nadu governments took early lead and laid down

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<sup>11</sup> The data is from Electronics and Computer Software Export Promotion Council (ESC) as reported in *Business Standard*, New Delhi, November 3, 2003, p. 3.

their IT policies giving an array of incentives and concessions to investment in IT sector in their respective states as early as 1997 whereas Kerala government started the emphasis on IT by announcing its first IT policy in 1998.

Karnataka for long has been the leader in the country for software industry. The state software industry is concentrated in Bangalore referred to as the Silicon Valley of India and contributes now to about 30 per cent of India's total software exports. Karnataka exports bulk of its software the bulk of from the Software Technology Park (STP) in Bangalore. The government facilitated the setting up of two more STPs in Manipal and Mysore and proposed to set up two more in Hubli and Mangalore. It is interesting to note that the international quality certification for software industry, SEI CMM Level 5, were received by 18 Bangalore companies against 29 for all-India and 40 companies for all-world. The state plans to set up IT incubation centres in 12 districts of the state to foster IT entrepreneurship. The government has established training centres under *Yuva.com* in 229 locations so far in the state in partnership with leading IT training schools to impart IT skills to the educated unemployed youth especially in the rural areas. The state has provided for IT education for classes 8 to 10 in all districts.

Karnataka has made substantial headway in computerizing the various departments and activities starting with the Chief Minister's office. The most celebrated achievement of the state in this regard is *Bhoomi*, the digitization of land records. This has been completed in all 176 taluks in the state involving 20 million land records of 6.7 million landowners with provision for online mutation (change in land title) and collection of authenticated print outs from Kiosks at taluk offices. Courts could use this online land record database to adjudicate civil disputes, and banks for planning their farm credit activities and also to monitor the creation of charge on land of crop loan borrowers. This is by far the most significant case of application of IT in rural areas in India. This has the unique distinction of turning into a profitable enterprise as well with about Rs. 180 million already recovered out of the total expenditure on the project of Rs. 200 million by charging a nominal fee of

Rs. 15 for a certified printout of land record<sup>12</sup>. Other achievements of the Karnataka government include the provision of online reservation for KSRTC buses and computerisation of RTO offices in Bangalore and Gulburga and of ration cards in Bailhongal taluk of Belgaum district.

Andhra Pradesh has made rapid progress in the area of IT in the last seven years or so. A NASSCOM survey conducted in May 1998 revealed that about 23 per cent of Indian IT professionals worldwide originates from Andhra Pradesh. Engineering colleges in the state increased from 32 in 1995 to 174 now and the engineers graduating every year from there rose from 8000 to 46,000 in the same period. The state government has set up a state-of-the art IT park, HITEC (Hyderabad Information Technology & Engineering Consultancy) City at Madhapur spread over 151 acres with 5 million sq. ft. of office space and world-class infrastructure. Software Technology Parks of India (STPI), Hyderabad, set up by the Government of India is in operation from 1991-92. 1320 software export units (of which, 404 foreign companies) have been registered with STPI, Hyderabad as at the end of March, 2002 with a total capital investment of Rs. 23.37 billion and an employment of 58,000 professional staff and 6000 supporting staff. Software exports by units of STPI, Hyderabad, have been Rs. 41 billion during 2002-03 up from a meager Rs. 1.34 billion in 1996-97. Andhra Pradesh is the sixth in software exports after Karnataka, Tamil Nadu, Maharashtra, Uttar Pradesh and Delhi.

A Gartner Study on Indian Business Processing Outsourcing (BPO) released in September 2002 has indicated that Andhra Pradesh along with Tamil Nadu and Karnataka have become the preferred destinations for the fast-growing BPO industry, immediately following Delhi and Maharashtra<sup>13</sup>. Andhra Pradesh is not only the first to announce an ITES policy in January 2002, but it also the first to set up a nodal agency, APFIRST, for promoting and facilitating investment in remote services in June 2002. Andhra Pradesh has

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<sup>12</sup> This information is based on the presentation of Bhoomi Project made by Government of Karnataka in the Annual World Bank Conference on Development Economics, 21-23 May 2003, Bangalore, India.

<sup>13</sup> The study has rated 13 states based on six different criteria namely, availability of quality human resources, telecom infrastructure, power, air connectivity, government support for BPO and industrial development (Reported by The Economic Times, Mumbai, 9 September 2002).

been the biggest ITES exporter from South securing Rs. 14.11 billion in 2002-03, followed by Karnataka (Rs. 9.88 billion) and Tamil Nadu (5.23 billion)<sup>14</sup>.

Extensive networks of optical fibre cables (22,000 kms) have been laid through out Andhra Pradesh by BSNL, which is being used for by the AP State Wide Area Network (APSWAN) for connecting state headquarters with each district as part of a government Intranet. Private companies such as Reliance Infocom (3000 kms), Bharati Telecom (2500 kms) and Tata Teleservices (1750 kms) have been setting up high-speed digital networks in the state taking advantage of the liberal right of way policy announced by the government. APNet project is being launched on a pilot basis with the use of Ku Band transponder and with the assistance of ISRO. This is aimed at taking the benefits of IT to rural areas for applications like distance education, telemedicine, and e-Governance.

With regard to e-Governance initiatives, Andhra Government now occupies the most advanced position in the country followed by Karnataka, Kerala and Maharashtra<sup>15</sup>. The major successful projects of Andhra Pradesh include the following:

- **CARD** (Computer-Aided Administration of Registration Department) project under which an end-to-end solution for the automation of registration process, cutting down the time for sales registration from 10 days to less than a hour, is provided.
- **E-Seva** is a one-stop-shop for citizen services providing a wide spectrum of services under one roof like payment of public utilities bills, tax payments, issue of certificates, licenses/permits, reservations, etc. Currently there are 21 centres with 200 counters operating in the twin cities and it is proposed to extend it to 56 more towns.
- **FAST** (Fully-Automated System for Transport) where 37 offices of Regional Transport Offices are being connected and services like the issue of learner's licenses, driving licenses and registration of vehicles have been computerised.

Tamil Nadu has also been doing well in software exports recording a fast growth to reach Rs. 75 billion in 2002-03 securing the second position after Karnataka.. The state has more than 930 software companies including over 90 MNCs employing about 50,000 professionals. The state also exported Rs. 9.98 billion worth of hardware in 2002-03. The

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<sup>14</sup> See The Economic Times, Mumbai, 12 May 2003.

<sup>15</sup> In a study on e-Governance in 10 states of India by NASSCOM, has put Andhra Pradesh, Karnataka, Kerala and Maharashtra in the first four positions followed by Tamil Nadu and Madhya Pradesh (The Economic Times, Mumbai, 30 September and 17 October 2002).

government announced a new IT policy in September 2002 extending further incentives such as capital subsidy, relaxation of FSI to the extent of 100 per cent to IT parks, concessional (50 per cent) stamp duty and registration fee, etc. After the completion of “TIDEL Park”, a one million sq. ft. IT park in Chennai with its entire space fully marketed, another 1000 acre IT park is being developed in Siruseri village near South Chennai for allotment to IT companies. Tamil Nadu has now a fibre optic cable network of more than 14,000 kms set up by both private and public sector units across the state. The state government intends to use this extensive network to launch its e-governance operations right down to the taluk and block levels. Chennai is also emerging as a major hub for ITES including the business process operations (BPO). The World Bank and major foreign banks like ABN Amro, Standard Chartered and Citibank have set up their BPO centres in Chennai.

Tamil Nadu has made considerable progress in computerization of government departments such as district registrars and sub-registrars offices, regional and zonal transport offices and transport commissioner’s office, sales tax department in Chennai and Coimbatore circles. A video-conferencing facility has been set up in the state headquarters and all district headquarters. Six agencies have been permitted to create high bandwidth optic fibre networks covering every district in the state.

A pilot project called “Sustainable Access in Rural India” (SARI) has been implemented in Madurai district for providing both telephone and Internet access in every village through “Wireless in Local Loop” technology developed by IIT, Madras. This is a collaborative effort between MIT Media Lab, Harvard University Centre for International Development, IIT, Madras and I-Gyan foundation. After its successful piloting in Madurai, it is now extended to 9 more districts. 1250 villages from these districts would have Internet-based information kiosks within a year. The “SARI” project is now been renamed “RASI” (Rural Access to Services through Internet). It is facilitating dissemination of all kinds of useful information to the villagers at a low cost; enabling the villagers to obtain crop-related help from agricultural universities; and using of telemedicine to treat rural patients.

Kerala government has facilitated the set up the Techno-park in Thiruvananthapuram, which provides world-class environment for high-tech electronics and software companies in a 156-acre campus with a built-up space of 1.5 million sq. ft. It is now hosting more than 55 international and domestic companies employing around 5000 IT professionals. Software exports from Techno-park was Rs. 1.45 billion in 2000-01. The government inaugurated an ITES Habitat Centre at Kochi in May 2003 with modern facilities to create a pool of skilled manpower for ITES industry within Kerala. The state has also set up an Indian Institute of Information Technology and Management (IIITM-K) as the centre of excellence in IT offering advanced training programmes, cutting edge curriculum, strong linkages with IT industry and affiliations with internationally reputed universities.

The Kerala state has made reasonable progress in computerisation in government and provision of citizen services online. Some of the areas where digitization is in progress are motor vehicle department, commercial taxes, civil supplies department, treasuries department, employment exchanges, road transport depots, introduction of electronic ticketing machines, and videoconferencing facility between the office of Chief Minister and district collectors and networking of all the 1157 local bodies. The online processing of registration called “PEARL” (Package for effective administration of registration laws) is being implemented in 14 sub-registrar offices covering all the 14 districts. The state has developed digital database for public distribution and has started issuing new ration cards based on this. A pilot project for issuing smart cards as ration cards has been launched in Thiruvananthapuram. Automation of land records is planned. Computerisation in the Secretariat, and Collectorates has also been launched.

In the area of citizen services, Kerala government introduced “FRIENDS” (Fast, reliable, instant, efficient, network for disbursement of services), an integrated service centre offering facility to remit public utility bill payments, make tax payments, submit application and fee for ration cards, licenses/permits from motor vehicle department, deposit university exam fees, etc. Starting from Thiruvananthapuram, the facility is

available now in all the fourteen district headquarters. Another important achievement is the launching of computerised rural information centres in all 14 districts called “Sevena” whereby information on various government schemes, local bodies and other facts of relevance to rural citizens are made freely accessible through Internet.

The Department of Information Technology of the Central government has recently brought out a study on e-readiness assessment of states, union territories and central ministries/departments (India: E-Readiness Assessment Report, 2003). One can loosely define e-readiness as the preparedness and ability of the people and government to exploit the potential of IT in efficiently satisfying the needs of society and economy including governance. For the state level assessment, the study, following the methodology developed by the Center for International Development at Harvard University with some modifications, constructed a composite index based on a six-fold criteria: network access, network learning, network society, network economy, network policy and e-governance<sup>16</sup>. The composite scores of the states and union territories have been categorized into six groups by the study and are summarized in the table below.

**Table 22: E-Readiness of Indian States/U.Ts**

1. Leaders	Karnataka, Maharashtra, Tamil Nadu and Andhra Pradesh
2. Aspiring Leaders	Gujarat, Goa, Delhi and Chandigarh
3. Expectants	West Bengal, Uttar Pradesh and Kerala
4. Average Achievers	Madhya Pradesh, Punjab, Pondicherry, Haryana and Rajasthan
5. Below Average Achievers	Himachal Pradesh, Uttaranchal, Chattisgarh, Orissa, Mizoram, Tripura, Meghalaya and A & N Islands
6. Least Achievers	Assam, Jharkhand, Lakshadweep, Bihar, J & K, Sikkim, Arunachal Pradesh, Nagaland, Daman & Diu, Manipur, and D & N Haveli.

*Source: India: E-Readiness Assessment Report (2003)*

<sup>16</sup> The study has employed the principal component analysis, an econometric technique to assign objective weights to the different variables in finally arriving at a composite index for e-readiness at the state level. The weights are given to the different variables on the principle that the variation in the linear composite of these variables is the maximum.

Table 22 indicates that the southern and western states and the union territories of Delhi and Chandigarh in the North are clearly in the lead with regard to e-readiness in the country. Among the northern states, surprisingly Uttar Pradesh alone is above the average. Punjab, Haryana and Rajasthan belong to the group of average achievers and Himachal Pradesh, and Uttaranchal are below the average. J & K belong to the last group of the least achievers.

The study also categorises the states and union territories on the basis of each of the six attributes of e-readiness. With regard to e-governance, one of the attributes of e-readiness, a composite index is computed based on six indicators: special efforts of the government, government preparedness, e-services, infrastructure, data systems, and leadership & awareness. The classification of states and U.Ts into different levels of e-governance arrived at by the study is indicated in Table 23. This shows the northern states in a better light: the states of Himachal Pradesh, Uttar Pradesh, Rajasthan, Uttaranchal and the U.T of Delhi are in level 2 of e-governance and Punjab, Chandigarh and Haryana in level 3. Only J&K is in a relatively lower level of 5 in e- governance within the northern region.

**Table 23: Categorisation of the States/U.Ts in terms of E-Governance**

Level 1	Karnataka, Andhra Pradesh, Tamil Nadu and Gujarat
Level 2	Himachal Pradesh, Uttar Pradesh, Rajasthan, Uttaranchal, Kerala, Delhi, Madhya Pradesh, Maharashtra and Goa
Level 3	West Bengal, Punjab, Chandigarh and Haryana
Level 4	Tripura, Bihar, Assam, Pondicherry, Orissa, Chattisgarh, Meghalaya, A & N Islands
Level 5	Lakshadweep, J & K, Arunachal Pradesh, Mizoram and Sikkim
Level 6	D & N Haveli, Manipur, Daman & Diu, Nagaland and Jharkhand.

*Source: India: E-Readiness Assessment Report (2003).*



## **XII Biotechnology**

India has a natural edge in biotech with its huge reservoir of low-cost scientific talent and a globally competitive pharmaceuticals sector, along with rising cost of research in the US and Europe. A well-trained technician in India is paid US\$ 10,000 to US\$ 20,000 a year whereas in the US he is paid US\$ 100,000 (Fast Eastern Economic Review, 2002). State governments in Karnataka and Andhra Pradesh have sensed this opportunity and have taken proactive steps to nurture the industry in their respective states.

Karnataka government announced the “Millennium Biotech Policy” in March 2000, which provided for a set of incentives and concessions such as fiscal relief (stamp duty reduction on land registration, exemption from payment of entry tax, etc.), rebate on land cost, certain relaxation in labour laws, etc. Two biotech parks in Bangalore and Dharwad and a marine biotech park in Karwar are being set up. The government is also setting up an Institute of Agri-biotechnology (at Dharwad) and an Institute of Bio-informatics applied Biotechnology. Under the Policy, the government has instituted a single-window agency to clear all projects of biotechnology industry. It has established Karnataka Biotechnology Development Council to oversee the growth of this industry in the state. Further a “vision group” on biotechnology has been set up under by Ms Kiran Mazumdar-Shaw, the chairperson of Biocon India, India’s most prominent biotechnology company based in Bangalore, to work out future strategies. During 2001-02, the government cleared 23 small and medium biotech projects and one large project.

Andhra Pradesh has a natural advantage in biotechnology as nearly a third of India’s bulk drugs is produced in and around Hyderabad. Also, Andhra Pradesh has abundant and diverse agriculture and forest wealth, large marine resources, and cattle population providing opportunities for the development of biotech industry. Besides, Andhra Pradesh has a large network of research laboratories including the Centre for Cellular and Molecular Biology (CCMB), Centre for DNA Fingerprinting and Diagnostics (CDFD), International Crop Research Institute for Arid and Semi-Arid Tropics (ICRISAT), ICICI Knowledge Park Ltd, etc., offering the necessary support for the development of this industry. Andhra Pradesh has nine universities offering courses in

biotechnology bringing out about 900 students at the graduate level and 200 students at postgraduate level every year. Recently six Bio-informatics centres have been set up through private initiatives in Hyderabad. The state has several pioneers in biotech industry such as Shanta Biotechniques Pvt. Ltd., Bharat Biotech International Ltd., and Biological E. Ltd., and Dr. Reddy's Laboratories, providing a critical mass to the biotech industry.

ICICI Knowledge Park at Turkapalli village near Hyderabad has been set up with the assistance from the Andhra Pradesh government. The first module of 10,000 sq. ft. ready-to-use laboratories is now available on lease basis to companies along with support services. Developed land on long-term lease basis is also available to private companies to set up their own independent research facilities. The Department of Science and Technology, Govt. of India has declared the Knowledge Park as a scientific and industrial research organization (SIRO).

The government of Andhra Pradesh has announced that 600 sq. kms. covering the mandals of Shamirpet, Medchal, Keesra, and Uppal in Ranga Reddy district as the "Genome Valley" in which biotech activities will be encouraged and promoted. The government has also introduced a number of incentives for biotech units in the form of sales tax concessions, rebate on land, exemption from power cuts, exemption from certain labour regulations, etc.

Tamil Nadu government has also shown keenness in promoting biotech industry in the state. TIDCO is setting up a Biotechnology Park at Chennai, which will be equipped with a bio-resource centre and customized labs. A state-of-the-art Bio-informatics and Genomics Centre which will develop and commercialise advanced laboratory technology for DNA sequencing is also being set up. Kerala government is expected to announce a Biotechnology policy shortly. It is setting up a Biotechnology Park in Thiruvananthapuram with a Technology Incubation Centre, pilot plant and facilities for walk in and manufacture.

### **XIII Summary and Policy Conclusions**

First the southern states. We have seen that Karnataka has been the top economic performer in southern India in the post-reform period followed by Tamil Nadu. The growth performance of Andhra Pradesh and Kerala has been below par. The strong performance of a number of years has brought Tamil Nadu to a position of an advanced industrialised state although in the recent period the industrial growth in that state has slowed down. Its agriculture also is the most efficient among the southern states a major reason being that it is the most irrigated state in the South. Andhra Pradesh, Karnataka and Tamil Nadu have a mix of small, medium and large industries covering a large spectrum of products; Kerala is industrially weak having mostly small and medium industries in limited product categories, which are relatively less capital intensive. There is good investment climate in all southern states except Kerala where labour militancy, low labour productivity, poor infrastructure, and bureaucratic over-regulation have made the state investment unfriendly. Agriculture also suffered severely in Kerala till very recently as the prices of its major crops, mostly cash crops, collapsed since the mid-1990s. In this connection, it may be noted that Kerala has the largest unemployment rate in the country, which on current-daily-status basis increased from 15.5 per cent (against the national average of 6.0 per cent) in 1993-94 to 21.0 per cent (against national average of 7.3 per cent) in 1999-00. Besides, there was hardly any growth in employment in the state during the post-reform period, the worst case among the major Indian states (Planning Commission, 2002c, p.145).

All the southern states have a large number of SLPEs, which are in dire straits. The commercial loss and the rate of return are the worst for Kerala and the least problematic for Karnataka. The recent turnaround in Karnataka State Road Transport Corporation (KSRTC) to become the only profitable public transport corporation in the country is a sign of positive changes taking place in that state<sup>17</sup>. Power sector in all the four southern states are in a bad shape and the worst financial condition of the sector is in Andhra

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<sup>17</sup> The KSRTC had made a loss of Rs. 940 million in 1996-97 and the loss declined progressively and turned into a profit of Rs. 386 million in 2001-02 and still higher Rs. 611 million in 2002-03. This was possible due to better management and increased efficiency and the fares remain low in comparison with other public transport corporations (Jairaj, 2003).

Pradesh followed by Karnataka. The power reforms in these states are yet to produce tangible results.

State finances of all the four states are also in a severe condition and here again Kerala is the worst case followed by Karnataka and Andhra Pradesh, and Tamil Nadu is the least bad. Own tax-GSDP ratio in Andhra Pradesh has improved since 1996-97 but they continue to decline in other southern states. Tamil Nadu has taken a number of measures to improve tax buoyancy in last year's Budget. Shift to state VAT, empowerment of the states to tax and collect services tax, and better tax administration are the ultimate solutions for improving tax buoyancy in states. Own non-tax revenue-GSDP ratio has been falling in all the states including the southern states reflecting their inability so far to raise user charges and the resultant poor cost recovery of economic and social services, and the increasing losses from state level public enterprises. Some action is seen in Andhra Pradesh and in Karnataka to some extent, for restructuring of public enterprises but in Tamil Nadu and Kerala the process is somewhat slow.

All the four southern states have good banking infrastructure and the regional rural banks are in good shape in all the four states. However, Tamil Nadu could make use of banking and institutional finance system the best on account of its fast industrialisation and urbanisation and Kerala is the polar opposite case where the poor investment climate does not make the official financial intermediaries seek many bankable projects. Regional rural banks, on the other hand, have been most intensively used in Kerala and least intensively in Tamil Nadu.

With regard to social indicators, Kerala has been at the top for not only in south India but also in the entire country for several decades. But the social gap between Kerala and the rest of the country has been narrowing over the years as other states are catching up. Tamil Nadu made rapid progress in this regard in the 1980s and has kept the pace since then. Andhra Pradesh's position has deteriorated in the 1990s and remains the worst in the South, and Karnataka also slipped behind in this regard. With regard to per capita income, Kerala remained at the top in the South by the late 1990s closely followed by Tamil Nadu,

and Andhra Pradesh stayed at the bottom. On literacy, life expectancy and infant mortality Andhra Pradesh has remained behind all other southern states followed by Karnataka. However, on poverty, Tamil Nadu has the highest ratio in the South followed by Karnataka. Kerala again has the lowest poverty ratio in the South followed by Andhra Pradesh.

An analysis of the policy initiatives of the southern states in recent years has shown that Andhra Pradesh has made substantial progress followed by Karnataka. This is evident from the SLPE restructuring, power sector reforms, reforms in the irrigation sector, the steps to bring state finances under balance without affecting capital spending on projects, promotion of IT and biotech industry, e-Governance efforts, etc. While social development will follow economic growth, the Andhra Pradesh government has also taken direct measures to reduce poverty like massive social mobilisation of rural and urban poor into self-help groups who in turn organising and implementing developmental activities. Kerala continues to remain at the bottom of the league of reformers although the government has taken a few recent positive steps<sup>18</sup>.

The biggest challenge before all these states is to revive the commodity producing sectors, the agriculture and the manufacturing sector both of which have suffered since the mid-1990s. The agricultural productivity in most crops in India remains much lower than the world levels and the productivity in south Indian states for many crops is below the best ones in India. Andhra Pradesh and Tamil Nadu have been raising the public investment on irrigation in recent years. Karnataka and Kerala have to allocate much more funds for investment in irrigation, as they remain thinly irrigated. All the states have to bring down the huge wastage of agricultural subsidies and in turn, raise their investment in rural infrastructure including irrigation, rural roads, rural electrification, rural marketing, cold chain, agricultural research and extension services.

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<sup>18</sup> Among the recent reform measures taken by the Kerala Government, one must also mention the enactment of the Kerala Loading and Unloading (Regulation of Wages and Restriction of Unlawful Activities) Bill in August 2002 which aims to curb the notoriously restrictive trade union activity practiced by the head-load workers in Kerala.

Poor agriculture is constraining the growth of food processing industry, which is identified as one of the most promising industry in the country. The central government is actively making legislative changes to facilitate the growth of food industry such as amending the Essential Commodities Act, Prevention of Food Adulteration Act, and Forward Contracts (Regulation) Act. The states have to remove the various restrictions on storing and movement and of foodgrains by the private sector. They also have to bring in changes in the State Agricultural Produce Marketing Regulation Act pertaining to each state, to liberalise agricultural marketing permitting direct sale of produce to processors and thereby reducing the number of unproductive intermediaries in the food chain, and to allowing for contract farming. The government has to facilitate seed research, ensure better linkage between farm and laboratory and give copyright protection for proprietary planting material. The initial success with Bt cottonseeds in India has to be replicated for other crops like pulses, oilseeds and other cash crops.

While the revival of industrial and agricultural growth should be the prime concern and their revival will, to some extent, help alleviating the fiscal crisis in the states by increasing own- revenues, Kerala is different and its development strategy has to be different from the other states. While the welfare-orientation of the successive governments in Kerala made the huge advances in social progress possible, the sustainability of this model is under threat with the huge fiscal crisis of the state. Kerala's specialisation in commercial crops would continue but it cannot escape the vagaries of international markets as India has liberalised the trade regime. Among the industries, no major industries other than food processing and some agro-based manufacturing do seem to have much scope in the state. The major thrust, however, will have to continue to be the services sector predominantly tourism, IT & IT-enabled services, health care services and retailing which appear to suit the factor endowments of Kerala. Andhra Pradesh, which is in the forefront of reforms, have to pursue them further and the results may take more time, as the initial economic and social disadvantages of that state are large. Karnataka too has big social challenges ahead though it has achieved the most impressive growth performance in the 1990s. Tamil Nadu could achieve quicker results with the hastening of reforms, as its social and economic foundations are already strong.

Now the northern states. Northern states as a whole constituted about 28 per cent of the geographical area of the country and about 30 per cent of the population in 2001. These states now account for a little below 28 per cent of the aggregate GDP of the country which is almost the same share they had two decades ago. This constancy of northern share, however, hides the steady fall in the share of Uttar Pradesh, still the second biggest state economy in the country. J & K also lost its GDP share during the last two decades and Punjab too marginally. More importantly, the average per capita income of northern states has fallen below that of the southern region by the end of the 1990s. A major contributory factor in this regard has been the highest population growth in the northern region, the only region where the rate of population growth did not fall in the last decade. The demographic exceptions in the region are Himachal Pradesh and Punjab where the annual population growth has been low and declining.

The northern region's GDP growth has slowed down in the 1990s, the northeastern region being the only other region to be so. The slowdown happened in all the northern states except Himachal Pradesh and J&K. It occurred in all the three sectors of the state economies except for industry in Himachal Pradesh and Rajasthan where there had been rapid industrialization in the last decade. All the northern states except Himachal Pradesh and Rajasthan have an agricultural sector bigger than the industrial sector, an attribute similar to the states in the east and northeastern regions.

Although a major producer of a large variety of agricultural products, land productivity of agriculture in the northern states is low except in Punjab and Haryana. There has been a sharp reduction in the share of government sources of irrigation in these states except in Haryana and J&K. This is also reflected in the continued declining of the government expenditure on irrigation in most of these states in the 1990s.

New industrial investment proposals by domestic and foreign companies after liberalization have been considerably lower in this region than in western and southern regions. This is despite the fact that industrial efficiency in the northern region is above the

national average. Bank credit absorption and assistance by all-India financial institutions remain dismally low in all the northern states and the situation becomes particularly pathetic if Delhi, which accounts for a disproportionately high share in bank credit and AIFI disbursements, is excluded<sup>19</sup>.

State finances are in severe disarray in all the northern states with the exception of Delhi and, to some extent, Haryana. There is an acute crisis in the power sector of the northern states arising from huge losses being incurred by the state power entities. There has been no major private sector investment in power sector in northern region during the Ninth Plan (1997-02) and major capacity addition even by the public sector was confined to the states of only Punjab and Rajasthan. Investment in and accumulated loss by the state level public enterprises are relatively small in northern states except in the case of Delhi and Uttar Pradesh where the accumulated loss from SLPEs is one of the largest in the country.

The northern region is socially much behind the southern and western regions. The states of Punjab and Haryana as well as the U.Ts of Delhi and Chandigarh are exceptions in this regard but in these states/U.Ts there is an adverse sex ratio extremely biased against the females. The per capita income of Rajasthan, Uttar Pradesh and J&K are lagging behind the national average and for Uttar Pradesh the gap has widened over the last two decades. The decline in poverty ratio in Uttar Pradesh has been rather moderate unlike in other northern states and the ratio remains above the national average in that state also unlike other northern states.

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<sup>19</sup> Dr. Rupa Rege Nitsure, who is one of reviewers of this paper has asked, among other things, two pertinent questions. The are: why northern states despite being scoring above average on manufacturing efficiency indicators remain industrially weak and why Delhi's investment climate being just medium attracts huge bank credit and disbursements from all-India financial institutions. With regard to the first, the reviewer's conjuncture is that most of manufacturing indicators available are partial productivity indicators and are not able to capture the total productivity. The author's reasoning is that while the manufacturing efficiency may be high, these states are not attracting sufficient investments due to lack of congenial investment climate including sound governance. Regarding the second, the author's guess is that, among the manufacturing units registered in Delhi, several operate in the emerging enclaves of neighbouring states like Gurgaon and Noida. Also, Delhi being a major trading centre may be attracting large bank credit by its trade sector.



Northern region has registered rapid growth of the export-oriented software industry in recent years. In 2002-03, the region accounted for about a quarter of total software exports from the country, second only to the share of the southern region at 55 per cent. Uttar Pradesh, Delhi and Haryana have become large exporters of software from the country.

The states and U.Ts of the northern region are on different stages of e-readiness. Delhi and Chandigarh belong to the group of aspiring leaders in e-readiness just below the real leaders of Karnataka, Maharashtra, Tamil Nadu and Andhra Pradesh. Uttar Pradesh is just above the average and the states of Punjab, Haryana and Rajasthan belong to the group of average achievers. Himachal Pradesh and Uttarakhand are below the average and J&K belong to the long list of least achievers in e-readiness, mostly from the eastern and northeastern regions.

E-governance, which is the use of IT in efficient delivery of information and services to the people, is part of e-readiness of the states. Most of the northern states belong to the level 2 (Himachal Pradesh, Uttar Pradesh, Rajasthan, Uttarakhand and Delhi) and 3 (Punjab, Chandigarh and Haryana) of the stages of e-governance the exception being only J&K, which is placed at level 5.

The northern states are basically agrarian contributing about a half of the country's foodgrains production and over a four-fifth of milk, sugarcane and potato. But they have reached the limit of their agricultural growth for various reasons and that, in turn, has led to the falling growth of its industry and services sectors as well. Employment in agriculture remained high at two-thirds of labour force in the big states of Uttar Pradesh and Rajasthan. The most important task facing these states is to revitalise the agricultural sector and create an investment climate for reviving manufacturing. The state governments have to gear up their governance in supporting economic growth and delivery of public services.

Diminishing returns have set in for the agriculture of these states that were in the forefront of the green revolution and a part of the white revolution of yester years. A new

strategy to increase productivity of the agriculture sector has to be chalked out and implemented urgently by these states. This should involve the following. Give high priority for efficient maintenance of existing public irrigation projects and set up new medium and large irrigation projects. Promote result-oriented research especially in the area of agricultural biotechnology and deliver the results through efficient extension services. Enhance rural connectivity through construction of rural roads. Liberalise rural markets, support cold chain development, and improve rural electrification. The contract farming which is being actively supported by certain state governments like Punjab has to be put on the state statutes by amending their laws on land use and marketing (Sud, 2003). A second agricultural revolution has to be ushered in through deregulation and encompassing crops, horticulture, livestock and fisheries. Agriculture diversification has to be based on consumer demand for nutritionally rich products and would involve a shift from land and water-intensive to labour intensive products. This has to be buttressed by a complete revamping of the present support price, public procurement and distribution policies.

While rural development will provide the essential background for industrial growth in the northern states, it has to be bolstered by policy changes to improve investment climate. This involves not just tax concessions and subsidies (which have been liberally given by state governments one after the other) but more importantly, the creation of an industry-friendly mind-set at the bureaucratic and political levels for providing hassle-free clearances and offering flexible labour markets. Above all, the governance of these states has to improve considerably to inspire confidence in domestic and foreign investors. Each state has its own industries and areas in which it has comparative advantage and they will flourish once the congenial environment is created.

While the northern states in general are below par with regard to e-readiness, most of them except J&K are fast catching up with the southern and western states in regard to e-governance. They have to rapidly use I.T for delivery of public services to even far-flung rural areas. Information technology should be increasingly used to plug tax leaks at the check posts like in Gujarat, for land records and registration like in Karnataka, for

online receipts and payments, efficient cash-flow management and transfer of funds, and these states should outsource non-core activities like billing, recoveries, collections, payments, etc.

The reform process has caught on in these states in the recent period spurred by the acute financial crises of most of these states and the prodding by the central government. There is a flurry of activity in the state capitals after new governments took over in these states. The governments have to face up to the severe financial crises in their states by enhancing both tax and non-tax revenues. Collection of taxes can be improved through better tax administration rather than levying new taxes, shift to the state value added tax including for services and above all through the pick up in the economies of these states. The yield on non-tax revenues has to go up substantially through the levy and collection of appropriate user charges on power, transport, water, health and education especially higher education. The expenditure pattern has to be restructured towards productive directions of economic and social infrastructure and away from wasteful subsidies and bloated bureaucracy. The development of crucial infrastructure like power, roads, transport, urban infrastructure, however, cannot be solely undertaken by the states. They can be increasingly catalysed through government guarantees secured through surcharge on power, fuel, and road tax in the form of a first loss default guarantee fund (FLDGF) to be set up in the states.

Northern states have vast economic potential. The realisation of this potential is a matter of management at the political and bureaucratic levels by offering better governance and an atmosphere for investment. The study has indicated a high correlation between economic prosperity and social progress. The new governments in most of these states have a golden opportunity to set these states into a high trajectory of growth and social progress. India cannot pull ahead firmly so long as the big states of northern India like Uttar Pradesh and Rajasthan continue to lag behind.

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