Declining Incidence of Poverty in the 1980s
Evidence versus Artefacts

B S Minhas

L R Jain

S D Tendulkar

By constructing appropriate cost of living indices, which allow for the observed variations in consumption patterns and prices across states, the state-specific rural and urban poverty norms as well as the corresponding estimates of the incidence of poverty in 20 states and all-India in 1987-88 are presented. A set of criteria for ranking of states according to poverty alleviation performance is suggested. However, the reported numerical exercise in ranking is taken to reflect only a descriptive monitoring of the observed performance of different states between 1970-71 and 1987-88, without any pretensions to the analysis of the underlying causes of inter-state differences in performance on the poverty front.

The paper also shows that the massive reduction in the incidence of poverty in 1987-88, as reported by the Planning Commission in 1990, is once again largely a consequence of the peculiar statistical artefacts used by the Commission. Just as it did with the 1983 NSS data, the Planning Commission has continued to indulge in mindless tinkering with the observed NSS size distribution of consumer expenditure for 1987-88 also. Appropriately computed incidence of poverty in 1987-88 (affecting appropriate price adjustment at the state level for the relevant poor population) comes to about 48.7 and 37.8 per cent, respectively, in rural and urban India, rather than the artificially low estimates of 32.7 and 19.4 per cent reported to parliament by the Planning Commission in 1990.

I
Introduction

IN two earlier studies [Minhas and Jain (1990) and Minhas et al (1989)], we presented state-specific and all-India estimates of the incidence of poverty, separately for the rural and urban population, at five distinct intervals of time corresponding to five National Sample Survey (NSS) periods between 1970-71 and 1983. Recently [Minhas et al (1991)], the state-specific cost of living indices for the entire rural and urban populations of twenty states for four consecutive agricultural (July-June) years from 1984-85 to 1987-88, based on two alternative weighting diagrams relating to the base years of 1970-71 and 1983, were introduced. Using the retail price data base of this latter (1991) study, this paper constructs (a) the rural and urban cost of living indices at the state and all-India level for the middle fractiles considered relevant for updating the exogenously specified all-India rural and urban poverty norms, (b) then estimates the incidence of rural and urban poverty in 1987-88 in twenty different states and India as a whole, and (c) undertakes a critical examination of the veracity of the Planning Commission's claim of a big fall in the incidence of poverty in 1987-88.

The layout of the paper is as follows. In Section II, we take up the construction of state-specific cost of living indices for the middle-range of rural and urban populations for 1987-88 with 1970-71 as the base year. Here we also undertake updating of the inter-state price differentials separately for

the middle range of rural and urban populations from 1970-71 to 1987-88, and work out the state-specific rural and urban poverty lines in 1987-88. The estimates of the incidence of rural and urban poverty in each state and all-India in 1987-88, along with those for 1970-71 and 1983, are presented in Section III. This section also examines and analyses the comparative movements in state-specific poverty incidence and numbers of the poor over the two successive time periods (1970-71 to 1983 and from 1983 to 1987-88) and also across the rural and urban sector of each state during each one of these two time periods. In Section IV, we compare our estimates of rural and urban poverty at the all-India level for the 1980s with those provided by the Planning Commission. The paper closes with concluding remarks, which comprise Section V.

II
State-Specific Rural and Urban Cost of Living Indices for Middle Population and Poverty Norms: 1970-71, 1983, 1987-88.

To adjust an exogenously specified poverty norm for price-changes at the state level, one requires state-specific cost of living index relating to the relevant section of the population. This relevant section of the population, referred to as the middle-range of the population, is taken to comprised persons falling within a range of monthly per capita total expenditure (MPCTE) which encloses the state-specific poverty norm in the base year.[1] Such state-specific cost of

living indices, for the middle-range of population, were obtained earlier for rural areas by Minhas and Jain (1990) and for urban areas by Minhas et al (1988), for National Sample Survey (NSS) years 1972-73, 1973-74, 1977-78 and 1983 with 1970-71 as the base year and using 1970-71 NSS consumer expenditure pattern of the rural or urban middle population as the relevant weighting diagram. The price data used were the adjusted price relatives of the consumer price index series for agricultural labourers (CPIAL) for rural areas and the combined price relatives data of the consumer price index series for industrial workers (CPIIW) and for non-manual employees (CPINM) for urban areas.

In this study, we make use of the same 1970-71 weighting diagrams for the middle range of the rural and urban populations and the price relatives data of the same three series for the agricultural year 1987-88 as used in Minhas et al (1991) to construct statewise and all-India cost of living indices (CPIMR and CPIMU), relating to the rural and urban middle populations, for 1987-88 with 1970-71 as the base year. These are presented in Table 1. We also present in Table 1, the state-specific cost of living indices (CPITR and CPITU) for the total rural and urban populations for 1987-88 with 1970-71 = 100 [which are carried over from Minhas et al (1991)] and the state-specific price indices relative to all-India (SV1R and SVIU) separately for the rural and urban middle population for the years 1970-71 and 1983. These are taken from our earlier studies [Minhas and Jain (1990)] for rural

and [Minhas et al (1989)] for the urban population. For a given state, applying CPIMR (CPIMU) for 1987-88 (1970-71 = 100) to SVIR (SVIU) in 1970-71, we obtain SVIR (SVIU) in 1987-88 and present them in Table 1 with a view to facilitating a comparison of the inter-state price differential (relative to all-India) over time from 1970-71 to 1987-88.

In 1987-88, the cost of living index for the middle population (CPIM), compared to that for the total population (CPIT), is found to be on the lower side for all states except Bihar, Orissa and West Bengal in the rural sector and five states of Gujarat, Himachal Pradesh, Jammu and Kashmir, Maharashtra and UP in the urban sector. This shows that the use of CPIT, instead of the appropriate CPIM, at the state level will cause the poverty norm and the poverty incidence to be over-stated in most of the states, both in the rural and urban areas.

Inter-state differential in the price index (relative to all-India) for the middle population (SVI) in 1970-71, 1983 and 1987-88 are found to be different from year to year in the rural as well as urban areas [see Table 1, Columns (7) to (12)]. SVI—in percentage terms—had the minimum value for (a) Andhra Pradesh in all the three years, i e, 91.3, 86.2 and 86.0 per cent in the respective years 1970-71, 1983 and 1987-88 in the rural areas, and (b) Jammu and Kashmir (78.5 and 81.6 per cent) in 1970-71 and 1983 and Himachal Pradesh (82.2 per cent) in 1987-88 in the urban areas.

Maximum value for SVI in the rural sector was experienced by West Bengal (124.8) in 1970-71 and Kerala (118.3 and 126.3) in 1983 and 1987-88; and by Delhi (118.8), Orissa (116.8) and Delhi (115.3) in the same three respective years in the urban sector.

There was no discernible pattern in the movement of SVI over time from 1970-71 to 1987-88 for the various states. Both in the rural as well as the urban sector, there were states experiencing rise (decline) during period I from 1970-71 to 1983, followed by rise (decline) over the next period II from 1983 to 1987-88. On the other hand, there were other states which experienced rise (decline) during period I, followed by decline (rise) in period II.

We have taken the all-India rural and urban poverty lines as exogenously specified by the Planning Commission, i e, monthly per capita total expenditure (MPCTE) of Rs 49.09 (rural) and Rs 56.64 (urban) at all-India level, both at 1973-74 prices.[2] These poverty norms need to be converted to prices prevailing in the survey years 1970-71, 1983 and 1987-88 for estimating the incidence of poverty in these years. For this purpose, we have used the appropriate cost of living indices for the relevant middle-range of population as described above. For the years 1970-71 and 1983 (with 1973-74 = 100), these indices are taken from earlier studies [Minhas and Jain (1990) for rural middle-range population and Minhas et al (1989) for the corresponding urban population]. For the year 1987-88, we have made use of the

indices presented in Table 1. These all-India poverty norms for 1970-71, 1983 and 1987-88 are converted to the state-specific prices by using the SVI for the respective years given in Table 1. The state-specific poverty norms, thus obtained, are presented in Table 2. Given the foregoing procedure, there is an obvious one-to-one relationship between the state-specific poverty norms and the state-specific SVI.

It may be noted from the results reported in Table 2 that, compared to all-India, the state-specific poverty norm in all the three years turned out to be on the *lower* side for four states in the rural and ten states in the urban sector; and, on the *higher* side, for twelve states in the rural and eight states in the urban sector. The states whose poverty norms fluctuated around the all-India poverty norm over the three years were Gujarat, Jammu and Kashmir, Rajasthan and Tamil Nadu in the rural areas and Karnataka and Tamil Nadu in the urban areas. Among all the states, in all the three years, the lowest poverty norm was noticed for AP in the rural and Jammu and Kashmir (except that it was the second lowest in 1987-88) in the urban areas. Kerala had the highest poverty norm in the rural areas (except that it was second to West Bengal in 1970-71), whereas in the urban areas the poverty norm of Delhi was the highest except in 1983 when urban Orissa had the highest poverty norm.

Line 22 in Table 2 presents the range in poverty norms across states as per cent of all-India poverty norm which provides an idea of the relative variability in poverty norms across states. This relative range can be seen to have declined over time in the three selected years for the urban population. For the rural

population, it increased in the drought year 1987-88 compared to the earlier two years. The inter-state relative variability fluctuated between 33 and 40 per cent, both in the rural and urban sectors, over the three years falling in the time period from 1970-71 to 1987-88.

III

Estimates of Rural and Urban Poverty Incidence

At the state and all-India level, we use the poverty line estimates obtained in Section II, along with the size distributions[3] of per capita total expenditure (PCTE) available from the NSS, to calculate the headcount ratio measure of poverty incidence, separately for the rural and urban areas in each of the years 1970-71, 1983 and 1987-88. For this purpose, we have followed the procedures of simple linear interpolation between log x and P where x denotes monthly PCTE and P the proportion of state-specific population (rural or urban) with monthly PCTE less than or equal to x. Other non-linear interpolation procedures between x and P, which are more sophisticated but computationally more cumbersome than ours, have been noted to yield virtually the same estimate of the headcount ratio. We have therefore preferred the computationally simpler procedure. A comparison of alternative all-India estimates of headcount ratio and numbers of the poor are presented in Tables 3 and 4. The estimated rural and urban headcount ratios for each of the 20 states (as also all-India) are presented in Table 5. We also provide in Table 5 the estimate of headcount ratio at the entire state level which is obtained as a weighted average of rural and urban estimates, with the state-

TABLE 1: STATEWISE CONSUMER PRICE INDICES FOR MIDDLE (CPIM) AND TOTAL (CPIT)
POPULATION FOR 1987-88 (1970-71 = 100) AND STATE-SPECIFIC PRICE INDICES (RELATIVE TO
ALL-INDIA) FOR MIDDLE POPULATION FOR 1970-71, 1983 AND 1987-88: RURAL AND URBAN AREAS

Sl No	State	1987-88 (1970-71 = 100)				State Price Index (All-India=100)					
		Rural		Urban		Rural			Urban		
		CPIM	CPIT	CPIM	CPIT	70-71	1983	87-88	70-71	1983	87-88
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Andhra Pradesh	349.7	357.7	391.0	398.3	91.3	86.2	86.0	99.1	94.1	95.6
2	Assam	364.0	368.1	338.6	365.1	116.7	111.1	114.4	98.8	86.5	82.5
3	Bihar	368.5	366.9	381.9	393.2	112.3	113.1	111.4	107.8	105.0	101.5
4	Gujarat	387.5	394.7	421.5	418.8	101.9	99.4	106.3	106.5	108.3	110.7
5	Haryana	371.4	377.9	381.7	390.9	108.4	102.3	108.3	96.2	93.0	90.6
6	Himachal Pradesh	378.9	387.1	373.0	359.7	108.4	103.6	110.5	89.4	83.5	82.2
7	Jammu and Kashmir	427.3	429.5	436.3	430.1	93.4	102.4	107.4	78.5	81.6	84.5
8	Karnataka	366.9	374.0	412.0	417.5	95.8	93.8	94.6	101.1	99.2	102.7
9	Kerala	400.9	404.8	409.1	413.1	117.0	118.3	126.3	107.9	113.0	108.9
10	Madhya Pradesh	370.5	379.9	407.5	412.0	96.5	94.3	96.3	110.7	109.0	111.2
11	Maharashtra	375.8	378.3	426.7	420.9	105.9	104.6	107.1	106.4	113.3	112.0
12	Manipur	366.4	367.6	338.6	365.1	116.7	112.1	115.1	98.8	86.5	82.5
13	Orissa	384.0	381.9	379.9	386.0	103.4	111.1	106.9	114.9	116.8	107.6
14	Punjab	383.4	387.5	363.4	368.1	108.4	103.9	111.8	96.8	88.2	86.7
15	Rajasthan	430.1	436.7	409.8	412.9	95.6	97.1	110.6	102.7	101.5	103.8
16	Tamil Nadu	395.4	399.1*	449.5	449.7	96.1	107.1	102.3	95.0	105.4	105.3
17	Tripura	356.3	366.6	338.6	365.1	116.7	109.7	111.9	98.8	86.5	82.5
18	Uttar Pradesh	402.1	410.3	396.6	394.2	91.4	93.9	98.9	97.9	96.0	95.8
19	West Bengal	341.6	341.0	364.1	381.2	124.8	117.7	114.7	99.8	90.0	89.6
20	Delhi	382.6	389.0	393.6	400.1	108.4	103.5	111.6	118.8	109.8	115.3
21	All-India	371.5	384.9	405.5	408.2	100.0	100.0	100.0	100.0	100.0	100.0

specific rural and urban populations as weights. For the statewise rural and urban populations, we have used the 1971 census estimates for the year 1970-71, the estimates given in *Sarvekshana*, Vol XI, No 4, Issue No 35, April 1988 (p S-222) for 1983 and the estimates given in *Sarvekshana*, September 1990, Special Number, Statement 1, (p 16) for 1987-88.

OVERVIEW OF ALL-INDIA ESTIMATES

At the all-India level, two alternative estimates of headcount ratio can be derived: (i) an estimate based on the all-India poverty line and the all-India size distribution of PCTE, and (ii) the population weighted average of state-specific headcount ratios using state-specific poverty lines and state-specific size distributions of PCTE. The estimate (i) can be shown to be equivalent to the population weighted average of state-specific headcount ratios using a *uniform* all-India poverty line for each of the states and state-specific size distributions of PCTE. Consequently, the difference between estimates (i) and (ii) boils down to the use of a uniform poverty line across states in (i) and state-specific price-adjustment factors in (ii). As a short-hand description, we call estimate (i) as the direct all-India estimate and estimate (ii) as the estimate aggregated over 20 states or the weighted average estimate. These two estimates are presented in columns (4) and (6) respectively in Table 3 for three time-points of 1970-71, 1983 and 1987-88 and for the rural, urban and combined (rural plus urban) populations, separately. Between these two estimates, the aggregated headcount ratio for 20 states (i e, aggregated all-India estimate or the weighted average estimate) is conceptually superior, as a representative all-India estimate. This is so because it allows for state-specific variations in prices relevant to the poor population in each state.

Applying this weighted average headcount ratio to the all-India population, we obtain the all-India estimate (which we call the alternative estimate) of the number of the poor, which is presented in column (8) of Table 3. Two other estimates of the number of the poor are also given in Table 3. One of these, which appears in column (5), is derived by applying the direct all-India estimate of the headcount ratio (in column 4) to the all-India estimates of population. The other estimate, which is given in column (7), is an aggregate of the numbers of the poor in 20 states considered in this study. We prefer the estimate given in column (8) to those in columns (5) and (7) because of the more comprehensive coverage in terms of population as well as due to the fact that state-specific price variations are taken into account in its estimation.

Based on the aggregated results for 20 states given in Tables 3 and 4, the following findings may be noted. Both at the rural and the urban sector level, the headcount ratio estimate aggregated for 20 states (column 6) is higher than the direct estimate (column

4). The same holds for the alternative (column 8) and the direct (column 5) estimates of the numbers of the poor. Obviously, the differences in the two estimates are attributable to the different state-specific poverty lines used in deriving the aggregated headcount ratios in column (6). It is worth noting that substantial under-statement is involved—about 4 percentage points—in the direct estimate of headcount ratio in 1987-88 compared to the aggregated estimate for all-India rural. This amounts to under-estimating the numbers of the rural poor by about 22 million in 1987-88 in comparison with the

use of the conceptually better, aggregated estimate of headcount ratio.

A continuous decline in the headcount ratio in the three selected years, both in the rural and the urban areas, is indeed apparent. Over twelve and a half years (period I) between 1970-71 and 1983, rural headcount ratio declined by 8 percentage points (from 58.8 per cent to 50.8 per cent) and the urban ratio declined by 6.5 percentage points (from 46.2 to 39.7 per cent). In the next four and a half years (period II) between 1983 and 1987-88, the headcount ratio declined further by 2 percentage points for both the

TABLE 2: STATEWISE POVERTY LINES FOR 1970-71, 1983 AND 1987-88—RURAL AND URBAN POPULATION
(Rs per Month and per Person)

Sl No (1)	State (2)	Rural			Urban		
		70-71 (3)	1983 (4)	87-88 (5)	70-71 (6)	1983 (7)	87-88 (8)
1	Andhra Pradesh (AP)	30.15	80.31	105.43	38.69	104.69	151.28
2	Assam (ASM)	38.53	103.50	140.23	38.57	96.23	130.61
3	Bihar (BHR)	37.06	105.33	136.56	42.09	116.81	160.73
4	Gujarat (GJT)	33.64	92.64	130.34	41.58	120.48	175.25
5	Haryana (HRY)	35.77	95.27	132.85	37.56	103.46	143.36
6	Himachal Pradesh (HP)	35.77	96.49	135.53	34.90	92.89	130.19
7	Jammu and Kashmir (J&K)	30.83	95.37	131.73	30.65	90.78	133.71
8	Karnataka (KRN)	31.63	87.37	116.04	39.47	110.36	162.62
9	Kerala (KER)	38.62	110.23	154.83	42.12	125.71	172.33
10	Madhya Pradesh (MP)	31.86	87.86	118.06	43.22	121.26	176.11
11	Maharashtra (MHR)	34.96	97.45	131.31	41.54	126.05	177.25
12	Manipur (MNP)	38.53	104.43	141.16	38.57	96.23	130.61
13	Orissa (ORS)	34.13	103.53	131.04	44.86	129.94	170.41
14	Punjab (PNB)	35.77	96.77	137.14	37.79	98.12	137.33
15	Rajasthan (RJN)	31.55	90.50	135.68	40.09	112.92	164.31
16	Tamil Nadu (TN)	31.74	99.77	125.49	37.09	117.26	166.71
17	Tripura (TRP)	38.53	102.18	137.27	38.57	96.23	130.61
18	Uttar Pradesh (UP)	30.17	87.48	121.30	38.22	106.80	151.58
19	West Bengal (WB)	41.19	109.69	140.70	38.96	100.12	141.86
20	Delhi (DEL)	35.77	96.45	136.85	46.38	122.15	182.55
21	All-India (AI)	33.01	93.16	122.63	39.04	111.25	158.31
22	Relative range in poverty line (per cent)	33.44	32.12	40.28	40.29	35.20	33.07

Note: Relative range in poverty line (per cent) across states given in line 22 is given by 100 (Max PL - Min PL)/AIPL, where Max PL and Min PL denotes state-specific maximum and minimum poverty lines respectively and AIPL the all-India poverty line.

TABLE 3: HEADCOUNT RATIO AND NUMBER OF POOR: A COMPARISON OF DIRECT ALL-INDIA ESTIMATES WITH THAT AGGREGATED FOR 20 STATES

Sl No (1)	Segment of Population (2)	Year (3)	Direct All-India Estimate		Estimate Aggregated for 20 States		Alternative All-India Estimate of Number of Poor (Million) (8)
			Headcount Ratio (Per Cent) (4)	Number of Poor (Million) (5)	Headcount Ratio (Per Cent) (6)	Number of Poor (Million) (7)	
1	Rural	1970-71	57.33	251.691	58.75	255.971	257.940
2	Urban	1970-71	45.89	50.068	46.17	49.933	50.377
3	Rural and urban	1970-71	55.05	301.759	56.25	305.904	308.317
4	Rural	1983	49.02	267.310	50.77	274.805	276.833
5	Urban	1983	38.33	65.962	39.74	68.391	69.177
6	Rural and urban	1983	46.46	333.272	48.11	343.196	346.010
7	Rural	1987-88	44.88	261.455	48.69	281.261	283.664
8	Urban	1987-88	36.52	74.962	37.76	76.569	77.496
9	Rural and urban	1987-88	42.70	336.417	45.85	357.830	361.160

Note: These are based on the Planning Commission poverty lines of monthly PCTE of Rs 49.09 and Rs 56.64 for all India rural and urban population respectively at 1973-74 prices.
Source: Table 5.

rural and the urban populations. The combined (rural plus urban) headcount ratio registered a continuous decline from 56.3 (1970-71) to 48.1 per cent (1983) and further to 45.9 per cent in 1987-88. The compound annual rate of decline in the headcount ratio in period II (0.9 and 1.1 per cent for all-India rural and urban) was slightly lower than that in period I (1.2 per cent both for all-India rural and urban), with no significant differences across the rural-urban dimension.

An interesting aspect of the movements in headcount ratio is the decline between 1983 and 1987-88. This is particularly striking because 1987-88 was widely publicised as being severely affected by the so-called 'worst drought', and in previous experience, the headcount ratio had always tended to rise in years of bad agricultural harvests. It would therefore be useful to comment on the possible reasons for this decline in 1978-88, even though detailed analysis is not possible within the scope of the present paper. First, the year 1987-88 was not marked by a substantial production loss. The foodgrains production in physical terms was reported to have declined from 143.42 million tonnes in 1986-87 to 140.35 million tonnes in 1987-88 or a little over 2 per cent decline over the year previous to 1987-88. The index of foodgrains output (base triennium ending 1969-70 = 100) showed a slightly higher decline of 2.7 per cent over the previous year. The index of production for non-foodgrains actually registered a *rise* of a little over 3.5 per cent. Consequently, income losses due to drought might not have been very serious. Secondly, efforts were made to offset the possible income losses due to drought by stepping up special wage-employment programmes. On the top of this, the stability in food prices was maintained through large releases of foodgrains in the public distribution system.[4] This explanation is also supported by the findings of the employment/unemployment survey of the NSS conducted in 1987-88, which showed a decline in the person-day rate of rural unemployment in 1987-88 compared to 1983.[5]

In contrast to the movement in the headcount ratio, the absolute numbers of the poor increased continuously in both the rural and the urban sectors. The increase, based on column (8) of Table 3, was of the order of nearly 19 million in period I for both the rural and the urban population. In period II, the increase of over 8 million in the numbers of the urban poor was about 1.5 million *higher* than the increase in the numbers of the rural poor. While the rate of population increase could not be offset by the rate of decline in the headcount ratio, the impact of population growth was considerably sharper for the urban population. The compound annual rate of growth of the rural poor varied between 0.5 and 0.6 per cent, whereas for the urban poor it was as high as 2.5 to 2.6 per cent during both the periods. For the combined (rural plus urban) poor population, the rate of growth

was of the order of 0.9 per cent per annum in the two periods under consideration. This may be compared with the compound annual rate of growth of total population of around 2.2 per cent over the same period.

STATE LEVEL RESULTS

State-specific headcount ratios for 20 states are presented in Table 5 for the rural, urban and combined (rural plus urban) population . A casual examination of this table suggests a fair amount of inter-state variability every year and for different segments of the population. In analysing the patterns emerging from this table, we do not consider the rural and the urban segments of Manipur, Tripura and Delhi and confine our discussion in this section to the remaining seventeen major states.[6] The very small size of the population of Manipur, Tripura and Delhi (rural) compared to the remaining major states introduces an element of dis-

continuity in terms of size which may distort the inferences about inter-state variability. Delhi (urban) has a large population but its metropolitan city character makes it non-comparable to the urban populations of the other major states where metropolitan cities form only a part of the urban population and that too only in a few states. It would be more appropriate to compare Delhi (urban) with other metropolitan cities, such as Bombay, Calcutta and Madras. This comparison, however, is not possible in the absence of separate data for other individual metropolitan cities.

In analysing the statewise results, we consider the following three aspects. First, we present a summary picture in terms of the aggregated headcount ratios for 17 major states, and certain summary indicators of disparity in the headcount ratios across 17 states. Next we consider the categories of the 17 states with reference to their poverty

TABLE 4: CHANGE IN THE NUMBER OF POOR BETWEEN PERIODS 1970-71 TO 1983 AND 1983 TO 1987-88—ALTERNATIVE ALL-INDIA ESTIMATES

(Millions)

Sl No	Segment of Population	Direct All-India Estimate		Estimate Aggregated for 20 States		Alternative All-India Estimate	
		I	II	I	II	I	II
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1 Rural		15.619	-5.855	18.837	6.455	18.893 (0.6)	6.831 (0.5)
2 Urban		15.894	9.000	18.470	8.177	18.800 (2.6)	8.319 (2.5)
3 Rural and urban		31.513	3.145	37.307	14.632	37.693 (0.9)	15.150 (0.9)

Notes: (1) I and II refer to the periods 1970-71 to 1983 and 1983 to 1987-88, respectively.
(2) Figures within brackets refer to annual rate of increase in the number of poor over the periods I and II, respectively.
Source: Table 3 columns (5), (7) and (8).

TABLE 5: STATEWISE HEADCOUNT RATIOS IN 1970-71, 1983 AND 1987-88—RURAL, URBAN AND ENTIRE STATE POPULATION

(Per cent)

Sl No	State	Rural			Urban			Entire State		
		70-71	1983	87-88	70-71	1983	87-88	70-71	1983	87-88
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Andhra Pradesh	51.57	34.92	31.56	46.15	35.48	40.04	50.52	35.06	33.80
2	Assam	50.36	49.24	53.08	19.00	21.02	11.37	47.59	46.23	48.34
3	Bihar	68.79	70.44	66.26	54.25	51.29	56.70	67.93	67.93	64.87
4	Gujarat	57.76	36.32	41.57	50.33	37.34	38.80	55.67	36.65	40.65
5	Haryana	40.02	24.01	23.17	34.55	21.30	18.25	39.05	23.38	21.90
6	Himachal Pradesh	28.73	22.96	24.75	18.73	7.05	3.29	28.03	21.72	23.02
7	Jammu and Kashmir	27.67	29.25	33.11	26.71	11.76	10.96	27.49	25.46	28.04
8	Karnataka	52.82	40.26	42.29	47.01	37.65	45.03	51.41	39.47	43.18
9	Kerala	69.03	47.20	44.02	62.42	47.78	44.47	67.96	47.32	44.12
10	Madhya Pradesh	62.40	54.05	49.83	58.37	51.95	46.03	61.74	53.60	48.94
11	Maharashtra	55.75	54.04	54.17	40.08	40.35	35.64	50.87	49.11	47.15
12	Manipur	72.87	30.24	20.24	37.02	13.38	8.64	68.15	25.62	16.86
13	Orissa	74.61	65.05	65.64	52.23	52.54	44.49	72.73	63.49	62.50
14	Punjab	28.65	18.45	21.02	24.64	21.58	11.18	27.70	19.35	17.97
15	Rajasthan	54.74	42.00	41.89	46.00	37.22	41.50	53.20	40.95	41.80
16	Tamil Nadu	66.45	56.84	51.30	56.16	45.14	39.19	63.33	52.91	47.08
17	Tripura	54.54	44.29	24.22	21.35	19.25	12.65	51.08	41.51	22.90
18	Uttar Pradesh	51.36	49.78	47.70	53.81	48.14	41.87	51.70	49.47	46.45
19	West Bengal	76.67	65.87	57.19	33.07	28.84	30.63	65.88	55.92	49.81
20	Delhi	13.79	7.31	6.14	30.14	27.45	15.09	28.46	26.11	14.60
21	All India	57.33	49.02	44.88	45.89	38.33	36.52	55.05	46.46	42.70
22	20 States	58.75	50.77	48.69	46.17	39.74	37.76	56.25	48.11	45.85

alleviation performance as judged by the *level* of the state-specific headcount ratio in relation to that at the all-India level in each of the three years. Thirdly, we attempt an exercise of ranking different states on the basis of their poverty alleviation performance in terms of their annualised rates of change in the headcount ratio and the number of the poor over the two periods 1970-71 to 1983 and 1983 to 1987-88. In this connection, we propose certain plausible criteria for ranking and indicate the rank-order position of each state for the rural and the urban population separately.

Summary Picture of State-Specific Poverty Incidence (Headcount Ratio)

Based on data relating to 17 major states for three different years in the 1970s and 1980s for each segment of the population, Table 6 provides the following summary information:

(i) weighted average headcount ratio for 17-states taken together,

(ii) minimum and maximum values of the headcount ratio among the 17 states, and

(iii) weighted coefficient of variation across 17 states.

The following regularities can be perceived from Table 6. First, for the rural population, Punjab has the lowest headcount ratio and Bihar the highest in all the three years (with the exception of 1970-71 when West Bengal featured in that position). Given the large weight of the rural population, Punjab and Bihar occupy the same extreme but opposite positions for the combined (rural plus urban) population. While the lowest headcount ratio in the urban areas is experienced by Himachal Pradesh in all the three years, no single state consistently appears at the worst slot. Similar to the situation noted above for 20 states, the weighted average headcount ratio for 17 major states also shows a decline over the time-periods considered in this study. Inter-state relative disparity in the headcount ratio, as measured by the weighted coefficient of variation, shows a slight tendency to rise for the urban population over the three time-points. For the rural as well as the total (rural plus urban) populations, the inter-state relative disparity shoots up in 1983 as compared to 1970-71 before registering a decline in 1987-88. Notice that the weighted average rural or urban headcount ratio for 17 states (given in column 6 of Table 6) declined at the rate of 1.15 per cent per annum (pcpa) between 1970-71 and 1983 and 0.88 pcpa between 1983 and 1987-88 (Tables 8.R and 8.U, last line and columns 4 and 5). Given this movement in the weighted average headcount ratio, an *increase* in the weighted coefficient of variation simply reflects the fact that the decline in head count ratio was not evenly shared by all the states, especially for the urban population. For the rural population, relative inter-state disparities

remained virtually unchanged when we compare the two end-points of 1970-71 and 1987-88.

We may also note some other broad regularities emerging from Table 5 which have been subsumed in the summary picture presented in Table 6. First, Assam (rural) and Bihar (urban) had the unique but dubious distinction of registering a higher headcount ratio in 1987-88 in comparison with both 1970-71 and 1983. Similarly, the rural populations of five states (Assam, Gujarat, Himachal Pradesh, Jammu and Kashmir and Punjab) and the urban populations of six other states (Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Rajasthan and West Bengal) did not experience a decline in the incidence of poverty (headcount ratio) between 1983 and 1987-88.

Categories of States on Basis of Level of Headcount Ratio:

On the basis of the *level* of state-specific headcount ratios in each of the three years, we distinguish three categories of states, namely,

Category A: those states having headcount ratio above all-India level in all the three years.

Category B: those states having headcount ratio below all-India level in all the three years.

Category F: the states excluding those in category A or B, i e, states having fluctuations from year to year in the position of their headcount ratio in comparison with the all-India level.

Table 7 provides the listing of states in categories A, B and F for the rural and urban populations. For each of these cate-

gories and for each year, we also provide additional information on

(i) the weighted average headcount ratio for the category,

(ii) the numbers of the poor in the category, and

(iii) the percentage share of the category in the numbers of the poor in 17 states together.

It may be noted that category A turns out to be numerically the largest, with its share ranging between 46 and 48 per cent for the rural poor and between 49 and 51 per cent for the urban poor population over the period from 1970-71 and 1987-88. The rural poor population in the three eastern states of Bihar, Orissa and West Bengal along with Madhya Pradesh and Tamil Nadu belong to this category. The weighted average headcount ratio in these five states is 10 to 12 percentage points above that for the 17 states together. In the urban areas, six states (Bihar and Orissa in the east, Kerala and Tamil Nadu in the south along with Uttar Pradesh and Madhya Pradesh) belong to category A, with its weighted average headcount ratio exceeding that for the 17 states together by six to 10 percentage points. The absolute numbers of the poor in category A increased over the three time-points for the urban population, whereas in the rural sector it increased between 1970-71 and 1983 before registering a slight decline between 1983 and 1987-88.

Category B was numerically the smallest, as one should expect. In the rural segment, it included the north and north-western states of Jammu and Kashmir, Punjab, Haryana, Himachal Pradesh and Rajasthan along with Andhra Pradesh and Karnataka

TABLE 6: WEIGHTED AVERAGE, MINIMUM AND MAXIMUM HEADCOUNT RATIO AND INTER-STATE COEFFICIENT OF VARIATION FOR 1970-71, 1983 AND 1987-88—RURAL, URBAN AND COMBINED POPULATION

(Per cent)

Sl No (1)	Segment of Population (2)	Year (3)	Average (4)	Minimum (5)	Maximum (6)	CV (7)
1	Rural	1970-71	58.78	27.7(J&K) 28.7(PNB)	76.7(WB)	18.66
2	Rural	1983	50.86	18.5(PNB)	70.4(BHR)	25.26
3	Rural	1987-88	48.88	21.0(PNB)	66.3(BHR)	19.20
4	Urban	1970-71	46.78	18.7(HP) 19.0 (ASM)	62.4(KER)	21.01
5	Urban	1983	40.31	7.1(HP)	52.5(ORS) 52.0 (MP)	22.14
6	Urban	1987-88	38.78	3.3(HP)	56.7(BHR)	24.15
7	Combined	1970-71	56.44	27.5(J&K) 27.7(PNB)	68.0(KER) 67.3(BHR)	17.29
8	Combined	1983	48.39	19.4(PNB)	67.9(BHR)	23.48
9	Combined	1987-88	46.32	18.0(PNB)	64.9(BHR)	21.89

Notes: (1) Column (4) provides a weighted average headcount ratio for 17 major states excluding Manipur, Tripura and Delhi. Weights are state-specific populations.

(2) Along with the state experiencing minimum or maximum headcount ratio, we also provide the next state in rank whenever it is within one percentage point range of the minimum or maximum.

(3) CV refer to weighted coefficient of variation across 17 major states. Weights are the state specific populations.

(4) For explanation of the abbreviations used for state names, see Table 2.

in the south. Their group's headcount ratio was 10 to 16 percentage points below the average headcount ratio for 17 states. In the urban areas, this category included Jammu and Kashmir, Punjab, Haryana and Himachal Pradesh along with Assam and, interestingly, the eastern state of West Bengal which happens to be in category A for the rural sector. The urban headcount ratio for this category B was 16 percentage points below the average headcount ratio for 17 states.

The residual category F covered over one-third of the rural and two-fifths of the urban poor population. Among others, it included Uttar Pradesh and Maharashtra in the rural segment and Andhra Pradesh, Karnataka and Maharashtra in the urban segment.

The group headcount ratio showed a decline in all the categories over the three time-points.

Exercise in Ranking of States according to Poverty Alleviation Performance

In this section, we attempt to rank different states with reference to performance in poverty alleviation in terms of the compound annual rates of change in the headcount ratio (h) and/or in the numbers of poor (n) between 1970-71 and 1983 (period I) and 1983 and 1987-88 (period II). We would like to caution the reader on two counts. First, h or n should *not* be mistaken for *trend* rates of change. This is because the incidence of poverty has been known to fluctuate from year to year depending on the state of agricultural harvest and these year-specific effects are confounded with 'trend' effects in the observed indicators of poverty incidence. Secondly, the 'performance' of each state, as measured by the observed rate of change, h or n, is also affected by factors beyond the control of each state as much as by those which it can control. This distinction is necessary if the ranking is to be used for policy purposes, such as allocation of central funds for poverty alleviation. However, it is not possible to implement this distinction in practice and to decompose h or n into those factors which are beyond and those which are within the control of each state. Our exercise may therefore be taken to reflect only a descriptive monitoring of the observed performance of different states without any pretension of analysing the underlying causes.

As regards the criteria for ranking, there is a wide set to choose from, and different combinations would not necessarily yield the same ranking. The ranking criteria that we have adopted are based on the principle of plausibility and simplicity in interpretation and consist of a sequence of steps with a criterion specified at each stage.

Step 1: Since we have two periods I and II, we first classify the states into three broad categories, namely,

(A) those states which managed to reduce the headcount ratio in both the periods.

(B) those states which experienced a rise in headcount ratio in period I followed by a decline in period II or vice versa.

(C) those states which experienced a rise in the headcount ratio in both the periods.

Clearly, category (A) is preferred to (B) and category (B) preferred to (C).

Step 2: Within category (A), we may distinguish two groups in order of preference, namely,

A(i): those states which managed to reduce the absolute numbers of the poor in both the periods.

A(ii): those states which did not manage to reduce the absolute numbers of the poor in both the periods.

Similarly category (B) may be sub-divided into two groups in order of preference, namely,

B(i): those states where increase in headcount ratio in period I is followed by a decline in period II,

B(ii): those states where the decline in the headcount ratio in period I is followed by an increase in period II.

Step 3: Within A(i) and A(ii) we adopt the following criteria for further sub-grouping, again in order of preference:

l_1: rate of decline in the headcount ratio in period II is *higher* than in period I,

l_2: rate of decline in the headcount ratio is higher in period I than in period II.

Step 4: Within each of the sub-groups formed by following the three steps outlined above, we rank the states in ascending order of the rate of growth of numbers of the poor in period II. This criterion gives the entire weight in ranking to the performance in poverty alleviation in the latest period. It takes into account not only the movement in the headcount ratio but also the impact of the state-specific population growth on the numbers of the poor over period II.

The foregoing sequence of four steps, using a plausible criterion at each step, provides us with the unique ranking of the states with reference to the observed performance in terms of the *rate* of poverty alleviation over the two periods. We admit that it may be possible to devise alternative criteria for ranking. However, we have made explicit our own basis of evaluation and ranked the states accordingly. Seventeen states, so ranked, are listed in Table 8.R, for the rural population, and in Table 8.U, for the urban population.

In the rural sector, two reasonably big states of Andhra Pradesh and Kerala managed to reduce both the headcount ratio *and* the number of poor in *both* the periods. Consequently, their share in the poor population for 17 states together declined from nearly 12 per cent in 1970-71 to about 8.5 per cent in 1987-88. Six states—West Bengal, Tamil Nadu, Madhya Pradesh, Uttar Pradesh, Haryana and Rajasthan, in that order—accounting for nearly half the rural poor population for 17 states together in the three years, experienced a decline in the headcount ratio in *both* the periods but the decline was not sufficient in relation to

population growth, therefore they did not manage to reduce the numbers of the poor in both the periods. Noteworthy within this group are West Bengal, Tamil Nadu and Madhya Pradesh, where the absolute numbers of the poor got reduced in the second period. At the worst end is the state of Jammu and Kashmir, where the headcount ratio increased in *both* the periods. Next to Jammu and Kashmir are Gujarat and the agriculturally prosperous Punjab, where the decline in the headcount ratio in period I was followed by an increase in the headcount ratio in period II, as a result of which the absolute numbers of the poor increased in period II at the compound annual rate of 4.5 per cent (Gujarat) and 4 per cent (Punjab).[7] Fortunately, these three states accounted for less than five per cent of the total poor population for 17 states together in 1983 and 1987-88.

In the urban segment, only the small state of Himachal Pradesh experienced a decline in *both* the headcount ratio *and* the numbers of the poor. Numerically, the most dominant group consisted of seven states (including Uttar Pradesh, Madhya Pradesh and Kerala) where there was a decline in the headcount ratio in *both* the periods. Their combined share in the total number of urban poor for 17 states together declined from nearly 44 per cent in 1970-71 to 39 per cent in 1987-88. The second largest category of six states experienced a decline in the headcount ratio in period I, followed by a steep rise in period II. Combined with population growth, this led to very high compound annual rates of growth of the urban poor in period II, varying between 8.1 per cent in Karnataka (at the worst end) to 3.8 per cent in Gujarat. Apart from these two extreme cases, other states in this category included West Bengal, Andhra Pradesh, Bihar and Rajasthan. The share of this category in the urban poor for 17 states together increased from about 41 per cent (1970-71) and 39 per cent (1983) to nearly 45 per cent in 1987-88. The highly urbanised state of Maharashtra was in the middle (rank 10) of the ranking of the states.

Looking at both the rural and the urban segments simultaneously, we observe that Madhya Pradesh has the same rank (number 5 from the top) in both the rankings. Tamil Nadu and Uttar Pradesh have also done well in both the segments with reference to the rate of poverty alleviation. Maharashtra and Orissa are in the middle. No state is consistently at the worst-end in terms of the rate of poverty alleviation. Karnataka and Gujarat are in the bottom half, the former occupying the lowest rank in the urban sector and the latter state being second from the bottom in the rural segment.

IV

Official Estimates of Poverty Incidence in 1980s: A Comparison

Official estimates of the headcount ratio are periodically released by the Planning

Commission. For the year 1987-88, official estimates were released recently in reply to a question in parliament. Table 9 presents a comparison of the appropriately computed estimates of the headcount ratio at the all-India level with those reported by the Planning Commission, as well as those computed by us using the Planning Commission procedures for 1983 and 1987-88. [Notice that our estimates are based on the uniform poverty line (as those of the Planning Commission) but using the conceptually more appropriate price-adjustment as discussed in Section II.] The Planning Commission's estimates use (a) the implicit deflator of private final consumer expenditure (PFCE) for adjusting the poverty line for price changes between the price-base of the poverty line and the current year, and (b) the *pro rata* adjustment factor to adjust for the differences between the National Account Statistics (NAS)-based PFCE and the NSS-based aggregate household consumer expenditure (AHCE). Relative size distribution of per capita total expenditure (PCTE) from NSS is used along with adjustments (a) and (b) to derive the official estimates of the headcount ratio.

A comparison of lines 1(a) and 2(a) in Table 9 indicates that our estimates of headcount ratio are nine to 10 percentage points *higher* than those of the Planning Commission for the year 1983. The differences are much wider for 1987-88, namely, 12 percentage points for the rural population and as high as 17 percentage points for the urban population. These differences can be traced to the two adjustments (a) and (b) mentioned in the last paragraph. The implicit

deflator of PFCE used in (a) ignores rural-urban price differentials as well as rates of price changes faced by the rural and the urban population. It has also been shown that the implicit deflator of PFCE tends to understate[*] the actual price rise, which, on the other hand, is better captured in our conceptually appropriate consumer price index for the middle-range of the population. The Planning Commission procedure leads to an understatement of the poverty line and hence of the headcount ratio. However, a quantitatively much more significant source of difference lies in the use of *pro rata* adjustment by the Planning Commission and this adjustment factor for 1987-88 comes to about 1.275 (see Appendix). In other words, for 1987-88, the PCTE of each fractile group is increased by 27.5 per cent before applying the underestimated poverty line to the observed size distribution of NSS. It should be obvious that this would bring about a massive (but artificial) reduction in the headcount ratio.

We tried to verify, for the year 1987-88, the estimates reported by the Planning Commission, using the Planning Commission's procedure and the latest available data sources. We present the details of these estimates in the Appendix. Our replication of the Planning Commission's procedure yielded the estimates of headcount ratios which turned out to be lower than those officially reported [compare lines 2(b) and 3(b)]. We are unable to trace the sources of these differences on the basis of available information. However, our calculations bring out clearly the massive difference made by the *pro rata* adjustment factor. A

comparison of lines 3(b) and 4(b) shows that, in the absence of *pro rata* adjustment factor, the headcount ratio would have been as high as 51 per cent instead of 29 per cent for the rural population and 33.5 per cent instead of 17.5 per cent for the urban population in 1987-88.

This procedure, and especially the *pro rata* adjustment factor, has been critically discussed in a number of recent papers. As early as 1987, a scrutiny of this procedure pointed to the questionable nature of this *pro rata* adjustment in the light of widely differential distributional aspects of consumer behaviour on the composition of the consumer basket [Minhas et al (1987), p 46]. A later paper [Minhas(1988)] undertook a detailed cross-validation exercise for critically assessing the different sources of discrepancies between NSS and NAS estimates of consumer expenditure at a detailed disaggregated level for 1972-73 and 1977-78. This exercise was extended to 1983 in yet another paper [Minhas and Kansal (1989)]. These papers have been in the public domain for some years and clearly indicate not only the questionable nature of *pro rata* adjustment of the observed size distribution of consumer expenditure by the Planning Commission but also favour the headcount ratio estimates based on the NSS data without any adjustment. Even when adjustment might be warranted for achieving consistency between NSS and NAS estimates of consumer expenditure, a case could be made for item-group specific adjustments (rather than the *pro rata*) which could take into account the results of the aforementioned exercises. However, the Planning Commission has not bothered to learn from them and has been merrily using the same old, analytically and empirically questionable methods, leading to generation of misinformation about country's progress on the poverty alleviation front: The massive reduction in the incidence of poverty between 1983 and 1987-88, as reported by the Planning Commission, is a consequence of the peculiar statistical artefacts used by it. As against the Planning Commission's estimate, which would have us believe that the incidence of rural (urban) poverty in 1987-88 has fallen to 32.7 per cent (19.4 per cent), the estimate with appropriate price adjustment at all India level would be around 44.9 per cent for rural and 36.5 per cent for urban India.

V

Concluding Remarks

After constructing appropriate cost of living indices (for the middle range of population) which allow for the observed variations in consumption patterns and prices of various goods and services across different states, the state specific rural and urban poverty norms as well as estimates of the incidence of poverty in the rural and urban segments of 20 states/union territories in 1987-88 have been presented in this paper. The following results which emerge from the

TABLE 7: POVERTY ALLEVIATION PERFORMANCE—CATEGORIES OF STATES BASED ON THE LEVEL OF STATE-SPECIFIC HEADCOUNT RATIO
(Rural and Urban Population)

Sl No (1)	Cate-gory (2)	State (3)	Headcount Ratio (Per Cent)			Number of Poor (Million)		
			1970-71 (4)	1983 (5)	1987-88 (6)	1970-71 (7)	1983 (8)	1987-88 (9)
			Rural Population					
1	A	BHR,MP,ORS,TN, WB	69.36	63.24	58.53	116.304 (45.7)	130.765 (47.8)	129.114 (46.0)
2	B	AP,HRY,HP,J&K, KRN,PNB,RJN	47.72	34.52	34.26	49.666 (19.5)	44.963 (16.4)	47.672 (17.0)
3	F	ASM,GJT,KER, MHR,UP	54.94	48.72	41.34	88.505 (34.8)	97.856 (35.8)	103.688 (37.0)
4		17 States together	58.78	50.86	48.88	254.475 (100.0)	273.584 (100.0)	280.474 (100.0)
			Urban Population					
5	A	BHR,KER,MP, ORS,TN,UP	55.91	48.68	44.42	23.810 (48.8)	33.639 (50.6)	36.686 (48.7)
6	B	ASM,HRY, HP, J&K,PNB,WB	31.34	24.89	22.56	5.551 (11.4)	6.846 (10.3)	7.164 (9.5)
7	F	AP,GJT,KRN, MHR,RJN	44.80	38.05	39.39	19.386 (39.8)	26.052 (39.2)	31.475 (41.8)
8		17 States together	46.78	40.31	38.78	48.747 (100.0)	66.537 (100.0)	75.325 (100.0)

Notes: (1) Figures within brackets refer to category-specific percentage share in total poor population of 17 states together in a given year.
(2) For explanation of the abbreviations used for state names, see Table 2.
(3) For explanation of categories A, B and F, see text in Section III.
(4) Headcount ratios in columns (4), (5) and (6) are obtained as weighted average of those of the states belonging to the category with state-specific populations as the weights.

comparative analysis of all-India and state-specific poverty incidence and the numbers of the poor in 1970-71, 1983 and 1987-88, are worth noting:

(1) In comparison with the conceptually better estimate obtained through aggregation over the states, the so-called direct estimate of the headcount ratio for rural India in 1987-88 turned out to be an underestimate by about four percentage points, implying an underestimation of the numbers of the rural poor by about 22 million. Changes in the numbers of the poor (CNP) over period (1970-71 to 1983), based on the direct all-India estimates, were underestimated by about three million in each of the two sectors (rural and urban) in comparison with the corresponding aggregated estimates. Over the next period (1983 to 1987-88), the direct estimates of CNP were lower by about 12.5 million in the rural sector, but higher by about one million in the urban sector than those obtained from the aggregate estimates.

(2) Based on the aggregated estimates, which are preferable, the incidence of poverty in rural India declined from 58.8 per cent in 1970-71 to 50.8 per cent in 1983 and 48.7 per cent in 1987-88. In the urban sector, the corresponding decline in poverty incidence was from 46.2 per cent (1970-71) to 39.7 per cent (1983) and to 37.8 per cent (1987-88). For rural and urban India taken together, the incidence of poverty declined from 56.3 per cent in 1970-71 to 48.1 per cent in 1983 and further to 45.9 per cent in 1987-88. To put it differently, the annualised rate of decline in rural poverty incidence in India as a whole was steeper between 1970-71 and 1983 (1.2 per cent) than in the later period from 1983 to 1987-88 (0.9 per cent). In the urban sector, the corresponding rate of decline was about 1.1 to 1.2 per cent per annum during both the periods.

(3) The absolute numbers of the rural poor (in million), on the other hand, rose from 257.9 (1970-71) to 276.8 (1983) and further to 283.7 million (1987-88). In urban India, the numbers of the poor rose from 50.4 (1970-71) to 69.2 (1983) and 77.5 million (1987-88).

(4) For the Indian union as a whole, the population in poverty grew from 308.3 million in 1970-71 to 346.0 million in 1983 and to 361.2 million in 1987-88. Incidentally, the total population of India was about 361 million in 1951, whereas the population of the poor alone was exactly of the same magnitude in 1987-88. The annualised rate of growth of the rural population afflicted with poverty was around 0.5 to 0.6 per cent between 1970-71 and 1983 as well as between 1983 and 1987-88. In sharp contrast, the corresponding rate of growth of urban population in poverty was about 2.5 to 2.6 per cent between 1970-71 and 1987-88. For India as a whole, the population of the poor grew at an annual rate of about 0.9 per cent between 1970-71 and 1987-88, which may be compared with the overall growth rate of the general population of around 2.2 per cent since 1971.

(5) In view of the very small size of the population of Manipur, Tripura and Delhi (rural), our discussion of state-specific results is better confined to the remaining 17 major states. Among these 17 states, the incidence of rural poverty in Punjab was consistently the lowest in the three years, being 28.7 per cent (1970-71), 18.5 per cent (1983) and 21.0 per cent(1987-88), whereas rural Bihar occupied the opposite pole in 1983 (70.4 per cent) and 1987-88 (66.3 per cent) and West Bengal in 1970-71 (76.7 per cent). One nevertheless must note that rural Punjab ranked very low in terms of its performance in poverty alleviation, as both the headcount ratio as well as the numbers of the rural poor rose between 1983 and 1987-88. In the urban sector, the lowest headcount ratio was observed for Himachal Pradesh in all the three years and no single state, on the other hand, occupied the worst position (highest incidence of poverty) consistently in all the three years. Since the weight of the rural sector in each of the major states is very large, Punjab and Bihar occupied the same extreme but opposite positions in regard to poverty incidence at the entire state level in all the three years, 1970-71, 1983 and 1987-88.

(6) Rural sector of Assam and the urban sector of Bihar had the unique but dubious distinction of registering increase in poverty incidence in 1987-88 in relation to their level of poverty incidence experienced in 1970-71 as well ...

TABLE 8.R: RANKING OF STATES IN TERMS OF POVERTY ALLEVIATION PERFORMANCE, ANNUAL RATES OF GROWTH OF HEADCOUNT RATIO (h) AND NUMBERS OF THE POOR (n) DURING PERIODS I AND II—RURAL POPULATION

Category (1)	Rank (2)	State (3)	h(Per Cent) I (4)	h(Per Cent) II (5)	n(Per Cent) I (6)	n(Per Cent) II (7)	Numbers of Poor (million) 1970-71 (8)	1983 (9)	1987-88 (10)
A(i)	1	AP	-3.1	-2.2	-1.6	-1.0	18.101 (7.11)	14.783 (5.40)	14.115 (5.03)
A(i)	2	KER	-3.0	-1.5	-1.6	-0.2	12.343 (4.85)	10.097 (3.69)	9.991 (3.56)
A(ii)	3	WB	-1.2	-3.1	0.6	-1.5	25.566 (10.1)	27.513 (10.1)	25.688 (9.16)
A(ii)	4	TN	-1.2	-2.3	0.0	-1.1	19.093 (7.50)	18.988 (6.94)	18.028 (6.43)
A(ii)	5	MP	-1.1	-1.8	0.6	-0.4	21.757 (8.55)	23.339 (8.53)	22.970 (8.19)
A(ii)	6	UP	-0.3	-0.9	1.5	0.5	39.010 (15.3)	46.875 (17.1)	47.845 (17.1)
A(ii)	7	HRY	-4.0	-0.8	-2.1	0.9	3.307 (1.30)	2.543 (0.93)	2.649 (0.95)
A(ii)	8	RJN	-2.1	-0.1	-0.2	2.0	11.617 (4.57)	11.956 (4.37)	13.098 (4.67)
B(i)	9	BHR	0.2	-1.3	2.0	0.4	34.891 (13.7)	44.944 (16.4)	45.790 (16.3)
B(ii)	10	ORS	-1.1	0.2	0.5	0.9	14.997 (5.89)	15.981 (5.84)	16.638 (5.93)
B(ii)	11	MHR	-0.2	0.1	1.3	1.3	19.347 (7.60)	22.805 (8.34)	24.128 (8.60)
B(ii)	12	KRN	-2.2	1.1	-0.5	2.3	11.715 (4.60)	10.981 (4.01)	12.179 (4.34)
B(ii)	13	HP	-1.8	1.7	0.2	3.4	0.925 (0.36)	0.947 (0.35)	1.103 (0.40)
B(ii)	14	ASM	-0.2	1.7	2.6	3.9	6.716 (2.64)	9.237 (3.38)	10.953 (3.91)
B(ii)	15	PNB	-3.5	2.9	-2.0	4.0	2.961 (1.16)	2.311 (0.84)	2.752 (0.98)
B(ii)	16	GJT	-3.6	3.0	-1.8	4.5	11.089 (4.36)	8.842 (3.23)	10.771 (3.82)
C	17	J&K	0.4	2.8	2.7	4.7	1.040 (0.42)	1.442 (0.53)	1.776 (0.64)
17 States together			-1.2	-0.9	0.6	0.6	254.475 (100.0)	273.584 (100.0)	280.474 (100.0)

Notes: (1) I and II refer to periods 1970-71 to 1983 and 1983 to 1987-88.
(2) Figures within brackets refer to percentage share of a state in the total poor population of 17 states together in a given year.
(3) For explanation of the abbreviations used for state names, see Table 2.
(4) Column (1) refer to the state-specific category assigned while ranking the 17 states.
Source: Table 5.

(7) Among the 17 states, Tamil Nadu, Madhya Pradesh and Uttar Pradesh experienced higher annualised rates of decline in poverty incidence in period II (1983 to 1987-88) than in period I (1970-71 to 1983) both in the rural as well as urban sector.

(8) In the rural sector, the highest annualised rate of decline in poverty incidence was registered by Haryana (4.0 per cent) over period I and by West Bengal (3.1 per cent) over period II. In the urban sector, the highest rate of decline was experienced by Himachal Pradesh both in period I (7.5 per cent) and period II (15.6 per cent). In the second period, Punjab also registered an equally steep decline (13.6 per cent) in urban poverty. At the entire state level (rural plus urban), Haryana (4.0 per cent) recorded the highest annual rate of decline in poverty incidence during period I, whereas in period II, Tamil Nadu (2.6 per cent) and West Bengal (2.5 per cent) registered the highest rates of decline among the 17 states.

(9) Returning to the ranking of 17 states in terms of poverty alleviation performance, Andhra Pradesh and Kerala were the only two states which managed to reduce both the headcount ratio as well as the numbers of the poor consistently in both the periods in the rural sector, and thus secured the first and second ranks respectively. In the urban sector, it was only the state of Himachal Pradesh where both the headcount ratio and the numbers of the poor declined in both periods.

TABLE 8.U: RANKING OF STATES IN TERMS OF POVERTY ALLEVIATION PERFORMANCE, ANNUAL RATES OF GROWTH OF HEADCOUNT RATIO (h) AND NUMBERS OF THE POOR (n) DURING PERIODS I AND II —URBAN POPULATION

Category	Rank	State	h(Per Cent)		n(Per Cent)		Numbers of Poor (Million)		
			I	II	I	II	1970-71	1983	1987-88
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A(i)	1	HP	-7.5	-15.6	-4.8	-13.3	0.045 (0.09)	0.024 (0.04)	0.013 (0.02)
A(ii)	2	PNB	-1.1	-13.6	2.6	-10.6	0.792 (1.62)	1.090 (1.64)	0.658 (0.87)
A(ii)	3	TN	-1.7	-3.1	0.7	-0.8	7.001 (14.4)	7.629 (11.5)	7.369 (9.78)
A(ii)	4	UP	-0.9	-3.1	3.8	1.6	6.665 (13.7)	10.669 (16.0)	11.479 (15.2)
A(ii)	5	MP	-0.9	-2.7	3.5	1.7	3.960 (8.12)	6.088 (9.15)	6.560 (8.71)
A(ii)	6	HRY	-3.8	-3.4	0.8	1.4	0.613 (1.26)	0.676 (1.02)	0.720 (0.96)
A(ii)	7	KER	-2.1	-1.6	1.1	1.7	2.164 (4.44)	2.461 (3.70)	2.649 (3.52)
A(ii)	8	J&K	-6.4	-1.6	-2.8	1.9	0.229 (0.47)	0.160 (0.24)	0.175 (0.23)
B(i)	9	ASM	0.8	-12.8	5.4	-9.4	0.245 (0.50)	0.470 (0.71)	0.301 (0.40)
B(i)	10	MHR	0.1	-2.7	3.4	0.3	6.297 (12.9)	9.572 (14.4)	9.680 (12.9)
B(i)	11	ORS	0.0	-3.6	5.3	1.4	0.964 (1.98)	1.843 (2.77)	1.966 (2.61)
B(ii)	12	GJT	2.4	0.9	1.0	3.8	3.773 (7.74)	4.249 (6.39)	5.029 (6.68)
B(ii)	13	WB	-1.1	1.3	1.6	4.1	3.627 (7.44)	4.426 (6.65)	5.297 (7.03)
B(ii)	14	AP	-2.1	2.7	1.8	6.5	3.878 (7.96)	4.830 (7.26)	6.416 (8.52)
B(ii)	15	BHR	-0.4	2.3	3.9	6.8	3.056 (6.27)	4.949 (7.44)	6.663 (8.84)
B(ii)	16	RJN	-1.7	2.4	2.9	7.2	2.090 (4.29)	2.980 (4.48)	4.073 (5.41)
B(ii)	17	KRN	-1.8	4.1	2.2	8.1	3.348 (6.87)	4.421 6.64	6.277 (8.33)
17 States together			-1.2	-0.9	2.5	2.8	48.747 (100.0)	66.537 (100.0)	75.325 (100.0)

Notes and sources: Same as that of Table 8.R.

TABLE 9: ALL-INDIA ESTIMATES OF POVERTY INCIDENCE (HCR)—OUR ESTIMATES VERSUS THE PLANNING COMMISSION

Sl No	Description of Headcount Ratio Estimation Procedure		Year	Rural	Urban	Combined Rural and Urban
(1)	(2)		(3)	(4)	(5)	(6)
1	HCR based on appropriate price adjustment	(a)	1983	49.02	38.33	46.46
		(b)	1987-88	44.88	36.52	42.70
2	HCR as officially reported	(a)	1983-84	40.40	28.10	37.40
		(b)	1987-88	32.70	19.40	29.20
3	HCR using official price-adjustment and *pro rata* adjustment factor	(a)	1983	40.50	26.70	37.10
		(b)	1987-88	29.33	17.57	26.27
4	HCR using official price-adjustment but without *pro rata* adjustment factor	(a)	1983	56.50	42.30	53.00
		(b)	1987-88	51.00	33.47	46.43

Sources: 1 For lines 1(a) and 1(b), Table 3 in this paper.
2 For lines 2(a) and 2(b) , Table 54 in *Selected Socio-Economic Indicators for India (1990)*, Central Statistical Organisation, New Delhi.
3 For lines 3(a) and 4(a), Table 9 in Minhas et al (1987).
4 For lines 3(b) and 4(b), Appendix in this paper.

Finally, we must note that there is no basis, either in theory or known facts, to carry out a *pro rata* adjustment in the observed size distribution of consumer expenditure in a particular NSS round by multiplying it with a scalar derived from the ratio between the National Accounts estimate of aggregate consumption for the nearest financial year and the total NSS consumer expenditure available from the particular round of household budget survey. In spite of the weight of a substantial amount of scientific research to the contrary, the Planning Commission has continued to indulge in mindless tinkering with the NSS size distribution of consumer expenditure for 1987-88 also, just as it did for 1983. The massive reduction in the incidence of poverty between 1983 and 1987-88, as reported by the Planning Commission in 1990, is largely a consequence of the peculiar statistical artefacts used by it and the extent of real reduction in poverty incidence is indeed rather small. Appropriately computed incidence of poverty in 1987-88 (affecting appropriate price adjustment only at the all-India level comes to about 44.8 and 36.5 per cent, respectively in rural and urban India, rather than 32.7 and 19.4 per cent reported by the Planning Commission. However, according to our preferred aggregated all-India estimates (which allow for state-specific variation in prices relevant to the poor population in each state), the incidence of poverty in 1987-88 comes to about 48.7 and 37.8 per cent for all-India rural and urban, respectively.

Appendix

ESTIMATES OF HEADCOUNT RATIOS AT THE ALL-INDIA LEVEL USING THE PLANNING COMMISSION PROCEDURE

Planning Commission procedure for the estimation of the headcount ratio involves

(a) price-adjustment to the poverty line (orginally estimated at 1973-74 prices) based on the implicit deflator for Aggregate Private Final Consumer Expenditure (PFCE) in the domestic market, and

(b) *pro rata* adjustment in the size distribution of PCTE for the difference between the National Accounts-based estimate of PCFE and the NSS-based estimate of Aggregate Household Consumer Expenditure (AHCE).

As regards (a), we have the following estimates of PFCE (Rs crore) at current and constant (1980-81) prices from the National Accounts Statistics (NAS).

Year	PFCE at Current Prices	PFCE at Constant Prices
1973-74	46638	75654
1987-88	223629	135320

The estimates for 1987-88 are the latest revised ones made available by CSO. Using the above information, the price- adjustment factor for 1987-88 (with 1973-74 = 100) works out to be 268.06.

As regards (b), we have the following information for 1987-88: Average PCTE for all-India rural and urban population is Rs 158.10 and 249.93 per month respectively (*Source: NSS Draft Report No 372*, p 17). Population weights derived from *Sarvekshana* (September 1990) p 16 are 0.7395 (rural) and 0.2605 (urban) for 1987-88 with approximately 788 million of aggregate population. Since the NSS estimate is for 30 days, we use the factor of 12.167 (= 365/30) for deriving the annual estimate of AHCE. Using the foregoing information, NSS-based estimate of AHCE works out to

be Rs 174509 crore. The required *pro rata* adjustment factor for 1987-88, therefore, will be (PFCE based on NAS)/(AHCE based on NSS) = 223629/174509 = 1.275.

The alternative headcount ratios (in per cent) for 1987-88, based on the foregoing information of (a) and (b) and NSS based size-distribution (given in *NSS Draft Report No 372*), are as follows:

Sl No	HCR Estimation Procedure	Rural	Urban
1	Using the price-adjustment factor (a) and *pro rata* adjustment factor (b)	29.33	17.57
2	Using only the price-adjustment factor (a) but *not pro rata* adjustment factor (b)	51.00	33.47

Notes

1 The rationale for the choice of middle fractiles of population as the relevant group, whose cost of living should be used in updating the poverty norms, is discussed in Minhas et al (1987).
2 For details, see Planning Commission (1979).
3 At the state and all-India levels, the size distributions of PCTE in the years 1970-71, 1983 and 1987-88 are taken from the respective sources: *NSS Report No 231*, *Sarvekshana*, Vol IX, No 4, April 1986, and *NSS Draft Report No 372*, June (1990). Notice that the results relating to the year 1987-88 and reported in the *NSS Draft Report No 372* are based on the half sample. Nevertheless, the survey made large enough coverage in this half sample, with about 41.6 and 22.7 thousand households spread over about 4,184 sample villages and 2,298 sample blocks in the rural and urban areas, respectively.
4 Also see, Minhas, B S, *Agricultural Progress and Rural Poverty in India*, Sir Chhotu Ram Memorial Lecture IV, February 2, 1991, Haryana Agricultural University, Hissar.
5 See Visaria and Minhas (1991).

6 Results for state of Assam are not comparable over the period from 1970-71 to 1987-88, as the boundaries of the state underwent change during this period.
7 Notwithstanding the fact that the absolute level of the incidence of poverty in rural Punjab was the lowest (relative to other states) at each of the three time-points (1970-71, 1983 and 1987-88), the rise in the percentage and the numbers of the rural poor in Punjab between 1983 and 1987-88 may have been a consequence of the persistence of abnormally disturbed political conditions which have been prevailing in Punjab since 1984.
8 For the year 1987-88, a comparison between the implicit PFCE deflator and consumer price indices for the middle-range (separately) of the rural and the urban population shows that the price rise is under-stated to the extent of a little over two per cent for the rural population and over 10 per cent for the urban population.

References

Government of India, Planning Commission (1979), *Report of the Task Force on Projections of Minimum Needs and Effective Consumption Demand*, New Delhi.

Minhas, B S, L R Jain, S M Kansal and M R Saluja (1987), 'On the Choice of Appropriate Consumer Price Indices and Data Sets for Estimating the Incidence of Poverty in India', *Indian Economic Review*, Vol XXII, No 1, January-June 1987, pp 19-50.

Minhas, B S (1988), 'Validation of Large Scale Sample Survey Data—Case of NSS Estimates of Household Consumption Expenditure', *Sankhya* A, Series B, Vol 50, Part 3, Supplement, pp 1-63.

Minhas, B S, L R Jain, S M Kansal and M R Saluja (1988), 'Measurement of General Cost of Living for Urban India—All India and Different States', *Sarvekshana*, Vol XII, No 1, July, pp 1-23.

Minhas, B S and S M Kansal (1989), 'Comparison of the NSS and the CSO Estimates of Private Consumption: Some Observations Based on 1983 Data', *The Journal of Income and Wealth*, Vol 11, No 1, January, 1989, pp 7-24.

Minhas, B S, S M Kansal and L R Jain (1989), 'Incidence of Urban Poverty in Different States (1970-71 to 1983)', *Indian Statistical Institute, Technical Report No 8902* (January).

Minhas, B S and L R Jain (1990), 'Incidence of Rural Poverty in Different States and All-India 1970-71 to 1983', *Agricultural Development Policy: Adjustments and Reorientation* (Golden Jubilee Volume of Indian Society of Agricultural Economics), Oxford and IBH Publishing Co, New Delhi, pp 342-81.

Minhas, B S, L R Jain and S D Tendulkar (1991), 'Rural and Urban Cost of Living: 1983 to 1987-88, Statewise and All-India', *Indian Statistical Institute, Technical Report No 9105* (May).

Visaria, P and Minhas, B S (1991), 'Evolving Employment Policy for the 1990s: What Do the Data Tell Us?' *Economic and Political Weekly*, April 13, 1991, pp 969-79.