

Revising Estimates of Poverty

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One of the criticisms of the official poverty line is that it does not capture the cost of basic necessities, particularly non-food components such as health and education. This issue gains importance due to an increase in household private expenditure on education and health services in recent years. This article estimates poverty ratios at the all India level and for the states in 2004-05 by including the minimum private expenditure on health and education. The estimated poverty ratios are substantially higher than the official poverty ratios.

There are several contentious issues about the official estimates of poverty in India. One issue relates to the inclusion of minimum expenditure on health and education in the poverty line. The consumption basket of the poor based on which the poverty line is derived from is taken from National Sample Survey (NSS) data of 1973-74. However, the composition of the consumption basket in 1973 hardly includes any expenditure on health and education as it was assumed that the basic needs of education and health would be met by the state. As a result, the poverty line derived from the consumption patterns of 1973-74 includes very little expenditure on health and education. This issue gains importance due to increasing household private expenditure on education and health services in recent years. There is a need to adjust poverty estimates in order for them to accurately reflect the consumption of health and education services. In this article, we undertake an exploratory study by making adjustments to the poverty lines for the above deficiency and obtain alternative estimates of poverty at the all India level and for the major states.

Including Education and Health

As the official poverty line does not provide for expenditure on health and education, its use is likely to depress the poverty count. There is a need to add the minimum expenditure on these two services to the poverty line to make it more realistic.

Let y_i be the monthly per capita expenditure (MPCE) of the i th person in the state. The MPCE includes expenditure incurred on education and health services. Let z be the poverty line, which affords any person to buy a basket of minimum needs. By definition, the consumption basket underlying the poverty line z does not include the consumption of education and health services. In such a case, the use of a poverty line is likely to understate poverty. This can be overcome by adding a certain minimum level of education and health components to the minimum needs basket of z . However, the determination of what constitutes minimum expenditure on education and health is a difficult exercise. There can be two alternatives. First, we can merely account for actual expenditure on health and education of the poor while estimating the poverty count. This can be done by adding to z the actual expenditure incurred by people on education and health near the poverty line. This is not normative. The current level of expenditure incurred by the poor need not constitute the minimum need. A normative alternative is to make a minimum of provision in the poverty line for medical and education expenditure. Determining this is difficult and has to be arbitrary. A simple approach is to take the expenditure on education and health by the median household in the (total expenditure) distribution as the minimum need.

Let m_i and e_i be the household expenditure on health and education. We can add z_m and z_e , the minimum expenditure on health and education, to z to arrive at revised poverty line z' . z_m and z_e are given by $z_m = f_m(y_m)$ and $z_e = f_e(y_m)$. Here, f_m and f_e are Engel functions estimated from using data on m_i , e_i and y . The revised poverty line is given by $z' = z + z_m + z_e$.

Table 1: All India Estimates of Health and Education Expenditure

	Official and Adjusted Poverty Lines			Poverty Ratios		
	Official Poverty Line	Per Capita Expenditure on Education	Per Capita Expenditure on Health	Adjusted Poverty Line	Official Poverty Ratio	Revised Poverty Ratio Including Education and Health
Rural	356.30	10.9	24.4	391.60	28.30	36.38
Urban	538.60	40.1	44.0	622.70	26.03	34.45
Total	—	—	—	—	27.50	35.83

Source: Estimates by the authors based on NSS 61st round on employment and unemployment.

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Using the above equation, we estimated the minimum level of expenditure on health and education for the revision of the official poverty lines. Unlike the official poverty line, which takes a common minimum consumption basket for all states, we have derived the z_m and z_e separately for each state. This is so because both z_m and z_e depend heavily on the state-specific public investments in the education and health sectors.

Estimates for All India

Table 1 (p 8) presents the estimated minimum expenditure on education and health and the adjusted poverty lines at the all-India level. It shows that if we include private health and education expenditure, the rural poverty line increases from Rs 356 to Rs 392 while the urban poverty line increases from Rs 539 to Rs 623. The rural poverty ratio increased from 28.3 per cent to 36.4 per cent. Total poverty rose from 27.5 to 35.8 per cent – an increase of 8.3 percentage points due to the inclusion of the minimum level of private expenditure on health and education.

Estimates at State Level

We have adjusted the poverty line by including the minimum private expenditure on education and health by the median household in the (total expenditure) distribution as the minimum need in each state. The estimates of the official poverty line, median level private per capita expenditure on education and health and the adjusted poverty lines by including health and education are presented in Table 2. It shows some interesting findings across states. It may be noted that Kerala has the highest per capita private expenditure on health (Rs 70) and second highest per capita private expenditure on education in rural areas. In urban areas also, Kerala has the highest per capita expenditure on health. States such as Haryana, Himachal Pradesh and Punjab also have high per capita expenditure on health and education (Table 2). On the other hand, poorer states such as Bihar, Jharkhand, Orissa, Chhattisgarh have lower levels of per capita expenditure on these services.

It looks like the private per capita expenditure on health and education is

higher where public expenditure is also higher on these services. In this context, Kerala is a good example. It reflects the awareness about education and health in relatively developed states. It is possible that private expenditure in these services will increase significantly in poorer states such as Bihar, Jharkhand, Orissa

and other states once incomes and awareness increase.

Official poverty ratios and revised poverty ratios (using the revised poverty line after including expenditure on health and education) for the year 2004-05 are given in Table 3. Increase in rural poverty ratios is higher in states such as Himachal

Table 2: Estimated Minimum Expenditure on Education and Health (2004-05)

	Rural				Urban			
	Poverty Line	y(e)	y(m)	Adjusted Poverty Line	Poverty Line	y(e)	y(m)	Adjusted Poverty Line
Andhra Pradesh	292.95	6.0	23.8	322.72	542.89	18.5	34.9	596.27
Assam	387.64	6.7	8.8	403.15	378.84	34.6	37.5	451.02
Bihar	354.36	5.8	12.0	372.18	435.00	41.1	29.1	505.24
Jharkhand	366.56	5.6	13.6	385.83	451.24	10.5	12.1	473.91
Gujarat	353.93	5.7	20.1	379.76	541.16	33.1	42.2	616.47
Haryana	414.76	30.1	39.2	484.10	504.49	70.0	42.8	617.26
Himachal Pradesh	394.28	23.0	36.8	454.11	504.49	73.7	64.3	642.48
Jammu and Kashmir	391.26	20.6	15.7	427.52	553.77	57.7	28.4	639.90
Karnataka	324.17	4.1	15.0	343.28	599.66	16.0	31.1	646.81
Kerala	430.12	25.5	70.6	526.20	559.39	46.4	81.0	686.81
Madhya Pradesh	327.78	7.9	22.0	357.68	570.15	36.1	33.3	639.52
Chhattisgarh	322.41	5.0	21.7	349.09	560.00	7.4	17.6	584.94
Maharashtra	362.25	8.0	27.0	397.25	665.90	35.2	57.3	758.40
Orissa	325.79	8.2	14.7	348.68	528.49	31.6	25.3	585.39
Punjab	410.38	25.2	45.4	481.04	466.16	59.0	42.6	567.78
Rajasthan	374.57	10.9	23.6	409.12	559.63	34.0	32.4	626.05
Tamil Nadu	351.86	7.5	17.2	376.55	547.42	18.6	36.8	602.87
Uttar Pradesh	365.84	17.1	35.7	418.69	483.26	49.8	47.0	580.02
Uttarakhand	478.02	18.3	20.6	516.91	637.67	26.7	15.7	680.09
West Bengal	382.82	15.0	27.9	425.73	449.32	66.7	55.7	571.80
All India	356.30	10.9	24.4	391.60	538.60	40.1	44.0	622.70

y(e): minimum private expenditure on education, y(m): minimum private expenditure on health.
Source: Same as Table 1.

Table 3: Official and Revised Poverty Ratios (2004-05)

State	Rural			Urban		
	Official	Revised	% Difference	Official	Revised	% Difference
Andhra Pradesh	10.83	16.07	48.38	27.08	33.27	22.86
Assam	21.79	25.47	16.89	3.69	9.30	152.03
Bihar	42.53	47.91	12.65	35.27	44.94	27.42
Jharkhand	46.46	51.85	11.60	19.45	21.75	11.83
Gujarat	19.46	24.59	26.36	14.19	21.42	50.95
Haryana	13.63	23.92	75.50	15.50	26.51	71.03
Himachal Pradesh	10.87	20.42	87.86	5.02	13.06	160.16
Jammu and Kashmir	4.51	8.11	79.82	10.82	18.92	74.86
Karnataka	20.05	26.06	29.98	33.25	37.45	12.63
Kerala	13.37	24.64	84.29	20.63	31.85	54.39
Madhya Pradesh	37.67	45.19	19.96	41.82	48.94	17.03
Chhattisgarh	41.41	50.37	21.64	39.53	42.15	6.63
Maharashtra	30.08	37.56	24.87	32.98	40.91	24.04
Orissa	47.81	53.23	11.34	42.60	48.40	13.62
Punjab	10.04	19.97	98.90	5.87	15.75	168.31
Rajasthan	18.76	26.91	43.44	32.28	40.34	24.97
Tamil Nadu	22.62	28.77	27.19	23.77	29.30	23.26
Uttar Pradesh	32.88	45.78	39.23	31.21	42.95	37.62
Uttarakhand	39.87	48.00	20.39	34.89	39.64	13.61
West Bengal	28.87	39.62	37.24	15.97	27.73	73.64
All India	28.30	36.38	28.55	26.03	34.45	32.35

Source: Same as Table 1.

