

PATTERN OF URBAN POVERTY IN INDIA:AN INTER STATE ANALYSIS

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Prevalence of poverty in developing nations have always been a major concern for the economists and the researchers . The 20th century witnessed a rapid growth in urban population in the developing nations. As a result in recent times incidence of poverty in the urban areas has attracted the attention of the researchers. The objectives of the present study is to observe the pattern of urban poverty in India and its states from 1980- 2010 ,to study inter-state variation in urban poverty in India and do a decomposition exercise showing regional variability in mean effect, inequality effect and a residual effect. The study is based on the unit level Consumption expenditure data (monthly per capita expenditure) from National Sample Survey Organisation for the years 1983-84,1987-88,1993-94,1999-00,2004-05 and 2009-10 . We use state specific poverty lines (in Rs monthly per capita) from Planning commission estimates of different years. In this paper Head Count Ratio (HCR) following Gaurav Datt's methodology(Parameterized Lorenz curve method) for estimating the poverty measure have been used as a poverty measure to find the pattern of urban poverty in the states. Here an attempt is being made to show whether there exist any inter state variation in urban poverty over the years.Then a study showing decomposition of changes in urban poverty over the periods of time 1983-84 to 1987-88,1987-88 to 1993-94,1993-94 to 1999-00,1999-00 to 2004-05 and 2004-05 to 2009-10 have been done for the urban areas of the states and all India level in terms of growth/mean effect(holding inequality constant) and inequality effect(holding mean unchanged) and residual effect. The study reveals that between 1987- 1999 there occurred significant decline in HCR in almost all the states with substantial regional differences in poverty reduction .However reduction in urban poverty accelerated in the 1990s.Between 1999- 2004 there have been rising urban poverty in all states except Gujarat & WB .In almost all the years the best performing states being Punjab,Haryana,Delhi, Gujrat and W.B. In almost all the years Bihar ,Madhya Prades, Maharashtra, Orissa, Karnatak, U.P performed very badly. Decomposition result shows that growth effect dominates over the inequality effect during 83-84 to 99-00 where as inequality effect dominates over the growth effect during 99-00 to 2004-05 and 2004-05 to 2009-10 in case of India.

INTRODUCTION

Prevalence of poverty in developing nations have always been a major concern for the economists and the researchers . Assessment of poverty used to have a strong bias in favour of rural poverty. The 20th century however witnessed a rapid growth in urban population in the developing nations. The urbanization level in India was under 16percentage in 1951 that increased to over 27percentage by 2001 and by 2030 AD it will have 41percentage of its population living in cities & towns. As a result in recent times incidence of poverty in the urban areas has attracted the attention of the researchers. A person is said to be urban poor if he is unable to meet the basic minimum requirements of 2100 kcal per day.Urban poverty poses the problems of shelter, water, sanitation, health, education, social security and livelihoods. The most vulnerable class are the elderly, disabled, young children and women. The objective of the present paper is to analyse the pattern of urban poverty in India and its states from 1980-2010 ,to study inter-state variation in urban poverty in India and do a decomposition exercise showing changes in urban poverty incidence as the sum of mean effect, inequality effect and a residual effect in the states of India.

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Utsa Patnaik (2010) while showing the trend in urban poverty under economic reforms at the all India level and the individual states showed that urban poverty has fallen between 1983 and 1993-94, but it has increased between 1993-94 and 2004-05. This is much more prominent in states with urban conurbations like Delhi, Mumbai, Chennai and Kolkata compared to states with smaller urban pockets. N.R. Bhanumurthy and Arup Mitra (2004) studied the trend in poverty and their incidence in the 80s and 90s. The decomposition exercise showing change in the incidence of poverty into growth, inequality and population shift effect shows that growth effect dominates over the inequality and population shift effects that caused poverty to fall both in 80s and 90s. Kakwani (1993) uses growth & inequality components where residual has been allocated to the redistribution component. It is criticized on the ground that this procedure is arbitrary and in turn gives an incorrect impression that the decomposition is an exact one. Tendulkar & Jain (1991) decomposes changes in poverty into growth effect, distribution effect and population shift effect. But this was criticized on the ground that the mean effect and the inequality effect have been estimated by using a difference reference period. Gaurav Datt & Martin Ravallion (1992) do the decomposition exercise into growth & inequality and a residual component using parameterized poverty measures and Lorenz curves. According to them the residual term neither vanishes nor can it be apportioned between growth and redistribution components.

DATA AND METHODOLOGY

The study is based on the unit level consumption expenditure data (monthly per capita expenditure) from National Sample Survey Organisation for the years 1983, 1987, 1993-94, 1999-00, 2004-05 and 2009-10. We use state specific poverty lines (in Rs monthly per capita) from Planning Commission estimates of different years. In this paper Head Count Ratio (HCR) have been used as a measure to find the pattern of urban poverty in the states for the years 1983, 1987, 1993, 1999, 2004 and 2009.

We use a computational tool following Gaurav Datt's methodology for estimating these poverty measures. Then a study showing decomposition of changes in urban poverty over the periods of time 1983-84 to 1987-88, 1987-88 to 1993-94, 1993-94 to 1999-00, 1999-00 to 2004-05 and 2004-05 to 2009-10 have been done for the urban areas of the states and all India level in terms of growth/mean effect (holding inequality constant) and inequality effect (holding mean unchanged) and residual effect.

Until 1993-94, National Sample Survey Organisation (NSS) collected information on consumption expenditure from households on a uniform 30-day recall period for all items of consumption. Since 1999-00, NSSO has used a Mixed Recall Period (MRP) for collecting information on the same. Under Mixed Recall Period (MRP), information on five broad item groups of household consumer expenditure with low frequency of purchase namely, clothing, footwear, education, institutional medical care and durables is collected on a year or 365 days recall basis while information on consumption expenditure on all other items is collected on a month or 30 days recall period. In the case of Uniform Recall Period (URP), all information on consumption expenditure is collected on a month-long recall period basis. For 1983 to 2004 we use urban poverty line based on URP in calculating the HCR and for 2009 we use urban poverty line based on MRP in calculating the HCR.

We use Parameterized Lorenz curve methods (General Quadratic (GQ) Lorenz curve) for constructing poverty measures.

Let $L = (p, \pi)$ and $P = P(\mu / z, \pi)$ be the Lorenz curve and poverty measures functions respectively where L is the share of the bottom p percent of population in aggregate consumption, π is a vector of (estimable) parameters of the Lorenz curve, P is a poverty measure defined as a function of the ratio of the mean consumption μ to the poverty line z and π , the parameters of the Lorenz curve.

The Head count index H is derived by using the relationship between the Lorenz curve and the distribution function.

Poverty Measure for GQ Lorenz Curve

Equation of the Lorenz Curve:

$$L(1-L) = a(p^2 - L) + bL(p-1) + c(p-L)$$

$$L(p) = -1/2[(bp + e + (mp^2 + np + e^2)^{1/2}] \text{ Where, } e = -(a+b+c+1)$$

$$m = b^2 - 4a$$

$$n = 2be - 4c$$

We calculate poverty line /mean consumption for all the states for different years. We try to construct the poverty measures for the states of India for different years by constructing cumulative proportion of population (p) and cumulative proportion of consumption expenditure (L).

Using the values of p and L from the survey data we regress $L(1-L)$ on $(p^2 - L)$, $L(p-1)$ and $(p-L)$ to estimate GQ Lorenz curve parameters a , b and c . Then we can construct H estimate of poverty measure by a formula using the values of z/μ and coefficients a, b, c as obtained above.

$$\text{Head Count Index}(H) = -1/2m(n+r(b+2z/\mu))((b+2z/\mu)^2 - m)^{-1/2} \text{ Where } e = -(a+b+c+1)$$

$$m = b^2 - 4a$$

$$n = 2be - 4c$$

$$r = (n^2 - 4me^2)^{1/2}$$

We try to decompose the change in poverty ratio into growth effect and redistribution effect and effect of a residual component that is neither growth nor distribution. Growth effect is envisaged in terms of mean effect—the mean of consumption expenditure per capita which is a gross underestimate of per capita income. Growth effect or mean effect determines the extent of fall/rise in poverty incidence due to rise /fall in mean per capita consumption expenditure. Inequality effect estimates the rise/fall in inequality. The residual effect may capture the population shift effect, effect of relative changes in prices or it can be a combination of several factors.

This decomposition is done for the urban areas of 15 major states and all India. The data used are the National Sample Survey data (NSS) for the time periods 1983 to 87-88, 1987-88 to 1993-94, 1993-94 to 1999-00, 1999-00 to 2004-05 and 2004-05 to 2009-10. While doing this decomposition exercise we mainly follow Gaurav Datt's methodology (1992). The level of poverty may change due to a change in the mean income u_t relative to the poverty line or due to a change in relative inequalities L_t . The growth redistribution decomposition deals with the question, how much of a given change in poverty is due to change in mean consumption (holding relative inequalities or the Lorenz curve

constant) and how much to the change in relative inequalities or the Lorenz curve (holding mean consumption constant). The former defines the growth component while the latter defines the redistribution component.

Table 1: State-wise Urban Head Count Ratio in India during 1983-2009

	1983	1987	1993	1999	2004	2009
Andhra Pradesh	36.4	40.0	45.8	27.5	27.8	26.2
Assam	21.7	9.9	7.7	7.5	4.7	15.4
Bihar	47.6	49.1	35.6	33.2	33.5	43.5
Gujarat	38.7	36.6	28.8	16.4	14.8	20.9
Haryana	22.5	20.6	17.3	11.4	16.3	23.2
Himachal Pradesh	11.4	6.5	9.5	3.5	5.4	15.9
Jammu & Kashmir	17.8	17.7	8.4	0.6	10.7	26.0
Karnataka	42.5	46.8	39.5	25.4	33.3	33.2
Kerala	45.5	41.5	26.2	20.5	21.3	26.1
Madhya Pradesh	52.0	44.4	48.0	37.5	41.7	44.0
Maharashtra	39.5	32.7	34.8	27.4	32.9	33.9
Orissa	49.0	42.7	41.2	42.6	42.2	46.6
Punjab	23.6	16.3	12.2	5.6	7.6	16.1
Rajasthan	37.2	42.4	31.0	21.3	32.6	36.1
Tamil Nadu	45.7	38.6	39.4	23.8	24.0	30.1
Uttar Pradesh	50.2	41.5	35.6	30.9	30.6	39.3
Delhi	27.0	14.6	17.1	10.2	16.2	28.4
West Bengal	32.3	34.1	23.4	16.8	15.8	20.3
Chhattisgarh	-	-	-	-	39.0	42.1
Jharkhand	-	-	-	-	19.0	35.4
Uttarakhand	-	-	-	-	34.3	44.2
All India	40.6	37.8	32.7	24.2	26.0	31.1

Source: Authors calculation from different NSS rounds.

Hence we can write that for any two dates 0 and 1, the growth component of a change in the poverty measure is the change in poverty due to a change in the mean from μ_0 to μ_1 while holding Lorenz curve constant at $L_0=L(p, \pi_0)$. The redistribution component is defined as the change in poverty due to a change in the Lorenz curve from L_0 to $L_1=L(p; \pi_1)$ holding mean constant at μ_0 .

Hence we get the following decomposition

$$P(\mu_1 / z, \pi_1) - P(\mu_0 / z, \pi_0) = P(\mu_1 / z, \pi_0) - P(\mu_0 / z, \pi_0) + P(\mu_0 / z, \pi_1) - P(\mu_0 / z, \pi_0) + P(\mu_1 / z, \pi_1) - P(\mu_0 / z, \pi_1)$$

or change in poverty = Growth component + Redistribution component + Residual

The poverty line is kept fixed over the two periods. The means have been adjusted for changes in the cost of living over the two dates. After we get the values of H we try to find the decomposition of changes in poverty ratio into growth effect, redistribution effect and effect due to a residual term.

Table2 : State Rank in Urban poverty during 1983-2009

	1983	1987	1993	1999	2004	2009
Andhra Pradesh	6	9	15	12	10	7
Assam	1	1	1	2	1	1
Bihar	13	16	10	14	15	16
Gujarat	8	7	7	5	3	4
Haryana	2	4	4	4	6	5
Karnataka	10	15	13	10	14	10
Kerala	11	10	6	7	8	6
Madhya Pradesh	16	14	16	15	18	17
Maharashtra	9	5	9	11	13	11
Orissa	14	13	14	16	19	19
Punjab	3	3	2	1	2	2
Rajasthan	7	12	8	8	12	13
Tamil Nadu	12	8	12	9	9	9
Uttar Pradesh	15	10	10	13	11	14
Delhi	4	2	3	3	5	8
West Bengal	5	6	5	6	4	3
Chhattisgarh					17	15
Jharkhand					7	12
Uttarakhand					16	18

Source: Authors calculation from different NSS rounds.

Note: Rank exclude Assam, Himachal Pradesh, Jammu & Kashmir

DISCUSSION AND RESULTS

Pattern of Urban poverty: Between the periods 1980-2010 there has been a significant achievement in reducing poverty both at the national and state level. During this period poverty has fallen in all the states with substantial differences in all the states. Urban India performed a little

better under economic reforms . This decline in poverty may be attributed to the high growth rate achieved by the states. The decline in the urban poverty had accelerated in the 1990s. The regional differences in poverty reduction have been quite substantial. From table 1 we find in almost all the states a significant decline in HCR could be noticed between 1987 and 1999. However Gujarat, Haryana ,Karnataka ,Kerala, Punjab, Rajasthan, Tamil nadu and West Bengal are among the best performing states. Again between 1999 and 2004 an opposite picture could be noticed in case of change in poverty ratio in almost all the states where poverty ratio increased significantly in states like Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Delhi. However poverty reduction occurred in states like Gujarat, Kerala and W.B .But urban poverty had been low in Assam, Gujarat, Haryana, Punjab, Delhi and W.B. in 2004. In case of India HCR accounts to 40 percentage in 1983 which falls to 37 percentage in 1987 and then to 32 percentage in 1993 and then falls to 24 percentage in 1999 and then accounts to 26 percentage in 2004 and to 31 percentage in 2009.

Table 3a Decomposition of Urban Poverty Changes in India

States/UTs	1983-1987				1987-1993			
	total effect	growth effect	distr eff	residual	total effect	growth effect	distr eff	residual
Andhra Pradesh	3.5	-24.0	31.7	-4.2	5.8	-32.5	44.4	-6.2
Bihar	1.5	-22.1	25.5	-2.0	-13.5	-45.7	31.0	1.2
Gujarat	-2.1	-28.9	29.9	-3.0	-7.8	-35.2	42.0	-14.6
Haryana	-1.8	-20.4	30.9	-12.3	-3.3	-21.7	33.1	-14.7
Karnataka	4.3	-17.8	25.4	-3.2	-7.2	-37.0	33.8	-4.1
Kerala	-4.0	-25.5	15.3	6.2	-15.4	-34.6	30.3	-11.0
Madhya Pradesh	-6.0	-37.1	27.2	3.9	1.3	-33.5	39.0	-4.2
Maharashtra	-6.8	-22.5	25.0	-9.3	2.1	-21.7	40.5	-16.7
Orissa	-6.3	-29.1	21.3	1.5	-1.5	-33.4	36.7	-4.7
Punjab	-7.4	-17.0	19.9	-10.2	-4.1	-24.7	41.3	-20.6
Rajasthan	5.2	-23.7	34.6	-5.7	-11.4	-37.0	32.2	-6.6
Tamil Nadu	-28.7	-26.2	16.6	-19.1	22.4	-10.7	60.8	-27.69
Uttar Pradesh	-8.7	-33.0	22.9	1.4	-5.9	-33.3	34.5	-7.0
Delhi	-12.4	-31.8	31.2	-11.8	2.5	-16.2	25.4	-6.7
West Bengal	1.9	-20.5	27.3	-4.9	-10.8	-34.2	30.6	-7.1
All-India	-2.8	-25.5	25.9	-3.2	-5.1	-31.9	35.2	-8.3

Interstate variation in urban poverty: When we rank the states in terms of maximum HCR for a particular year then we will find from table 2 that for the year 1983 Madhyapradesh accounts for highest HCR(rank 15) and Haryana experiences lowest HCR(Rank 1) followed by Punjab, Delhi, West Bengal and Andhra Pradesh. In 1987 however Bihar accounts for highest HCR and

Delhi for lowest HCR followed by Punjab, Haryana, Maharashtra and W.B. However for the next three consecutive years Punjab happens to be the best performing state in terms of lowest HCR and maximum HCR could be noticed in M.P in 1993, in Orissa in 1999, in 2004 and in 2009 . For both 1993 and 1999, Delhi and Haryana maintained second and third position respectively in terms of lowest HCR. In 2009 maximum poverty ratio could be noticed in Orissa and minimum in Punjab. We can notice that in almost all the years the best performing states happens to be Punjab, Haryana, Delhi, Gujarat and West Bengal. In almost all the years Bihar ,Madhya Pradesh and Orissa performed very badly.

Table 3b Decomposition of Urban Poverty Changes in India

	1993-1999				1999-2004			
	total effect	growth effect	distr eff	residual	total effect	growth effect	distr eff	residual
Andhra Pradesh	-18.31	-37.70	25.33	-5.94	0.36	-15.91	19.01	-2.74
Bihar	-2.41	-31.45	35.02	-5.98	0.28	-10.60	10.75	0.13
Gujarat	-12.47	-29.95	38.32	-20.84	-1.60	-10.98	10.96	-1.58
Haryana	-5.98	-21.71	34.29	-18.56	4.91	-6.44	16.68	-5.33
Karnataka	-14.08	-36.21	35.83	-13.70	7.84	-6.85	15.43	-0.74
Kerala	-5.68	-26.40	35.60	-14.88	0.79	-14.66	18.66	-3.20
Madhya Pradesh	-9.94	-35.68	28.29	-2.56	3.66	-17.65	20.86	0.45
Maharashtra	-7.37	-26.77	32.20	-12.79	5.48	-8.59	15.70	-1.63
Orissa	1.32	-26.11	33.92	-6.49	-0.32	-15.39	12.42	2.65
Punjab	-6.63	-17.79	30.35	-19.19	1.98	-12.74	22.75	-8.03
Rajasthan	-9.60	-30.02	40.41	-20.00	11.22	-11.36	24.96	-2.38
Tamil Nadu	-15.56	-39.43	35.44	-11.57	0.17	-7.21	6.49	0.89
Uttar Pradesh	-4.72	-29.77	34.42	-9.37	-0.29	-14.06	14.09	-0.32
Delhi	-6.90	-14.06	20.91	-13.75	6.05	1.89	3.68	0.48
West Bengal	-6.51	-26.07	34.22	-14.66	-1.04	-12.70	12.08	-0.42
All-India	-8.49	-29.78	32.78	-11.49	1.75	-10.64	1.75	10.64

Decomposition analysis: If we see the decomposition of changes in poverty into growth effect, inequality effect and residual effect then we see that growth effect is always negative implying that as growth occurs poverty falls and inequality effect is always positive implying that as inequality rises/falls poverty rises /falls. Residual effect may be positive or negative. Between 1983-87 for India we find from table 3a, 3b and 3c that during this period due to growth effect poverty falls by 25 percent where as due to inequality effect poverty rises by 26 percentage. Due to residual effect poverty falls by 3 percentage i.e this residual effect in this case is poverty diminishing in nature. Here the total effect is negative. If we see the decomposition for the periods 87-88 to 93-94 ,here poverty

Table 3c Decomposition of Urban Poverty Changes in India

States/UTs	2004-2009			
	Total Effect	Growth Effect	Distr Eff	Residual
Andhra Pradesh	-1.6	-31.8	38.4	-8.3
Bihar	0.3	-10.6	10.8	0.1
Gujarat	6.1	-16.9	40.2	-17.2
Haryana	6.9	-16.8	36.8	-13.1
Karnataka	-0.1	-25.0	32.4	-7.5
Kerala	4.9	-24.7	46.1	-16.6
Madhya Pradesh	2.4	-27.8	32.2	-2.1
Maharashtra	-7.7	-38.8	31.1	0.0
Orissa	4.3	-31.5	37.8	-2.0
Punjab	8.5	-13.6	32.5	-10.4
Rajasthan	3.6	-30.6	43.2	-9.0
Tamil Nadu	6.1	-21.3	35.1	-7.7
Uttar Pradesh	8.7	-24.3	37.3	-4.3
Delhi	12.2	-19.2	41.9	-10.5
West Bengal	4.5	-16.2	29.2	-8.5
Chattisgarh	3.1	-16.5	25.7	-6.0
Jharkhand	16.4	-38.5	56.9	-2.0
Uttarakhand	5.0	-26.0	40.8	-9.8
All-India	5.1	-22.4	37.5	-10.0

Source: Authors calculation from different NSS rounds

falls by 32 percentage due to growth effect where as poverty rises by 35 percentage due to inequality effect and due to residual effect poverty falls by 8 percentage. Here the total effect is negative. In the year 93-94 to 99-00 poverty falls by 29 percentage due to growth effect where as poverty rises by 32 percentage due to inequality effect and due to residual effect poverty falls by 11percentage. In all these years the total effect is found to be negative interpreting that the growth effect seems to have gone up and the inequality effect falls down and the residual term being poverty diminishing in character. That is the growth effect dominates over the inequality effect during these years. During 99-00 to 2004-05 poverty falls by 10 percentage due to growth effect where as poverty rises by 2 percentage due to inequality effect and poverty rises by 10 percentage due to residual effect.

The total effect is found to be positive. That is the inequality effect dominates over the growth effect. During 2004-09 poverty falls by 22 percentage due to growth effect where as poverty rises by 37percentage due to inequality effect and poverty falls by 10percentage due to residual effect. The total effect is found to be positive . That is the inequality effect dominates over the growth effect.

During 1983-84 to 1987-88 total effect is negative for all the states except A.P, Bihar, Karnataka, Rajasthan and W.B interpreting that growth effect dominates over the inequality effect for those states where as inequality effect dominates over growth effect for rest of the states. The residual term is poverty diminishing in character in all cases. During 1987-88 to 1993-94 total effect is negative for almost all the states where growth effect dominates over the inequality effect and total effect is positive for some states like Andhra Pradesh, Madhya Pradesh, Maharashtra, Tamilnadu and Delhi where inequality dominates over growth effect for rest of the states .The residual term is poverty diminishing in character in all cases. During 1993-99 total effect is negative for all the states implying that poverty falls in all the states and growth effect dominates over the inequality effect. The residual term is poverty diminishing in character in all cases. During 1999-2004 total effect is positive for almost all the states showing that poverty rises in all states and inequality effect dominates over the growth effect. During 2004-09 total effect is positive for all the states showing that poverty rises in all states except Andhra Pradesh and Maharashtra and inequality effect dominates over the growth effect in all these states.

CONCLUSION

The above exercises are limited to state level expenditure distribution data only. They indicate how growth in mean per capita expenditure has dominated reduction in urban head count ratio of poverty in Indian states and all-India. Our next task would be to carry out the district level decomposition of urban poverty using the NSS unit-level consumption expenditure data for years where it is available. This would help us in identifying the relative effects of growth and expenditure inequality at the more disaggregated level. Then we would try to relate such changes in the urban poverty indicator to some socio-economic variables to explain the role of such factors in poverty reduction in urban areas.

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