

Decomposing Poverty Change in India:
Within- and Between-group Effects across Regions,
2004-05 and 2009-10

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Abstract

An analysis of poverty change between 2004-05 and 2009-10 is decomposed into the within-group effects of growth, inequality and population components and the between-group effect on account of changes in population shares. The relatively higher incidence of poverty is not restricted to the known poorer states viz, Chhattisgarh, Assam, Bihar, Madhya Pradesh, Odisha, Uttar Pradesh, and Jharkhand (CABMOUJ, pronounced kab mouj implying when to relax), but also includes regions in some of the better-off states of Andhra Pradesh, Gujarat and Maharashtra and also in some of the Northeast states. Growth effects having adverse implications on poverty reduction is also observed in some regions of Punjab, Gujarat and West Bengal among others. Increasing inequality is a matter of concern, particularly in regions comprising some well-known urban centres. Negative effects from population growth subsumed other effects in Northern Bihar, Eastern Gujarat and Southern Odisha. Shift in population shares point out that people out-migrate from regions where growth has adverse implications on poverty change. Providing opportunities and improving capabilities of people to take advantage of opportunities made available, particularly in regions where poverty has increased, should be a public policy priority.

JEL Codes: C18, C63, C81, D63, I32, R19, Y10

Key words: between-group; decomposition; growth; inequality; India, NSS regions, population; poverty; within-group

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1 Introduction

It is tautological to state that income gains will not translate in per capita terms because of increasing population. The concern of adverse implications from population growth led to policy initiatives on family planning across the globe (Robinson and Ross 2007). In fact, India was the first country in the world to set up an official programme in 1952, starting with its first five-year plan, to contain population growth (Harkavy and Roy 2007). While public policy initiatives addressed the Malthusian fears, the literature on decomposing poverty change concentrated on growth (or income growth) and inequality effects (Jain and Tendulkar 1990, Kakwani and Subbarao 1990, Datt and Ravallion, 1992, Tsui, 1996, Kakwani, 2000, and Heshmati 2004 among others); the methods drew credence from an implicit assumption that population remained constant.

In a recent paper, Mishra (2015) has incorporated the role of population growth as an independent within-group effect that is different from growth and inequality effects. In addition, Mishra (2015) also integrates that to Son (2003) so that change in population shares across groups shows the between-group effect. The current exercise takes this method as a starting point and extends the analysis across regions.

The method is explained in the next section. This is followed by an explanation of the data used and the region-wise analysis from this data on decomposing poverty change. Concluding remarks are in the final section.

2 The Method

There are two time periods, $t, \tau = 1, 2$ ($t \neq \tau$), and $k = 1, \dots, K$ groups that are comparable over t . P_t is poverty head count ratio at t ; it can be computed for a group, P_{tk} , or aggregated across groups with its population share, b_{tk} , as weights such that $P_t = \sum_k b_{tk} P_{tk}$; $\sum_k b_{tk} = 1$.

Poverty change is denoted by $\Delta P = P_2 - P_1$, which can be decomposed into three broad within-group effects of growth (ΔP_X), inequality (ΔP_L) and population (ΔP_N), respectively, such that

$$(1) \quad \Delta P = \sum_j \Delta P_j; j = X, L, N$$

As indicated in Mishra (2015), the computation of the three within-group effects depends upon the base time period and the sequence of calculations. For a given base (say, period 2),² there can be six possible sequences. Using notations X_t, L_t, N_t to denote income, inequality (expressed as a Lorenz ratio or Gini coefficient) and population, respectively, at t the sequences are

Growth-inequality-population

$$(2) \quad \Delta P = (P_2 - P_{2|X_1}) + (P_{2|X_1} - P_{1|N_2}) + (P_{1|N_2} - P_1),$$

Growth-population-inequality

$$(3) \quad \Delta P = (P_2 - P_{2|X_1}) + (P_{2|X_1} - P_{1|L_2}) + (P_{1|L_2} - P_1),$$

Inequality-growth-population

$$(4) \quad \Delta P = (P_2 - P_{2|L_1}) + (P_{2|L_1} - P_{1|N_2}) + (P_{1|N_2} - P_1),$$

Inequality-population-growth

$$(5) \quad \Delta P = (P_2 - P_{2|L_1}) + (P_{2|L_1} - P_{1|X_2}) + (P_{1|X_2} - P_1),$$

² In Mishra (2015), the base followed was period 1. At the three broader levels the components of income growth, inequality and population effects will remain the same, independent of the base time period. However, with a change in the base period, the specific attribution and interpretation will change when the broader levels are further disaggregated. In particular, the sequence of the equations (2)-(7) will get reversed.

Population-growth-inequality

$$(6) \quad \Delta P = (P_2 - P_{2|N_1}) + (P_{2|N_1} - P_{1|L_2}) + (P_{1|L_2} - P_1),$$

Population-inequality-growth

$$(7) \quad \Delta P = (P_2 - P_{2|N_1}) + (P_{2|N_1} - P_{1|X_2}) + (P_{1|X_2} - P_1).$$

And hence, $\Delta P_j \forall j$ is an average over the six possibilities. In effect, due to repetition, there are four formulae for each of the within-group effect. Each formula indicated in equations (2)-(7) have a minuend and a subtrahend where both the components are additively decomposable across groups with their population share as weights. This leads to Proposition 1.

Proposition 1: Poverty change in any of the within-group effects is additively decomposable across groups with appropriate weight adjustments,

$$(8) \quad \Delta P_j = \sum_k \widetilde{\Delta P_{jk}} \forall j;$$

$\widetilde{\Delta P_{jk}}$ denotes weight adjusted share of poverty change of the k^{th} group for the j^{th} effect and $\sum_j \widetilde{\Delta P_{jk}} = \widetilde{\Delta P_k} = b_{2k}P_{2k} - b_{1k}P_{1k}$.

Further, it needs to be mentioned that for any specific group,

$$(9) \quad \Delta P_k = \sum_j \Delta P_{jk}.$$

Son (2003) proposes an alternative decomposition of poverty change that combines within-group effects with between-group effect of change in population shares,

$$(10) \quad \Delta P = \sum_k \widetilde{\Delta P_k} = \sum_k \bar{b}_k \Delta P_k + \sum_k \bar{P}_k \Delta b_k; \bar{b}_k = (b_{k1} + b_{k2})/2 \text{ and } \bar{P}_k = (P_{k1} + P_{k2})/2.$$

If one extends (10) using (9) to incorporate all the three broad within-group effects then it allows us to refine and reiterate a result of Mishra (2015) in Proposition 2.

Proposition 2: In decomposing poverty change, the within-group effects of growth, inequality and population are independent of the between-group effect on account of change in population shares and all the four components are decomposable across groups and are mutually exclusive. In other words,

$$(11) \quad \Delta P = \sum_j \sum_k \bar{b}_k \Delta P_{jk} + \sum_k \bar{P}_k \Delta b_k.$$

3 Data and Analysis

Now we take up an analysis of the above-mentioned method using household level National Sample Survey (NSS) data of India for 2004-05 and 2009-10 on consumption expenditure. We use the monthly per capita expenditure (MPCE) to represent an individual's well-being and use the poverty lines provided by the Planning Commission (2011, 2012)³ to estimate the proportion of poor. The poverty lines are state and sector (rural or urban) specific and benchmarked to a commodity basket for urban India in 2004-05. For ease of computation, we use the ratio of the benchmarked commodity basket to the poverty lines to obtain comparable MPCE with the benchmarked commodity basket as the poverty line and obtain group-specific poverty ratios, P_{tk} , and population shares, b_{tk} . These are indicated in Table 1.⁴

³ For a critical assessment of this method of computing the poverty line see Pathak and Mishra (2013, 2015).

⁴ The results at the aggregate level will differ from Mishra (2015) for two reasons. The calculations and weights in the current exercise are region-specific whereas in the earlier exercise they were state-specific. Besides, the population used in the current exercise is obtained from the unit level data whereas in the earlier exercise the population from Censuses of 2001 and 2011 were interpolated at the state level.

Table 1: Poverty Incidence and Population Share across NSS region for Rural, Urban and Combined in 2004-05 and 2009-10

Region-specific Code	Rural				Urban				Combined			
	Poverty Incidence		Population Share		Poverty Incidence		Population Share		Poverty Incidence		Population Share	
	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10
AN0	3.3	0.4	0.020	0.021	0.8	0.0	0.010	0.013	2.5	0.2	0.030	0.034
AP1	23.6	15.1	2.429	2.257	19.5	19.7	0.865	0.807	22.5	16.3	3.294	3.065
AP2	48.1	31.1	1.065	0.982	37.9	31.6	0.337	0.320	45.7	31.2	1.403	1.302
AR0	33.6	26.1	0.079	0.079	23.5	24.9	0.010	0.020	32.4	25.9	0.089	0.099
AS1	57.1	27.7	0.952	0.955	21.6	20.8	0.101	0.131	53.7	26.9	1.052	1.087
AS2	53.6	41.1	1.382	1.466	18.8	26.4	0.137	0.145	50.5	39.7	1.520	1.611
BI1	53.7	55.3	4.116	4.721	45.3	43.2	0.195	0.279	53.4	54.6	4.311	5.000
BI2	58.7	55.4	2.684	2.511	43.1	37.4	0.499	0.539	56.3	52.2	3.183	3.049
CN0	29.4	10.2	0.009	0.012	10.1	9.1	0.081	0.067	12.1	9.2	0.090	0.078
CT0	55.1	56.1	1.853	1.724	28.4	23.6	0.335	0.374	51.0	50.3	2.189	2.099
DA0	63.6	55.6	0.018	0.020	16.8	17.7	0.002	0.007	58.1	46.2	0.021	0.026
DD0	2.4	32.0	0.011	0.009	14.4	32.7	0.006	0.007	6.6	32.3	0.017	0.016
DE0	15.6	7.6	0.086	0.057	12.9	14.3	1.180	1.040	13.1	14.0	1.265	1.097
GO0	28.1	11.3	0.068	0.097	22.2	6.4	0.041	0.039	25.9	9.9	0.109	0.136
GU1	51.2	39.0	0.805	1.129	24.9	14.3	0.129	0.726	47.6	29.3	0.934	1.855
GU2	38.0	19.0	0.659	0.857	21.9	18.0	0.546	0.727	30.7	18.6	1.205	1.584
GU3	39.8	42.3	0.532	0.264	14.1	23.9	0.524	0.033	27.0	40.3	1.056	0.297
GU4	48.3	35.0	0.520	0.141	27.5	21.5	0.070	0.013	45.9	33.9	0.591	0.154
GU5	16.7	10.9	0.635	0.813	22.5	21.8	0.391	0.467	18.9	14.9	1.025	1.280
HA1	23.0	13.7	0.991	0.936	18.2	23.1	0.427	0.514	21.5	17.0	1.419	1.450
HA2	27.8	25.8	0.620	0.622	33.9	22.5	0.158	0.152	29.0	25.2	0.778	0.774
HP0	25.0	9.1	0.566	0.543	4.6	12.5	0.059	0.051	23.0	9.4	0.625	0.594
JK1	5.0	3.2	0.136	0.145	4.6	6.8	0.054	0.073	4.9	4.4	0.190	0.217
JK2	32.7	8.5	0.057	0.142	9.3	9.0	0.008	0.017	30.0	8.6	0.065	0.159
JK3	14.6	10.1	0.322	0.323	13.2	17.9	0.112	0.096	14.3	11.9	0.435	0.419
JN0	51.6	41.4	2.072	1.981	23.8	31.0	0.398	0.499	47.2	39.3	2.471	2.480

Continued

Table 1: Poverty Incidence and Population Share across NSS region for Rural, Urban and Combined in 2004-05 and 2009-10

Region-specific Code	Rural				Urban				Combined			
	Poverty Incidence		Population Share		Poverty Incidence		Population Share		Poverty Incidence		Population Share	
	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10
KA1	27.0	8.5	0.329	0.271	38.2	13.6	0.092	0.094	29.4	9.8	0.421	0.365
KA2	17.8	8.7	0.380	0.345	20.5	18.2	0.086	0.074	18.3	10.4	0.466	0.419
KA3	27.5	9.4	1.018	0.966	7.9	6.4	0.792	1.050	18.9	7.9	1.810	2.016
KA4	49.6	41.6	1.747	1.746	49.5	44.9	0.575	0.567	49.6	42.4	2.323	2.313
KE1	30.3	19.3	1.004	0.988	30.9	19.9	0.262	0.285	30.4	19.4	1.267	1.273
KE2	12.9	6.1	1.397	1.229	11.5	7.6	0.474	0.494	12.5	6.5	1.871	1.723
LA0	0.3	20.6	0.003	0.003	10.3	1.0	0.003	0.003	5.3	10.7	0.006	0.006
MP1	59.7	61.5	1.028	0.882	28.3	37.7	0.185	0.200	54.9	57.1	1.213	1.082
MP2	64.5	43.2	0.555	0.499	36.6	28.2	0.245	0.258	56.0	38.1	0.800	0.757
MP3	42.1	17.3	1.066	1.102	28.6	4.5	0.427	0.423	38.2	13.8	1.493	1.526
MP4	64.5	56.7	0.798	0.842	39.6	32.7	0.180	0.182	59.9	52.5	0.979	1.024
MP5	53.2	58.2	0.601	0.565	39.0	27.5	0.168	0.137	50.1	52.2	0.770	0.701
MP6	40.1	21.7	0.638	0.608	44.5	27.0	0.228	0.248	41.3	23.3	0.866	0.856
MR1	44.0	27.1	0.629	0.588	7.9	5.1	1.674	1.779	17.7	10.6	2.303	2.368
MR2	27.1	16.8	1.580	1.523	28.2	16.8	0.785	0.798	27.5	16.8	2.365	2.320
MR3	54.9	30.7	0.768	0.765	44.8	34.8	0.335	0.281	51.8	31.8	1.103	1.046
MR4	61.6	30.0	1.242	1.196	60.3	44.2	0.358	0.382	61.3	33.4	1.601	1.579
MR5	54.3	37.8	0.970	0.880	41.2	32.3	0.525	0.517	49.7	35.8	1.495	1.397
MR6	63.2	55.3	0.427	0.465	31.4	43.9	0.114	0.112	56.5	53.1	0.540	0.577
MU1	24.5	43.6	0.080	0.080	33.6	45.1	0.045	0.052	27.8	44.2	0.125	0.132
MU2	56.6	51.4	0.068	0.074	51.4	87.4	0.003	0.002	56.5	52.2	0.070	0.075
MY0	14.0	15.3	0.184	0.200	24.7	23.9	0.028	0.041	15.4	16.8	0.212	0.241
MZ0	23.0	31.1	0.044	0.042	7.9	11.5	0.028	0.036	17.1	22.1	0.072	0.078
NA0	10.0	19.2	0.058	0.074	4.3	24.9	0.024	0.027	8.3	20.8	0.083	0.101
OD1	44.6	25.3	1.518	1.111	37.0	18.1	0.258	0.229	43.5	24.1	1.776	1.340
OD2	80.7	52.4	0.610	1.011	46.4	37.1	0.052	0.114	78.0	50.8	0.662	1.125

Continued

Table 1: Poverty Incidence and Population Share across NSS region for Rural, Urban and Combined in 2004-05 and 2009-10

Region-specific Code	Rural				Urban				Combined			
	Poverty Incidence		Population Share		Poverty Incidence		Population Share		Poverty Incidence		Population Share	
	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10	2004-05	2009-10
OD3	71.6	41.7	1.143	0.871	36.1	29.3	0.208	0.156	66.1	39.8	1.351	1.027
PD0	22.9	0.0	0.032	0.036	9.9	1.6	0.058	0.068	14.5	1.1	0.090	0.104
PN1	15.7	17.0	0.872	0.695	16.2	19.1	0.514	0.359	15.8	17.7	1.386	1.054
PN2	29.9	12.4	0.728	0.741	24.1	17.2	0.245	0.418	28.4	14.1	0.973	1.158
RA1	55.7	25.3	3.331	3.338	32.4	17.4	1.063	1.176	50.1	23.2	4.394	4.514
RA2	71.4	33.6	0.588	0.583	22.7	20.0	0.093	0.076	64.8	32.1	0.680	0.659
RA3	56.5	25.3	0.460	0.544	24.5	18.8	0.099	0.179	50.8	23.7	0.559	0.723
SI0	31.8	15.2	0.045	0.047	25.9	4.2	0.006	0.007	31.1	13.7	0.051	0.054
TE0	34.4	27.0	2.030	2.087	21.1	11.3	0.697	0.954	31.0	22.0	2.727	3.041
TN1	45.4	26.8	1.014	1.051	16.0	9.4	0.940	1.065	31.2	18.0	1.954	2.116
TN2	26.3	9.0	0.780	0.666	15.6	13.1	0.252	0.274	23.7	10.2	1.032	0.940
TN3	37.6	15.6	0.845	0.901	28.0	17.4	0.484	0.637	34.1	16.3	1.329	1.538
TN4	38.4	30.4	0.876	0.784	20.9	13.5	0.521	0.755	31.9	22.1	1.397	1.539
TR0	44.5	19.6	0.280	0.278	22.5	9.5	0.046	0.053	41.4	18.0	0.326	0.331
UP1	63.1	34.6	7.030	6.959	36.0	21.4	2.410	2.500	56.2	31.1	9.440	9.459
UP2	78.9	44.3	5.807	5.765	45.9	23.8	0.708	0.675	75.3	42.2	6.515	6.441
UP3	70.9	45.9	0.665	0.640	55.4	29.9	0.184	0.192	67.5	42.2	0.849	0.832
UT0	35.1	13.7	0.649	0.645	26.2	25.0	0.198	0.221	33.0	16.6	0.847	0.866
WB1	27.8	19.1	0.605	0.581	32.5	24.7	0.086	0.100	28.4	19.9	0.691	0.681
WB2	55.9	26.6	1.918	1.666	44.6	26.6	0.287	0.206	54.4	26.6	2.206	1.872
WB3	26.4	33.0	2.157	1.969	19.8	21.0	1.467	1.318	23.8	28.2	3.624	3.287
WB4	36.8	29.6	1.393	1.244	26.9	22.1	0.127	0.118	35.9	28.9	1.520	1.362
AIN	48.7	33.1	74.684	72.952	26.4	19.6	25.316	27.048	43.0	29.5	100.000	100.000

Note: The details of region-specific code are given in Appendix 1.

Source: Author's calculation using unit level data

Table 2: Group-specific Growth, Inequality and Population Effects of Poverty Change from 2004-05 to 2009-10 across NSS regions of India for Rural, Urban and Combined

Region-specific code	Rural				Urban				Combined			
	Growth	Inequality	Population	Total	Growth	Inequality	Population	Total	Growth	Inequality	Population	Total
AN0	-3.3	-1.2	1.6	-2.9	-2.7	0.1	1.8	-0.8	-3.1	-0.8	1.6	-2.2
AP1	-11.3	3.5	-0.7	-8.5	-4.0	4.4	-0.2	0.2	-9.4	3.7	-0.6	-6.2
AP2	-6.6	-6.4	-4.1	-17.0	-4.0	-2.8	0.4	-6.3	-5.9	-5.5	-3.0	-14.5
AR0	-18.7	5.8	5.5	-7.4	-43.7	5.6	39.5	1.4	-23.2	5.4	11.3	-6.5
AS1	-2.1	-27.7	0.4	-29.4	-5.0	-1.0	5.2	-0.8	-2.3	-25.1	0.6	-26.8
AS2	7.2	-14.0	-5.8	-12.6	1.3	1.8	4.5	7.6	6.7	-12.6	-4.9	-10.8
BI1	-20.5	1.3	20.8	1.6	-27.7	-2.2	27.7	-2.1	-20.8	1.0	21.1	1.3
BI2	-5.8	3.0	-0.5	-3.3	-13.5	-1.6	9.4	-5.7	-7.0	2.0	0.9	-4.1
CN0	-45.0	8.4	17.3	-19.3	-2.1	4.7	-3.6	-1.0	-7.9	5.5	-0.4	-2.8
CT0	1.5	0.9	-1.3	1.1	-4.3	-9.9	9.5	-4.7	0.7	-1.4	0.0	-0.6
DA0	-5.9	-11.6	9.5	-8.0	-36.0	-5.9	42.8	0.9	-11.3	-14.3	13.8	-11.9
DD0	22.3	15.2	-7.9	29.6	-21.5	11.1	28.7	18.2	4.3	14.2	7.1	25.7
DE0	13.2	-2.7	-18.5	-7.9	0.4	4.5	-3.5	1.4	1.2	4.1	-4.4	0.9
GO0	-28.9	-8.4	20.5	-16.8	-5.4	-10.4	0.0	-15.8	-21.7	-8.7	14.4	-16.0
GU1	-44.6	4.5	27.9	-12.2	-54.0	-1.6	44.9	-10.6	-48.7	-1.9	32.4	-18.2
GU2	-34.1	-9.6	24.7	-19.0	-25.7	1.8	20.0	-4.0	-30.3	-4.4	22.5	-12.2
GU3	51.3	-8.5	-40.2	2.6	48.9	12.0	-51.1	9.8	53.2	2.0	-42.0	13.2
GU4	41.8	1.9	-57.1	-13.3	41.1	9.4	-56.4	-5.9	41.9	3.0	-56.8	-11.9
GU5	-31.9	4.3	21.9	-5.8	-24.7	7.0	17.0	-0.7	-29.3	5.2	20.0	-4.0
HA1	-0.7	-8.7	0.2	-9.2	-15.1	4.6	15.5	5.0	-5.5	-4.2	5.3	-4.5
HA2	-14.3	7.2	5.1	-2.0	-21.7	8.6	1.8	-11.3	-15.7	7.5	4.4	-3.8
HP0	-16.9	-0.2	1.3	-15.9	-1.4	12.3	-2.9	7.9	-15.5	1.0	0.9	-13.6
JK1	-11.9	4.1	6.0	-1.8	-15.9	5.5	12.5	2.1	-13.2	4.6	8.2	-0.5
JK2	-64.1	4.7	35.3	-24.2	-45.2	3.1	41.8	-0.2	-62.0	4.6	36.0	-21.4
JK3	-7.6	-1.0	4.1	-4.5	13.8	-2.9	-6.2	4.8	-2.4	-1.5	1.5	-2.4

Continued

Table 2: Group-specific Growth, Inequality and Population Effects of Poverty Change from 2004-05 to 2009-10 across NSS regions of India for Rural, Urban and Combined

Region-specific code	Rural				Urban				Combined			
	Growth	Inequality	Population	Total	Growth	Inequality	Population	Total	Growth	Inequality	Population	Total
JN0	-10.7	-1.4	1.9	-10.2	-10.2	1.4	16.1	7.2	-10.4	-1.4	3.9	-7.8
KA1	-3.7	-9.9	-4.8	-18.5	-6.1	-22.5	4.0	-24.6	-4.4	-12.7	-2.5	-19.6
KA2	-3.1	-2.4	-3.6	-9.1	12.6	-9.6	-5.3	-2.3	-0.2	-3.8	-4.0	-7.9
KA3	-16.3	-2.4	0.7	-18.1	-15.8	1.0	13.4	-1.5	-16.1	-1.5	6.5	-11.0
KA4	-9.4	-5.6	6.9	-8.0	-10.2	1.7	4.0	-4.5	-9.6	-3.8	6.2	-7.2
KE1	-16.5	2.3	3.1	-11.0	-18.4	-2.0	9.4	-11.0	-16.9	1.4	4.5	-11.0
KE2	-4.5	0.5	-2.8	-6.8	-10.5	3.4	3.1	-3.9	-6.2	1.3	-1.1	-6.0
LA0	5.7	15.4	-0.8	20.2	-2.4	-7.1	0.1	-9.3	1.7	4.1	-0.4	5.4
MP1	11.8	-1.7	-8.2	1.8	-1.0	2.2	8.2	9.4	9.9	-1.7	-6.0	2.2
MP2	-16.0	0.8	-6.1	-21.3	-30.4	13.9	8.0	-8.5	-20.4	4.6	-2.0	-17.9
MP3	-29.1	-2.3	6.6	-24.8	-10.5	-15.5	2.0	-24.0	-23.9	-5.9	5.4	-24.5
MP4	-24.2	6.1	10.3	-7.7	-24.0	13.8	3.4	-6.9	-24.2	7.7	9.2	-7.4
MP5	5.3	-0.2	-0.1	5.0	9.0	-9.6	-10.9	-11.5	5.9	-1.8	-2.0	2.1
MP6	-17.7	-2.0	1.3	-18.4	-16.6	-11.5	10.6	-17.5	-17.4	-4.6	4.0	-18.0
MR1	-13.2	-3.2	-0.5	-16.9	-8.9	2.0	4.1	-2.8	-9.8	0.2	2.5	-7.2
MR2	-7.9	-4.4	1.9	-10.3	-19.6	4.3	3.8	-11.5	-11.8	-1.4	2.6	-10.7
MR3	-26.2	-2.7	4.7	-24.3	4.3	-5.9	-8.4	-10.0	-17.6	-3.5	1.0	-20.1
MR4	-27.8	-6.2	2.2	-31.7	-25.1	-1.8	10.8	-16.1	-27.2	-5.1	4.3	-27.9
MR5	-10.4	-3.2	-2.9	-16.5	-11.7	-0.3	3.1	-8.9	-10.8	-2.2	-0.9	-13.9
MR6	-15.4	-7.4	14.8	-7.9	7.4	-2.1	7.2	12.5	-10.9	-6.0	13.5	-3.5
MU1	5.1	5.1	8.8	19.1	-18.0	3.2	26.5	11.6	-3.7	4.5	15.7	16.4
MU2	-35.2	6.3	23.7	-5.2	66.7	-1.3	-29.4	36.0	-32.4	6.0	22.1	-4.3
MY0	-17.8	4.8	14.4	1.4	-22.8	-5.5	27.5	-0.7	-18.6	3.4	16.6	1.4
MZ0	-1.4	5.9	3.5	8.1	-14.4	3.6	14.4	3.6	-6.8	4.2	7.7	5.1
NA0	-16.5	-4.0	29.7	9.2	7.6	-0.4	13.5	20.7	-9.9	-3.0	25.3	12.5

Continued

Table 2: Group-specific Growth, Inequality and Population Effects of Poverty Change from 2004-05 to 2009-10 across NSS regions of India for Rural, Urban and Combined

Region-specific code	Rural				Urban				Combined			
	Growth	Inequality	Population	Total	Growth	Inequality	Population	Total	Growth	Inequality	Population	Total
OD1	7.8	0.0	-27.2	-19.3	-20.8	8.3	-6.4	-18.9	3.4	1.2	-24.0	-19.5
OD2	-58.0	-1.2	30.9	-28.4	-43.0	-5.0	38.7	-9.3	-56.7	-1.9	31.4	-27.2
OD3	-1.9	-7.4	-20.6	-29.9	1.0	5.9	-13.8	-6.9	-1.5	-5.3	-19.5	-26.3
PD0	-16.3	-12.6	6.0	-22.9	-23.4	7.0	8.1	-8.3	-21.0	0.1	7.4	-13.4
PN1	11.6	1.9	-12.2	1.3	14.9	4.0	-16.1	2.9	12.8	2.6	-13.6	1.9
PN2	-23.3	0.3	5.5	-17.5	-35.9	1.3	27.7	-6.9	-27.7	0.6	12.8	-14.3
RA1	-27.1	-20.8	17.4	-30.4	-2.1	-10.6	-2.4	-15.1	-20.6	-18.5	12.3	-26.9
RA2	-29.0	-24.9	16.1	-37.8	-3.0	-0.1	0.3	-2.7	-25.9	-21.3	14.5	-32.7
RA3	-41.2	-20.8	30.8	-31.2	-15.1	-5.5	14.9	-5.7	-34.9	-19.1	26.8	-27.1
SI0	-25.2	0.8	7.8	-16.5	-28.6	-6.8	13.6	-21.7	-25.5	-0.4	8.5	-17.4
TE0	-12.2	-2.8	7.7	-7.4	-26.7	-2.0	18.9	-9.8	-16.3	-3.2	10.5	-8.9
TN1	-30.0	2.4	9.0	-18.6	-12.2	-2.4	8.0	-6.5	-21.1	-0.3	8.2	-13.2
TN2	-7.4	-2.5	-7.4	-17.3	-9.0	-2.5	8.9	-2.5	-7.9	-2.6	-3.0	-13.5
TN3	-22.7	-11.5	12.2	-22.0	-27.5	-5.0	21.9	-10.6	-24.7	-9.0	15.9	-17.8
TN4	-4.1	0.2	-4.1	-8.0	-26.9	-2.4	21.9	-7.4	-13.9	-2.3	6.4	-9.8
TR0	-30.1	-0.6	5.8	-24.8	-23.0	-1.4	11.4	-12.9	-28.9	-0.9	6.5	-23.4
UP1	-22.8	-18.0	12.3	-28.5	-37.6	-1.6	24.6	-14.5	-26.7	-13.8	15.4	-25.0
UP2	-28.5	-23.3	17.3	-34.6	8.4	-24.2	-6.4	-22.2	-24.6	-23.3	14.8	-33.1
UP3	-18.6	-17.4	11.1	-25.0	-14.7	-19.7	9.0	-25.5	-17.6	-18.2	10.4	-25.3
UT0	-47.4	22.5	3.5	-21.4	-16.9	3.3	12.3	-1.2	-39.8	17.7	5.7	-16.4
WB1	-10.3	-1.1	2.7	-8.7	-28.0	4.1	16.0	-7.8	-12.8	-0.3	4.6	-8.5
WB2	-12.4	-7.5	-9.3	-29.2	15.3	-11.9	-21.4	-18.0	-9.2	-7.9	-10.6	-27.8
WB3	14.3	-3.8	-4.0	6.5	0.3	3.1	-2.3	1.2	8.7	-1.0	-3.3	4.4
WB4	3.5	-4.9	-5.7	-7.2	-22.0	17.7	-0.4	-4.7	1.3	-3.0	-5.3	-7.0
AIN	-14.7	-6.2	5.5	-15.5	-13.4	-1.1	7.6	-6.8	-14.3	-5.1	5.8	-13.6

Note and Source: As in Table 1.

Table 3: Aggregate All India Poverty Change from 2004-05 to 2009-10 Decomposed to Within- and Between-group Effects across Rural and Urban areas of NSS regions

Region-specific Code	Rural			Urban			Combined		
	Within-group	Between-group	Total	Within-group	Between-group	Total	Within-group	Between-group	Total
AN0	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
AP1	1.47	0.24	1.71	-0.01	0.08	0.07	1.46	0.33	1.79
AP2	1.29	0.24	1.53	0.15	0.04	0.20	1.44	0.29	1.73
AR0	0.04	0.00	0.04	0.00	-0.02	-0.02	0.04	-0.02	0.02
AS1	2.06	-0.01	2.05	0.01	-0.05	-0.04	2.07	-0.06	2.01
AS2	1.32	-0.29	1.03	-0.08	-0.01	-0.09	1.24	-0.31	0.94
BI1	-0.51	-2.43	-2.94	0.04	-0.27	-0.24	-0.47	-2.71	-3.18
BI2	0.64	0.73	1.37	0.22	-0.12	0.10	0.86	0.61	1.47
CN0	0.01	0.00	0.01	0.01	0.01	0.02	0.02	0.01	0.03
CT0	-0.14	0.53	0.39	0.12	-0.07	0.05	-0.02	0.45	0.44
DA0	0.01	-0.01	0.01	0.00	-0.01	-0.01	0.01	-0.01	0.00
DD0	-0.02	0.00	-0.02	-0.01	0.00	-0.01	-0.03	0.00	-0.03
DE0	0.04	0.02	0.07	-0.12	0.14	0.02	-0.08	0.16	0.09
GO0	0.10	-0.04	0.06	0.05	0.00	0.05	0.15	-0.04	0.11
GU1	0.87	-1.08	-0.21	0.33	-0.86	-0.53	1.20	-1.94	-0.74
GU2	1.06	-0.42	0.65	0.19	-0.27	-0.08	1.25	-0.68	0.56
GU3	-0.08	0.81	0.74	-0.20	0.69	0.48	-0.28	1.50	1.22
GU4	0.32	1.17	1.49	0.02	0.10	0.12	0.34	1.27	1.61
GU5	0.31	-0.18	0.13	0.02	-0.13	-0.10	0.33	-0.31	0.03
HA1	0.66	0.07	0.73	-0.17	-0.13	-0.30	0.48	-0.06	0.43
HA2	0.09	0.00	0.09	0.13	0.01	0.14	0.22	0.01	0.23
HP0	0.65	0.03	0.68	-0.03	0.00	-0.03	0.62	0.03	0.65
JK1	0.02	0.00	0.02	-0.01	-0.01	-0.02	0.01	-0.01	0.00
JK2	0.18	-0.13	0.05	0.00	-0.01	-0.01	0.18	-0.13	0.04
JK3	0.11	0.00	0.11	-0.04	0.02	-0.02	0.07	0.02	0.09
JN0	1.53	0.31	1.84	-0.24	-0.20	-0.44	1.29	0.11	1.40
KA1	0.41	0.08	0.48	0.17	0.00	0.16	0.58	0.07	0.65
KA2	0.24	0.03	0.28	0.01	0.02	0.03	0.26	0.05	0.31
KA3	1.32	0.07	1.39	0.10	-0.14	-0.04	1.42	-0.07	1.36
KA4	1.03	0.01	1.04	0.19	0.03	0.22	1.23	0.03	1.26
KE1	0.81	0.03	0.84	0.22	-0.04	0.18	1.03	-0.01	1.02
KE2	0.66	0.12	0.78	0.14	-0.01	0.13	0.80	0.10	0.90
LA0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MN1	-0.11	0.00	-0.11	-0.04	-0.02	-0.06	-0.15	-0.02	-0.17
MN2	0.03	-0.02	0.00	-0.01	0.01	0.00	0.02	-0.02	0.00
MP1	-0.13	0.65	0.53	-0.13	-0.04	-0.17	-0.26	0.62	0.36
MP2	0.83	0.22	1.05	0.16	-0.03	0.13	0.99	0.19	1.18
MP3	1.98	-0.08	1.90	0.75	0.00	0.76	2.73	-0.07	2.66
MP4	0.47	-0.20	0.27	0.09	0.00	0.09	0.56	-0.20	0.36
MP5	-0.22	0.15	-0.06	0.13	0.08	0.21	-0.09	0.23	0.14
MP6	0.84	0.07	0.91	0.31	-0.05	0.26	1.15	0.02	1.17
MR1	0.76	0.11	0.86	0.35	-0.05	0.30	1.11	0.06	1.17

Continued

Table 3: Aggregate All India Poverty Change from 2004-05 to 2009-10 Decomposed to Within- and Between-group Effects across Rural and Urban areas of NSS regions

Region-specific Code	Rural			Urban			Combined		
	Within-group	Between-group	Total	Within-group	Between-group	Total	Within-group	Between-group	Total
MR2	1.18	0.09	1.27	0.67	-0.02	0.65	1.85	0.07	1.92
MR3	1.37	0.01	1.38	0.23	0.16	0.39	1.60	0.17	1.77
MR4	2.85	0.16	3.00	0.44	-0.09	0.35	3.29	0.06	3.35
MR5	1.12	0.30	1.43	0.34	0.02	0.36	1.47	0.33	1.79
MR6	0.26	-0.17	0.09	-0.10	0.00	-0.10	0.16	-0.16	-0.01
MY0	-0.02	-0.02	-0.04	0.00	-0.02	-0.02	-0.02	-0.04	-0.06
MZ0	-0.03	0.00	-0.02	-0.01	-0.01	-0.01	-0.03	0.00	-0.04
NA0	-0.04	-0.02	-0.06	-0.04	0.00	-0.04	-0.08	-0.02	-0.10
OD1	1.87	1.05	2.92	0.34	0.06	0.40	2.21	1.11	3.32
OD2	1.69	-1.97	-0.27	0.06	-0.19	-0.13	1.75	-2.16	-0.41
OD3	2.22	1.14	3.36	0.09	0.13	0.22	2.32	1.26	3.58
PD0	0.06	0.00	0.05	0.04	0.00	0.03	0.10	-0.01	0.09
PN1	-0.08	0.21	0.14	-0.09	0.20	0.11	-0.17	0.41	0.24
PN2	0.95	-0.02	0.93	0.17	-0.26	-0.09	1.12	-0.28	0.83
RA1	7.49	-0.02	7.47	1.24	-0.21	1.04	8.73	-0.23	8.50
RA2	1.63	0.02	1.65	0.02	0.03	0.04	1.65	0.04	1.69
RA3	1.15	-0.25	0.90	0.06	-0.13	-0.07	1.21	-0.38	0.83
SI0	0.06	0.00	0.05	0.01	0.00	0.01	0.07	0.00	0.06
TE0	1.12	-0.13	1.00	0.60	-0.31	0.29	1.72	-0.44	1.29
TN1	1.42	-0.10	1.32	0.48	-0.12	0.37	1.90	-0.22	1.69
TN2	0.92	0.15	1.07	0.05	-0.02	0.03	0.97	0.13	1.10
TN3	1.42	-0.11	1.31	0.44	-0.26	0.18	1.86	-0.37	1.49
TN4	0.49	0.24	0.72	0.35	-0.30	0.05	0.84	-0.06	0.78
TR0	0.51	0.01	0.52	0.05	-0.01	0.04	0.56	0.00	0.56
UP1	14.68	0.26	14.93	2.63	-0.19	2.44	17.31	0.06	17.38
UP2	14.75	0.19	14.94	1.13	0.08	1.22	15.88	0.27	16.15
UP3	1.20	0.11	1.31	0.35	-0.03	0.33	1.55	0.08	1.64
UT0	1.02	0.01	1.03	0.02	-0.04	-0.03	1.04	-0.04	1.00
WB1	0.38	0.04	0.42	0.05	-0.03	0.03	0.43	0.01	0.45
WB2	3.86	0.77	4.63	0.33	0.21	0.54	4.19	0.98	5.17
WB3	-0.99	0.41	-0.58	-0.12	0.22	0.10	-1.12	0.64	-0.48
WB4	0.70	0.37	1.07	0.04	0.02	0.06	0.74	0.38	1.12
AIN	86.20	3.52	89.72	12.69	-2.41	10.28	98.89	1.11	100.00

Note: As in Table 1 (see Appendix 1 for details of region-specific code). Within-group combines the growth, inequality and population effects given in table 2. For a group, one can decompose the total within-group effect to these components on a pro-rata basis based on their contribution to the group-specific total effect. Between-group denotes effect of shift in population shares for that group.

Source: Author's calculation based on unit level data

Hereafter, our computations have been for 148 groups, that is, rural and urban areas of 74 comparable NSS regions.⁵ In particular, the data was subjected to obtain three different MPCE series and related poverty ratios. In one, the total income (or, rather the total consumption expenditure) of the group was that of the other period that was obtained by multiplying household level MPCE data with $X_{\tau k}/X_{tk}$ and then a poverty ratio, $P_{tk|X_{\tau k}}$, was computed. In another case, the total population of the group was that of the other period that was obtained by multiplying household level MPCE data with $N_{\tau k}/N_{tk}$ and then a poverty ratio, $P_{tk|N_{\tau k}}$, was computed. In the final case, both total income and total population of the group was that of the other period and that was obtained by multiplying household level MPCE data with $(X_{\tau k}/X_{tk})(N_{\tau k}/N_{tk})$ and then a poverty ratio, $P_{tk|X_{\tau k}, N_{\tau k}} = P_{\tau k|L_{tk}}$, was computed. Thus, for each k we will have four poverty ratios for each t . From these, for each group using equations (2)-(7) and in line with equation (9), one can compute the within-group effects of growth, inequality and population. These are indicated in Table 2.

We use the poverty ratios and population shares of Table 1 and the within-group effects of growth, inequality and population of Table 2 and subject them to Son (2003) decomposition, as indicated in equation (10), to compute the aggregate within-group effect and the between-group effect on account of change in population shares. The components can be added to obtain the overall effect for each group and each of the components can be added across groups to obtain the aggregate effect for each component. In this, the effects of rural and urban areas can be separated and the two added to give us the combined effect. These are indicated in Table 3.

3.1 Incidence of Poverty

From Table 1 and as also indicated in Mishra (2014), one observes that some of the regions that continue to have relatively higher incidences of poverty (say, higher than the all India average) are broadly from the known poorer states, viz, Chhattisgarh, Assam, Bihar, Madhya Pradesh, Odisha, Uttar Pradesh, and Jharkhand (CABMOUJ, pronounced *kab mouj* implying when to relax), see Table 4. What is of concern is that it also includes regions in some of the better off states like Andhra Pradesh (Rayalseema region), Gujarat (excluding Plains Northern) and Maharashtra (excluding Konkan and Western Maharashtra). A worrying concern seen in urban areas is that in 2009-10 many of the regions in Northeast India have a relatively higher incidence of urban poor.

One also observes from Table 1 that the share of population is relatively higher in some regions. This is partly because of combining some NSS regions in our analysis, but also because some bigger states have a single region. This is so because NSS regions are not distributed according to the distribution of population. In rural areas, the regions with more than two per cent share of population are from the states of Andhra Pradesh, Bihar, Jharkhand, Rajasthan, Telengana, and Uttar Pradesh. In urban areas, the regions with more than one per cent share of population are those that comprise major cities like Bengaluru, Chennai, Delhi, Hyderabad, Kolkata, Lucknow, Mumbai, and Noida.

⁵ There were 78 NSS regions in 2004-05 (61st round) and 88 NSS regions in 2009-10 (66th round). However, to make them comparable, they were reduced to 74 comparable regions. Details of the 74 regions, as per the 61st round, are given in Appendix 1.

Table 4: Regions where incidence of poor is higher than the all India average for Rural, Urban and Combined, 2004-05 and 2009-10

Sector	Only in 2004-05	Both 2004-05 and 2009-10	Only in 2009-10
Rural	AS1, MR3, MR4, RA1, RA3, WB2	AS2, BI1, BI2, CT0, DA0, GU1, JN0, KA4, MP1, MP2, MP4, MP5, MR5, MR6, MU2, OD2, OD3, RA2, UP1, UP2, UP3	GU3, GU4, MU1
Urban	KA1, MP3, MR2, OD1, RA1, TN3	AP2, BI1, BI2, CT0, GU4, HA2, KA4, KE1, MP1, MP2, MP4, MP5, MP6, MR3, MR4, MR5, MR6, MU1, MU2, OD2, OD3, UP1, UP2, UP3, WB1, WB2, WB4	AP1, AS1, AR0, AS2, DD0, GU3, GU5, HA1, JN0, MY0, NA0, RA2, UT0, WB3
Combined	AS1, GU1, OD1, RA1, RA3, WB2	AP2, AS2, BI1, BI2, CT0, DA0, GU4, JN0, KA4, MP1, MP2, MP4, MP5, MR3, MR4, MR5, MR6, MU2, OD2, OD3, RA2, UP1, UP2, UP3	DD0, GU3, MU1

Note and Source: From estimates in Table 1. The details of region-specific code are given in Appendix 1.

3.2 Region-specific Growth, Inequality and Population Effects

In Table 2 one observes that there are some regions where incidence of poverty has increased, see Table 5. It is a matter of concern that growth did not lead to reductions in incidence of poverty. In fact, in most regions when growth leads to an increase in poverty the population effect has contributed to a decline in poverty. The exceptions are urban Eastern Vidarbha of Maharashtra and urban Nagaland as also those where the three effects led to an increase in poverty (rural Plains of Manipur, urban Western Plains of Assam and at the combined level the union territory of Daman & Diu). The contribution of population in the opposite directions when growth has not shown the desired results could perhaps be explained by a sectoral shift in population shares, which we will take up later.

Table 5: Regions where total within-group effect and growth effect show an increase in poverty for Rural, Urban and Combined , 2004-05 and 2009-10

Effects that increase poverty	Rural	Urban	Combined
<i>Total effect shows increase</i>			
Growth, Inequality, Population	MU1	AS2	DD0
Growth, Inequality	CT0, DD0, LA0, PN1	DE0, GU3, PN1, WB3	DE0, GU3, LA0, PN1
Growth, Population		MR6, NA0	
Inequality, Population	BI1, MY0, MZ0	AR0, DD0, HA1, JK1, JN0, MP1, MU1, MZ0	BI1, MU1, MY0, MZ0
Growth	GU3, MP1, MP5, WB3	JK3, MU2	MP1, MP5, WB3
Inequality		AP1, HP0	
Population	NA0	DA0	NA0
<i>Total effect shows decrease</i>			
Growth, Inequality	GU4, OD1	GU4, OD3	GU4, OD1
Growth	AS2, DE0, WB4	KA2, MP5, MR3, UP2, WB2	AS2, CT0, WB4

Note and Source: From estimates in Table 2. The details of region-specific code are given in Appendix 1. The rows depicting regions when total effect shows decrease is restricted to situations when growth effect (either independently or along with other effects, particularly along with inequality) led to an increase in poverty.

A matter of concern is that inequality is increasing and it has contributed to an increase in poverty in 28 rural regions and 36 urban regions, see Table 2.⁶ It is intriguing that inequality, particularly in urban regions, is increasing in some of the better-off states like Coastal Andhra Pradesh, Delhi, Gujarat (particularly in Plains Southern that includes Surat and Vadodara and Dry Areas), Eastern region of Haryana (includes Gurgaon and Rohtak), Himachal Pradesh, Northern region of Punjab (includes Amritsar and Jalandhar), and Central Plains of West Bengal (includes Kolkata and Howrah) among others. This may perhaps explain the social strife that one observes - agitation for reservation in Haryana and Gujarat, and drug problem in Punjab to name a few. Or, as they say, growth is not inclusive.

The population effect to have an adverse effect on poverty decline is expected. Nevertheless, some of the regions where population has been a concern from the perspective of increase in poverty are Northern Bihar, Eastern Gujarat, and Southern Odisha among others. However, it is important to note that the effect of population in itself has not led to an increase in poverty at the aggregate level (except for rural Nagaland and urban Dadra & Nagar Haveli).

3.3 *Within-group and Between-group Effects*

In Table 3, the aggregate poverty change of -13.6 percentage points is fixed at 100 per cent and then decomposed across regions and over within- and between-group effects. In this table, an impact that leads to an increase in poverty will show a negative entry. There are 11 rural regions and 27 urban regions where the overall effect has led to an increase in poverty. At the combined level, 13 regions contribute to an increase in poverty - five (Northern Bihar, Daman & Diu, Eastern Gujarat, Plains of Manipur, and Southern Odisha) where the increase was from both rural and urban region, two (Lakshadweep and Central Plains of West Bengal) where the increase was from rural regions only and six (Dadra & Nagar Haveli, Mountainous Jammu & Kashmir, Eastern Vidarbha of Maharashtra, Meghalaya, Mizoram and Nagaland) where the increase was from urban regions only.

The between-group effect indicating a shift in population share has contributed to a decline in poverty for all rural regions (3.5 per cent) and to an increase in poverty for all urban regions (-2.4 per cent). Hence, at the combined level the overall between-group effect is positive (a decline of poverty by 1.1 per cent). It also needs to be mentioned that in almost all the cases (except for Western Plains of Assam, urban Nagaland and combined Daman & Diu) of Table 5 where growth effect led to an increase in poverty, the shift in population shares has contributed to a decrease in poverty. One argument, at least in regions where growth and/or inequality have contributed to an increase in poverty, is that as opportunities from growth are limited the people migrate out.

4 Concluding Remarks

This exercise is an analysis of poverty change in India from 2004-05 to 2009-10. An analysis of incidence of poverty shows that those regions with relatively higher incidence of poverty are not only from the well-known poorer CABMOUJ (*kab mouj*) states of Chhattisgarh, Assam, Bihar, Madhya Pradesh, Odisha, Uttar Pradesh and Jharkhand. The increasing incidence of poverty in some of the Northeast states is also a matter of concern. What is intriguing is that some regions with higher incidence of poverty are from the better-off states like Andhra Pradesh, Gujarat and Maharashtra.

⁶ On inequality, the method proposed is to control for the Lorenz ratio/Gini coefficient. This implies that we control for the distribution that is independent of scale. Hence, it will not control the increasing real gaps at the absolute level. Further, as the inequality was controlled at the regional level, it could change at the state or national level.

For each of the comparable 74 NSS regions, the within-group effects of growth, inequality and population computed separately for rural, urban and combined areas raise three concerns. First, growth need not always lead to reduction of poverty in all regions. This may be obvious to those that are laggards in growth, but one observed that these regions were also there in Delhi, Gujarat, Punjab and Karnataka. Second, increasing inequality has contributed to an increase in poverty in many better-off regions (particularly, in and around major urban centres). Third, the adverse effect of population becomes a concern when it is greater than the positive impact from other effects, as is the case in Northern Bihar, Eastern Gujarat and Southern Odisha.

The aggregate poverty change was decomposed not only over the within-group and between-group effects but also across regions. There are 11 rural regions, 27 urban regions and 13 regions at the combined level where poverty increased. An analysis of the sectoral shift in population shares also suggest that the regions where growth effect led to an increase in poverty are also the regions that witnessed a reduction in population shares implying out migration. At the aggregate level, to take the advantage of the demographic dividend that India has, it is necessary that opportunities are available across the length and breadth of the country and the capabilities of the individuals are attuned to take advantage of these opportunities.

Appendix 1: State/Union territory, Region-specific Code and NSS region of 2005-05

State/Union Territory	Region-specific Code	NSS Region of 2004-05 (61st round)
Andaman and Nicobar Islands	AN0	Entire union territory
Andhra Pradesh	AP1	Coastal
Andhra Pradesh	AP2	South Western + Inland Southern (Rayalseema)
Arunachal Pradesh	AR0	Entire state
Assam	AS1	Plains Eastern + Hills
Assam	AS2	Plains Western
Bihar	BI1	Northern
Bihar	BI2	Central
Chandigarh	CN0	Entire union territory
Chhattisgarh	CT0	Entire state
Dadra & Nagar Haveli	DA0	Entire union territory
Daman & Diu	DD0	Entire union territory
Delhi	DE0	Entire state
Goa	GO0	Entire state
Gujarat	GU1	Eastern
Gujarat	GU2	Plains Northern
Gujarat	GU3	Plains Southern
Gujarat	GU4	Dry areas
Gujarat	GU5	Saurashtra
Haryana	HA1	Eastern
Haryana	HA2	Western
Himachal Pradesh	HP0	Entire state
Jammu and Kashmir	JK1	Mountainous
Jammu and Kashmir	JK2	Outer Hills
Jammu and Kashmir	JK3	Jhelum Valley
Jharkhand	JN0	Jharkhand
Karnataka	KA1	Coastal & Ghats
Karnataka	KA2	Inland Eastern
Karnataka	KA3	Inland Southern
Karnataka	KA4	Inland Northern
Kerala	KE1	Northern
Kerala	KE2	Southern
Lakshadweep	LA0	Entire union territory
Madhya Pradesh	MP1	Vindhya
Madhya Pradesh	MP2	Central
Madhya Pradesh	MP3	Malwa
Madhya Pradesh	MP4	South
Madhya Pradesh	MP5	South Western
Madhya Pradesh	MP6	Northern
Maharashtra	MR1	Coastal (Konkan)
Maharashtra	MR2	Inland Western (Western Maharashtra)
Maharashtra	MR3	Inland Northern
Maharashtra	MR4	Inland Central (Marathwada)
Maharashtra	MR5	Inland Eastern (Inland Vidarbha)
Maharashtra	MR6	Eastern (Eastern Vidarbha)
Manipur	MU1	Plains
Manipur	MU2	Hills
Meghalaya	MY0	Entire state
Mizoram	MZ0	Entire state

Continued

Appendix 1: State/Union territory, Region-specific Code and NSS region of 2005-05

State/Union Territory	Region-specific Code	NSS Region of 2004-05 (61st round)
Nagaland	NA0	Entire state
Odisha	OD1	Coastal
Odisha	OD2	Southern
Odisha	OD3	Northern
Puducherry	PD0	Entire state
Punjab	PN1	Northern
Punjab	PN2	Southern
Rajasthan	RA1	Western + North-eastern
Rajasthan	RA2	Southern
Rajasthan	RA3	South-eastern
Sikkim	SI0	Entire state
Telengana	TE0	Entire state
Tamil Nadu	TN1	Coastal Northern
Tamil Nadu	TN2	Coastal
Tamil Nadu	TN3	Southern
Tamil Nadu	TN4	Inland
Tripura	TR0	Entire state
Uttar Pradesh	UP1	Western + Central
Uttar Pradesh	UP2	Eastern
Uttar Pradesh	UP3	Southern
Uttarakhand	UT0	Entire state
West Bengal	WB1	Himalayan
West Bengal	WB2	Eastern plains
West Bengal	WB3	Central plains
West Bengal	WB4	Western plains
India	AIN	Entire country

Note: In the 61st NSS round (2004-05) there were 78 regions and in the 66th NSS round (2009-10) there were 88 regions. However, to make them comparable they were reduced to 74 regions. In particular, for the 61st round, two each in Andhra Pradesh, Assam, Rajasthan and Uttar Pradesh have been merged. For district/sub-district composition of regions that do not cover the entire state/union territory see Appendix 1 of Mishra (2014).

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