ASSESSMENT OF GROWTH POVERTY AND INEQUALITY IN UTTAR PRADESH : A LONG TERM ANALYSIS

Sivakar Tiwari*

In this study we have tried to examine in depth the development in the Uttar Pradesh in the last more than two and half decades which covers both pre and post reform period. Although there is intensive research at the all India level regarding the issues of growth, inequality and poverty, there is huge gap regarding Uttar Pradesh. Given its large population size (which is larger than the population of many countries of Europe combined together) it is very important to have authentic and intensive information about the nature of development of the state.

INTRODUCTION

In India, relatively higher economic growth since 1990s is attributed to the policy reform. It was expected for poverty incidence to decline steeply but this period was also marked by slow down in the rate of poverty reduction (Datt and Ravallion, 2002) and widening rural-urban gap. In response to the criticism of exclusive nature of the reform, Eleventh Five-Year Plan (FYP) declared its commitment to achieve inclusive growth by adopting strategy of the plan as 'Towards Faster and Inclusive Growth'. However, the approach paper of the plan did not provide any concrete definition of the inclusive growth (Suryanarayana, 2008) which is done exclusively in the Twelfth FYP in terms of various dimensions[1]. Among the various dimensions of inclusiveness poverty reduction, regional balance and inequality reduction are crucial indicators. In the reform era, at all India level, poverty incidence has declined at slower rate in the period between 1993-94 to 2004-05 (Himanshu, 2007) and at faster rate in the period between 2004-05 to 2009-10 (Thorat and Dubey, 2012) reflecting the improved inclusiveness of the growth. However, this decline in the poverty incidence is not uniform across the states (Dev and Ravi, 2007) and inter-state disparities increased in this period. At the same time, inequality measured by Gini index has also gone up both for rural and urban area (fig. 1). As inter-states inequalities in terms per capita income and consumption has increased in the reform era, the states like Uttar Pradesh (UP) are lagging far behind (GOI, 2013). Thus the objective of regional balance and inclusiveness would be distant dream without participation of state like UP.

Nonetheless, UP has achieved relatively higher growth in the post-reform period the rate of reduction in the poverty incidence between 1993-94 and 2004-05 has been similar to the period between 1983 and 1993-94. The latest data shows that at the aggregate level rate of poverty decline in UP has slowed down compared to 1980s and 1990s. At the sectoral level, similar to the all India level, rural poverty has declined at faster rate but urban poverty incidence has increased in the reform era which is discouraging scene despite the fact of positive income growth. Even though growth is accepted as good for the poor (Dollar and Kraay, 2002), its effectiveness in poverty reduction showed ambiguous behavior in the state. Not only this, intra-state (at the NSS region level) performance of the state in poverty reduction is also not uniform both in the rural and urban area.

In light of the above fact, this study aims to add to the analysis of growth and its impact on standard of living in two ways. Firstly, by analyzing the relative progress of UP as compare to all

* Research Scholar, CSRD, JNU, New Delhi, E-mail : shivakar1984@gmail.com

India average and secondly by analysing the intra-state variations at the NSS region level. This intensive study of growth poverty relationship of UP at the regional level will hopefully fill the relevant knowledge gap which is very important in formulating effective policy.

DATA AND DECOMPOSITION METHODOLOGY

To measure growth and poverty incidence the study has used unit record data from four quinquennial rounds on consumption expenditure survey (CES), conducted by National Sample Survey Office (NSSO). These rounds include 38th round (1983), 50th (1993-94), 61st (2004-05) and 68th (2011-12). In all these rounds NSS conducted survey in agriculture year (July-June), however, the survey of 38th round was carried out in calendar year (January 1983 to December 1983).

The period of the study covers both pre and post reform period spanning over 28 years. In this period geographical boundary of Uttar Pradesh (UP) has been changed and new state Uttarkhand has been carved out of it on 9th November 2000 as 27th state of Union of India. In order to ensure comparability of data NSS regions 'Himalayan' (code-221) has been excluded from 38th rounds and in 50th round NSS region 'Himalayan' (code-251) has been excluded. Apart from this in 50th round district Bareilly (now in UP) was part of Himalayan region and district Haridwar (now in Uttarakhand) was part of Western region. Both of these districts were adjusted accordingly and data of 50th round were made comparable with other rounds. Similarly, since 64th NSS rounds Western region has been divided in two regions (Northern Upper Ganga Plains and Southern Upper Ganga Plains) which have been merged. So in this study the state considered is divided Uttar Pradesh with four regions-- Western, Central, Eastern and Bundelkhand.

As this study is endeavor to examine the effect of reform policy as well as inclusive growth agenda of eleventh five year plan it requires to include pre reform period as well. So for calculating poverty incidence poverty lines (PLs) published by planning commission has been used which was derived by Task Force (1979) and modified by the Expert Group (1993) to calculate state-level PLs by taking into account state level price variations. Since planning commission has published new PLs based on Tendulkar committee recommendation for year 2011-12 we have updated PLs as suggested by Expert Group (1993). Thus 'Old Official Poverty Lines' has been used to calculate poverty incidence measured by Head Count Ratio (HCR) index of poverty measurement. Index applied for deflating is what is used to adjust poverty line and all the trend in mean monthly per capita expenditure (MPCE) is calculated at constant prices (1999-2000).

Decomposition Methodology

In order to quantify the contribution of growth and income distribution, change in HCR has been decomposed into growth and redistribution effect. For this Ravallion and Dutt (1992) has been adopted with some modification has been done incorporating axiomatic approach of Kakwani (2000). So the nature of decomposition is of exact type in which change in poverty incidence is decomposed in two components viz. growth and redistribution effect with no residual component. To define growth effect explains the change in the poverty incidence with distribution of income being unchanged (remained at the base year level) and redistribution effect quantifies the change in poverty incidence assuming no growth in income has been occurred.

For decomposition actual and hypothetical HCR is calculated by using parameterised Lorenz curve technique where Lorenz curve is estimated from the consumption expenditure distribution1. In this study General Quadratic method2 of estimation of parameters of Lorenz curve is used as it fits more accurately over the whole distribution (Ravallion and Huppi, 1990) and it is also relatively computationally easier.

Poverty incidence is primarily a function of indicator of standard of living which here is per capita mean consumption expenditure, distribution of consumption expenditure around the mean measured by Lorenz curve parameters and exogenously determined poverty line. In functional form it is written as:

$$P = P(\mu, L(p), z) \longrightarrow 1$$

Where μ is the mean per capita expenditure, $L(p)$ is Lorenz equation and z is exogenously determined poverty line.

For two time periods (j and k), change in the poverty incidence will be

$$\Delta P_{jk} = P(\mu_k; \pi_k; z) - P(\mu_j; \pi_j; z) \longrightarrow 2$$

Where, ΔP_{jk} is change in the actual poverty incidence between two point of time i.e., j and k and π is the parameters of Lorenz curve. Both terms on the right hand side in the above equation are actual poverty ratio for j and k period as both Lorenz parameter and MPCE used is for the same period.

Hypothetical poverty ratio for these periods can be calculated in two ways: one by keeping Lorenz curve constant at j^{th} period and mean per capita expenditure at terminal year period i.e., k^{th} period. Secondly, by keeping MPCE unchanged at j^{th} period level and Lorenz curve at terminal year level i.e., k^{th} period. Functional forms for these two cases are:

$$P_{kj} = P(\mu_k; \pi_j; z) \longrightarrow 3$$

Where, MPCE 'μ' is for k^{th} period and Lorenz parameters 'π' is used one for j^{th} period, and

$$P_{jk} = P(\mu_j; \pi_k; z) \longrightarrow 4$$

Where, Lorenz parameters 'π' is for k^{th} period and MPCE 'μ' is of jth period.

Given the actual and hypothetical poverty ration, growth and redistribution effect is calculated as difference between poverty incidences of the base (j^{th}) period with equation '3' and '4' respectively. So,

Growth Effect $\qquad\qquad\qquad G_{jk} = P_{kj} - P_{jj}$

& Inequality Effect $\qquad\qquad I_{jk} = P_{jk} - P_{jj}$

Decomposition component calculated in the above manner will have some unexplained part which is termed as residual by Dutt and Ravallion (1992). However, by applying axiomatic approach discussed by Kakwani (2000) we have adjusted the residual term thus decomposition of poverty between two points of time will be exact one. For this average mean effect ($\hat{G}_{jk}$) and redistribution effect ($\hat{I}_{jk}$) has been calculated by taking first base year as reference period and then terminal year as reference period. Thus decomposition of change in HCR between two points of time constitutes of two components—growth effect and redistribution effect.

$$\Delta P_{jk} = \hat{G}_{jk} + \hat{I}_{jk} \longrightarrow 5$$

Contextual Framework

In continuance with the debate mentioned above, to achieve inclusive development of the nation, participation of all the states needs to be ensured and gap in the level of development should be narrowed down over time. Since economic reform announced in 1991, growth rate has increased on an average at all India level. However, if one looks at the sub-national level then it cannot be ascertained with the confidence for the participation of every state in the growth process3.

The rising divergence in the progress of Uttar Pradesh vis-à-vis all India average is clearly evident from the figure 1 below. The gap between UP and all India average in the standard of living measured by monthly per capita expenditure was increasing since 1993/94 for both rural and urban sector. This gap is higher for the urban area in all the periods which is highest in the latest NSS round of CES (2011-12). Between 1983 and 1993/94, urban UP has shown some sign of catching up with the all India average, however, since then it is rising, in fact at higher rate since 2004/05. Even though growth in the consumption expenditure has been slowing down in the urban UP, the level of MPCE was always higher in the urban area as compared to the rural area. However, the extent to which level of MPCE is poverty reducing depends on the distribution of consumption.

The distribution of income as measured by the Gini coefficient shows altogether heterogeneous pattern in the rural and urban area of UP (figure 2). While the long term nature of the income distribution shows declining trend in the rural UP, in the urban area it was increasing. This behavior is more puzzling when compared this trend in consumption inequality is compared with the all India trend for both rural and urban area. Whereas, inequality at the all India level is rising both in rural and urban area particularly since 1993/93, in UP on the one hand rural inequality is showing secular declining trend and at the same time inequality in UP is increasing at a faster rate than the all India average. In reform era period between 2004/05 and 2011/12, the rural and urban inequality moves in opposite direction with rural inequality has shown steep decline and the level of inequality in urban UP surpasses all India urban inequality.

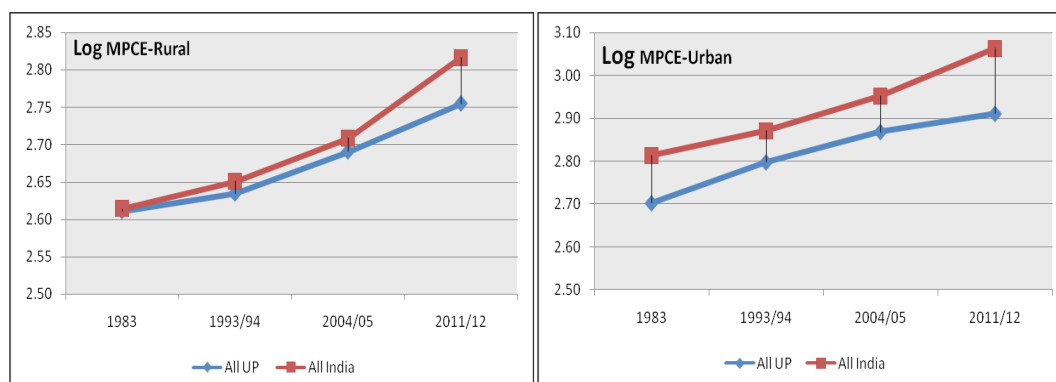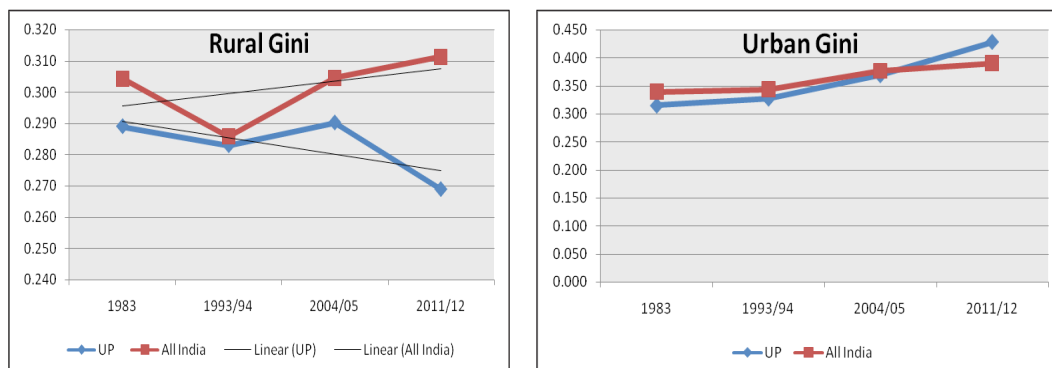## Figure 1: MPCE of All India and Uttar Pradesh since 1983

Figure 2: Consumption Inequality of All India and Uttar Pradesh

The fact that UP is not participating in the growth process at the desired pace is manifested in the above stanza and at the same time disparity between rural and urban area was also growing in the state. The increasing inequality with slowing down of MPCE growth in urban area and declining inequality with slowing MPCE growth in rural area presents a puzzle and demands further inquiry into the development at the micro level. As has been discussed in the introduction growth is directly related to the poverty reduction but adverse distribution of income may hamper the desired level of poverty reduction given the growth. Given the slower growth in income for both rural and urban area as compare to the all India, it is expected, the steep decline in the inequality in the rural area would led to faster poverty reduction as compare to urban area.

In the backdrop of expanding gap in the performance of the state as compare to the national average, one simple question was how far inclusive is the growth of different regions of the UP? If all the regions of UP is not benefitting equally from the growth then the situation might be more precarious.

GROWTH AND POVERTY DYNAMICS IN THE STATE

As noted above, economic growth will be inclusive only if it is benefitting every section of society particular weaker ones and at the same time all the regions are equally participating in the growth process. In the preceding section we have also seen Uttar Pradesh is lagging behind in comparison to the national average in consumption growth which was set back for the objective of welfare improvement of the every individual4. It is imperative to examine the status of growth among different regions of the state itself. Simultaneously, it is also important to know how far growth has been effective in reducing level of poverty incidence in different regions in the reform era.

Trends in Monthly Per Capita Expenditure

Since data on income is not available at the disaggregated level so consumption expenditure has been used to examine comparative trend in the growth5. The rate of growth in consumption at the different regions of the state for pre and post-reform period has been reported in the table 1 below. Post-reform period result has also been analysed in the two-sub periods, the latter being the phase of higher growth.

At the preset it seems policies in the reform era has been inclined more towards the rural area than the urban area of the state. The compounded annual growth rate of MPCE in the rural area has been higher (1.6%) in the post-reform period between 1993/94 and 2011/12 than the pre-reform period growth rate (0.5%). However, for the urban area, growth has been significantly lower in this period (1.5%) than the pre-reform growth rate (2.2%). In the two sub-periods of the post-reform era for rural area growth has been higher in the second sub-period but for urban area the growth has slowed down in the second sub-period. It implies urban area of the state has been constantly loosing its growth momentum in reform period. Similarly, although rural area seems to be benefitting but these developments are not uniform at the NSS region level of the state.

In rural area among the four regions of the state, growth seems to be exclusionary in the reform period (1993-94 to 2011-12) as the ranking in terms of growth rate of MPCE remained intact in both the periods. But this is the region (Bundelkhand) whose initial level of per capita expenditure has been lower thus the gap among the regions is declining over the period. The regions where growth rate has been higher in the post-reform period were also better off in the pre-reform period. Now, between the two sub-periods of the reform era the performance of the different regions were complimentary. The western and Eastern regions of the state showing better growth in the second sub-period were lagging behind the other two regions in first the sub-period between 1993/94 and 2004/05 and the growth rate was higher in Central and Bundelkhand region in this sub-period. Central region which has experienced second highest growth (2.4%) in first sub-period has witnessed negative growth in the second sub-period of the post-reform period.

In the urban area, in the post-reform period, among the various regions the growth of Bundelkhand was highest (2.7%), followed by western (1.6%), central (1.2%) and eastern (1.1%) whereas in the pre-reform period western region was leading followed by eastern, central and Bundelkhand. Similar to the rural area, the growth of different regions were also complimentary in the two sub-periods of post-reform period with Bundelkh and has experienced higher growth rate (1.9% and 3.9%) in both the sub-periods. Central region which has highest growth rate (3.3%) in the period between 50th and 61st NSS round has seen negative growth rate in the period between 61st and 68th NSS rounds.

Table 1 Compounded Annual Growth Rate (percent) of MPCE in Different Periods

State/Regions	1983 and 1993/94	1993/94 and 2004/05	2004/05 and 2011/12	1993/94 and 2011/12
Rural Area				
Western	0.41	0.62	2.24	1.25
Central	0.53	2.43	-0.22	1.39
Eastern	0.67	0.98	3.04	1.78
Bundelkhand	0.93	3.16	0.68	2.19
Uttar Pradesh	0.54	1.18	2.13	1.55
Urban Area				
Western	3.01	0.86	2.73	1.58
Central	1.48	3.28	-2.08	1.16
Eastern	1.65	0.66	1.78	1.09
Bundelkhand	1.09	1.87	3.88	2.65
Uttar Pradesh	2.22	1.49	1.39	1.45

Source: Author's calculation from unit record data of different NSS rounds

Changes in the Poverty Incidence

Per annum change in poverty incidence measured by head count ratio (HCR) for different regions of state for both pre and post-reform period has been reported in the table 2. All the changes in poverty incidence are showing per annum change. Decline in the rate of rural poverty of the state has been higher in post-reform period6 (1.5ppt) vis-à-vis pre-reform period between 1983 and 1993/94 (0.5ppt). In the two sub-periods of the post-reform era, rate of decline in rural poverty has been higher in the second sub-period (2.4ppt) than the first sub-period (0.9ppt). Urban poverty, which experienced appreciable rate of decline in HCR in the pre-reform period (1.7ppt) has witnessed increase in the poverty incidence in the post-reform period (0.2ppt). Increase in the urban poverty has come absolutely in the second sub-period of reform era (1.3ppt) as in the first sub-period HCR has shown annual decline (0.5ppt).

All the four regions of the state has experienced decline in the rural HCR in both pre and post-reform period with the rate of decline being higher in the later period. Bundelkhand where rate of poverty reduction has been slower (0.2pp) in the earlier period has seen highest per annum reduction in poverty incidence (2.5pp) in the later period. In the two sub-periods of the post-reform period the poverty reduction has been more inclusive in the second sub-periods as all regions have seen annual rate of reduction more than the 2 percentage points per annum except for central region. Western and eastern regions whose poverty reduction were dismal (0.4pp and 0.7pp) in the first sub-period have seen higher rate of reduction (2.3pp and 3.0pp) in the second sub-period.

Table 2 Per Annum change in HCR (percentage points)

State/Regions	1983 and 1993/94	1993/94 and 2004/05	2004/05 and 2011/12	1993/94 and 2011/12
Rural Area				
Western	-0.53	-0.42	-2.29	-1.15
Central	-0.48	-1.82	-0.75	-1.41
Eastern	-0.55	-0.67	-3.04	-1.60
Bundelkhand	-0.15	-2.59	-2.27	-2.46
Uttar Pradesh	-0.51	-0.88	-2.40	-1.47
Urban Area				
Western	-2.11	-0.39	0.88	0.10
Central	-1.38	-0.43	2.67	0.78
Eastern	-1.63	-0.24	1.31	0.36
Bundelkhand	-0.33	-2.16	-0.03	-1.33
Uttar Pradesh	-1.68	-0.50	1.32	0.21

Source: Same as in table 1.

Similar to the state level, at the region level also urban poverty has gone up in all the regions excluding Bundelkhand where it has declined by 1.3 percentage points per annum. Contrary to this, in the pre-reform period, urban poverty has declined in all the regions with western region showing the highest per annum reduction (2.1pp) and Bundelkhand experienced the lowest per annum reduction (0.3pp). The performance in terms of change in poverty incidence has been more pathetic in the period between 2004/05 and 2011/12 in which poverty incidence has gone

up in all the regions. In this sub-period central region experienced highest increase in urban poverty where HCR has increased by 2.7 percentage points per annum. In the first sub-period poverty has declined in all the regions of the state but it was also lesser than the pre-reform period with only Bundelkhand higher rate of decline (2.2pp) than the pre-reform period.

To comprehend, as indicator of poverty reduction, rural UP has benefitted more in reform era but urban UP seems to be at disadvantage where poverty incidence has increased. The scene at the region level of the state was more or less similar to the aggregate level both for rural and urban area. Among all the regions in the reform era, Bundelkhand being the only region which has experienced poverty reduction in the urban area and at the same time it has also seen highest rate of poverty reduction in the rural area. One noteworthy point in the reform era is increase in the urban poverty despite the fact that growth in expenditure although slowed down but not negative with only exception of Central region. This may be due to the more unequal distribution of income in the urban area and whatever growth has occurred was concentrated at the upper strata of income distribution.

Role of Consumption Distribution in Inclusiveness

As noted in preceding discussion poverty has declined in the rural area of the state while it has increased in the urban area in the reform era. The character of growth in the state seems to be disappointing as poverty in the urban was expected to be slowed but not increased as consumption growth rate has been positive in this period. At the same time rural area has seen faster decline in the poverty incidence which is well explained given the rise in the consumption growth rate. Here role of distribution is playing a critical role in the change in the poverty incidence in the state particularly in the urban area. Change in the inequality (percentage per annum) measured by summary statistics (Gini) over the period has been reported in table 3.

Inequality in consumption distribution has declined in the rural area at the faster rate (5%) in the post-reform period as compared to the earlier period (2.1%). In the sub-periods of reform era inequality has gone up in first sub-period but it has again declined in the second sub-period at the much faster rate (7.3%). On the other hand, urban area has witnessed constant rise in the inequality in both pre and post-reform period with rate of increase in inequality has been much higher in the reform era (30.6%). In the two sub-periods, rate of rise in inequality has been higher in the second sub-period. At the further disaggregate level trend has been diverse in the rural and urban area.

Changes in the inequality have not been homogenous among regions in the rural area. As compared to the pre-reform period when inequality has declined in the two of the four regions, in the reform era three regions has experienced decline in the inequality. In the Eastern region inequality has risen in both the periods whereas Bundelkhand has seen fastest rate of decline in the inequality (24%) in the reform era and that too in the second sub-period. In the first sub-period of reform era all the regions of rural area have seen increase in inequality, the highest being in the Eastern region.

In the urban area, inequality has increased in all the regions in the reform era whereas in the pre-reform period two regions (central and eastern) have seen decline in inequality. In the reform era, rate of increase in inequality has been more than the aggregate state level in all the regions except Bundelkhand. In Bundelkhand also, the rate of increase was higher than the pre-reform period. In the first sub-period of reform era, central region has seen highest rise in inequality (33.8%) which has increased marginally in the second sub-period. Bundelkhand is the only region where inequality has decline in the first sub-period which has experienced highest increase in inequality in the second sub-period (28.6%).

Table 3 Rate of Change in Consumption Distribution (percent)

State/Regions	1983 and 1993/94	1993/94 and 2004/05	2004/05 and 2011/12	1993/94 and 2011/12
Rural Area				
Western	-4.86	3.27	-11.18	-8.28
Central	-2.61	3.23	-13.63	-10.84
Eastern	1.20	5.22	1.19	6.48
Bundelkhand	13.89	3.39	-26.16	-23.66
Uttar Pradesh	-2.10	2.57	-7.34	-4.96
Urban Area				
Western	7.94	4.66	24.76	30.57
Central	-3.37	33.79	0.41	34.34
Eastern	-1.82	8.05	24.77	34.82
Bundelkhand	12.88	-7.59	28.59	18.83
Uttar Pradesh	3.91	12.67	15.94	30.63

Source: same as in table 1.

In the above discussion the important role of distribution along with growth is well reflected. The regions that were showing lesser decline or increase in the poverty incidence are the one where proportionately inequality has also increased. However, there are certain cases which cannot be deciphered completely with the trend analysis of inequality. It is imperative to examine what is the role of inequality when poverty has decline despite increase in inequality and on the other hand poverty incidence has increase even though growth in the consumption expenditure was positive, which was the case of urban UP in the reform period.

GROWTH AND INEQUALITY COMPONENT OF CHANGE IN HCR

As noted above distribution of consumption expenditure is playing decisive role in change in the poverty incidence, however, exact impact of distribution is not very much clear from trend analysis of inequality. In order to examine the contribution of growth and inequality, change in the HCR between two points of time has been decomposed into the growth and distribution effect separately for rural and urban area of the state. The decomposition results have been reported in the table (4 & 5) for rural and urban area respectively.

Rural Area

In the rural area, as discussed above, the level of inequality was lesser than the urban area and at the same time growth in income was also lesser than the urban area and so initially poverty ratio was also comparably higher. However, over the period inequality in rural area has declined along with growth in the mean standard of living and the gain of which was exhibited in the faster decline in the HCR. The virtue of this decline in inequality in achieving the inclusive growth target has been analysed in this section through decomposition of poverty incidence. Decomposition result has been analysed first for the pre-reform period followed by the two sub-period of reform era sequentially.

At the state level, in the pre-reform period, along with the growth in income, favourable distribution has also contributed in the per annum poverty reduction although marginally (0.07ppt) and the main driver of poverty reduction was the growth. Further at the NSS region level, both the

component of change in poverty reduction was not similar to the state level with only western region has experienced reduction in HCR through both growth and redistribution effect. In the remaining three regions poverty has decline only due to growth effect whereas inequality has diluted the poverty reducing effect of growth. Among the other three regions, as we have seen in previous section, inequality has gone up in Eastern and Bundelkhand regions but it has declined in the central region at rate of 2.6 percent (table 3). However, this decline in inequality in the central region was not poverty reducing as per annum contribution of the redistribution effect was negative although marginal (0.02ppt).

In the reform era, between 1993-94 and 2004-05, rural area of the state has experienced relatively faster decline in the HCR only due to growth effect. Increase in inequality has diluted the poverty reducing effect of the growth in this period. Had the distribution of income remained unchanged rate of decline poverty would have 1.04 percentage points per annum. Similarly, at the region level, rise in inequality has brought down the effective poverty reduction in all the regions except in Bundelkhand where favourable distribution has contributed although marginally (0.08pp) in the poverty reduction. Nonetheless, rate of increase in inequality is higher in the Western region as compared to Central region (table 3), its adverse impact has been lesser in the former vis-à-vis later region.

Table 4 Decomposition Results of the Per Annum Change in HCR (Rural)

State/Regions	ΔH	Growth effect	Redistribution effect
Between 38th and 50th NSS Rounds			
Western	-0.40	-0.23	-0.16
Central	-0.40	-0.41	0.02
Eastern	-0.56	-0.63	0.08
Bundelkhand	-0.30	-0.66	0.36
Uttar Pradesh	-0.49	-0.42	-0.07
Between 50th and 61st NSS Rounds			
Western	-0.45	-0.53	0.09
Central	-1.90	-2.03	0.13
Eastern	-0.75	-0.96	0.21
Bundelkhand	-2.68	-2.60	-0.08
Uttar Pradesh	-0.90	-1.04	0.14
Between 61st and 68th NSS Rounds			
Western	-2.07	-1.53	-0.54
Central	-0.70	0.18	-0.88
Eastern	-2.61	-2.68	0.07
Bundelkhand	-2.24	-0.53	-1.71
Uttar Pradesh	-2.09	-1.66	-0.44

Source: Author's calculation

During the second sub-period of the reform era decomposition result corroborate the inclusive nature of growth. In this period, at the state level, HCR has declined at the faster rate which is the outcome of both higher growth in mean MPCE and steep decline in inequality. Although growth

effect remained dominant in poverty reduction but favourable distribution of income has contributed more than 21 percent in total poverty reduction. At the region level, in the Western and Bundelkhand region both growth and redistribution has contributed in poverty reduction. In Western region, growth remained dominant in poverty reduction whereas in Bundelkhand favourable distribution of income was the main driver of poverty reduction. Central and Eastern region shows distinct pattern. In the Eastern region poverty has declined only due to growth effect and in the Central region only redistribution effect has led to fall in the HCR.

Urban Area

As discussed above, in reform era, the urban area of the state was trailing behind in terms of MPCE growth but its growth was still positive so it was expected for poverty incidence to go done may at slower rate. However, contrary has been the experience and poverty has gone up significantly in reform era particularly in the second sub-period between 2004-05 and 2011-12. Skewed distribution of income as can be seen from table 3 above excluded the poor in the urban area. Decomposition results reported below reflects the exact contribution of adverse income distribution in offsetting role of positive growth in poverty reduction.

In the pre-reform period, at the state level, HCR declined mainly due to growth in MPCE while adverse distribution of income offset the effect of growth by 0.07 ppt per annum. Similarly, at the region level, in Western and Bundelkhand due to increase in inequality (table 3), redistribution effect has diluted poverty reducing effect of growth by 0.3 and 0.35 percentage points per annum respectively. However, in central and eastern region decline in the HCR can be attributed to both growth and redistribution effect. In this period, as we have seen earlier inequality measured by Gini coefficient has increased in Eastern region, however, pro-poor distribution at the lower end of strata has resulted in poverty reduction.

In the first sub-period of the reform era, poverty incidence has been reduced only due to growth effect and contribution of redistribution effect has been adverse (0.52ppt per annum). Decomposition result shows that slower decline in HCR in this period was both due to decline in the contribution of growth effect as well as rise in the adverse contribution of redistribution effect. Similarly at the region level in all the regions but Bundelkhand, contribution of redistribution effect is adverse with growth in MPCE as sole driver of poverty reduction. Decline in the poverty incidence was highest in the Bundelkhand followed by Central region even though per annum growth effect has been higher in the later (1.8ppt) region than the former (1.4ppt). In the Bundelkhand it is both the contribution of redistribution effect along with growth in MPCE that has pushed up the decline in HCR as compared to the pre-reform period.

In the reform era period between 2004-05 and 2011-12, increase in the aggregate state poverty is only due to significant increase in inequality. If distribution of income would have remained unchanged in the urban area HCR would have declined at the rate of 0.6 percentage points. At the region level poverty has gone up in all the regions except in Bundelkhand. However, contribution of redistribution effect was negative in all the regions. Rate of negative contribution of redistribution effect was highest in the Western region (2.3ppt) followed by Eastern (1.8ppt), Bundelkhand (1.7ppt) and Central region (0.7ppt). Nevertheless, negative contribution of redistribution effect in the central region was least but region has experience highest rate of increase in HCR as rate of contribution of growth effect was also negative (1.6ppt) in this region. Western and Bundelkhand region would have seen significant fall in the HCR had the distribution of income remained at the base year level.

Table 5 Decomposition Results of the Per Annum Change in HCR (Urban)

State/Regions	ΔH	Growth effect	Redistribution effect
Between 38th and 50th NSS Rounds			
Western	-1.93	-2.22	0.30
Central	-1.10	-1.03	-0.07
Eastern	-1.61	-1.33	-0.29
Bundelkhand	-0.49	-0.84	0.35
Uttar Pradesh	-1.57	-1.64	0.07
Between 50th and 61st NSS Rounds			
Western	-0.36	-0.58	0.22
Central	-0.66	-1.79	1.13
Eastern	-0.06	-0.50	0.44
Bundelkhand	-2.03	-1.43	-0.61
Uttar Pradesh	-0.47	-0.99	0.52
Between 61st and 68th NSS Rounds			
Western	0.84	-1.41	2.25
Central	2.27	1.59	0.67
Eastern	0.90	-0.97	1.87
Bundelkhand	-0.78	-2.54	1.76
Uttar Pradesh	1.13	-0.60	1.74

Source: Author' calculation

CONCLUSION

The growth of UP in the MPCE has been more consistent in the rural area as compared to the urban area of the state. Rural area has shown better growth performance in the latter phase of the reform era. However, analysis at the region level shows huge inconsistency as central region of the state experienced negative growth in both urban and rural area. In both rural and urban area, Bundelkhand witnessed highest growth in MPCE.

Poverty incidence in the rural area as measured by the HCR has shown secular decline constantly since 1983 at state level and it has declined at faster rate in the period between 2004-05 and 2011-12. But the urban poverty, although declined earlier, has increased in the latter phase of reform era. At the region level, as expected given the high MPCE growth, Bundelkhand has shown highest reduction in the HCR in both rural and urban area. Whereas all the regions of rural area have seen fastest reduction in the HCR, in the urban area except Bundelkhand HCR has gone up in every regions.

Trend in inequality provides explanation, although partial, for both the faster decline in the rural poverty as well as increase in the urban poverty in the reform era. As compared to the pre-reform period, in the reform era, Gini in the rural area has declined while it has increase significantly in the urban area of the state. Except eastern region, inequality has declined significantly in all the

regions of rural UP particularly Bundelkhand. Inequality is increasing continuously in the eastern region in both pre and post reform period. In the urban area, Gini has increased in all the four regions in the reform era while it had declined in Central and Eastern region in the pre reform period.

Decomposition results corroborate the fact for growth as poverty reducing in the both rural and urban area. However, the important role of distribution has also been confirmed. In the rural area, distribution effect has supported in the poverty reduction along with the growth effect in both pre and post reform period except in the first sub period of reform era. In all the regions of the rural area, growth has been poverty reducing in entire period of analysis except in Central region in the period between 2004-05 and 2011-12. Favourable distribution of income has supported growth effect in Western region in pre reform period and in Bundelkhand in the first sub-period of the reform era. In the second sub-period of the reform era, favourable distribution of income has been poverty reducing in all the regions except the Eastern region.

In the urban area, redistribution effect has neutralizes the growth effect in poverty reduction. It is beyond any doubt that in the urban area HCR has increased only due to high negative contribution of the redistribution effect. As similar to the rural area, growth has been poverty reducing in all the regions of the urban area of the state except the central region in the second sub-period of the reform era. Redistribution has been poverty reducing in the Central and Eastern region in the pre reform period and in Bundelkhand in the first sub period of the reform era. In the period between 2004-05 and 2011-12, high negative contribution of the redistribution effect has not only offset the growth effect but also led to increase in the HCR.

Footnotes

1. *Twelfth Five-Year Plan (2012-2017) has defined inclusiveness which covers poverty reduction, group equality, regional balance, income inequality, empowerment and employment generation (GOI, 2013).*

2. *Here HCR is not calculated through standard method where weighted sum of all the individuals whose mean monthly expenditure is below the benchmark pre-determined poverty line. So change in poverty incidence may have slight difference from the standard technique however, that error will be very less and it will perfectly account change in the poverty incidence between two points of time.*

3. *This method is used by Dutta and Ravallion (1992) to estimate actual and hypothetical poverty ratio. In literature on estimation of Lorenz curve Kakwani and Subbarao (1990) have used Beta distribution to estimate parameters and Tendulkar and Jain (1990) assume log normal distribution. However, Raval- lion and Huppi (1990) have shown that General Quadratic method is more accurate over the whole distribution.*

4. *see Datt and Ravallion (2000); Dev and Ravi (2007) and Himanshu (2007).*

5. *According to latest census figure population of Uttar Pradesh is around 199 million which is 16.5 percent of total all India population. Thus if Uttar Pradesh is left out of the growth process, it means a large size of India's citizen remained deprived from the benefit of higher growth.*

6. *Consumption expenditure is good proxy of standard of living as it avoids short run fluctuations in the income. Also per capita income data available at the state level prohibits the analysis of the income at the further disaggregated level is not possible and also it cannot extended for rural and urban area separately.*

7. *Here change in poverty incidence between two points of time has been measured as percentage points (pp).*

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