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Growth and Deprivation in India: What does Recent Evidence Suggest on “Inclusiveness”?  

SRIPAD MOTIRAM & KARTHIKEYA NARAPARAJU

ABSTRACT We investigate the relationship between growth and deprivation in India, an issue of immense interest. Given that there is continuing controversy over poverty lines, we use a framework that rigorously addresses this issue over a range of poverty lines. Using National Sample Surveys on consumption expenditure, we show that while growth has “trickled down”, it has not benefited the poor sufficiently. Extending this framework, we show that growth has not benefited the poor among disadvantaged caste groups and lower classes adequately. Our findings raise concerns about the “inclusiveness” of Indian growth. We discuss plausible explanations for our findings and policy implications.

JEL Classification: D63, I32

1. Introduction

This paper deals with economic growth and deprivation in India. India has been one of the fastest growing economies in the world during the past three decades and has attracted worldwide attention: among scholars (e.g. Balakrishnan, 2010, 2011 and references therein), policy-makers and informed observers (e.g. The Economist, 2012). Given perceptions that the extent and depth of Indian poverty are severe and that its contribution to world poverty is significant, one question that has interested many observers is whether or not growth is benefitting the poor. There is also concern regarding the impact of growth on disadvantaged groups (e.g. lower castes and classes). We examine these questions by...
drawing upon a methodology appropriate for the Indian context, using data on consumption expenditure. The dominant approach towards the above issues has involved examining changes in absolute money-metric poverty for the whole population, and for various groups. An increase in the rate of poverty reduction over time and faster rates of reduction for disadvantaged groups (over time or relative to other groups) have been interpreted as signs of progress. This approach suffers from certain limitations. First, considerable controversy exists over official poverty lines and there is a widespread perception that they are artificially low, implying that both the extent of poverty and rates of poverty reduction have been estimated incorrectly. Recent discussions have centred on the recommendations of the 2009 expert (Tendulkar) committee, which suggested new poverty lines. Several scholars (e.g. Suryanarayana, 2011, Subramanian, 2012, which also presents an historical overview) have argued persuasively that these lines are not based upon any coherent methodology. Responding to these critiques, the Indian government has appointed another committee to come up with new poverty lines. Hence, poverty and rates of poverty reduction based upon official poverty lines lack credibility, particularly since rates of poverty reduction are sensitive to poverty lines.

Second, there is broad agreement among Indian policy-makers on the importance of “inclusion” or “inclusive growth”, which have been defined vaguely and broadly. Most economists have interpreted inclusive growth as growth that raises all incomes and is therefore poverty reducing (Balakrishnan, 2012). The draft approach paper to the latest (12th) national five-year plan (Planning Commission, 2011) states as follows:

Inclusive growth should result in lower incidence of poverty, broad-based and significant improvement in health outcomes, universal access for children to school, increased access to higher education and improved standards of education, including skill development. It should also be reflected in better opportunities for both wage employment and livelihood, and in improvement in provision of basic amenities like water, electricity, roads, sanitation and housing. Particular attention needs to be paid to the needs of the SC/ST and OBC population.

It is unclear how seriously one should take such broad statements referring to desirable outcomes on many fronts, without specific targets or commitments. But, for even modest progress, the incomes of the poor should not only grow, but grow reasonably fast and reach some absolute level that will allow them to meet basic needs. It is worth noting that public provision of many basic services (e.g. health, education) is inadequate and of poor quality (Dreze & Sen, 2002, Motiram & Osberg, 2012, Dreze & Sen, 2013) and therefore even the poor are forced to access these services privately (and at considerable cost). This also implies that in order to assess inclusion, one should use more expansive approaches and criteria than those involving mere reductions in absolute poverty, based upon unrealistically low poverty lines.

Given the aforesaid, we draw upon the literature on pro-poor growth to assess rigorously how recent growth has affected the poor. We use the methodology of Duclos (2009) and Araar et al. (2009) because it has a number of advantages: it is based upon a systematic axiomatisation; it synthesises different ideas/approaches in the literature and it allows for statistical assessment using various standards and poverty lines. The last feature is particularly relevant for India given the controversies over official poverty lines and the
absence of an official poverty line at present. Also, since consensus on a particular poverty line may be difficult to obtain, one should explore how robust one’s conclusions are to different poverty lines. Briefly, pro-poorness involves evaluating growth of the incomes of the poor (between a prior period and a posterior period) against a desirable standard. We can use relative standards if we are interested in growth in relative terms; for example, are the incomes of the poor growing at 2%? Absolute standards deal with absolute changes; for example, have the incomes of the poor increased by Rs. 50? Some authors have used “weak absolute” standards or “trickle down” to refer to any growth. As we describe in detail later in the text, these two standards embody different ethical principles/axioms. In the relative case, the evaluation of pro-poorness is unaffected if the posterior distribution is scaled by the same factor (e.g. all incomes are doubled). In the absolute case, the evaluation of pro-poorness is unaffected if the posterior distribution is changed by the same absolute amount (e.g. all incomes increased by Rs. 50). Note the connection with measurement of inequality—relative inequality and absolute inequality corresponding to relative and absolute standards, respectively. Also note that when we scale the posterior distribution, its relative inequality is unaffected, whereas when we change it by an absolute amount, its absolute inequality is unaffected. In practice, absolute standards (not weak absolute) turn out to be stronger than relative standards. With either of these standards, there are two approaches. The first-order approach requires all the poor quantiles to grow at least at the standard imposed, whereas the second-order approach allows for some poor quantiles to fall short of the standard provided that those poorer are growing at a higher rate than the standard. The first-(second-)order approach is equivalent to checking for first-(second-)order stochastic dominance of the distribution of the poor in the first period by the normalised (using the standard, details below) distribution of the poor in the second period. Note that first-order stochastic dominance implies second-order stochastic dominance, i.e. the first-order approach is stronger than the second-order approach.

Duclos (2009) and Araar et al. (2009) ignore sub-groups of the population, an important issue, so we extend their analysis. We describe this in detail below, but essentially a growth process is (first-order) pro-poor for a group if all the poor quantiles of the group grow at a higher rate than the standard. Although we are using the language of pro-poor growth, our analysis captures the idea and spirit of “inclusion” and “inclusive growth”.

Before continuing further, it is worth summarising our analysis and findings. We examine the period 2004–2005 to 2011–2012 using National Sample Survey data on consumption expenditure and the growth rate of the median and mean as standards. The statistical procedure is described in detail later, but briefly it involves constructing confidence intervals for the difference in quantiles of the poor between the posterior and prior distributions. If some part of the lower bound of this confidence interval lies below the horizontal line (null), then we can say that there is no evidence for pro-poor growth. If the entire upper bound lies below the horizontal line, which is obviously stronger, then we can say that there is evidence for “anti-poor” growth. For relative standards, with both the mean and the median, we find no evidence for pro-poor growth in rural or urban areas. There is no evidence for pro-poor growth for any disadvantaged caste group or for the lower classes (labourers, marginal farmers and small farmers in rural areas, and casual labourers and the self-employed in urban areas). With absolute standards, we find evidence for anti-poor growth (discussed later), in both rural and urban areas. Broadly speaking, in recent times, the growth rates of the poor have been lower than those for middle and richer
groups. We have focused on the period 2004–2005 to 2011–2012 because our interest is in recent changes and the survey from 1999 is not comparable. Moreover, by focusing on this period, we can incorporate Other Backward Classes (OBCs, a disadvantaged caste group) which were not enumerated earlier. Nevertheless, we have used the data from the 1993–1994 survey to examine separately the periods 1993–1994 to 2004–2005 and 2004–2005 to 2011–2012. We find no evidence for pro-poor growth in the former period either. We perform several robustness checks.

Our results are consistent with and therefore complement those from a few other studies (discussed below) that have used other methodologies, e.g. Suryanarayana (2008) and Jayaraj & Subramanian (2012a). Our findings imply that the picture emerging from some studies (e.g. Thorat & Dubey, 2012) which have argued that recent growth has been “more inclusive”, by showing that the rates of poverty reduction during the period 2004–2005 to 2009–2010 are higher compared to those during 1993–1994 to 2004–2005, has to be viewed cautiously. As we noted earlier, we obtained stronger results with absolute standards as compared to relative standards. Given that there is no solid theoretical basis for preferring one approach to another, one may benefit from examining both, and also trying to find a compromise between these two. The empirical literature on inequality, particularly on India, has been dominated by the relative approach.

The rest of the paper is organised into four sections. Section 2 describes the relevant literature and the methodology that we are using, Section 3 describes the data, Section 4 presents the analysis and results and Section 5 concludes with a discussion, including robustness, explanations and policy implications.

2. The Relevant Literature on Pro-Poor Growth

In the interests of space, we do not review all the studies in the literature on pro-poor growth, but instead focus on the ideas that are relevant for us. Klasen (2008) and Duclos (2009) present excellent surveys, which we will draw upon.

There is agreement in the literature that pro-poor growth is growth that benefits the poor. However, beyond this, there is considerable disagreement and debate. Broadly speaking, as noted earlier, two different approaches exist: relative and absolute. In the former, a growth process is pro-poor if the incomes of the poor grow at least at some standard (usually the average growth rate). In the latter, growth is pro-poor if the absolute incomes of the poor increase by at least some standard. A distinction can be made between “strong absolute growth”, where high standards are imposed (usually the absolute change of the average), and “weak absolute growth”, where any growth, or trickle-down, is acceptable.

Duclos (2009) presents an axiomatic formulation of the above ideas and Araar et al. (2009) provide statistical tests. We present only the essential details. Let real monthly per-capita consumption expenditure distributions in 2004–2005 (prior period) and 2011–2012 (posterior period) be denoted by \(c_{2004–2005}\) and \(c_{2011–2012}\), respectively. \(c_{2004–2005}\) and \(c_{2011–2012}\) are vectors of individual consumptions. Let \(z\) denote the poverty line in terms of monthly per-capita consumption expenditure. All expenditures are denominated in 2011–2012 prices. We first describe the relative approach. The illfare (negative/lack of welfare) in 2004–2005, \(P_{2004–2005}\), is a function of the distribution of consumption expenditure in 2004–2005 and the poverty line. Let \(g\) denote the standard, i.e. we would like the incomes of the poor to grow by at least \(g\). The illfare in 2011–2012, \(P_{2011–2012}\), is a function of the distribution of consumption expenditure in 2011–2012, the standard, and
the poverty line. An evaluation function can be defined as:

\[
W(c_{2004-2005}, c_{2011-2012}, (1 + g), z) = P_{2011-2012}(c_{2011-2012}, (1 + g), z)
\] (1)

Growth is pro-poor if \( W \) is non-positive. Let \( F_{2004-2005}, F_{2011-2012} \) and \( F'_{2011-2012} \) denote the cumulative distribution functions (CDFs) for expenditures in 2004–2005, 2011–2012 and the normalised expenditures in 2011–2012 \((c_{2011-2012}/(1 + g))\), respectively. If \( W \) satisfies the axioms of \( \text{focus, population invariance, symmetry, monotonicity, normalisation and proportionality,} \) then Duclos (2009) shows that \( W \) is non-positive (i.e. first-order pro-poor growth) if

\[
F_{2004-2005}(x) - F'_{2011-2012}(x) \geq 0 \forall x \in [0, z].
\] (2)

The above implies that for the poor, the normalised distribution in 2011–2012 first-order stochastically dominates the distribution in 2004–2005. An equivalent condition is

\[
Q'_{2011-2012}(p) - Q_{2004-2005}(p) \geq 0 \forall p \in [0, p_c],
\] (3)

where \( Q \) and \( Q' \) denote the “quantile functions” for the 2004–2005 and normalised 2011–2012 distributions, respectively. \( p_c \) denotes the quantile corresponding to the poverty line in 2004–2005. Equation (3) implies that all the poor quantiles have to grow at least at the rate of \( g \). Araar et al. (2009) provide statistical tests for pro-poor growth by constructing confidence intervals for the difference of quantiles. The decision rule is as follows: reject a union set of null hypotheses \([Q'_{2011-2012}(p) - Q_{2004-2005}(p) < 0]\) for some \( p \in [0, p_c] \) in favour of an intersection set of alternative hypotheses \([Q'_{2011-2012}(p) - Q_{2004-2005}(p) \geq 0]\) for all \( p \in [0, p_c] \). This can be done by drawing a one-sided confidence interval for the desired level of significance. If the lower bound of this confidence interval lies below the null horizontal line for any poor quantile, then there is no evidence for pro-poor growth. Otherwise, there is evidence for pro-poor growth. If a similar test with the upper bound reveals that the upper bound of the confidence interval lies below the horizontal null line for all the poor quantiles, then there is evidence for “anti-poor” growth; essentially all the poor are growing at rates less than the standard, which of course implies that there is no evidence for pro-poor growth.

For second-order pro-poor growth, we impose the additional axiom of \( \text{distribution sensitivity,} \) to account for inequality among the poor.\(^{16}\) Duclos (2009) shows that there is pro-poor growth if:

\[
D_{2011-2012}((1 + g)x) - D_{2004-2005}(x) \leq 0 \forall x \in [0, z]
\] (4)

where \( D_{2011-2012} \) and \( D_{2004-2005} \) denote the “poverty deficit” functions for 2011–2012 and 2004–2005, respectively.

\[
D_{2004-2005}(x) = \sum_{i=1}^{n} \frac{(z - c_{2004-2005}^i) \times I(c_{2004-2005}^i \leq z)}{zn},
\] (5)

where \( n \) is the population in 2004–2005 and \( I \) is the indicator function (similarly for 2011–2012). The poverty deficit function is nothing but the poverty gap ratio (PGR) and (4) boils down to the PGR in 2011–2012 being lower than it was in 2004–2005 for all
poverty lines until and including $z$ and where the poverty line in 2011–2012 is $(1 + g)z$. Duclos (2009) shows that a sufficient condition for second-order pro-poor growth is that for none of the poor quantiles, the generalised Lorenz curve for the normalised distribution in 2011–2012 is below the distribution in 2004–2005. As in the first-order approach, we can construct confidence intervals and test for pro-poor growth.

The absolute approach is similar to the relative approach except that the standard $(a)$ that we impose is in terms of absolute changes. As a result, the technical details are similar. The only difference is that the normalisation involves subtracting “$a$” from the distribution in 2011–2012. The axiom of proportionality is replaced by translation invariance—the evaluation function is unaffected if the same amount is subtracted from all the incomes in the posterior distribution.

Duclos (2009) and Araar et al. (2009) ignore sub-groups of the population, but we can extend their analysis to consider pro-poor growth for specific groups. We present an informal discussion for the first-order approach; the case of the second-order approach is similar. Let the population comprise $G (> 1)$ mutually exclusive sub-groups. Let the poverty line and the standard $(g)$ be the same for each sub-group and the population. A sub-group can be considered as experiencing pro-poor growth if all the poor quantiles are growing at least at the rate $g$. From Equation (2), we can observe that when we have first-order pro-poor growth for the population, for every poverty line $x \in [0, z]$ the head count ratio (HCR) for the normalised distribution in 2011–2012 is not higher than it was for 2004–2005. HCR is sub-group decomposable, so the HCR in both 2011–2012 and 2004–2005 can be represented as a weighted average of the HCRs for each sub-group, the weights being the population shares of the sub-groups. Given the above, if we find pro-poor growth for the population, then at least one sub-group should display pro-poor growth; if we do not find pro-poor growth for the population, we cannot have all the groups displaying pro-poor growth, but one or more sub-groups could display pro-poor growth. Once we note this, we can apply the same procedure as above for each sub-group. We are interested here in caste and occupational groups/classes. The motivation here (in the spirit of inclusion) is that we would like the poor among the disadvantaged caste groups and lower classes to experience adequate growth (which is possible whether the poor, in general, are experiencing adequate growth, or not).

3. Description of Data

We use data from the Indian National Sample Surveys (NSS) on consumption expenditure conducted by the National Sample Survey Organization (NSSO). These surveys are well known, large, nationally representative and are used by many researchers working on India, and Indian policy-makers. The surveys, which are repeated every 5 years and conducted in various “rounds”, provide reliable estimates of consumption expenditure. In a departure from usual practice, the NSSO conducted a survey in 2011–2012 (68th round), 2 years after the previous survey in 2009–2010 (66th round) because 2009–2010 was an unusually bad agricultural year. This has resulted in controversy, with some accusing the statistical agencies of conducting the survey because the 2009–2010 figures on poverty and unemployment would look bad for the government (The Hindu, 2013a, 2013b). To focus upon recent changes, i.e. those in the 2000s, we use data from the surveys for the years 2004–2005 (61st round) and 2011–2012 (68th round), although we analyse data from other years and discuss trends. In particular, given the controversy referred to
above, it is worth highlighting that our results hold even if we focus upon quinquennial surveys only (2004–2005 and 2009–2010). The methodology (sample design, schedule, etc.) can be obtained from NSS reports.\(^{18}\) We use uniform reference period (URP) data although our results hold with mixed reference period (MRP) data too (more below). We do not use the 55th round (1999–2000) since it is not comparable to other rounds. It is unnecessary to go into details here, but briefly put, this is due to differences in survey methodology (Sen & Himanshu, 2004a, 2004b). We express all consumption expenditures in 2011–2012 prices. We deflate (or rather inflate) 2004–2005 nominal consumption expenditures by using the state-level indices that are implicit in the official poverty lines for 2011–2012 and 2004–2005 for various states. It has been argued (e.g. Deaton & Tarozzi, 2000) that there are some problems in using the other popular indices, viz. the Consumer Price Index for Agricultural Labourers (CPIAL) and Consumer Price Index for Industrial Workers (CPIIW).\(^{19}\)

It is worth highlighting two limitations of the data. First, these provide cross sections across time and are not panel data, so we cannot track individuals or households over time. Second, as pointed out by several authors (e.g. Jayadev et al., 2007), the rich are likely to be undersampled; to the extent that they are present in the sample, their consumption expenditures are likely to be undervalued or underreported. Given that we find the consumption expenditures of the poor to be growing at rates that are less than those for middle-income and richer groups, our conclusions are likely to be stronger in the absence of these biases. We also performed several robustness checks (see Section 4).

4. Analysis and Results

4.1 Basic Patterns

Before we proceed with the analysis, we will discuss some basic patterns. Figure 1 presents the CDFs of monthly per-capita consumption expenditure for rural and urban areas for various caste groups for 2011–2012. Four groups are enumerated in the data: Scheduled Castes (SCs), Scheduled Tribes (STs), OBCs and Others. SCs, STs and OBCs have been discriminated against historically. From Figure 1(A) for rural areas, we can observe the order of dominance as: Others, OBCs, SCs and STs. Using the simple (but popular) measure of HCR, the absolute and relative deprivation among SCs and STs is higher than that for the OBCs for all plausible absolute and relative poverty lines, e.g. until the 60th percentile. Others fare the best.

The NSS divides rural households into five types: self-employed in agriculture (farmers), self-employed in non-agriculture, agricultural labourers, other labourers and others.\(^{20}\) Farmers possess different amounts of land, and it is inappropriate to equate “large” and “small” farmers. We therefore use household type and land possessed to divide households into seven classes: large farmers, medium farmers, small farmers, marginal farmers, self-employed in non-agriculture, agricultural and other labourers and others. The first four classes are self-employed in agriculture, possessing land: > 10 ha, between 2 and 10 ha, between 1 and 2 ha, between 0 and 1 ha, respectively.\(^{21}\) Agricultural labourers are those who own no land or who are enumerated as such. Figure 2(A) presents the CDFs for these classes for 2011–2012. We can observe (as expected) that for all plausible absolute and relative poverty lines (e.g. until the 60th percentile), absolute and
relative deprivation among the “lower classes” (agricultural and other labourers and marginal farmers) is higher than that for the other classes.

Moving to urban areas (Figure 1(B)), the caste patterns of deprivation are similar to those in rural areas, except that STs are better off than SCs. However, STs are sparsely represented in urban areas (about 3.5%). For occupational categories, we use the NSS classification of households itself: self-employed; regular wage; casual labour; and others. From Figure 2(B), we can see a clear pattern: the absolute and relative deprivation is highest among casual labour, followed by self-employed, and then by regular wage earners.

For reasons of space, we have not presented the 2004–2005 patterns, but these are roughly similar. The ranking of deprivation among caste and class/occupational groups remained stable during 2004–2005 and 2011–2012. We will now investigate the nature of growth between 2004–2005 and 2011–2012.

Figure 1. (A) Caste-wise comparison—2011–2012 (rural). In this graph, we plot the CDF of consumption expenditure for various castes in the rural areas for the year 2011–2012. (B) Caste-wise comparison—2011–2012 (urban). In this graph, we plot the CDF of consumption expenditure for various castes in the urban areas for the year 2011–2012.
4.2 Analysis of Pro-Poorness

4.2.1 Relative approach. We start with the relative first-order approach. Figure 3 presents the results using the rate of growth of the average (median) consumption expenditure for rural ($g = 21.90\%$) and urban ($g = 26.48\%$) areas. These are simple relative growth rates over 7 years (2004–2005 to 2011–2012). As described in Section 2, to test for pro-poor growth, we can use the lower bound. We use 95% as the confidence level throughout our analysis and the STATA package, Distributive Analysis Stata Package to perform tests. We present the lower bound of the 95% confidence interval and, for clarity, restrict ourselves to the percentiles up to the 60th. For rural areas (Figure 3(A)), the curve is initially below the null horizontal line, and crosses it around the 20th percentile. The lower bound of the confidence interval lies below the null horizontal line, implying no evidence for pro-poor growth for any reasonable absolute or relative poverty line. Figure 3(B) reveals a similar picture for urban areas, although the curve crosses the horizontal line around the 15th percentile.

Figure 2. (A) Class-wise comparison—2011–2012 (rural). In this graph, we plot the CDF of consumption expenditure for various occupational classes in the rural areas for the year 2011–2012. (B) Class-wise comparison—2011–2012 (urban). In this graph, we plot the CDF of consumption expenditure for various occupational classes in the urban areas for the year 2011–2012.
Given the lack of pro-poor growth at the median standard, we considered the growth rate of the mean and obtained a similar result for both rural and urban areas. To investigate further, we examine “growth incidence curves”, which we present in Figure 4(A) (rural) and (B) (urban). These curves depict the “point estimates” of growth rates of monthly per
capita consumption expenditure during the period 2004–2005 to 2011–2012 for various quantiles of the population (also see Table 1). In rural areas, all the quantiles of the population have shown growth, implying that for all reasonable absolute and relative poverty lines, we have evidence for trickle-down, i.e. some growth for the poorer groups. However, the richer groups have grown faster (in general) than the poorer groups and also faster than the median. In rural areas, the richest group (the 95th percentile) has grown at a slightly lower rate (a difference of 2.3% points) than the next richest group (90th percentile). As we discussed in Section 3, the data are likely to exclude/underestimate the consumption of the upper quantiles—this problem is likely to be more severe in urban (as compared to rural) areas. The above finding (the comparison of the 95th and 90th percentiles) could be a result of this exclusion, but it could also reflect reality. In urban areas too, we find trickle-down. The richest groups (i.e. the 90th and 95th percentiles) have

Figure 4. (A) Growth incidence curve—rural. This graph denotes the growth in the consumption expenditure for a quantile in 2011–2012 over its consumption expenditure in 2004–2005 in rural areas, i.e. \([Q_{2011–2012}(p) - Q_{2004–2005}(p)]/Q_{2004–2005}(p)\). (B) Growth incidence curve—urban. This graph denotes the growth in the consumption expenditure for a quantile in 2011–2012 over its consumption expenditure in 2004–2005 in urban areas, i.e. \([Q_{2011–2012}(p) - Q_{2004–2005}(p)]/Q_{2004–2005}(p)\).
grown much faster than the others. The richest groups have grown faster than their counterparts in rural areas, which is unsurprising given that the avenues for growth for the rich are greater in urban areas as compared to those in rural areas.

For reasons of space, we omit figures for the rest of the analysis. These are available on request from the authors. We now focus on socio-economic groups. For STs, we use the growth rate of the overall median as the standard since this is more appropriate than the growth rate of the median of STs themselves. We find no evidence for pro-poor growth in rural or urban areas. We conduct a similar analysis for SCs and OBCs and find no evidence for pro-poor growth.

Turning to classes, we first look at rural areas. We again use the median (for the entire population) standard. There is no evidence for pro-poor growth for either labourers or marginal farmers. For marginal farmers, we also looked at the upper bound of the confidence interval. Almost the entire upper bound is below the horizontal line; but for a few exceptions (around the 24th and 36th percentiles), we could have termed this anti-poor growth. We find no evidence for pro-poor growth for small farmers and the non-agricultural self-employed. Moving to urban areas, we find no evidence for pro-poor growth for the self-employed or casual labourers.

The first-order approach requires that all the quantiles of the poor grow at the standard that is imposed. This may appear too strong, so we have considered the second-order

Table 1. Real growth of rural and urban quantiles between 2004–2005 and 2011–2012

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<td>90</td>
<td>1668.92</td>
<td>2053.67</td>
<td>23.05</td>
<td>3313.48</td>
</tr>
<tr>
<td>95</td>
<td>2174.28</td>
<td>2626.25</td>
<td>20.79</td>
<td>4446.99</td>
</tr>
</tbody>
</table>

Notes: Real growth rates have been arrived at using the price indices implicit in official poverty lines. Data for 2004–2005 and 2011–2012 are expressed in constant 2011–2012 prices.
Source: Authors’ calculations from the respective NSS consumption expenditure rounds.
approach too and found no evidence for pro-poor growth in rural or urban areas, for the entire population, or for the various disadvantaged groups.

4.2.2 Absolute approach. We have observed above that there is trickle-down or weak absolute pro-poor growth. However, this is insufficient and we should investigate whether evidence for strong absolute pro-poor growth exists. We examined the possibility of absolute pro-poor growth with the median standard for rural and urban areas. There is evidence for anti-poor growth in both rural and urban areas. The absolute growth incidence curves are actually increasing: absolute increases in expenditure (between 2004–2005 and 2011–2012) for richer groups are higher than those for poorer groups. We find no evidence of absolute pro-poor growth at the median or mean standard for any of the socio-economic groups.

We also conducted the analysis above for the period 2004–2005 to 2009–2010 and found that all the above results hold: there is no evidence for pro-poor growth in rural or urban areas, either for the entire population or for any of the disadvantaged socio-economic groups. The growth rates for the period 2004–2005 to 2009–2010, for both rural and urban areas, and for all percentiles are lower than those for the period 2004–2005 to 2011–2012. This is unsurprising since 2009–2010 was an adverse agricultural year. What is interesting though is that during 2004–2005 to 2009–2010, there was a strong growth bias against the poor in urban areas, e.g. the growth rates for the 5th percentile, the median and the 90th percentile were 6.59%, 9.87%, and 11.67%, respectively. Such a trend is absent for the period 2004–2005 to 2011–2012 (Table 1). However, the super-rich (the 90th and 95th percentiles) grew at substantially faster rates during the period 2004–2005 to 2011–2012 compared to the other groups; this is not the case during the period 2004–2005 to 2009–2010.

We also conducted the analysis for individual states using the standard of the national median. We find that for most of the states, there is no evidence for pro-poor growth. It is beyond the scope of this paper to go into all the regional variations and explain them. However, it is important to learn from good and bad experiences. For example, in rural areas, Andhra Pradesh and Orissa demonstrated pro-poor growth. In urban areas, Andhra Pradesh and Maharashtra experienced pro-poor growth. It is interesting to investigate what policies and measures led to this, and whether there are lessons for other states. One should also raise the issue of sustainability: previous governments in Andhra Pradesh have been accused of adopting populist policies which have burdened the exchequer, apart from leading to other problems (Vakulabharanam & Motiram, 2014). Turning to bad experiences, in rural Rajasthan, the poorest decile experienced very low growth (compared to the median); in urban Assam, there is evidence for anti-poor growth. What led to these adverse outcomes? This is worth investigating.

5. Discussion and Conclusions

In the analysis above, we examined the issue of pro-poor growth in India during 2004–2005 to 2011–2012 using data from the NSS consumption expenditure surveys. We considered the entire population in rural and urban areas and also SCs, STs, OBCs and occupations that are at the lower rungs of the rural (e.g. labourers, marginal farmers) and urban (casual labourers and the self-employed) economies. Our broad conclusion is that there is no evidence for pro-poor growth, although growth has trickled down. Table 2...
Table 2. Evidence on pro-poor growth in India between 2004–2005 and 2011–2012—summary of results

<table>
<thead>
<tr>
<th></th>
<th>Relative approach</th>
<th>Absolute approach</th>
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<tbody>
<tr>
<td></td>
<td>Median standard</td>
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<tr>
<td></td>
<td>First order</td>
<td>Second order</td>
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<tr>
<td></td>
<td>Weak absolute</td>
<td>Strong absolutea</td>
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<tr>
<td>All-India</td>
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<tr>
<td>Rural</td>
<td>No statistical evidence</td>
<td>No statistical evidence</td>
</tr>
<tr>
<td>Urban</td>
<td>No statistical evidenceb</td>
<td>No statistical evidence</td>
</tr>
<tr>
<td>Caste groups</td>
<td></td>
<td></td>
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<tr>
<td>Rural STs</td>
<td>No statistical evidence</td>
<td>No statistical evidence</td>
</tr>
<tr>
<td>Urban STs</td>
<td>No statistical evidence</td>
<td>No statistical evidence</td>
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<tr>
<td>Rural SCs</td>
<td>No statistical evidence</td>
<td>No statistical evidence</td>
</tr>
<tr>
<td>Urban SCs</td>
<td>No statistical evidence</td>
<td>No statistical evidence</td>
</tr>
<tr>
<td>Rural OBCs</td>
<td>No statistical evidence</td>
<td>No statistical evidence</td>
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<tr>
<td>Urban OBCs</td>
<td>No statistical evidence</td>
<td>No statistical evidence</td>
</tr>
<tr>
<td>Class groups—rural</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marginal farmers</td>
<td>Evidence for anti-poor growth</td>
<td></td>
</tr>
<tr>
<td>Agricultural and other</td>
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<td>No statistical evidence</td>
</tr>
<tr>
<td>casual laborers</td>
<td></td>
<td></td>
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<tr>
<td>Class groups—urban</td>
<td></td>
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<tr>
<td>Self-employed</td>
<td>No statistical evidencec</td>
<td>No statistical evidence</td>
</tr>
<tr>
<td>Casual labour</td>
<td>No statistical evidence</td>
<td>No statistical evidence</td>
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</tbody>
</table>

a Median standard. b Evidence for anti-poor growth with mean standard with MRP data. c Evidence for anti-poor growth with mean standard.
summarises our findings. We also examined various states separately and found that for most of the states, there is no evidence of pro-poor growth, either in rural or urban areas. Future research can focus on explaining the within-country variation and the lessons that can be drawn from both the good and bad experiences.

Our focus has been on recent changes. But, we also used data from the surveys in 1993–1994 and 2004–2005 to investigate whether growth was pro-poor during this period. We find no evidence for pro-poor growth during this period either, for either rural or urban areas using the first-order approach. We performed other robustness checks. Instead of URP, we used MRP data and found that our results hold. Putting everything together, we believe that our conclusions are strongly suggestive that Indian growth is making marginal (albeit some) difference to the poor, and disproportionately benefiting the middle- and richer-income groups. Our findings raise serious questions and concerns about the “inclusiveness” of Indian growth.

Further evidence can be obtained by examining changes in inequality. Between 2004–2005 and 2011–2012, the inequality in nominal consumption expenditure increased slightly in rural areas (0.305–0.311), increased in urban areas (0.376–0.390) and increased at the all-India level (0.363–0.375). Looking at real consumption expenditures reveals similar trends. More importantly, as noted in the literature, pro-poor growth is associated with a decrease in inequality between the poor and the non-poor (Klasen, 2008). Evidence suggests that this may not be occurring in India. The ratio of the richest decile (90th percentile) to the poorest decile (10th percentile) increased between 2004–2005 and 2011–2012 in both rural (3.281–3.430) and urban (4.775–4.972) areas. The ratio of the median to the poorest decile increased in both rural (1.683–1.729) and urban (2.010–2.042) areas. Actually, both interpersonal inequality and inequality along several axes (e.g. class, state) have increased since the 1990s (Motiram & Vakulabharanam, 2012, Vakulabharanam, 2012 on class).

We can also ask whether any other country has exhibited pro-poor growth during roughly the same period that we have investigated, using the methodology that we have deployed. If very few countries have exhibited pro-poor growth, then one could argue that we have imposed standards that are too stringent. However, we do find several countries that have experienced pro-poor growth, e.g. Peru, Ecuador and Venezuela (Araar, 2012), Ethiopia, Malawi and Central African Republic (Bibi et al., 2012). More relevantly, Ravallion & Chen (2003) show that in the period 1993–1996, in China, which was experiencing growth rates comparable to those of India, poorer quantiles were growing faster than the average.

Since there is no consensus in the literature on pro-poor growth as to the right approach to this issue, we want to be cautious and add that our findings may be sensitive to the methodology that we have used. However, we do believe that this methodology is appropriate for India given its advantages, which we discussed above (axiomatisation, ability to employ different standards, etc.) and the controversies surrounding official poverty lines in India. Moreover, our results are consistent with those from other studies that have used different approaches towards assessing inclusion. Suryanarayana (2008) constructs a measure of inclusion based upon the share of the population which is below 60% of the median (essentially a relative poverty line) and uses older NSS consumption expenditure data (up to 2004–2005). This poverty line is actually low and the methodology (unlike ours) does not involve examining all poor quantiles. Nevertheless, he finds that Indian growth has not been inclusive. Jayaraj & Subramanian (2012a) conceptualise
inclusion in terms of the literature on the “Talmudic estate problem”, which deals with various ways in which an estate can be divided among competing heirs. By analogy they consider the different ways in which the increase in the Indian pie can be apportioned among various quantiles and groups (castes, occupations). They consider different fairness criteria and use NSS consumption expenditure data to argue that the actual/observed distribution in India falls short of even the minimally acceptable criterion. Their methodology is in the spirit of the absolute approach, which is stronger; we have shown that even with the relative approach, there is no evidence for inclusion.

What explains our findings? We can draw upon the literature (e.g. Kotwal et al., 2011 and the references therein) to answer this question. In rural areas, agriculture has been going through a crisis (Mishra & Narasimha Reddy, 2011, Vakulabharanam & Motiram, 2011 present details) and the farm and non-farm sectors are not performing well enough to raise the incomes of the poor adequately. Farmers have also been witnessing an increase in the prices of their inputs. In the urban sector, labour-intensive manufacturing has not grown adequately enough to absorb either the rural poor or the poor in the urban informal sector. Thomas (2014) has estimated that in the period that we are considering (2004–2005 to 2011–2012) half of the non-agricultural jobs that were created were in the construction sector, largely in rural areas, and mostly poorly remunerated (“poor quality”). In contrast, job growth in the manufacturing sector was small (5.1 out of 48 million new jobs) and actually slower than that during the period 1993–1994 to 2004–2005. There is considerable debate on the reasons for this, but one interesting and persuasive argument is that the skewed growth process is itself responsible. For example, Kotwal et al. (2011, p. 1195) have argued that growth has been biased towards the high-skilled/high-income groups, which are likely to consume goods that are not intensive in unskilled labour. This would imply that investors would not be keen to invest in the production of goods which are intensive in unskilled labour, resulting in low benefits for the unskilled/poor. Kotwal & Roy Choudhary (2013) provide evidence for this phenomenon. An example from their study illustrates the basic point:

When a software engineer working for Infosys sees an increase in her income, how would she spend this additional income? She already has a driver, a maid and a cook. She is not going to hire more domestic help. She might buy an iPad, visit more holiday resorts and buy higher quality processed and unprocessed food items. The component of value added by the unskilled in producing these items is quite limited.

Given our findings, what policies are required to ensure pro-poor growth and “inclusion”? A comparison with Brazil is instructive here. Kakwani et al. (2010) use a rigorous methodology to show that despite negative growth in per capita real income during 2001–2004, poverty fell and growth was pro-poor due to a fall in inequality. A crucial role was played by government social policies (e.g. social security, government transfers) under a social democratic government, which protected the poor from adverse shocks. In contrast (as noted above), inequality has grown in India; the Indian state has prioritised growth, and has not displayed a serious commitment to implementing pro-poor policies (Kohli, 2012). This suggests that non-distorting redistribution and better targeting of the poorer groups is important in India. A large-scale employment guarantee scheme (Mahatma Gandhi National Rural Employment Guarantee Scheme) was initiated in rural India in the early 2000s. Proper implementation of this scheme could go a long way
towards protecting the rural poor. No such scheme exists in urban areas—yet protection has to be provided to the urban poor too. While protection of the poor is crucial, it is also important to focus on policies that enhance growth, and create better opportunities for the poor. Recent analysis has suggested the importance of public investment for sustained growth, and how it can provide an impetus to private investment, rather than replacing it (“crowding out”) (Nagaraj, 2013). Public investment should go into infrastructure and the social sector (e.g. in skills, education and health). By international standards, investment in India, particularly public investment in the social sector, is quite low. For example, public expenditure on health is only 1.2% of gross domestic product (GDP), which is much lower than in several developing (Brazil: 4.2%, Mexico: 2.9% and China: 2.7%) and developed countries (USA: 8.5%, UK: 8.0% and Norway: 8.1%) (Government of India, 2013). We also believe that simply relying on growth to deliver on “inclusion” may be inadequate.

Notes

1 “Deprivation” refers to poverty in general (absolute or relative). We use absolute and relative poverty wherever appropriate.

2 GDP grew at the rate of 3.6%, 5.6% and 6.8% during 1951–1980, 1981–1991 and 1992–2010, respectively. The corresponding figures for gross national product per-capita are 1.4%, 3.0% and 5.0%, respectively (Nagaraj 2011).

3 On the importance of addressing horizontal/group-based disparities, see Stewart (2002).

4 Reliable data on income are unavailable for India, so researchers use consumption expenditure.

5 A large number of studies have used this approach, e.g. Himanshu (2007), Thorat & Dubey (2012) and Planning Commission (2012). A number of studies have also analysed poverty using official poverty lines, e.g. Deaton & Dreze (2002).

6 To illustrate, the Tendulkar committee’s rural poverty lines for 2004–5 and 2009–2010 are Rs. 446.68 and 672.88, respectively. These yield a poverty reduction rate of 1.602% points per annum. Increasing the poverty lines for 2009–2010 by Rs. 10 and 20 and suitably adjusting the 2004–5 poverty lines would yield rates of 1.574 and 1.816, respectively. Also see Kotwal et al. (2011).

7 Balakrishnan (2012) makes a similar argument that inclusive growth should go beyond mere poverty reduction. Also see the other studies that we cite later.

8 Kolm (1976a, 1976b) presents a discussion of relative and absolute inequality measures. The different ethical principles become evident if we use Kolm’s terminology of “leftist” and “rightist” measures for relative and absolute inequality, respectively.

9 Mean and median are both acceptable measures of central tendency. Since the distribution of consumption expenditure is skewed, the median is different from the mean and these grow at different rates. So, using these standards could yield different results. We use both these standards to check whether our results are robust.

10 In Section 5, we describe the problems involved in comparing poverty over long periods.

11 One could argue (particularly given the policy statement on inclusive growth that refers to multiple facets) that we should be focusing on multidimensional deprivation, but we have not done so because the debate on India has almost exclusively focused on money-metric/unidimensional poverty. Moreover, the literature on pro-poor growth has also largely restricted itself to unidimensional poverty.

12 A few studies on India have used absolute and intermediate measures, e.g. Jayadev et al. (2007) and Jayaraj & Subramanian (2012b).

13 Also see Ravallion & Chen (2003) and Son (2004).

14 The analysis is the same for incomes. We discuss consumption because this is what we use.

15 These are standard in the literature on poverty measurement. Focus implies that only the incomes of the poor matter. Population invariance implies that cloning the entire income distribution does not matter. Symmetry or anonymity implies that only incomes (and not those earning them) matter. Monotonicity implies that for a given g if the income of some individual in the posterior distribution increases, then the evaluation function cannot increase. Normalisation implies that if the prior and
posterior distributions are the same, then for a given poverty line, \( g = 0 \) would result in a zero evaluation function. Proportionality (or scale invariance) implies that the evaluation functions are the same if for a given prior distribution and a given poverty line, the normalised posterior distributions are the same. This is equivalent to saying that for a given prior distribution and a poverty line, if the posterior distribution is scaled up or down by a certain factor (e.g. if all incomes are doubled or halved), then the evaluation function is unaffected.

*Ceteris paribus*, the evaluation function cannot be higher for a progressive transfer (from a richer to a poorer person) in the posterior distribution.

The 2004–05 survey enumerated 79,298 (45,346) households and 403,207 (206,529) individuals in rural (urban) areas spread across all the states and union territories of India.


In a previous version of this paper, we have shown that using CPIAL and CPIIW does not change the main results. For a description of the indices being used in the poverty lines, and how they are different from CPIAL and CPIIW, see Government of India (2009).

Broadly, a household is “self-employed in agriculture” if self-employment in agriculture is more important as a source of income compared to other sources. Similarly for other types. In the 68th round, a new type (regular wage/salary) was added, which we included in the category “Others”. Moreover, agricultural and other labourers were referred to as “casual labour in agriculture” and “casual labour in non-agriculture”, respectively.

These thresholds are not sacrosanct. We can use different thresholds, e.g. as used in the NSS land and livestock surveys, and our results do not change.

The analysis, presented in a working paper, is available upon request.

In comparisons over such a long period, the bundle of commodities that is considered to be “reasonable” (poverty line bundle, PLB) could itself change over time. Conceptually, as Amartya Sen has argued, poverty can be relative in the space of commodities, even if it is absolute in the space of functionings. This would make the process of simply adjusting poverty lines for inflation and the use of stochastic dominance techniques problematic. Essentially, even if one distribution first-order stochastically dominates another, if the PLBs are different for the two distributions, poverty in the first case could still be higher than poverty in the second case. In India one could think of commodities that are considered to be “essential” in the 2000s which were sparsely available (and hence not essential) in the 1990s, e.g. mobile phones. On this issue, see the statement of the minister of state for planning, Aswani Kumar: “We don’t send a letter through 20 paisa post card these days rather we call from our mobile phones. Everybody wears Reebok shoe and people ride scooter instead of cycles” (*The Hindu*, 2012). Note that given this issue, since we do not find evidence for pro-poor growth, our results would hold even if we have different PLBs for various years.

MRP data are based upon different recall periods as compared to URP data and yields slightly different trends. For details, see the NSS reports cited above.

All these computations are based upon nominal values.

An issue that has been hotly debated is the divergence between the NSS estimates and those from the National Accounts Statistics (NAS). While this issue is unresolved, the NAS estimates show higher growth compared to the NSS estimates. Given that the bias in the growth rate of the rich from the NSS is likely to be higher compared to that for the poor, our results will only be strengthened if the divergence between the NSS and NAS is resolved.

Topalova (2008) has shown that in India, the poorer groups were growing at higher than average rates during 1983 to 1993–4, whereas this trend reversed during 1993–4 to 2004–5.

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