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On the 'Inclusiveness' of India's Consumption Expenditure Growth

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Abstract

This paper reviews the evidence on the 'inclusiveness' of the growth in consumption expenditure that has occurred in India over the last four decades or so. The notion of dynamic inclusiveness is framed in terms of imagined normative allocations of the inter-temporal product of growth, as dictated by notions of equity of varying orders of demandingness. There are analytical parallels between these exercises and those involved in the study of bankruptcy in 'Talmudic estate problems', as well as in the determination of optimal anti-poverty budgetary allocations. The issue of inclusive growth is reviewed in this paper with respect to inclusiveness across both income classes and social groups such as caste and occupation. The results of the investigation undertaken in the essay suggest distressingly little evidence of inclusiveness in India's consumption growth experience.

Keywords: absolute inequality, relative inequality, equal division rule, vertical inclusiveness, horizontal inclusiveness

JEL classification: D30, D31, O15, O40

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1 Introduction

From the inception of planned development in India, a major objective of state policy, as articulated in various plan documents and other official pronouncements, has been the achievement of growth in per capita gross national product in a manner compatible with a reasonably egalitarian distribution of the product of growth. This aim is reflected, over time, in successive capsule statements of intent for the process of development: 'equitable growth', 'growth with distribution', 'growth with social justice', and—most recently, and not least in the Draft Eleventh Plan document—'inclusive growth'. For long there was amongst academicians a measure of relatively serious engagement with this issue. However, in the more recent environment of the post-liberalization era, it appears there is a generally tacit agreement amongst commentators that it is natural for official publications such as Five-Year Plan documents and *Economic Surveys* to emphasize the importance of 'inclusive development' but that it would be somewhat silly and unadult to actually take these protestations of intent seriously. But what if one did? What if one set about deliberately assessing the actual record of the 'inclusiveness' of growth against the official ambitions that have been, and continue routinely to be, advertised in its cause? The present essay is a product of such a naïve, not to say, arrested mentality. It seems best to be as explicit and forthright about the orientation of this paper—and as early on—as possible, hence this summary *caveat lector*, at the very outset.

Systematic time-series data on the distribution of income are not available for India, but such information on consumption expenditure is indeed available from the periodic investigations carried out and published by the National Sample Survey Office (NSSO) of the Central Statistical Organization (CSO). It is these data that we shall make use of in assessing both 'vertical' and 'horizontal' aspects of equity in the distribution of the fruits of growth in per capita mean consumption over the roughly 40-year period from 1970-71 to 2009-10. (In this connection, the reader is also referred to the recent work of Thorat and Dubey 2012.) We recognize, of course, that—despite the generally admirable task performed in its consumption expenditure surveys by the NSSO—there are problems with the complete reliability of these data. Two especially significant difficulties are that (a) as with most distributional surveys of a similar nature, the information on the tails of the distribution are unlikely to be very accurate, and (b) there has been a divergence in the mean consumption as reported by the NSSO and in the National Accounts Statistics of the CSO, with the latter source revealing a progressively larger mean than the former. Our results are subject to these possible deficiencies of data, and are an outcome of our decision to employ a single, consistent source of information for our computational exercises.

We look at decile—and specific quintile—trends in mean consumption expenditure with a view to analysing an aspect of 'vertical inclusiveness' in the distribution of the product of growth over time.[1] 'Horizontal inclusiveness' is assessed with respect to the relative growth performances of caste and occupation groups. These exercises would require some clear statement of what constitutes 'inclusive growth'.[2] In the present paper, we do not deal so

[1] For related country-specific estimates of inequality involving comparisons of the incomes of top and bottom deciles of the income distribution, see OECD (2011).

[2] There is an extensive literature that is now available on the notion of 'pro-poor' growth, and particular mention may be made of the work of, among others: Kakwani and Pernia (2000); Ravallion and Chen (2003);

much with 'pro-poor growth' as with a less specific notion of inclusive or equitable growth.[3] We contrast the actual pattern of growth in consumption expenditure in India with the normative pattern that we predicate on our proposed requirement of equitable or inclusive growth. This is done for both inter-personal and inter-group comparisons.

This introductory section is followed by a conceptual section on our favoured notion of inclusive growth. Growth of consumption expenditure and 'vertical inclusiveness' are considered in the next section, succeeded by one on growth and 'horizontal inclusiveness', involving comparisons of the relative growth performance of caste- and occupation-based groups. The final section summarizes and concludes.

2 Inclusive growth: toward some criteria for qualification

A typical 'Talmudic estate problem' is of the variety in which a person dies with unpaid debts exceeding the value of his estate, and it must be determined how the estate should be divided among the creditors: possible outcomes—among others—would include an equal share, or a share proportional to the size of the debt. A structurally and analytically similar problem has to do with the optimal allocation of an anti-poverty budget of given size, smaller than what is required to eradicate poverty, amongst the constituency of the poor. Analogously, one could think of the 'budget' in the poverty-alleviation problem as corresponding to the additional income generated by growth from one period to another, and one could ask how this product of growth should be distributed amongst given income quantiles of the population.

We shall take it that 'inclusiveness' will entail, at the very least, that the poorer of two quantiles never gets a smaller share of the fruit of growth. It is possible, of course, to see the requirement of inclusiveness as being satisfied as long as no one is wholly excluded from a share of the product of growth.[4] However, we are inclined to believe that this is far too anaemic a view of inclusiveness. In particular, it seems reasonable to interpret inclusiveness in a relative rather than absolute sense, that is, to interpret the concept in a way that goes beyond just not absolutely excluding anybody from the benefits of growth but ensuring that no person is included any less than any other only because the first individual is poorer than the second. This requirement would constitute the lower bound on the progressivity with which the product of growth is distributed.

A strongly egalitarian solution to the problem of optimal budgetary intervention for the alleviation of poverty is the so-called 'lexicographic maximin principle', in which, starting from the poorest of the poor, one effects a sequence of progressive income-equalizing transfers until one arrives at that marginal person with whom the budget is exhausted: the incomes of all persons poorer than this marginal individual are raised to the level of his income (which is the maximum level to which the worst-off person's income can be raised), while those who are richer receive no transfer at all. In the 'inclusive growth' version of this story, one would distribute the proceeds of growth in period 2 in such a way that, starting

Kakwani, Khandker and Son (2004); Ravallion (2004); Son (2004); Duclos and Wodon (2004); Osmani (2005); Klasen (2008); and Bibi, Duclos, and Verdier-Chouchane (2012).

3 In doing so we draw on some of the literature on optimal anti-poverty policy: Bourguignon and Fields (1990); Gangopadhyay and Subramanian (1992); Subramanian (2006)—which also shares some commonalities with the literature on 'Talmudic estate problems': Aumann and Maschler (1985); Kaminski (2000).

4 This would correspond to Ravallion's (2004) notion that pro-poor growth is any growth that benefits the poor.

with the poorest quantile, one effects a sequence of transfers in which the mean incomes of as many quantiles as possible are equalized, with the remaining quantiles (if any) not receiving any part of the proceeds of growth.

A less radically egalitarian solution to the poverty alleviation problem is one in which no person is excluded from a share of the budget, but it is allocated in proportion to each poor person's share in the aggregate shortfall of income from the amount that would be needed to eradicate poverty, that is, in the ratio of each person's poverty deficit to the aggregate poverty deficit.[5] This is the 'proportionality solution'. To see what this might entail for the corresponding appropriate division of the product of growth, we first consider some basic notation that will facilitate a formalization of the problem.

Suppose, for specificity, that we divide the population into deciles, and label the deciles in non-descending order of mean income. We consider two points of time, 1 and 2, and we imagine that the average income has risen (in real terms) from μ^1 in period 1 to μ^2 in period 2, and that the population has risen from n^1 in period 1 to n^2 in period 2. We let μ_i^1 stand for the mean income of the *i*th poorest decile in period 1, and similarly μ_i^2 for the mean income of the *i*th poorest decile in period 2 $(i = 1,...,10)$, and n_i^1 (respectively, n_i^2) for the population size of the *i*th poorest decile in period 1 (respectively, period 2). (Of course, $n_i^1 = n^1/10$ and $n_i^2 = n^2/10$ $(i = 1,...,10)$.) Let $\Delta \equiv n^2(\mu^2 - \mu^1)$ be the total additional income available from the growth process, over and above what is needed to ensure that the period 1 mean income is achieved. Under the proportionality rule the *i*th poorest decile in period 2 is enabled to retain its period 1 mean income μ_i^1 and, additionally, a share of Δ which is just the period 1 shortfall of the *i*th poorest decile's mean income from that of the richest decile—call it $D_i^1 (\equiv n_i^1(\mu_{10}^1 - \mu_i^1))$—as a proportion of the aggregate shortfall of all the deciles' period 1 mean incomes—call it $D^1 (\equiv \Sigma_{j=1}^{10} n_j^1(\mu_{10}^1 - \mu_j^1))$. That is, if $\tilde{\mu}_i^2$ is the mean income of the *i*th poorest decile in period 2 that is warranted by the proportionality rule, we can write:

$$\tilde{\mu}_i^2 = \mu_i^1 + (D_i^1 / D^1)(\Delta / n_i^2).$$

This is true as long as the richest decile's period 1 mean income does not fall short of the aggregate period 2 mean income (i.e. as long as $\mu_{10}^1 \geq \mu^2$). When, however, this condition is not satisfied, then, clearly, the appropriate solution would be to ensure that each person in the society receives the period 2 mean income. Taking note (a) of the fact just mentioned, (b) of the expressions provided earlier for D_i^1, D^1 and Δ, and (c) of the fact that $n_i^2 = n^2/10$ $(i = 1,...,10)$, and after performing some routine manipulations on the preceding equation, one can write:

$$\tilde{\mu}_i^2 = \mu_i^1 + \frac{(\mu_{10}^1 - \mu_i^1)}{(\mu_{10}^1 - \mu^1)}(\mu^2 - \mu^1), \text{ if } \mu_{10}^1 \geq \mu^2;$$
$$= \mu^2, \text{ otherwise.} \qquad (1)$$

[5] This would correspond, in the Talmudic problem, to a share of the estate for a creditor in proportion to the size of the debt owed him.

We believe it would be perfectly reasonable to see merit in the proportionality rule: it is not as stringent in its demand for equality as the lexicographic maximin solution, but it does confer a differential advantage on any poorer decile vis-à-vis a richer decile.

But let us, against our own inclination, yield to the possible criticism that even the proportionality rule is much too radically egalitarian. The most minimally egalitarian solution one can then think of, given the context, is the '*equal division rule*', according to which, after allowing for each decile in period 2 to retain its period 1 mean income, an additional amount is provided for, where this additional amount is just an equal tenth share of the surplus available from the growth process [namely, $n^2(\mu^2 - \mu^1)$]. That is, if $\hat{\mu}_i^2$ is the mean income of the *i*th poorest decile in period 2 that is warranted by the equal division rule, then it can be verified that

$$\hat{\mu}_i^2 = \mu_i^1 + \mu^2 - \mu^1 \qquad (2)$$

In much of what follows, we shall confine ourselves to this modestly egalitarian equal division rule (which, as it happens, corresponds to a weakened version of what Klasen 2008 calls 'strong absolute pro-poor growth'), and we shall refer to $\hat{\mu}_i^2$ as simply the *warranted* mean income, in period 2, of the *i*th poorest decile (warranted, that is, by the equal division rule).

A small digression is in order here. The actual surplus generated by the process of growth is $n^2\mu^2 - n^1\mu^1$, and if it is an equal division of *this* surplus which is allocated to the *i*th poorest decile in period 2, then the warranted mean income of the *i*th poorest decile in period 2—call it $\overline{\mu}_i^2$ —can be verified to be given by:

$$\overline{\mu}_i^2 = (n^1/n^2)\mu_i^1 + \mu^2 - (n^1/n^2)\mu^1 \qquad (3)$$

Furthermore, it can be checked that $\overline{\mu}_i^2$ will exceed μ_i^1 only if it is the case that $(n^2 - n^1)\mu_i^1 < n^2\mu^2 - n^1\mu^1$: the likelihood of this condition being satisfied increases the smaller is μ_i^1. It is possible in principle therefore that—typically for a richer decile—the warranted mean income in period 2 is less than the actual mean income in period 1. In such an event, one or more deciles could end up being worse off in period 2 than in period 1: this solution (which is advanced in Subramanian 2009, 2011) is thus 'Pareto-disrespecting'. If this should be a cause for concern, then an equal division rule that *is* 'Pareto-respecting'—in the sense that each decile in period 2 is assured of retaining at least its period 1 mean—is yielded by the expression available in equation (2) for the warranted mean income of the *i*th poorest decile in period 2.[6] Philosophers such as Larry Temkin have questioned the supposed unexceptionableness of the Pareto principle (which Temkin 2002 calls 'The Slogan'), but in this paper we shall settle for the conservative Pareto-respecting equal division rule of equation (2).

Next, we consider criteria of 'horizontal inclusiveness', that is, equality-sensitive conditions for growth in the mean incomes of well-defined groups such as those of caste or occupation.

6 Note that the proportionality rule of equation (1) has also been presented in a Pareto-respecting form.

We shall present rules for 'horizontal inclusiveness' corresponding to those for 'vertical inclusiveness' as embodied in equations (1), (2) and (3). To this end, we again consider two periods, a base period 1 and a terminal period 2, and as before, we imagine that the average income has risen (in real terms) from μ^1 in period 1 to μ^2 in period 2, and that the population has increased from n^1 in period 1 to n^2 in period 2. Assuming that the population is partitioned into some K mutually exclusive and exhaustive groups (such as on the basis of caste or occupation), we let μ_j^1 (respectively, μ_j^2) stand for the mean income of the jth group in period 1 (respectively, period 2), and n_j^1 (respectively, n_j^2) for the population size of the jth group in period 1 (respectively, period 2) ($j = 1,...,K$) . Also, let μ^{*1} designate the mean income of the richest group in period 1. Then, it can be verified through some straightforward calculations that the 'horizontal' analogues of the 'vertical' rules embodied in equations (1), (2) and (3) are given, respectively, by:

The Pareto-respecting proportionality rule:

$$\tilde{\mu}_j^2 = \mu_j^1 + \left[\left(\frac{\phi_j^1}{\phi_j^2}\right)\frac{(\mu^{*1} - \mu_j^1)}{(\mu^{*1} - \mu^1)}(\mu^2 - \Sigma_{k=1}^K \phi_k^2 \mu_k^1)\right] \text{ if } \mu^{*1} \geq \mu^2;$$

$$= \mu^2 \text{ , otherwise} \qquad (1')$$

where $\varphi_j^t (\equiv n_j^t / n^t)$ is the population share of group j in period t ($j = 1,...,K; t = 1,2$) .

The Pareto-respecting equal division rule:

$$\hat{\mu}_j^2 = \mu_j^1 + \mu^2 - \Sigma_{k=1}^K \phi_k^2 \mu_k^1 \qquad (2')$$

The Pareto-disrespecting equal division rule:

$$\bar{\mu}_j^2 = (n_j^1/n_j^2)\mu_j^1 + \mu^2 - (n_j^1/n_j^2)\mu^1. \qquad (3')$$

For both the vertical and the horizontal cases, the Pareto-respecting proportionality rule and the Pareto-disrespecting equal division rule have been dealt with here mainly for purposes of completeness of record. While we have employed the Indian data on consumption expenditure to work out the patterns of inclusive growth that would be dictated by each of the rules expressed in equations (1), (2), (3), $(1')$, $(2')$ and $(3')$, we shall, in this paper, report principally on the findings for the most conservatively egalitarian solution available, and as represented by the Pareto-respecting equal division rule of equations (2) and $(2')$. Since, to anticipate, the verdict on 'inclusiveness' is bad enough with the restricted criterion of equitableness that we employ, the picture can be only worse if we should resort to more liberal interpretations of equality-sensitivity. Accordingly, the results relating to the Pareto-respecting proportionality rule have been relegated to appendices, while those relating to the Pareto-disrespecting equal division rule are not reported at all in the paper.

Finally, it may be useful to emphasize the point that 'inclusiveness' in this paper is not assessed by a simple comparison of growth rates of mean income (of different income groups or of different social groups). Why such comparisons could be misleading is brought out in the following elementary example considered in Subramanian (2011). Imagine a two-person ordered income distribution which changes from (1,100) in period 1 to (2,105) in period 2. One might be tempted to the conclusion that the growth in income here has been highly

inclusive, inasmuch as the poorer person's income has grown by 100 per cent in period 2 vis-à-vis period 1, while the richer person's income has grown by only 5 per cent! However, such a conclusion obscures the fact that the high growth rate for the poorer person has been achieved on a very low base, while the low growth rate of the richer person has been achieved on a relatively very high base, so that, as it happens, of the total increase in income between periods 1 and 2, as much as $5/6^{th}$ has been appropriated by the richer person. At the heart of the issue is the distinction that was drawn by Kolm (1976a, 1976b) between two properties of an inequality measure—those of *scale invariance* (which Kolm associated with a 'right-wing' inclination) and *translation invariance* (which Kolm associated with a 'left-wing' inclination). Scale invariance requires that the value of an inequality measure should remain unchanged if all incomes in a distribution are scaled up or down by the same factor, while translation invariance requires that the value of an inequality measure should remain unchanged if all incomes are increased or decreased by the same amount. Thus, scale invariance takes a 'relative' view of inequality, while translation invariance takes an 'absolute' view.

Without necessarily discerning unqualified merit in the translation invariance property, this paper proceeds on the judgment that scale invariance has all too often been accepted as a perfectly reasonable and innocuous principle of inequality comparisons, which may well not be the case. In other words, and in the view advanced here, absolute differences in income *also* matter for an assessment of inequality: it may simply be biased to suggest that inequality in the two-person example just considered has unambiguously declined because the ratio of the richer person's income to the poorer person's income has declined from 100 in period 1 to 52.5 in period 2 when, as a matter of fact, the difference in the two persons' incomes has *increased* from 99 units of income in period 1 to 103 units in period 2. This is why relatively faster rates of increase in income of low income groups vis-à-vis high income groups are nevertheless compatible with a divergence in the absolute levels of income of the low income groups from those of richer groups. These considerations are incorporated in the empirical exercises that follow, and it is hoped that the underlying judgments on inclusiveness resorted to will be rendered transparent from the context of discussion.

3 Consumption growth and vertical inclusiveness in India

As stated earlier, our data on consumption expenditure are drawn from all the major ('thick') samples of the NSSO's publication 'Tables with Notes on Consumer Expenditure' between 1970-71 and 2009-10. From 1972-73 onward the survey on consumption expenditure has been published quinquennially, and the specific years for which we have data are 1970-71, 1972-73, 1977-78, 1983, 1987-88, 1993-94, 1999-2000, 2004-05 and 2009-10 (nine observations in all). Data on population are from the decennial census of India, and population figures for the inter-censal years have been obtained by applying the annual compound rate of growth of population derived from the figures for the base and terminal years of each relevant decennium. The major data sources employed for the analysis in this paper are listed in Appendix 1.

Table 1 presents basic information on population, mean consumption expenditure, and inequality in the distribution of consumption expenditure for the years of our study. To obtain consumption expenditure at constant prices, we have employed the Consumer Price Index of Agricultural Labourers (CPIAL) as the deflator in the rural areas, and the Consumer Price Index of Industrial Workers (CPIIW) in the urban areas. There has been a small but steady

increase in mean per capita consumption expenditure over the reference years of the study, in both the rural and the urban areas, with inequality, as measured by the Gini coefficient, displaying a sudden spurt in urban India in the 2000s—plausibly the result of a combination of liberalized economic policy and increases in government salaries following on the implementation of the recommendations of two Pay Commissions of the Indian government

Table 1: Data relating to population, mean consumption expenditure, and inequality in the distribution of consumption expenditure: 1970-71 to 2009-10

Year	Population (in 000s)		Mean consumption expenditure (INR), at constant (1960-61) prices		Gini coefficient of inequality in the distribution of consumption expenditure	
	Rural	Urban	Rural	Urban	Rural	Urban
1970-71	439046	109114	18.99	28.42	0.2889	0.3469
1972-73	454833	117716	19.55	30.64	0.3067	0.3446
1977-78	496830	142307	21.32	29.66	0.3420	0.3480
1983	543330	169693	22.87	30.29	0.3162	0.3392
1987-88	595213	198232	24.34	34.01	0.3016	0.3568
1993-94	660900	236233	24.51	39.37	0.2855	0.3442
1999-00	730353	278395	27.14	44.28	0.2630	0.3465
2004-05	777563	319532	28.31	44.88	0.3048	0.3759
2009-10	823566	366836	31.26	54.69	0.2992	0.3932

Note: Unless otherwise stated, all distributional computations in this paper, such as those relating to the Gini coefficient, quantile shares, and quantile mean expenditure levels have been performed by estimating the equation of the Lorenz curve from the relevant grouped NSSO data in terms of the so-called 'beta function' approach, as codified in a computer programme (POVCAL) for the World Bank by Chen, Datt and Ravallion (1991).

Source: (1) Population for the Census Years 1971, 1981 and 1991 is from: Census of India 1991, Series I: *Final Population Totals: Brief Analysis of Primary Census Abstract* ; population for the year 2001 is from: Census of India 2001, *Series 1: Final Population Totals*; and population for the year 2011 is from Census of India 2011, Provisional Population Totals, Paper2, Volume 1 of 2011, Rural-Urban Distribution, India-Series 1: Available at: http://www.censusindia.gov.in/2011-prov-results/paper2/prov_results_paper2_india.htm, Accessed on May 1, 2012. (2) Consumption expenditure data are from various reports listed in Appendix 1, sub-section 1. (3) Data on Consumer Price Indices are from sources listed in Appendix 1 for CPIAL and CPIIW.

Tables 2a and 2b present data for rural and urban India respectively on aspects of mean consumption expenditure, for each decile of the distribution, in each of the base and terminal years of our study, 1970-71 and 2009-10. One can see that in rural India, the shares in consumption expenditure of the poorest two deciles and of the richest decile have increased in 2009-10 vis-à-vis 1970-71, while the shares of deciles 4 through 9 have actually declined; in urban India, the shares of all but the richest two deciles have declined. Table 3 displays the annual compound rate of growth of each decile's mean income over the 39-year period from 1970-71 to 2009-10: in rural India, we have a declining profile of growth rates from deciles 1 through 8, while the richest decile has registered the highest growth rate; in the urban areas, we have a systematic increase in the annual growth rate as we travel up the decile ladder. In the rural areas, the ratio of the richest decile's mean income to that of the poorest decile increases from 6.07 in 1970-71 to 6.35 in 2009-10, and the corresponding increase, in the urban areas, is from 8.37 to 10.74. This suggests rising over-time disparity, which is much

Table 2a: Data on distribution of consumption expenditure in the base and terminal years, rural India

Decile	Share in consumption expenditure		Mean consumption expenditure at constant (1960-61) prices (INR)		Increase in mean consumption expenditure	Difference in mean consumption expenditure of the relevant decile and the next decile		Difference in mean consumption expenditure of the relevant declie and the richest decile	
	1970-71	2009-10	1970-71	2009-10	1970-71–2009-10	1970-71	2009-10	1970-71	2009-10
1	0.039	0.041	7.36	12.72	5.37	2.53	4.04	37.32	68.03
2	0.052	0.054	9.88	16.77	6.88	1.81	2.59	34.79	63.99
3	0.062	0.062	11.70	19.35	7.66	1.77	2.46	32.98	61.40
4	0.071	0.070	13.46	21.82	8.35	1.86	2.59	31.21	58.94
5	0.081	0.078	15.32	24.41	9.09	2.05	2.91	29.35	56.35
6	0.091	0.087	17.37	27.32	9.94	2.41	3.51	27.30	53.44
7	0.104	0.099	19.78	30.83	11.05	3.07	4.69	24.89	49.93
8	0.120	0.114	22.85	35.52	12.67	4.64	7.64	21.83	45.24
9	0.145	0.138	27.48	43.16	15.68	17.19	37.60	17.19	37.60
10	0.235	0.258	44.67	80.75	36.08	NA	NA	0.00	0.00

Source: Computed employing data: (1) for the year 1970-71 (1971) from: National Sample Survey, (Round 25, Report No. 231): *Tables with Notes on Consumer Expenditure*; and (2) for the year 2009-10 (2010) from: National Sample Survey, (Round 66, Report No. 538): *Level and Pattern of Consumer Expenditure 2009-10*.

more pronounced in urban than in rural India, although the information on decile shares and decile growth rates in the rural areas suggests some semblance of 'inclusiveness' of growth.[7] However, it is useful to remind oneself of the distinction, flagged in the previous section, between 'scale invariance' and 'translation invariance'. As Tables 2a and 2b indicate, (a) the absolute decile-wise increase in mean income from the base to the terminal years keeps systematically increasing with the decile in both the rural areas and the urban ones (and pronouncedly so in the latter); (b) for both rural and urban India, the difference in mean consumption as between successive deciles is systematically larger, for each pair of deciles, in the terminal year than in the base year; and (c) again, whether we consider the rural or the urban sector, the absolute gap between the mean income of the richest decile and that of each of the other deciles is systematically and substantially larger in the terminal year than in the base year. These findings are far from suggestive of any 'vertical inclusiveness' in India's consumption growth experience.

[7] For example, commenting on quintile shares in consumption expenditure at the all-India level over the period 1983-99, Bhalla (2003: 346) says 'The first poorest quintile shows the sharpest improvement, equivalent to a 6 per cent increase in its share, from 8.42 to 8.93 per cent.'

Table 2b: Data on distribution of consumption expenditure in the base and terminal years, urban India

Decile	Share in consumption expenditure		Mean consumption expenditure in constant, 1960-61, prices (INR)		Increase in mean consumption expenditure	Difference in mean consumption expenditure of the relevant decile and the next decile		Difference in mean consumption expenditure of the relevant declie and the richest decile	
	1971	2010	1971	2010	1971-2010	1971	2010	1971	2010
1	0.034	0.029	9.57	16.12	6.55	3.32	5.66	70.52	157.79
2	0.045	0.040	12.90	21.78	8.89	2.57	4.81	67.20	152.13
3	0.054	0.049	15.47	26.59	11.12	2.61	5.04	64.62	147.32
4	0.064	0.058	18.08	31.63	13.55	2.83	5.60	62.02	142.28
5	0.074	0.068	20.90	37.23	16.33	3.23	6.53	59.19	136.68
6	0.085	0.080	24.13	43.76	19.63	3.92	8.09	55.96	130.15
7	0.099	0.095	28.05	51.85	23.80	5.23	11.04	52.04	122.05
8	0.117	0.115	33.28	62.89	29.61	8.40	18.26	46.81	111.02
9	0.147	0.148	41.68	81.15	39.47	38.41	92.76	38.41	92.76
10	0.282	0.318	80.09	173.91	93.82	NA	NA	0.00	0.00

Source: As for Table 2a.

Table 3: Annual compound growth rates of actual real mean consumption expenditure for each decile between 1970-71 and 2009-2010

Decile	Growth rates of actual mean consumption expenditure (%)	
	Rural	Urban
1	1.42	1.35
2	1.36	1.35
3	1.30	1.40
4	1.25	1.45
5	1.20	1.49
6	1.17	1.54
7	1.15	1.59
8	1.14	1.65
9	1.16	1.72
10	1.53	2.01

Source: Based on numbers presented on mean consumption expenditure in the previous two tables.

Next, we look at information on the consumption expenditure of the bottom and top quintiles of the distribution. It may be mentioned here that Basu (2001, 2006) has persuasively advocated the employment of the average income of the bottom 20 per cent of a population—he calls this the 'quintile income'—as a useful summary indicator of an economy's development on the income front. Indeed, Subramanian (2009, 2011) suggests that the quintile income, subject to limitations, is a reasonable reflector of income poverty as such,

and not least in a situation where the 'identification' exercise of poverty measurement, entailing the specification of a poverty line level of income, is open to both arbitrariness and manipulation. In the present exercise, we assess the bottom and top quintile consumption levels as a means to verifying the 'inclusiveness' of the growth process.

For both the rural and the urban areas of the country, Table 4a presents, employing in turn each of the reference years of the study as a base year, information on both the actual mean consumption in the relevant base year and the warranted mean consumption in the terminal year, for each of the bottom and top quintiles. The warranted consumption level in the terminal year (2009-10) is computed as follows. Employing, say, 1970-71 as the base year and 2009-10 as the terminal year, one can compute the warranted mean income of the relevant quintile in the terminal year in terms of the 'Pareto-respecting equal division rule' reflected in equation (2) of the preceding section. The exercise can be repeated employing 1972-73 as the base year, and then 1977-78, and so on down the list, till we arrive at 2004-05.

Table 4a: Data on real mean consumption expenditure of the bottom and top quintiles under the 'Pareto-respecting equal division' rule

Period	Bottom Quintile				Top Quintile			
	actual mean consumption expenditure in the base year		warranted mean consumption expenditure in the terminal year		actual mean consumption expenditure in the base year		warranted mean consumption expenditure in the terminal year	
	rural	urban	rural	urban	rural	urban	rural	urban
1970-71–2009-10	8.62	11.24	20.90	37.51	36.08	60.89	48.35	87.16
1972-73-2009-10	8.51	11.97	20.22	36.02	38.62	65.08	50.34	89.13
1977-78-2009-10	9.05	11.53	19.00	36.55	45.99	63.56	55.93	88.59
1983-2009-10	9.51	12.27	19.24	36.66	42.17	64.02	51.90	88.42
1987-88-2009-10	11.17	13.17	18.09	33.85	48.16	74.30	55.08	94.98
1993-94-2009-10	11.74	15.49	18.49	30.81	46.95	83.61	53.70	98.93
1999-00-2009-10	13.71	17.38	17.82	27.79	49.50	94.52	53.61	104.93
2004-05-2009-10	13.28	16.10	16.24	25.92	56.86	101.09	59.81	110.91
Terminal Year	14.74	18.95	NA	NA	61.96	127.53	NA	NA

Source: Computed employing data from sources provided in Appendix 1.

Table 4a indicates that no matter which year we select as the base year, and for both the rural and the urban areas of the country, the actual mean consumption in the terminal year 2009-10 *always* falls short of the warranted mean consumption for the bottom quintile, and generally by more in the urban than in the rural areas. By contrast, for the top quintile, the ratio of the actual mean consumption to the warranted mean consumption in the terminal year 2009-10 is, irrespective of the base year employed, *always* greater than unity, and in general the ratio is larger for the urban than for the rural areas of the country. Notice also that, employing any given year in our data set as a base year and 2009-10 as the terminal year, it is possible to compute both the implied actual rate of growth of mean consumption from that year to 2009-10, and the rate of growth that would be warranted by implementation of the 'Pareto-respecting equal division' rule, and this can be done for each of the bottom and top quintiles in each of the rural and urban sectors of the country. The outcome of the exercise is presented

in the figures of Table 4b for each of the bottom and top quintiles. Table 4b indicates that the ratio of actual to warranted growth rates is systematically less than one for the bottom quintile (and substantially so in the urban areas), while for the top quintile the ratio is systematically greater than one (and substantially so, again, for the urban areas). Between them, Tables 4a and 4b are a poor advertisement for the 'inclusiveness' of consumption expenditure growth in India.

Table 4b: Data on actual and warranted growth rates of mean consumption expenditure for the bottom and top quintiles under the 'Pareto-respecting equal division' rule

Period	Bottom Quintile				Top Quintile			
	rural		urban		rural		urban	
	Actual	Warranted	Actual	Warranted	Actual	Warranted	Actual	Warranted
1970-71–2009-10	1.39	2.30	1.35	3.14	1.40	0.75	1.91	0.92
1972-73-2009-10	1.50	2.37	1.25	3.13	1.29	0.72	1.84	0.85
1977-78-2009-10	1.54	2.34	1.57	3.67	0.94	0.61	2.20	1.04
1983-2009-10	1.64	2.64	1.63	4.14	1.44	0.77	2.59	1.20
1987-88-2009-10	1.27	2.22	1.67	4.39	1.15	0.61	2.49	1.12
1993-94-2009-10	1.43	2.88	1.27	4.39	1.75	0.84	2.67	1.06
1999-00-2009-10	0.73	2.66	0.87	4.81	2.27	0.80	3.04	1.05
2004-05-2009-10	2.11	4.10	3.31	9.99	1.73	1.02	4.76	1.87

Ratio of actual to warranted growth rates of real mean consumption expenditure

	Bottom Quintile		Top Quintile	
	Rural	Urban	Rural	Urban
1970-71–2009-10	0.6035	0.4299	1.8522	2.0710
1972-73-2009-10	0.6324	0.4001	1.7889	2.1495
1977-78-2009-10	0.6555	0.4265	1.5251	2.1094
1983-2009-10	0.6192	0.3925	1.8595	2.1490
1987-88-2009-10	0.5728	0.3806	1.8816	2.2149
1993-94-2009-10	0.4975	0.2889	2.0734	2.5290
1999-00-2009-10	0.2756	0.1806	2.8294	2.8954
2004-05-2009-10	0.5150	0.3315	1.7016	2.5422

Source: Computations based on numbers presented in the previous table

The annual compound rate of growth, over the 39-year period between 1970-71 and 2009-10, at which the base-year expenditure level would have to grow in order to achieve the terminal-year warranted expenditure level can now be calculated. Application of this 'warranted' rate of growth to the relevant quintile in any particular year between 1970-71 and 2009-10 will then yield the 'warranted' mean consumption expenditure level for that year. We already have information on the actual mean consumption in each year, so it is a simple matter to generate a series on the ratio of the actual to the warranted mean consumption level, in each year, for each of the bottom and the top quintiles, and for each of the rural and the urban sectors of the economy. The relevant information is provided in Tables 5a and 5b. Tables 5a and 5b suggest that, for the bottom 20 per cent of the population in the rural areas, the ratio of

actual to warranted mean consumption is systematically less than unity, while the same ratio, for the top 20 per cent of the population is systematically in excess of unity. A similar pattern (discounting three early years when the ratio is a little below one) is observed for the urban areas. The ratios, plotted over time, present a clear visual image of the poor record of inclusiveness in growth that has obtained in India: this is reflected in, broadly speaking, a picture of a diverging fork, with the upper branch of the fork (representing the top quintile) generally lying above the unit line, and the lower branch (representing the bottom quintile) lying below the unit line: see Figures 1a and 1b.

Table 5a: Data for the bottom quintile on the actual and warranted real mean consumption expenditure levels under the 'Pareto-respecting equal division' rule for the period 1970-71–2009-10

	Bottom Quintile					
	rural			urban		
Year	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure
1970-71	8.62	8.62	1.00	11.24	11.24	1.00
1972-73	8.51	9.02	0.94	11.97	11.95	1.00
1977-78	9.05	10.10	0.90	11.53	13.95	0.83
1983	9.51	11.32	0.84	12.27	16.28	0.75
1987-88	11.17	12.68	0.88	13.17	19.00	0.69
1993-94	11.74	14.53	0.81	15.49	22.87	0.68
1999-2000	13.71	16.65	0.82	17.38	27.54	0.63
2004-05	13.28	18.65	0.71	16.10	32.14	0.50
2009-10	14.74	20.90	0.71	18.95	37.51	0.51

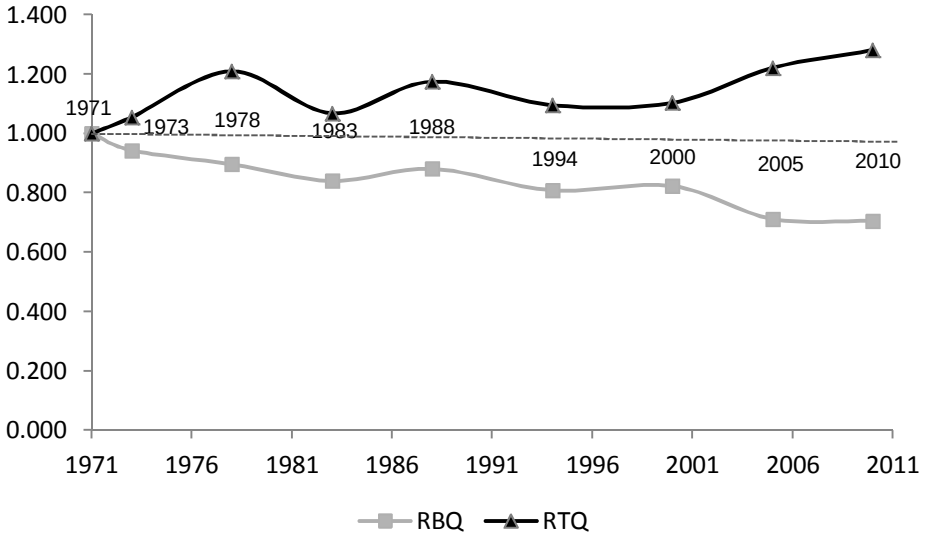
Source: As for Table 4a.

Table 5b: Data for the top quintile on the actual and warranted real mean consumption expenditure levels under the 'Pareto-respecting equal division' rule for the period 1970-71-2009-10

	Top Quintile					
	Rural			Urban		
Year	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure
1970-71	36.08	36.08	1.00	60.89	60.89	1.00
1972-73	38.62	36.62	1.06	65.08	62.02	1.05
1977-78	45.99	38.02	1.21	63.56	64.94	0.98
1983	42.17	39.48	1.07	64.02	67.99	0.94
1987-88	48.16	40.99	1.18	74.30	71.19	1.04
1993-94	46.95	42.88	1.10	83.61	75.23	1.11
1999-2000	49.50	44.86	1.10	94.52	79.50	1.19
2004-2005	56.86	46.57	1.22	101.09	83.24	1.21
2009-2010	61.96	48.35	1.28	127.53	87.16	1.46

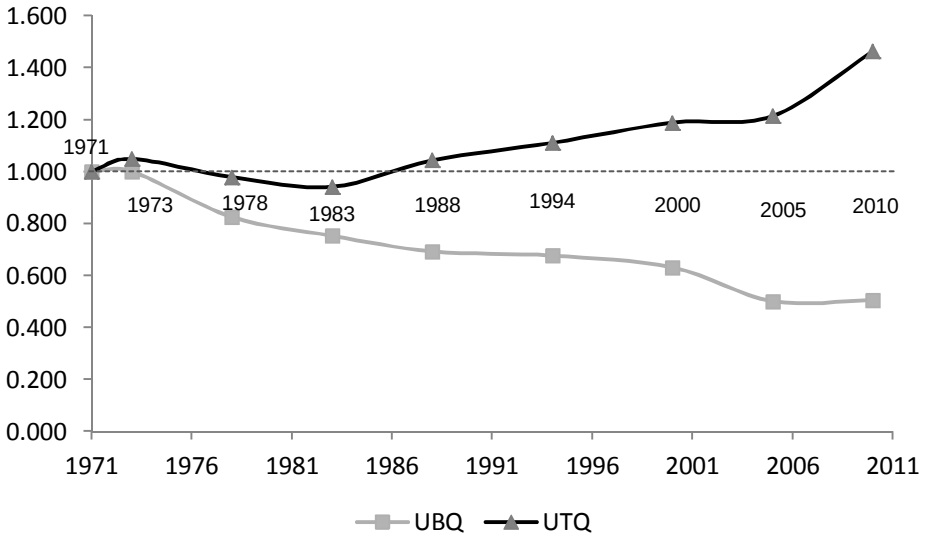
Source: As for Table 4a.

Figure 1a: Curves of the ratios of actual to warranted mean consumption expenditure of the bottom and top quintiles of rural India under the 'Pareto-respecting equal division' rule



Note: RBQ and RTQ respectively stand for 'rural bottom quintile' and 'rural top quintile'.
Source: authors' illustration.

Figure 1b: Curves of the ratios of actual to warranted real mean consumption expenditure of the bottom and top quintiles of urban India under the 'Pareto-respecting equal division' rule



Note: UBQ and UTQ respectively stand for 'urban bottom quintile' and 'urban top quintile'.
Source: authors' illustration.

Corresponding precisely to Tables 5a and 5b are Tables 6a and 6b which provide information on actual and warranted mean consumption expenditure levels not for the bottom and top *quintiles* but for the bottom and top *halves* of the distribution: the over-time ratios of the actual mean consumption to the warranted mean consumption are plotted both for the below-median population and the above-median population, in the rural and urban areas respectively, in Figures 2a and 2b. The numbers in the tables, and the accompanying figures, offer a perspective—depending on whether one is looking up from below the unit line or looking down from above the unit line—on how the other half, over time, has been thriving or diving.

For purposes of completeness of record, we also provide information on and visual representation of the actual and warranted mean consumption outcomes that obtain if one were to implement a 'Pareto-Respecting Proportionality Rule' of the type formalized in equation (1). So as not clutter up the text we relegate this material to Appendix 2 of the paper. Appendix Tables 1a and 1b correspond to Tables 5a and 5b in the text, Appendix Figures 1a and 1b correspond to Figures 1a and 1b in the text, Appendix Tables 2a and 2b correspond to Tables 6a and 6b in the text, and Appendix Figures 2a and 2b correspond to Figures 2a and 2b in the text. We only need to remember that the analysis in the Appendix differs from what we have just undertaken in the text in the matter of the allocation rule employed: the relevant rule is the 'Pareto-Respecting Equal Division (PRED) Rule' in the text, and the 'Pareto-Respecting Proportionality (PRP) Rule' in the Appendix. The only additional commentary warranted by the Appendix is that, as one might expect, the poorer quantiles invariably fare relatively worse, and the richer quantiles invariably fare relatively better, under the PRP rule than under the PRED rule: if the picture on 'inclusiveness' of growth is bad enough under the PRED rule, it is even worse under the PRP rule.

Table 6a: Data for the bottom half on the actual and warranted real mean consumption expenditure levels under the 'Pareto-respecting equal division' rule for the period 1970-71–2009-10

Year	Below Median Population					
	Rural			Urban		
	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure
1970-71	11.54	11.54	1.00	15.38	15.38	1.00
1972-73	11.52	11.98	0.96	16.61	16.19	1.03
1977-78	11.98	13.15	0.91	16.06	18.40	0.87
1983	12.80	14.43	0.89	16.72	20.90	0.80
1987-88	14.63	15.83	0.93	18.00	23.75	0.76
1993-94	15.21	17.70	0.86	21.32	27.68	0.77
1999-2000	17.50	19.78	0.89	23.83	32.27	0.74
2004-05	17.04	21.71	0.79	22.63	36.66	0.62
2009-10	19.01	23.82	0.80	26.67	41.66	0.64

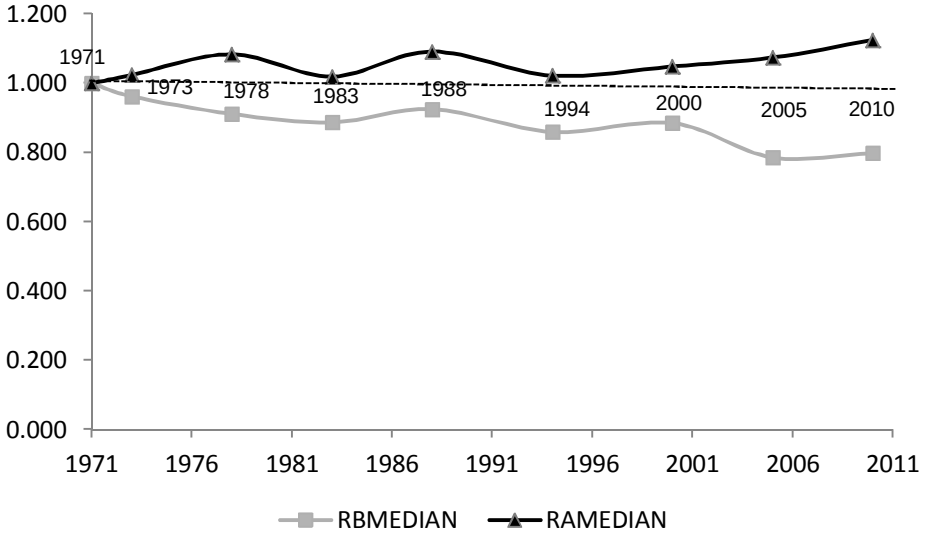
Source: As in Table 4a.

Table 6b: Data for the top half on the actual and warranted real mean consumption expenditure levels under the 'Pareto-respecting equal division' rule for the period 1970-71–2009-10

Year	Above Median Population					
	Rural			Urban		
	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure
1970-71	26.43	26.43	1.00	41.45	41.45	1.00
1972-73	27.57	26.95	1.02	44.67	42.51	1.05
1977-78	30.66	28.30	1.08	43.27	45.27	0.96
1983	30.28	29.72	1.02	43.87	48.21	0.91
1987-88	34.05	31.21	1.02	50.02	51.34	0.97
1993-94	33.82	33.10	1.02	57.42	55.37	1.04
1999-2000	36.79	35.10	1.05	64.73	59.71	1.08
2004-05	39.58	36.86	1.07	67.12	63.59	1.06
2009-10	43.51	38.71	1.12	82.71	67.72	1.22

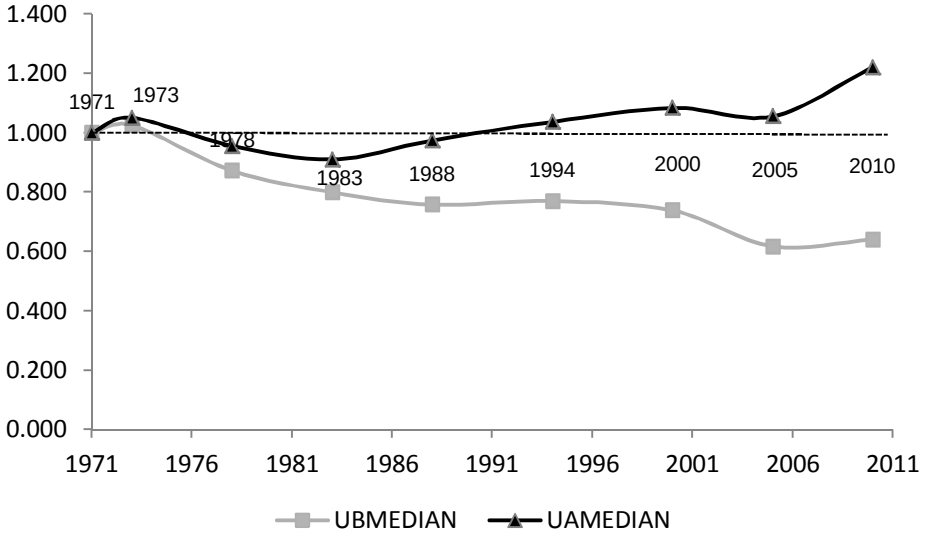
Source: As for Table 4a.

Figure 2a: Curves of the ratios of actual to warranted real mean consumption expenditure of the bottom and top halves of rural india under the 'Pareto-inclusive equal division' rule



Note: RBMEDIAN and RAMEDIAN respectively stand for 'rural below median' and 'rural above median'.
Source: authors' illustration.

Figure 2b: Curves of the ratios of actual to warranted real mean consumption expenditure of the bottom and top halves of urban india under the 'Pareto-inclusive equal division' rule



Note: UBMEDIAN and UAMEDIAN respectively stand for 'urban below median' and 'urban above median'.
Source: authors' illustration.

In wrapping up the discussion on vertical inclusiveness, it is useful to try and obtain an overall summary perspective on the issue by contrasting the actual nature of growth that has occurred between the base year 1970-71 and the terminal year 2009-10 with the differing benchmarks of inclusiveness yielded by application of the lexicographic maximin (LMM) rule, the Pareto-respecting proportionality (PRP) rule, and the Pareto-respecting equal division (PRED) rule. A means to this end is described in what follows.

Using the notation employed earlier (and therefore the superscripts 1 and 2 to designate the base year 1970-71 and the terminal year 2009-10 respectively), we first recall how the product of growth between the base and terminal years, represented by $\Delta \equiv n^2(\mu^2 - \mu^1)$, should be allocated amongst the various deciles in the terminal year, under each allocation rule in turn. Let us say Δ_i^k is the amount out of Δ that must be allocated to the *i*th poorest decile $(i = 1,...,10)$ under rule *k*, where, of course, *k* can assume one of three values, LMM, PRP and PRED. We first consider allocation under the LMM rule. Suppose we need to equalize the mean incomes of some *m* poorest deciles under the LMM rule. Let x^* be the common level of income to which the mean income of each decile not exceeding the *m*th decile is raised. Then, it is clear that, for the LMM rule to be met, *m* and x^* must be chosen in such a way that the following equation is satisfied: $\Sigma_{i=1}^{m}(x^* - \mu_i^1) = \Delta$. One solves for *m* and x^* heuristically, and once the solution has been obtained, it is straightforward to note that the required LMM allocation pattern is given by:

$$\Delta_i^{LMM} = (n^2/10)(x^* - \mu_i^1), i = 1,...,m;$$
$$= 0, \text{ if } i > m \qquad (4)$$

The share s_i^{LMM} in Δ of the *i*th poorest decile is then just Δ_i^{LMM}/Δ if $i \le m$ and zero otherwise. Once the decile-wise shares have been worked out, so can the cumulative shares—call them the c_i^{LMM} $(\equiv \Sigma_{j=1}^{i} s_j^{LMM})$—be computed.

From equations (1) and (2) respectively, we already know that:

$$\Delta_i^{PRP} = (1/10)\frac{(\mu_{10}^1 - \mu_i^1)}{(\mu_{10}^1 - \mu^1)}\Delta, i = 1,...,10 \qquad (5)$$

and

$$\Delta_i^{PRED} = (1/10)\Delta, i = 1,...,10 \qquad (6)$$

whence

$s_i^{PRP} = \Delta_i^{PRP}/\Delta$ and $s_i^{PRED} = \Delta_i^{PRED}/\Delta, i = 1,...,10$. Once more, the cumulative shares under each of the allocation rules PRP and PRED, c_i^{PRP} and c_i^{PRED}, respectively, can be worked out.

Finally, note that the *actual* Δ_i out of Δ that goes to the *i*th poorest decile is given by:

$$\Delta_i = (1/10)\frac{(\mu_i^2 - \mu_i^1)}{(\mu^2 - \mu^1)}\Delta \qquad (7)$$

so that the actual share of Δ received by the *i*th poorest decile is $s_i \equiv \Delta_i/\Delta, i = 1,...,10$. The corresponding actual cumulative share for the *i*th decile, c_i, is easily computed.

From the relevant data which are provided in Tables 1, 2a and 2b, it is now a routine matter to generates Tables 7a and 7b. Table 7a presents information, relating to rural India, on the warranted cumulative expenditure shares c_i^{LMM}, c_i^{PRP} and c_i^{PRED}, as well as the actual

cumulative expenditure shares c_i, for each decile of the population. Table 7b presents the same data for the urban areas of the country.

One can now plot the various cumulative expenditure shares against the cumulative population shares (arranged in ascending order of expenditure) in the unit square to obtain 'Lorenz-like' curves that reveal something about the inclusiveness of the growth process. We shall call these curves 'inclusiveness curves'. Specifically, notice that the LMM and the PRP are *progressive* schemes of allocation, in which the share of the product of growth assigned to any decile is larger the poorer the decile is—with, of course, the lexicographic maximin solution being more progressive than the proportionality solution. The PRED solution is *neutral*, being neither progressive nor regressive. For any *progressive* scheme of allocation, we should expect the plot of the cumulative expenditure shares against the cumulative population shares to lie *above* the diagonal of the unit square; for any *neutral* scheme, we should expect the plot to *coincide with* the diagonal; and for any *regressive* scheme, we should expect the plot to lie everywhere *below* the diagonal.

Table 7a: Co-ordinates of the inclusiveness curves for growth from 1970-71 to 2009-10: decile-wise cumulative expenditure shares, warranted and actual, in 2009-10, rural India

Decile	Cumulative decile share of expenditure warranted under the LMM rule	Cumulative decile share of expenditure warranted under the PRP rule	Cumulative decile share of expenditure warranted under the PRED rule	Cumulative actual decile share of expenditure
1	0.1827	0.1453	0.1000	0.0438
2	0.3447	0.2808	0.2000	0.0999
3	0.4919	0.4049	0.3000	0.1623
4	0.6247	0.5268	0.4000	0.2304
5	0.7424	0.6411	0.5000	0.3045
6	0.8434	0.7474	0.6000	0.3850
7	0.9247	0.8443	0.7000	0.4751
8	0.9810	0.9293	0.8000	0.5784
9	1.0000	1.0000	0.9000	0.7062
10	1.0000	1.0000	1.0000	1.0000

Note: The 'LMM Rule' is the Lexicographic Maximin Rule; the 'PRP Rule' is the Pareto-Respecting Proportionality Rule; and the 'PRED Rule' is the Pareto-Respecting Equal Division Rule. The relevant decile-wise cumulative expenditure shares have been worked out from application of equations (4), (5), (6) and (7). Under the LMM rule, it turns out that the mean consumption levels of the first nine deciles have to be raised to the common level of Rs. 29.76, with the richest decile receiving no allocation, that is, in terms of the symbols employed earlier, $m = 9$ and $x^* = 29.76$.

Source: Computations based on data in Tables 1 and 2a.

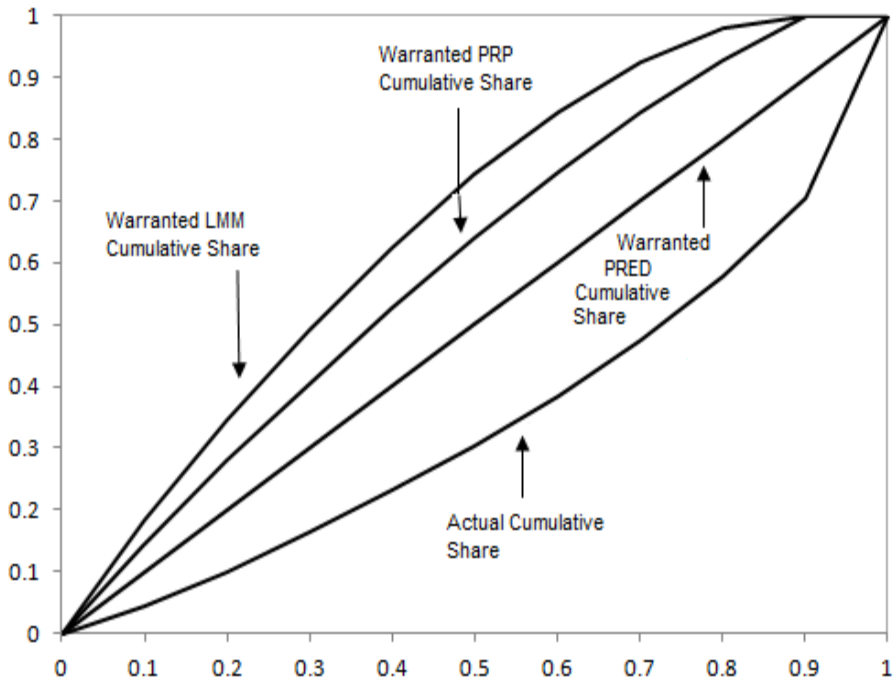
Table 7b: Co-ordinates of the inclusiveness curves for growth from 1970-71 to 2009-10: decile-wise cumulative expenditure shares, warranted and actual, in 2009-10, urban India

Decile	Cumulative decile share of expenditure warranted under the LMM rule	Cumulative decile share of expenditure warranted under the PRP rule	Cumulative decile share of expenditure warranted under the PRED rule	Cumulative actual decile share of expenditure
1	0.1610	0.1365	0.1000	0.0249
2	0.3093	0.2666	0.2000	0.0587
3	0.4478	0.3987	0.3000	0.1010
4	0.5764	0.5117	0.4000	0.1526
5	0.6943	0.6263	0.5000	0.2148
6	0.7999	0.7346	0.6000	0.2895
7	0.8905	0.8353	0.7000	0.3801
8	0.9612	0.9259	0.8000	0.4928
9	1.0000	1.0000	0.9000	0.6430
10	1.0000	1.0000	1.0000	1.0000

Note: The 'LMM Rule' is the Lexicographic Maximin Rule; the 'PRP Rule' is the Pareto-Respecting Proportionality Rule; and the 'PRED Rule' is the Pareto-Respecting Equal Division Rule. The relevant decile-wise cumulative expenditure shares have been worked out from application of equations (4), (5), (6) and (7). Under the LMM rule, it turns out that the mean consumption levels of the first nine deciles have to be raised to the common level of Rs. 51.86, with the richest decile receiving no allocation, that is, in terms of the symbols employed earlier, $m = 9$ and $x^* = 51.86$.

Source: Computations based on data in Tables 1 and 2b.

Figure 3a: Inclusiveness curves obtained from plotting the co-ordinates in Table 7a (India: rural, 1970-71–2009-10)

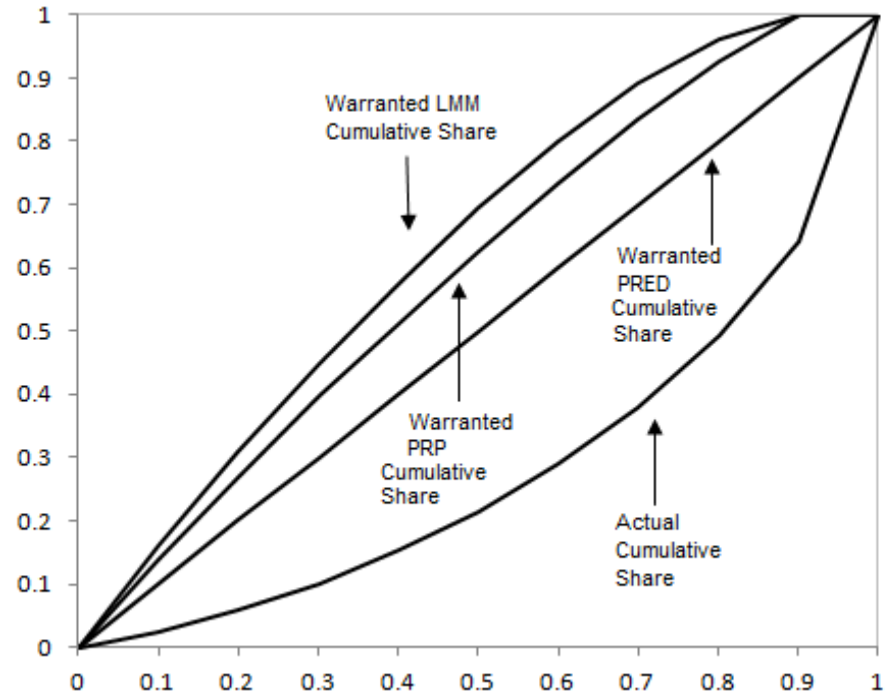


Source: authors' illustration.

The 'warranted' inclusiveness curves plotted in Figures 3a and 3b from the data in Tables 7a and 7b respectively are essentially benchmarks or standards of different orders of

progressivity or inclusiveness. As each of Figures 3a and 3b reveals, the actual inclusiveness curve generated by our data lies uniformly below the diagonal; and a visual picture is available of the fact that it falls very far short of the relatively very progressive LMM-warranted inclusiveness curve; less far short of the relatively progressive PRP-warranted curve; and, disappointingly, far enough below even the undemandingly neutral PRED curve. The actual inclusiveness curve is more distant from its benchmark models in the urban areas than in the rural areas.

Figure 3b: Inclusiveness curves obtained from plotting the co-ordinates in Table 7b (India: urban, 1970-71–2009-10)



Source: authors' illustration.

Just as one calculates the standard Gini coefficient of inequality, one can compute a normalized 'coefficient of non-inclusiveness' (lying between zero and one), as the ratio of the area between the actual inclusiveness curve and the benchmark inclusiveness curve to the area beneath the benchmark curve.[8] When the benchmark is yielded by the PRED rule, it turns out that the coefficient of non-inclusiveness for the rural areas is 0.30 and that for the urban areas is 0.43; when the benchmark is yielded by the PRP rule, the corresponding figures for the rural and urban areas are 0.46 and 0.55 respectively; and when the benchmark is yielded by the LMM rule, the rural and urban non-inclusiveness coefficients turn to be, respectively, 0.51 and 0.58. One must conclude that the record of growth, from the perspective of 'vertical inclusiveness', has been regressive and exclusionary rather than equalizing and pro-poor: what trickle-down there has been has been distinctly trickly.

[8] A simple means to this end is via the standard 'trapezoidal approximation method', to which we have resorted.

4 Consumption growth and horizontal inclusiveness in India

In this section we shall consider how inclusive or otherwise the growth process has been with respect to groupings of the population by caste and by occupation. The information on consumption expenditure by caste and by occupation (or 'household type', as occupational groups—based on 'sources of income for livelihood'—are referred to in the official data sources) has been obtained from the detailed household-level micro-data compiled by the National Sample Survey Office and made available on compact discs. For caste, we employ data over a 27-year period, covering six data points in the time series: 1983, 1987-88, 1993-94, 1999-2000, 2004-05 and 2009-10; for occupations, we have a 22-year period covering the last five data points just listed.

In the matter of caste as well as occupation, we shall consider two broad groupings of the population, in each of the rural and urban areas of the country. The caste groups we shall employ are those constituted by the scheduled castes and scheduled tribes (SCST) and the 'others' (a category which includes the so-called 'other backward classes' and the 'forward castes'). The occupation groups we shall consider are constituted by 'labour' (composed of agricultural and 'other' labour in the rural areas, and casual labour in the urban areas), and 'other occupational groups' (a category that includes the self-employed in agriculture and non-agriculture and 'other sources of livelihood' in the rural areas, and the self-employed, the regular wage/salaried occupations and 'other sources of livelihood' in the urban areas). Our group categories are no doubt somewhat coarse, but this fact also carries with it the advantage of a certain clarity that becomes available from employing dichotomously classified divisions.

We consider caste first. Table 8 presents some basic information on levels of consumption expenditure and the relative sizes of population for the SCST and 'others' groups, in each of the rural and urban areas of the country. Tables 9a and 9b present some statistics on 'inclusiveness' based on the data available in Table 8, for rural and urban India respectively. Given any pair of base and terminal years, Equation (2') provides the formula for the caste-wise mean expenditure in the terminal year that would be warranted by an application of the Pareto-Respecting Equal Division (PRED) rule to the product of growth between the base and terminal years. By shifting the base year forward sequentially from 1983 to 1987-88, 1993-94, 1999-2000 and 2004-05, while keeping the terminal year fixed at 2009-10, one can compute the terminal year's caste-specific warranted mean consumption level for each corresponding base year, as is done in Tables 9a and 9b for the rural and urban areas respectively. Given the actual mean consumption level in each of the base and terminal years, as well as the warranted mean consumption in the terminal year, one can work out the actual and the warranted caste-specific annual compound rates of growth, both actual and warranted, relevant for each base year in the series.

Table 8: Real mean consumption expenditure and population shares for a grouping of the population based on caste: rural and urban India

Year	Mean consumption expenditure in INR (1960-61 prices)			Population Share		
	All castes	Scheduled caste and tribes (SCST)	'Others'	SCST	others	all castes
Rural India						
1983	21.26	17.37	22.79	0.282	0.718	1.000
1987-88	24.26	20.03	26.02	0.293	0.707	1.000
1993-94	24.53	20.70	26.33	0.319	0.681	1.000
1999-2000	27.12	22.77	29.06	0.309	0.691	1.000
2004-05	28.27	23.19	30.60	0.315	0.685	1.000
2009-10	31.29	26.36	33.71	0.330	0.670	1.000
Urban India						
1983	29.80	23.51	30.89	0.148	0.852	1.000
1987-88	33.39	25.66	34.80	0.154	0.846	1.000
1993-94	39.37	30.03	41.29	0.171	0.829	1.000
1999-2000	44.28	32.35	46.85	0.178	0.822	1.000
2004-05	44.87	33.00	47.58	0.186	0.814	1.000
2009-10	54.71	40.99	57.83	0.185	0.815	1.000

Source: Computed Employing Unit Level Data, from Schedule 1.0 on Consumption Expenditure, available on CD-ROM, for the NSS 38th, 43rd , 50th, 55th, 61st, and 66th Rounds.

In rural India, we find from Table 9a that except when the base year is 2004-05, the ratios of actual to warranted growth rates for the SCST group are systematically less than unity, and the corresponding ratios for the 'Others' group are systematically in excess of unity. Table 9b suggests that for the urban areas, no matter which year is employed as the base year, the ratio of the actual to the warranted growth rate is always less than one for the SCST group, and always greater than one for the 'Others' group. The shortfalls for the Scheduled Castes and Tribes are in general worse in urban India than in rural India. These trends suggest little in the way of caste-related inclusiveness in the growth process.

Table 9a: Data on actual and warranted growth rates of real mean consumption expenditure for the scst and 'others' caste groups under the 'Pareto-respecting equal division' rule: rural India

Period	Scheduled Castes and Tribes		Others	
	actual mean consumption expenditure in the base year	warranted mean consumption expenditure in the terminal year	actual mean consumption expenditure in the base year	warranted mean consumption expenditure in the terminal year
1983—2009-10	17.37	27.65	22.79	33.08
1987-88-2009-10	20.03	27.28	26.02	33.26
1993-94-2009-10	20.70	27.51	26.33	33.15
1999-2000-2009-10	22.77	27.07	29.06	33.36
2004-05-2009-10	23.19	26.32	30.60	33.73
Growth rates of mean consumption expenditure (%)				
	Actual	Warranted	Actual	Warranted
1983-2009-10	1.56	1.74	1.46	1.39
1987-88-2009-10	1.26	1.41	1.19	1.12
1993-94-2009-10	1.53	1.80	1.56	1.45
1999-2000-2009-10	1.48	1.75	1.50	1.39
2004-05-2009-10	2.60	2.57	1.96	1.97
Ratio of actual to warranted growth rate				
1983-2009-10	0.90		1.05	
1987-88-2009-10	0.89		1.06	
1993-94-2009-10	0.85		1.07	
1999-2000-2009-10	0.85		1.08	
2004-05-2009-10	1.01		0.99	

Source: As for Table 8.

Table 9b: Data on actual and warranted growth rates of real mean consumption expenditure for the scst and 'others' caste groups under the 'Pareto-respecting equal division' rule: urban India

Period	Scheduled Castes and Tribes		Others	
	actual mean consumption expenditure in the base year	warranted mean consumption expenditure in the terminal year	actual mean consumption expenditure in the base year	warranted mean consumption expenditure in the terminal year
1983-2009-10	23.51	48.70	30.89	55.88
1987-88-2009-10	25.66	47.27	34.80	56.40
1993-94-2009-10	30.03	45.54	41.29	56.80
1999-2000-2009-10	32.35	42.89	46.85	57.40
2004-05-2009-10	33.00	42.84	47.58	57.41
Growth rates of mean consumption expenditure (%)				
	Actual	Warranted	Actual	Warranted
1983-2009-10	2.08	2.73	2.35	2.23
1987-88-2009-10	2.15	2.82	2.34	2.22
1993-94-2009-10	1.96	2.64	2.13	2.01
1999-2000-2009-10	2.40	2.86	2.13	2.05
2004-05-2009-10	4.43	5.35	3.98	3.83
Ratio of actual to warranted growth rate				
1983-2009-10	0.76		1.05	
1987-88-2009-10	0.76		1.05	
1993-94-2009-10	0.75		1.06	
1999-2000-2009-10	0.84		1.04	
2004-05-2009-10	0.83		1.04	

Source: As for Table 8.

In a dynamic context, 'inclusiveness' must be expected to reflect a time-profile of improving *relative* achievement of the initially worse-off group vis-à-vis the initially better-off group. Tables 10a and 10b present a picture of this dimension of inclusiveness (or the want of it) for each of the rural and urban areas of the country. Employing 1983 as the base year and 2009-10 as the terminal year, one can, for this 27-year period, work out the caste-specific mean consumption levels that would be warranted by application of the PRED rule. Given the base year actual and the terminal year warranted mean consumption levels, one can infer the annual compound rate of growth, for each caste-group, that would be dictated by the PRED rule. Employing these warranted growth rates, one can deduce the warranted mean consumption levels, for each caste group, for each of the data points in our series: 1983, 1987-88, 1993-94, 1999-2000, 2004-05 and 2009-10. It is now a simple matter to compare the time-profile of the ratio of the SCST warranted mean consumption to the 'Others' warranted mean consumption. Call this the 'warranted ratio of means'. We already have data, from Table 8, on the actual mean consumption levels for each caste-group for each year of our series. Call the ratio of the SCST actual mean consumption to the 'Others' mean consumption in any year the 'actual ratio of means'.

Tables 10a and 10b juxtapose the time-profile of the actual ratio of means with the time-profile of the warranted ratio of means. The evidence is telling: the actual ratio of means is never greater, and frequently less, than the warranted ratio. As observed earlier, in any inter-temporal setting, the term 'inclusiveness' must be expected to carry some connotation of a catching-up between unequals. The last three columns of Tables 10a and 10b reveal how poorly, in the caste context, this requirement of inclusiveness has been served in India. The last-but-two columns of the two tables in question reflect at least two salient features of the caste-related pattern of India's consumption growth experience. The first feature, which is captured in the statistic called the 'warranted ratio of means', points to really how modest the demands of the PRED rule are from a dynamically relativistic perspective: all that the latter requires is that the low initial (1983) proportion of 76 per cent which the SCST mean consumption bears to the 'Others' mean consumption, in both rural and urban India, needs to increase by just 6 (respectively, 11) per cent points to 82 (respectively, 87) per cent in the rural (respectively, urban) areas, over the 27-year period terminating in 2009-10. The second feature, captured in the statistic called the 'actual ratio of means', indicates that the actual outcome, in this regard, has been even *more* modest than the already modest objective dictated by the PRED rule. The picture that emerges is one of a niggardly achievement that has succeeded in falling short of a modestly-stipulated ambition: this is captured by the

Table 10a: Ratios of caste-wise real warranted means and caste-wise real actual means under the 'Pareto-respecting equal division' rule over 1983 to 2009-10: rural India

Year	SCST actual mean consumption	SCST warranted mean consumption	'Others' actual mean consumption	'Others' warranted mean consumption	Warranted ratio of means (ratio of warranted scst means to warranted 'others' means)	Actual ratio of means (ratio of actual scst means to actual 'others' means)	Ratio of ratios (actual ratio of means /warranted ratio of means)
1983	17.37	17.37	22.79	22.79	0.76	0.76	1.00
1987-88	20.03	18.93	26.02	24.51	0.77	0.77	1.00
1993-94	20.70	20.99	26.33	26.74	0.79	0.79	1.00
1999-2000	22.77	23.27	29.06	29.16	0.80	0.78	0.98
2004-05	23.19	25.37	30.60	31.36	0.81	0.76	0.94
2009-10	26.36	27.65	33.71	33.71	0.82	0.78	0.95

Source: As for Table 8.

Table 10b: Ratios of caste-wise real warranted means and caste-wise real actual means under the 'pareto-respecting equal division' rule over 1983 to 2009-10: urban India

Year	SCST actual mean consumption	SCST warranted mean consumption	'Others' actual mean consumption	'Others' warranted mean consumption	Warranted ratio of means (ratio of warranted scst means to warranted 'others' means)	Actual ratio of means (ratio of actual scst means to actual 'others' means)	Ratio of ratios (actual ratio of means /warranted ratio of means)
1983	23.51	23.51	30.89	30.89	0.76	0.76	1.00
1987-88	25.66	26.91	34.80	34.50	0.78	0.74	0.95
1993-94	30.03	31.63	41.29	39.39	0.80	0.73	0.91
1999-2000	32.35	37.19	46.85	44.97	0.83	0.69	0.83
2004-05	33.00	42.56	47.58	50.22	0.85	0.69	0.81
2009-10	40.99	48.70	57.83	55.88	0.87	0.71	0.82

Source: As for Table 8.

statistic, in the last column of each of Tables 10a and 10b, called the 'ratio of ratios', viz. the ratio of the 'actual ratio of means' to the 'warranted ratio of means'. This time-series of ratios, which is bad enough for rural India, is even worse for urban India. When the ambition with respect to 'inclusiveness' is more demanding—such as would be the case with respect to a 'Pareto-Respecting Proportionality (PRP)' rule—the contrast between the real and desired situations becomes even starker: the statistic called the 'ratio of ratios' becomes significantly smaller than the numbers reported in the last column of each of Tables 10a and 10b.[9]

We turn, finally, to the results on inclusiveness with respect to occupational groups. Our resort to commentary here will be extremely brief. Table 11 for occupational groups corresponds exactly with Table 8 for caste groups; Tables 12a and 12b correspond to Tables 9a and 9b respectively; and Tables 13a and 13b correspond to Tables 10a and 10b respectively. With 'labour' replacing 'scheduled castes and tribes', and 'other occupational groups' replacing 'other caste groups', all the observations made earlier about inclusiveness of the growth process with respect to caste carry over, *mutatis mutandis*, to inclusiveness of the growth process with respect to occupation. Tables 12a, 12b, 13a and 13b speak plainly for themselves; and the relative exclusion, from the fruits of growth, of those whose livelihood depends on the use of their labour-power, vis-à-vis other occupations, has been at least as severe as the relative exclusion of the historically disadvantaged castes vis-à-vis the historically advantaged castes.

9 The results of this exercise, which are not reported here, are available from the authors on request.

Table 11: Real mean consumption expenditure and population shares for a grouping of the population based on occupational categories or 'sources of income for survival': rural and urban India

Rural India						
	Mean consumption expenditure (in rupees at 1960-61 prices)			Population share		
Year	All occupation groups	Labour (agricultural and 'other' labour)	'Other' occupational groups (self-employed in agriculture and non-agriculture, and 'other sources of livelihood')	Labour (agricultural and 'other' labour)	'Other' occupational groups (self-employed in agriculture and non-agriculture, and 'other sources of livelihood')	All occupation groups
1987-88	24.26	19.49	26.97	0.362	0.638	1.000
1993-94	24.53	19.86	27.04	0.349	0.651	1.000
1999-00	27.12	22.45	30.04	0.385	0.615	1.000
2004-05	28.27	22.59	31.37	0.353	0.647	1.000
2009-10	31.29	31.29	25.87	0.398	0.602	1.000
urban india						
	Mean consumption expenditure (in rupees at 1960-61 prices)			Population share		
Year	All occupation groups	Casual labour	'Other' occupational groups (self-employed, regular wage/salaried occupations, and 'other sources of livelihood')	Casual labour	'Other' occupational groups (self-employed, regular wage/salaried occupations, and 'other sources of livelihood')	All occupation groups
1987-88	33.39	20.45	35.17	0.121	0.879	1.000
1993-94	39.37	23.81	41.70	0.128	0.871	1.000
1999-00	44.28	28.01	47.05	0.143	0.856	1.000
2004-05	44.87	24.72	47.59	0.117	0.882	1.000
2009-10	54.71	30.45	58.76	0.141	0.858	1.000

Note: In the rural areas, the population share of the worst-off group (in terms of the level of mean consumption), 'Agricultural and Other Labour', has increased substantially from 19.5 per cent in the initial year to 31.3 per cent in the terminal year, while in the urban areas, the population share of the worst-off group, 'Casual Labour', has increased slightly from 12.1 per cent to 14.1 per cent (which nevertheless adds up to more than a hundred million persons).

Source: As for Table 8.

Table 12a: Data on actual and warranted growth rates of real mean consumption expenditure for the 'labour' and 'other occupational groups' categories under the 'Pareto-respecting equal division' rule: rural India

Period	Labour (agricultural and 'other' labour)		'Other' occupational groups (self-employed in agriculture and non-agriculture, and 'other sources of livelihood')	
	actual mean consumption expenditure in the base year	warranted mean consumption expenditure in the terminal year	actual mean consumption expenditure in the base year	warranted mean consumption expenditure in the terminal year
1987-88—2009-10	19.49	26.78	26.97	34.26
1993-94—2009-10	19.86	26.97	27.04	34.15
1999-2000—2009-10	22.45	26.72	30.04	34.31
2004-05—2009-10	22.59	26.01	31.37	34.79
Growth rates (%)				
	Actual	Warranted	Actual	Warranted
1987-88—2009-10	1.30	1.46	1.18	1.09
1993-94—2009-10	1.67	1.93	1.60	1.47
1999-2000—2009-10	1.43	1.76	1.50	1.34
2004-05—2009-10	2.75	2.86	2.14	2.09
Ratio of actual to warranted growth rate				
1987-88—2009-10	0.89		1.08	
1993-94—2009-10	0.87		1.09	
1999-2000—2009-10	0.81		1.12	
2004-05—2009-10	0.96		1.02	

Source: As for Table 8.

Table 12b: Data on actual and warranted growth rates of real mean consumption expenditure for the 'casual labour' and 'other occupational groups' categories under the 'pareto-respecting equal division' rule: urban India

Period	Casual labour		'Other' occupational groups (self-employed, regular wage/salaried occupations, and 'other sources of livelihood')	
	Actual mean consumption expenditure in the base year	Warranted mean consumption expenditure in the terminal year	Actual mean consumption expenditure in the base year	Warranted mean consumption expenditure in the terminal year
1987-88—2009-10	20.45	42.10	35.17	56.82
1993-94—2009-10	23.81	39.38	41.70	57.27
1999-2000—2009-10	28.01	38.40	47.05	57.44
2004-05—2009-10	24.72	35.11	47.59	57.98
Growth rates of mean consumption expenditure (%)				
	Actual	Warranted	Actual	Warranted
1987-88—2009-10	1.83	3.34	2.36	2.20
1993-94—2009-10	1.55	3.19	2.17	2.00
1999-2000—2009-10	0.84	1.99	2.25	2.02
2004-05—2009-10	4.26	7.27	4.31	4.03
Ratio of actual to warranted growth rate				
1987-88—2009-10	0.55		1.07	
1993-94—2009-10	0.49		1.09	
1999-2000—2009-10	0.42		1.11	
2004-05—2009-10	0.59		1.07	

Source: As for Table 8.

Table 13a: Ratios of occupational category-wise real warranted means and occupational category-wise real actual means under the 'Pareto-respecting equal division' rule over 1987-88 to 2009-10: rural India

Year	Actual mean consumption of agricultural and other labour	Warranted mean consumption of agricultural and other labour	Actual mean consumption of 'other occupational groups'	Warranted mean consumption of 'other occupational groups'	Warranted ratio of means (ratio of warranted 'labour' means to warranted 'others' means)	Actual ratio of means (ratio of actual 'labour' means to actual 'others' means)	Ratio of ratios (actual ratio of means/ warranted ratio of means)
1987-88	19.49	20.65	26.97	28.17	0.73	0.72	0.99
1993-94	19.86	22.53	27.04	30.06	0.75	0.73	0.97
1999-2000	22.45	24.58	30.04	32.08	0.77	0.75	0.97
2004-05	22.59	26.42	31.37	33.87	0.78	0.72	0.92
2009-10	25.87	26.78	34.87	34.26	0.78	0.74	0.95

Source: As for Table 8.

Table 13b: Ratios of occupational category-wise real warranted means and occupational category-wise real actual means under the 'Pareto-respecting equal division' rule over 1987-88 to 2009-10: urban India

year	Actual mean consumption of casual labour	Warranted mean consumption of casual labour	Actual mean consumption of 'other occupational groups'	Warranted mean consumption of 'other occupational groups'	Warranted ratio of means (ratio of warranted casual labour' means to warranted 'others' means)	Actual ratio of means (ratio of actual casual labour means to actual 'others' means)	Ratio of ratios (actual ratio of means/ warranted ratio of means)
1987-88	20.45	23.32	35.17	38.37	0.61	0.58	0.95
1993-94	23.81	28.40	41.70	43.72	0.65	0.57	0.88
1999-2000	28.01	34.59	47.05	49.82	0.69	0.60	0.87
2004-05	24.72	40.77	47.59	55.54	0.73	0.52	0.71
2009-10	30.45	42.17	58.76	56.82	0.74	0.52	0.70

Source: As for Table 8.

5 Concluding observations

This paper has been an attempt at gauging how inclusive or otherwise the process of growth in consumption expenditure has been in India over the last three decades. Aspects of both 'vertical' or interpersonal inclusiveness and 'horizontal' or inter-group inclusiveness have been investigated. The notion of inclusiveness in a dynamic context has been sought to be studied by resort to some methodological deviations from the norm, which it is hoped will prove to be persuasive. In particular, we have desisted from inferring measures of inclusiveness from an uncomplicated and direct comparison of growth rates across income or

other social groups. Rather, actual rates of growth have been sought to be compared with 'warranted' rates, where what is warranted is stipulated with respect to well-defined notions of *norms* of inclusiveness. Inclusiveness is then gauged by reference to the deviation— either in terms of shortfall or excess, as the case might be——of actual growth performance from the outcomes that would be dictated by the normative considerations that would be relevant for the comparisons in question. The results of our exercises suggest a strong want of inclusiveness in the experience of growth that India has undergone, whether we consider aspects of dynamic equality across income classes or across groupings of the population by caste and occupation.

We turn from the preceding methodological considerations to a few substantive concluding observations. There was a time when the contours of long-term policy in India were discussed with reference to the issues of land reform, asset redistribution, progressive direct taxation, enforcement of tax compliance, and the control of corruption. The overriding concern today seems to be with 'reform', understood as the requirement, largely, of putting in place a regime of 'incentives', 'business-friendliness', and 'deregulation'. There are, however, some elements of continuity with the past. In particular, the conventional pieties in relation to the virtues of equity have been preserved, and the slogan of choice—in its newest incarnation—has been that of 'inclusive growth'. The actual record of inclusiveness, which we have reviewed at some length in this paper, sits oddly with what one may be excused for perceiving to be the state's most urgently-apprehended policy-reform: the introduction of foreign direct investment in multi-brand retail trade. It is hard to desist from observing that there is something seriously crass about the continued divergence between promises of inclusiveness in growth, on the one hand, and both the actual record in this regard and those aspects of policy that are either neglected or embraced in the pursuit of the country's 'development'. The intention is neither to present a caricature nor to indulge in minatory finger-wagging. It is simply to underline the sentiment— however tiresomely old-fashioned it might be to assert this—that the facts and values that seem to inform the state's policy imperatives (as distinct from its rhetoric) in the matter of 'inclusive growth' constitute a serious affront to both political morality and enlightened self-interest.

Appendix 1: List of major data sources employed in the paper

Consumption Expenditure

1. Published

NSSO (1976): Tables with Notes on Consumer Expenditure, Report No. 231, Government of India.

NSSO (1979): "Some Results of Survey on Consumer Expenditure, NSS 27th Round (October 1972-September 1973)", Sarvekshana, Vol. II(3), January 1979.

NSSO (1986): "Some Results on the Second Quinquennial Survey on Consumer Expenditure: NSS 32nd Round (July'77-June 78)", Sarvekshana, Vol. IX(3), January 1986.

NSSO (1985): Report on the Third Quinquennial Survey on Consumer Expenditure, Report No. 319, Government of India.

NSSO (1991): "Results of Fourth Quinquennial Survey on Consumer Expenditure: (sub-sample 1): NSS 43rd Round (July 1987-June 1988)", Sarvekshana, Vol. XV(1), July-September 1991.

NSSO (1996): Level and Pattern of Consumer Expenditure, 5th Quinquennial Survey, 1993-94, Report No.402, Government of India.

NSSO (2001): Level and Pattern of Consumer Expenditure in India 1999-2000, NSS 55th Round (July 1999-June 2000), Report No. 457, Government of India.

NSSO (2006): Level and Pattern of Consumer Expenditure, 2004-2005, NSS 61st Round (July 2004-June 2005), Report No. 508, Government of India.

NSSO (2011): Level and Pattern of Consumer Expenditure, 2009-2010, NSS 66th Round (July 2009-June 2010), Report No. 538, Government of India.

2. Unit Level Data

Unit level data are available in text format in CD-ROMs. Labels on the CD-ROMs that have been used to extract unit level data, for the various NSS rounds for which we have performed the analysis, are provided below:

NSS, 38th Round, Sch 1.0: Consumer Expenditure.
NSS, 43rd Round, Sch 1.0: Consumer Expenditure, CC/NSS/6583.
NSS, 50th Round Sch 1.0: Consumer Expenditure, CC/CD/3010.
NSS, 55th Round Sch 1.0: Consumer Expenditure.
NSS, 61st Round, Sch 1.0: Consumer Expenditure.
NSS, 66th Round Sch 1.0: Consumer Expenditure (Uniform and Mixed Reference), CC/NSS/6784, 66, 1.0.

Consumer Price Index (General) For:

1. Agricultural Labour (CPIAL)

Data for the years1970-71, 1972-73, and 1977-78 are from:

http://www.indiastat.com/table/economy/8/consumerpriceindexnumberforagriculturallabourerinindiaupto2000/449576/53599/data.aspx, Accessed on February 15, 2012.

Data for the years 1983-84, 1987-88, and 1993-94 are from:
http://labourbureau.nic.in/CPI%2004-05%20Table%201.htm, Accessed on February 15, 2012.

Data for the years 1999-2000 and 2004-05 are from:
http://labourbureau.nic.in/CPI%2004-05%20Table%201.htm, Accessed on February 20, 2012.

Data for the year 2009-10 are from:
http://www.indiastat.com/table/economy/8/agriculturallabourers/14432/287502/data.aspx, Accessed on February 20, 2012.

2. Industrial Workers (CPIIW)

Data for the period 1970-71 to 2004-05 are from:
http://www.rbi.org.in/scripts/publicationsView.aspx?id=8248, Accessed on May 2, 2012.
Data for the year 2009-10 are from:
http://indiabudget.nic.in/es2010-11/estat1.pdf, Accessed on May 2, 2012.

Population Data

Census of India, 1991, Series I: Final Population Totals: Brief Analysis of Primary Census Abstract, Registrar General and Census Commissioner, India.

Census of India, 2001, Series 1: Final Population Totals, Registrar General and Census Commissioner, India.

Census of India, 2011, Provisional Population Totals, Paper2, Volume 1 of 2011, Rural-Urban Distribution, India-Series 1: Available at: http://www.censusindia.gov.in/2011-prov-results/paper2/prov_results_paper2_india.htm, Accessed on May, 1 2012.

Appendix 2: Data and figures on real actual and warranted mean consumption levels under the 'Pareto-respecting proportionality' rule

In this Appendix, there is very little commentary: the numbers in the tables and the diagrams have been explained in the main text. What is relevant to note is that while the text deals with the 'equal division rule' of inclusive growth, this appendix deals with the 'proportionality rule'. It would aid the process of ready reckoning to remember that Appendix Tables 1a and 1b are to be read as variants of Tables 5a and 5b in the text; Appendix Figures 1a and 1b are to be interpreted as variants of Figures 1a and 1b in the text; Appendix Tables 2a and 2b are to be read as variants of Tables 6a and 6b in the text; and Appendix Figures 2a and 2b are to be interpreted as variants of Figures 2a and 2b in the text.

Appendix Table 1a: Data for the bottom quintile on the actual and warranted real mean consumption expenditure levels under the 'Pareto-respecting proportionality' rule for the period 1970-71–2009-10

	Bottom Quintile					
	Rural			Urban		
Year	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure
1970-71	8.62	8.62	1.00	11.24	11.24	1.00
1972-73	8.51	9.12	0.93	11.97	12.08	0.99
1977-78	9.05	10.50	0.86	11.53	14.48	0.80
1983	9.51	12.08	0.79	12.27	17.36	0.71
1987-88	11.17	13.91	0.80	13.17	20.82	0.63
1993-94	11.74	16.47	0.71	15.49	25.88	0.60
1999-2000	13.71	19.51	0.70	17.38	32.17	0.54
2004-05	13.28	22.46	0.59	16.10	38.57	0.42
2009-10	14.74	25.85	0.57	18.95	46.25	0.41

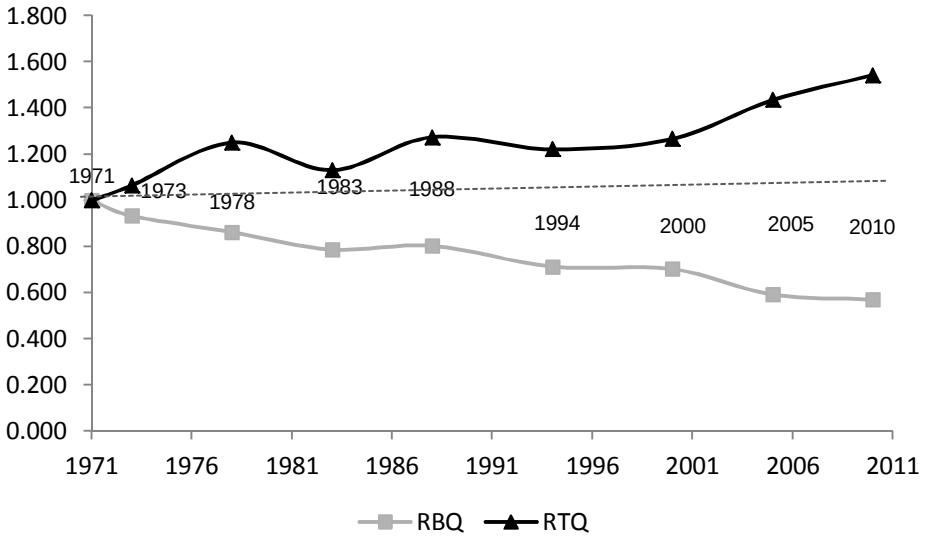
Source: Computed employing data from sources listed in Appendix 1.

Appendix Table 1b: Data for the top quintile on the actual and warranted real mean consumption expenditure levels under the 'Pareto-respecting proportionality' rule for the period 1970-71–2009-10.

	Top Quintile					
	Rural			Urban		
year	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure
1970-71	36.08	36.08	1.00	60.89	60.89	1.00
1972-73	38.62	36.28	1.07	65.08	61.35	1.06
1977-78	45.99	36.78	1.25	63.56	62.54	1.02
1983	42.17	37.29	1.13	64.02	63.74	1.00
1987-88	48.16	37.81	1.27	74.30	64.97	1.14
1993-94	46.95	38.45	1.22	83.61	66.47	1.26
1999-2000	49.50	39.09	1.27	94.52	68.01	1.39
2004-05	56.86	39.63	1.44	101.09	69.32	1.46
2009-10	61.96	40.18	1.54	127.53	70.65	1.81

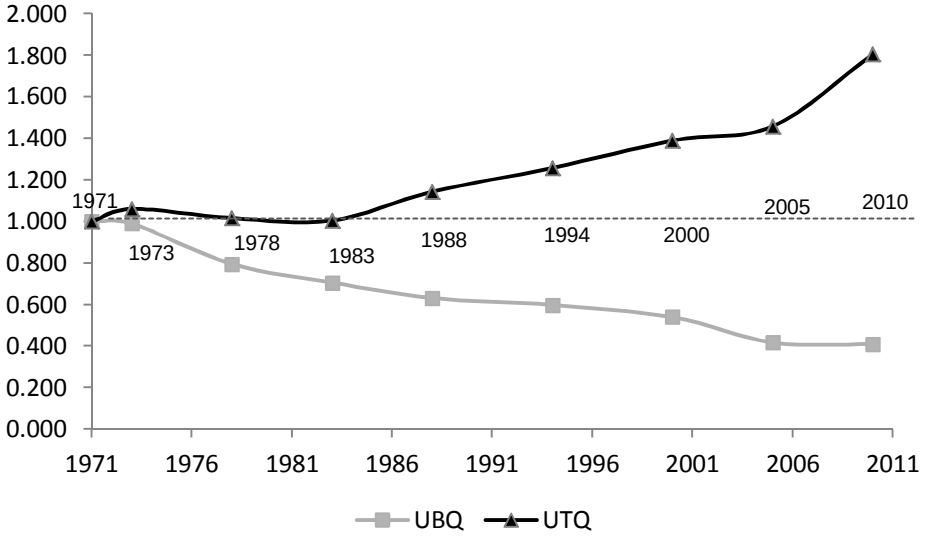
Source: As for Table 1a.

Appendix Figure 1a: Curves of the ratios of actual to warranted real mean consumption expenditure of the bottom and top quintiles of rural India under the 'Pareto-respecting proportionality' rule



Note: RBQ and RTQ respectively stand for 'rural bottom quintile' and 'rural top quintile'.

Appendix Figure 1b: Curves of the ratios of actual to warranted real mean consumption expenditure of the bottom and top quintiles of urban India under the 'Pareto-respecting proportionality' rule



Note: UBQ and UTQ respectively stand for 'urban bottom quintile' and 'urban top quintile'.

Appendix Table 2a: Data for the bottom half on the actual and warranted real mean consumption expenditure levels under the 'Pareto-respecting proportionality' rule for the period 1970-71–2009-10

	Below Median Population					
	Rural			Urban		
Year	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure
1970-71	11.54	11.54	1.00	15.38	15.38	1.00
1972-73	11.52	12.07	0.96	16.61	16.31	1.02
1977-78	11.98	13.48	0.89	16.06	18.89	0.85
1983	12.80	15.06	0.85	16.72	21.87	0.76
1987-88	14.63	16.82	0.87	18.00	25.33	0.71
1993-94	15.21	19.21	0.79	21.32	30.20	0.71
1999-2000	17.50	21.94	0.80	23.83	36.01	0.66
2004-05	17.04	24.51	0.70	22.63	41.70	0.54
2009-10	19.01	27.38	0.69	26.67	48.29	0.55

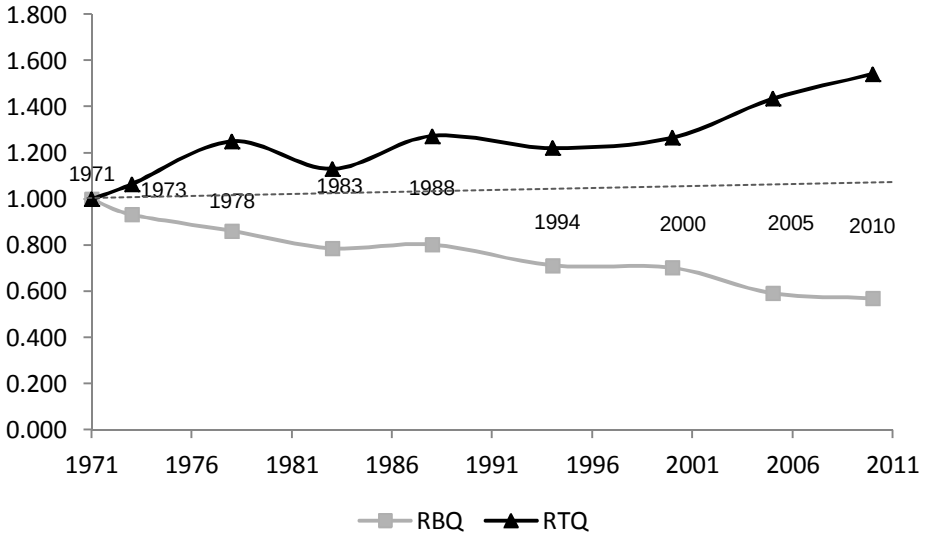
Source: As for Table 1a.

Appendix Table 2b: Data for the top half on the actual and warranted real mean consumption expenditure levels under the 'Pareto-respecting proportionality' rule for the period 1970-71–2009-10

	Above Median Population					
	Rural			Urban		
Year	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure	actual mean consumption expenditure	warranted mean consumption expenditure	ratio of actual mean consumption expenditure to warranted mean consumption expenditure
1970-71	26.43	26.43	1.00	41.45	41.45	1.00
1972-73	27.57	26.82	1.03	44.67	42.28	1.06
1977-78	30.66	27.82	1.10	43.27	44.44	0.97
1983	30.28	28.85	1.05	43.87	46.70	0.94
1987-88	34.05	29.93	1.14	50.02	49.09	1.02
1993-94	33.82	31.27	1.08	57.42	52.11	1.10
1999-2000	36.79	32.67	1.13	64.73	55.31	1.17
2004-05	39.58	33.89	1.17	67.12	58.13	1.16
2009-10	43.51	35.15	1.24	82.71	61.10	1.35

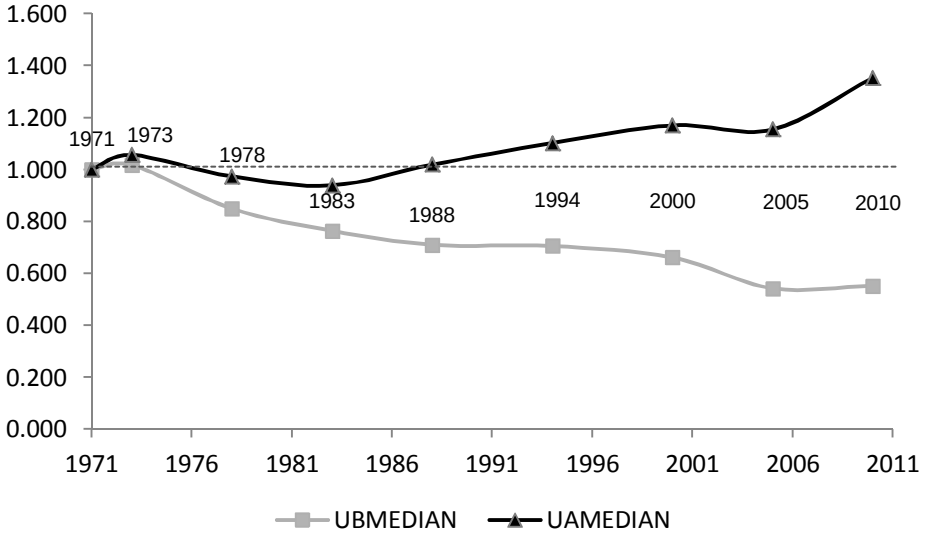
Source: As for Table 1a.

Appendix Figure 2a: Curves of the ratios of actual to warranted real mean consumption expenditure of the bottom and top halves of rural India under the 'Pareto-inclusive proportionality' rule



Note: RBQ and RTQ respectively stand for 'rural bottom quintile' and 'rural top quintile'.

Appendix Figure 2b: Curves of the ratios of actual to warranted real mean consumption expenditure of the bottom and top halves of urban India under the 'Pareto-inclusive proportionality' rule



Note: UBQ and UTQ respectively stand for 'urban bottom quintile' and 'urban top quintile'.

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