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Are the Rich Growing Richer? Evidence from Indian Tax Data

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INTRODUCTION

It is not often that the methodology of measurement becomes something of a political cause celebre. Yet, over the last few years, newspaper readers in India have been routinely exposed to spirited discussions of the arcana of how to measure poverty. At the heart of this debate, is the question of what happened to poverty in India in this last decade of globalisation and liberalisation. Did the poor get to share the munificence that the rich are so visibly enjoying?

The debate got started with the publication of the results from the 51st, 52nd, 53rd and 54th rounds of the National Sample Survey (NSS), which, taken together, suggested that, poverty had risen slightly since the 50th round and was more or less where it had been in the mid- to late-1980s. Since these were the first estimates of what liberalisation had done for the poor, it was read, not unfairly, by the critics of the liberalisation as direct evidence that liberalisation had failed the poor,[1] and by more uncommitted observers as a cause for concern.[2] The defenders of liberalisation responded by arguing that the data had to be wrong: First, the 51st through 54th rounds of the NSS were all 'thin' rounds and are therefore of dubious reliability. Second these rounds involved various experiments with survey methodology. Neither of these arguments is terribly compelling: as Deaton and Dreze (2002) point out, even the thin rounds are large enough to give fairly tight bounds for nationwide poverty estimates, and the upward trend in poverty between the 52nd and 54th rounds remain, if we focus on the data generated using a single consistent methodology.

The most compelling argument against these NSS numbers is that they show absolutely no evidence of growth in per capita expenditure, at a time when per capita consumption expenditure according to the National Accounts (NAS) was growing at a real rate of over 3 per cent per annum. Based on this apparent contradiction, dubbed the Indian growth paradox of the 1990s, Bhalla (2000), among others,

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1. See Sainath (2001) and Mehta (2001).
2. See Datt (1999a, 1999b).

has argued that the NSS methodology must be missing an increasing fraction of consumption growth and was therefore not fit to be used for poverty measurement.[3] He, therefore, generates alternative poverty estimates based on the assumption that the distribution of consumption did not change at all in the post-liberalisation period (which allows him to apply the average growth rate of per capita consumption expenditure from the NAS to the poor). Not surprisingly, given that that per capita consumption expenditure grew rapidly in this period according to the NAS, he finds evidence of huge declines in poverty.[4]

The dust settled somewhat after the 55th (1999-2000) round of the NSS came out. This was a large round and while the methodology was not quite consistent with that in the previous (1993-94) large round, Deaton (2003a) came up with an ingenious method for adjusting the data to make it more or less consistent with the 1993-94 numbers.[5] Based on these adjustments, as well as his recalculations of the price indices,[6] Deaton (2003a) concludes that poverty did go down substantially between 1993-94 and 1999-2000, though less than there would have been had he not made the corrections described above and much less than what Bhalla claims.

Moreover average per capita expenditure did grow over this period even according to the NSS, at 2 per cent per annum. However there is still a substantial amount of *missing growth*: the growth rate for average per capita expenditure that we would get from the NAS is 3.5 per cent. This has meant that those, like Bhalla, who believe the NAS numbers, remain skeptical about the NSS-based poverty estimates.[7]

One way to reconcile the NSS poverty numbers with the NAS average consumption growth numbers is to assume that the rich are under-represented in the NSS and that average consumption is growing because the consumption of the rich is growing faster than that of everybody else. In the extreme if all the growth is with the rich and the rich are excluded from the survey, average consumption could grow very fast according to the NAS and not at all according to the NSS. Yet the NSS numbers would still be right ones to use to measure poverty.

While there is no hard evidence that the rich are indeed being undercounted in India,[8] (the Indian consumer expenditure surveys do not, for example, report refusal rates by potential income category), there are plausible *a priori* reasons to suppose that this may be the case.[9] NSS surveys are long and relatively intrusive (they ask, for example, about alcohol consumption, a taboo subject for many). The rich may be less intimidated by the fact that the surveyors claim to come from a government organisation, in part because they know their rights better. They may also value their leisure more, or at least have

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3. As emphasised by Sen (2001), the divergence between the NAS and NSS consumption numbers goes back into the 1970s.
4. See Bhalla (2002).
5. Sundaram and Tendulkar (2002) propose another clever way to adjust the data, which also gives results similar to those obtained by Deaton.
6. See Deaton (2003b).
7. See Bhalla (2002).
8. There is one important piece of indirect evidence: Sundaram and Tendulkar (2001) find that the NSS-NAS gap is particularly important for commodities that are more heavily consumed by higher income groups, thereby providing indirect evidence for the explanation based on rising inequality.
9. See, e.g. Szekely and Hilgert (1999), who look at a large number of Latin American household surveys and find that the 10 largest incomes reported in surveys are often not very much larger than the salary of an average manager in the given country at the time of survey. For a systematic comparison of survey and national accounts aggregates in developing countries, see Ravallion (2001).

firmer belief in their own right to be left alone to enjoy their leisure. And, of course, the rich often live in buildings where there are doormen and doormen may be explicitly instructed not to let in surveyors.

However, even if it is true that the rich are being undercounted by the NSS, it would not matter unless it is also true that the rich were getting richer much faster than everyone else in the 1990s. The goal of this note is to present some evidence, based on tax data and culled from our previous paper,[10] on what was happening to the rich in the 1990s.

The basic pattern that emerges from our data is that in the 1990s, the rich were indeed getting richer much faster than anyone else, but this was entirely driven by what was happening to the very rich, i.e. those who were in the top 0.1 per cent of the population of tax units. Because the extraordinary growth was confined to this one group, the fact that the rich were getting richer cannot by itself explain all of the missing growth in the NSS data. We estimate that its potential contribution may be in the range of 20 per cent of the missing growth over the 1987-88 to 1999-2000 period.

The rest of this paper is organised as follows. Section 2 briefly outlines our data and methodology. Section 3 briefly reports our results on the evolution of the share of the rich in total income. Section 4 discusses potential problems with this evidence. Section 5 uses this evidence to shed some light on the Indian growth paradox of the 1990s, and concludes.

DATA AND METHODOLOGY

The tabulations of tax returns published each year by the Indian tax administration in the 'All-India Income-Tax Statistics' (AIITS) series constitute the primary data source used in this paper. The first year for which we have income data is 1956-57 while the last is 1999-2000.[11]

Due to the relatively high exemption levels, the number of taxpayers in India has always been rather small: It was between 0.5 per cent–1 per cent of the population of tax units, till the 1980s but rose sharply during the 1990s to about 3.5 per cent–4 per cent at the end of the decade.[12] To get comparable numbers over a longer period we focus on the top 1 per cent.

The tabulations published in AIITS report the number of taxpayers and the total income reported by these taxpayers for a large number of income brackets. By using standard Pareto extrapolation techniques

10. See Banerjee and Piketty (2003).

11. Financial years run from 1 April to 31 March in India (1956-57 refers to the period running from 1 April 1956 to 31 March 1957, etc., and 1999-2000 to the period running from 1 April 1999 to 31 March 2000). Note also that AIITS publications always refer to assessment years (AY), i.e. years during which incomes are assessed, while we always refer to income years (IY) (IY = AY – 1). For instance, AIITS 1957-58 contains the data on IY 1956-57, etc., and AIITS 1999-2000 contains the data on IY 1998-99. AIITS 2000-01 (IY 1999-2000) was not yet available when we revised this paper, and our IY 1999-2000 figures for top incomes were obtained by inflating the 1998-99 figures by the nominal 1999-2000/1998-99 per tax unit national income growth rate. This approximation probably leads us to under-estimate top income growth. We did this because there was no large NSS round for 1998-99 so it was easier to make comparison with 1999-2000 as the end point.

12. Throughout the paper, 'tax units' should be thought of as individuals (all of our estimates have been obtained by summing up tax returns filed by individuals and those filed by 'Hindu undivided families' (HUF), but the latter generally make less than 5 per cent of the total). The total, theoretical number of tax units was set to be equal to 40 per cent of the total population of India throughout the period. This represents a rough estimate of the potential 'positive-income population' of India: this is lower than India's adult population (the 15-year-and-over population makes about 60–65 per cent of total population since the 1950s), but is very close to India's labour force (the labour force consists of about 40–45 per cent of total population since the 1950s).

we computed for each year the average incomes of the top percentile (P99-100), the top 0.5 per cent (P99,5-100), the top 0.1 per cent (P99,9-100), and the top 0.01 per cent (P99,99-100) of the tax unit distribution of total income, as well as the income thresholds P99, P99,5; P99,9; and P99,99 and the average incomes of the intermediate fractiles P99-99,5; P99,5-99,9; and P99,9-99,99.[13]

One thing that immediately emerges from this exercise that is worth emphasising, is that the rich in India, even now, are quite poor by global standards. In 1999-2000, there were 396.4 million tax units in India. Based on the national accounts statistics, the average income of those almost 400 million tax units was around Rs 25,000 per year ($3,000 in PPP terms).[14] To belong to the top percentile (P99), which includes about 4 million tax units, one needed to make more than Rs 88,000 (around $10,000 at PPP). The average income of the bottom half of the top percentile (fractile P99-99,5, about 2 million tax units) was about Rs 99,000 (less than $12,000 at PPP). To belong to the top 0.01 per cent (about 40,000 tax units), one needs to make more than Rs 14 lakh ($160,000 at PPP), and the average income above that threshold was more than Rs 40 lakh ($470,000 at PPP).

As in other countries, the top of India's income distribution appears to be very precisely approximated by the Pareto structural form.[15] The estimates are subject to sampling error: the AIITS tabulations seem to be based upon uniform samples of all tax returns, rather than on the entire population (as in most OECD countries), or stratified sample. However the sampling rate is sufficiently large to guarantee that the estimated trends for top income shares are statistically significant.[16]

AIITS publications also includes tabulations reporting the amounts of the various income categories (wages, business income, dividends, interest, etc.) for each income bracket. In particular, AIITS offers separate tables for wage earners who are by far the largest subgroup. This allowed us to separate estimates for top wage fractiles, which we can compare to our top fractiles estimates for total income (see below).[17]

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13. For a recent use of Pareto extrapolation techniques with similar tax return data, see Piketty (2001) and Piketty and Saez (2001); see also Atkinson (2001).

14. Our average income series (table A0, col.(7)) was set to be equal to 70 per cent of national income per tax unit (the 30 per cent deduction is assumed to represent the fraction of national income that goes to undistributed profits, non-taxable income, etc.). The national income series was taken from Sivasubramonian (2000), to whom we also owe our population series..

15. In the same way as for other countries (see above for references), we checked that our extrapolation results are virtually unaffected by the choice of extrapolation thresholds. Pareto coefficients are locally very stable in India, just like in other countries.

16. According to the tax administration statistics division, the sampling rate is about 1 per cent and approximately uniform (no precise information about sampling design and rate is included in AIITS publications). Given India's large population, this implies that our estimate for the top 1 per cent income share (8,95 per cent of total income in 1999-2000, see Table A3) has a standard error of about 0,04 per cent, and that our estimate for the top 0,01 per cent income share (1,57 per cent of total income in 1999-2000, see Table A3) has a standard error of about 0,08 per cent. There is some evidence however that the sampling design is changing and that published tabulations are becoming more volatile by the end of the period. In particular, the tabulations for IY 1997-98 (AIITS 1998-99) contain far too many individual taxpayers above Rs 10 lakh, thereby suggesting that something went wrong in the sampling design during that year. The 1997-98 estimates were corrected downwards on the basis of 1996-97 and 1998-99 tabulations.

17. Published wage tabulations for IY 1996-97 and 1997-98 appear to suffer from sampling design failures (top wages are clearly truncated in 1996-97, and they are too numerous in 1997-98), and our estimates for those two years were corrected on the basis of 1995-96 and 1998-99 data.

THE DYNAMICS OF TOP INCOME SHARES

Figure 23.1 illustrates the basic finding from our previous paper:[18] income inequality (as measured by the share of top incomes) has followed a U-shaped pattern over the 1956-2000 period. The top 0.01 per cent income share gradually fell from about 1.5–2 per cent of total income in the 1950s to less than 0.5 per cent in the early 1980s, and then rose during the 1980s–1990s, back to 1.5–2 per cent during the late 1990s. What this means is that the average top 0.01 per cent income was about 150–200 times larger than the average income of the entire population during the 1950s. It went down to being less than 50 times as large in the early 1980s, but went back to being 150-200 times larger during the late 1990s.

One also observes a similar (though less pronounced) U-shaped pattern for the top 1 per cent income share, which went from about 12-13 per cent during the 1950s to 4-5 per cent in the early 1980s to 9-10 per cent in the late 1990s (see Figure 23.2). As with the top 0.01 per cent, the turning point seems to

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be around 1980-81, and over the 1980s, the share of the top 1 per cent also doubles. Then, as with the share of the top 0.01 per cent, there is a period of retrenchment which lasts till 1991-92, followed by a renewed upward movement. However these incomes grow much slower than the very top incomes over the 1990s.

The comparison of these Figures 23.1 and 23.2 reveals another intriguing fact: While in the 1980s the share of the top 1 per cent increases almost as quickly as the share of the top 0.01 per cent, in the 1990s there is a clear divergence between what is happening to the top 0.01 per cent and the rest of the top percentile. To confirm that this is the case, we break up the top percentile into four groups: those between the 99th percentile and the 99.5th percentile, those between the 99.5th percentile and the 99.9th percentile, those between the 99.9th percentile and the 99.99th percentile, and those in the top 0.01 percentile. Table 1 below reports what happened to each of these groups in the 1987-2000 period. We see that only those in the top 0.1 per cent enjoyed income growth rates faster than the growth rate of GDP per capita. This contrasts with what we see when we look at the period that includes the 1980s (see Table 2): for this period we see evidence of above average growth for the entire top percentile.

MEASUREMENT ISSUES

Our presumption so far has been that what we have measured is the actual income share of the rich. There a number reasons why this may not be true. First, despite our best efforts, we were unable to discover the actual procedure for generating the sample that is then used to create the tax tables. Our sense, from informal conversations with Indian tax officials, is that, at least in recent years, the procedure is more an informal attempt to sample randomly than a precise random sample. To the extent that this increases the risk of the data being clustered, the implication is that the within sample variance might overstate the precision of our data. While this remains a possibility, we take some consolation from the fact that the trends, for the most part, seem quite stable. While our results for single years or sets of years may reflect sampling variation, the fact that in every year between 1973-74 and 1992-93, the share of the top 0.01 per cent was less than 0.85 per cent (and in every year but two it was less than 0.7 per cent) and that in every year including and after 1995-96 it was greater than 1.5 per cent, seems much more robust. Moreover the intervening two years, 1993-94 and 1994-95 do show, as we might have hoped for, shares for the top 0.01 per cent that were between 0.7 per cent and 1.5 per cent.

A more serious problem is that the surge in top incomes may reflect improvements in the income tax department's ability to measure (and hence tax) the incomes of the wealthy. One reason for this may be that tax cuts in the early 1990s, simply reduced the incentives for evading taxes among the wealthy. Note, however, that the overall decline in the top marginal rate, though non-monotonic, was quite moderate: the top marginal tax rate dropped from 50 per cent in 1987-88 to 40 per cent in 1999-2000. By comparison the change in the share of the top 0.01 per cent was enormous: it went up from 0.7 per cent in 1987-88 to over 1.5 per cent in 1999-2000. If this entire change is to be explained by a shift in tax rates, the implied elasticity would have to be enormous.

Of course, the effect of these tax changes could have been reinforced by a spectacular improvement in the collection technology. There were, after all, a number of innovations in tax collection in the 1990s, such as the introduction of the 'one in six rule' (in 1998) that required everyone who satisfied at least one out of six criteria (owning a car, travel abroad, etc.) to file a tax return.

To see if this is the whole story, we redid the exercise above exclusively for wages. Wages are clearly much less subject to tax evasion than non-wage incomes, since taxes are typically deducted at source

and the employer has a strong incentive to report what he pays, since he gets to deduct the wages from his own taxes. Therefore if all that was happening was better collection, we would expect wage incomes to grow much more slowly than other incomes. To see if this is the case, we compared the evolution of top wages with the evolution of top incomes. We find that top wages have increased essentially in step with top incomes during the 1990s. In fact, wage growth among the top percentile of the wage distribution rose by 81 per cent between 1987-88 and 1999-2000, while the corresponding figure was 71 per cent for the top percentile of the income distribution. This is consistent with the fact that the share of wages within the total income of the top percentile has increased somewhat during this period (from 28 per cent to 31 per cent). Although very top incomes are still mostly made up of non-wage income, the wage part has increased during the 1990s.[19]

A final source of concern is that the evolution of the economy might have increased the share of those industries, such as software, which are easier to tax. However much of the increase in the share of the rich seems to be by 1995-96, at which point the software was still relatively small and hardly in a position to have such a huge distributional impact.

APPLICATION TO THE GROWTH PARADOX OF THE 1990s

Let us know turn to the growth paradox of the 1980s-1990s and how much can be explained by top income growth. Table 1 compares the growth performance over the 1987-2000 period of average consumption reported In the NSS, average income and consumption measured by the national accounts (NAS), and top incomes reported in tax returns. The reason for comparing 1987-88 and 1999-2000 is that large NSS surveys were conducted during those two years, so that estimates of the NSS-NAS gap are more precise if one uses those years.[20] To eliminate the effect of using different deflators, we first compare nominal growth performance, and we then compute real growth performance by using the same deflator for all series (namely, the CPI).

According to the NSS, real growth was fairly limited in India during the 1990s: per capita consumption increased by only 19 per cent in real terms between 1987-88 and 1999-2000. According to national accounts (NAS), however, there real growth was more than twice as large: both per capita GDP and national income increased by more than 50 per cent in real terms, and per capita household consumption (as measured by national accounts) consumption increased by 40 per cent. This is the NSS-NAS gap that has received so much attention in the recent past.

Table 1 shows that the very large growth of top incomes during the 1990s can be a part of the explanation of this puzzle. The average income growth among the top percentile of the tax units was 71 per cent in real terms between 1987-88 and 1999-2000, which is substantially more than average growth according to the national accounts. Moreover, the higher one goes within the top percentile, the higher the growth (up to +285 per cent for the top 0.01 per cent income fractile).

What fraction of the NSS-NAS gap can be explained by the huge growth performance of very top incomes? Let's assume that the NSS is unable to record any of the extra growth enjoyed by the top percentile (say the people in the top percentile do not report their extra growth to the NSS, or do not report anything at all). According to our calculations, the top percentile share in total consumption was

19. The wage results are reported in greater detail in Banerjee and Piketty (2003).
20. Note that for the NSS 1999-2000 per capita consumption estimates we use the ones reported by Deaton and Dreze (2002), who apply the procedure developed by Deaton (mentioned above), to correct for changes in survey methodology.

Insert Table 1: Top income growth during the 1990s: 1999-2000 vs 1987-1988

Table 23.2: Top income growth during the 1980s–1990s: 1999-2000 vs 1981-82

	1999-2000 vs 1981-82 (Nominal Growth)	1999-2000 vs 1981-2 (Real Growth)
Household consumption/capita (NSS)	+487%	+25%
GDP/capita (NAS)	+700%	+70%
Household consumption/capita (NAS)	+599%	+49%
National income/tax unit (NAS)	+688%	+68%
Top income fractile P99-100 (tax returns)	+1508%	+242%
Top income fractile P99,5-100 (tax returns)	+1747%	+293%
Top income fractile P99,9-100 (tax returns)	+2270%	+404%
Top income fractile P99,99-100 (tax returns)	+3980%	+767%
Top income fractile P99-99,5 (tax returns)	+992%	+132%
Top income fractile P99,5-99,9 (tax returns)	+1392%	+217%
Top income fractile P99,9-99,99 (tax returns)	+1698%	+282%
Top income fractile P99,99-100 (tax returns)	+3980%	+767%
Consumer price index	+370%	
Share of growth gap accounted for by P99-100		39.7%
Share of growth gap accounted for by P99,5-100		33.5%
Share of growth gap accounted for by P99,9-100		19.1%
Share of growth gap accounted for by P99,99-100		9.3%

Source: Banerjee and Piketty (2003, Table A0, Table A1, and Table A2, row 1999-2000/1981-82)

around 8 per cent in 1987-88.[21] Since the average income of the top percentile increased by 71 per cent in real terms between 1987-88 and 1999-2000 according to the tax returns (as opposed to +19 per cent for average NSS consumption), this implies that NSS growth was 3.55 per cent less than what would have been without the misreporting.[22] This implies that the growing incomes among the top percentile can explain at most 20.1 per cent of the total NSS-NAS gap (see the bottom panel in table 1).[23] This is significant, but clearly there is large piece that remains unexplained. The problem lies in the fact that almost all the extraordinary growth was among the top 0.1 per cent and the weight of this group is simply not large enough to have an impact on aggregate statistics of the necessary magnitude. For the rise of inequality to explain fully the NSS-NAS gap, there would have to have been very high income growth at the bottom of the top percentile, and not simply among those in the top 0.1 per cent.

Top income growth can explain a larger proportion of the NSS-NAS gap if we start in the 1980s. For instance, under the same assumptions, the top percentile can explain almost 40 per cent of the cumulative NSS-NAS gap over the 1981-2000 periods (see Table 2). This is because the bottom of the top percentile enjoyed rapid income growth in the 1980s (see Table 2). The more long-term divergence between the NSS and the NAS emphasised, for example, by Sen (2000), is more easily explained by the fact that the rich are getting richer.

The puzzle of the missing growth therefore remains. But our exercise makes it clear why it would be rash to use this as a reason to abandon the use of survey data for poverty measurement, as suggested by Bhalla (2002) and Sala-i-Martin (2001).[24] To be able to say anything useful about changes in poverty levels based on National Accounts data, we need a strong presumption that the income distribution has remained more or less stable. Our evidence, as well as the related work of Piketty and Saez (2001) on the United States, makes it clear that this would be foolhardy.[25] Indeed, one result of what happened in the 1990s is that the weight of the very rich in the income distribution went up very substantially, with the consequence that if the same pattern of divergence between the rich and the rest that we saw over the past decade is repeated over the next decade, the income distribution consequences will be much more drastic than what we have so far seen.

REFERENCES

Atkinson, Anthony B. (2001), Top Incomes in the United Kingdom over the Twentieth Century, mimeo Nuffield College, Oxford.

Banerjee, Abhijit and Thomas Piketty, Top Indian Incomes, 1956–2000, mimeo, MIT and Paris-Jourdan, 2003.

Bhalla, Surjit S. (2000), Growth and Poverty in India: Myth and Reality, mimeo, Oxus Research and Investments, New Delhi.

———— (2002), Imagine there is no country: poverty, inequality and growth in an era of globalisation, Washington D.C., Institute for International Economics.

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21. According to our estimates (computed with 70 per cent of national income as the income denominator), the top percentile income share was 8.12 per cent in 1987-88 (see Table A3).
22. $0.0812 \times (1.71/1.19 - 1) = 3.55$.
23. $3.55/(1.40/1.19 - 1) = 20.1$
24. For a detailed critique of the national accounts based approach see Deaton (2003c).
25. Piketty and Saez show that the share of the top 0.01 per cent in the US went up from 0.6 per cent to over 2.5 per cent between 1980-81 and 1999-2000.

Datt, Gaurav (1999), Has Poverty Declined since Economic Reforms, *Economic and Political Weekly*, December 11–17.

———— (1997), Poverty in India 1951–94: Trends and Decompositions, mimeo, The World Bank.

Deaton, Angus (2003c), How to Measure Poverty for the Millennium Development Goals, mimeo, Princeton University.

———— (2003b), Prices and Poverty in India, 1987–2000, *Economic Political Weekly*, January 25.

———— (2003a), Adjusted Indian Poverty Estimates for 1999-2000, *Economic and Political Weekly*, January 25.

———— and Jean Dreze (2002), Poverty and Inequality in India – A Re-Examination, *Economic and Political Weekly*, September 7.

Mehta, Jaya (2001), Give Poverty a Face, Please, *Alternative Economic Survey 2000-01*, New Delhi: Rainbow Publishers.

Piketty, Thomas (2001), Income Inequality in France, 1901–1998, CEPR Discussion Paper, No. 2876, forthcoming, *Journal of Political Economy*, 2003.

———— and Emmanuel Saez (2001), Income Inequality in the U.S., 1913–1998, NBER Working Paper, No. 8467, forthcoming, *Quarterly Journal of Economics*, 2003.

Ravallion, Martin (2001), Measuring Aggregate Welfare in Developing Countries: How Well do National Accounts and Surveys Agree?, mimeo, The World Bank.

———— (2000), Should Poverty Measures Be Anchored to the National Accounts?, *Economic and Political Weekly*, August 26–September 2.

Sainath, P. (2001), Will the Real National Calamity Please Stand Up, *The Hindu*, February 25.

Sala-i-Martin, Xavier (2002), The Disturbing 'Rise' of Global Income Inequality, NBER working paper, 8904.

Sen, Abhijit (2000), Estimates of Consumer Expenditure and its Distribution, *Economic and Political Weekly*, December 16.

Sivasubramonian, S. (2000), *The National Income of India in the Twentieth Century*, New Delhi: Oxford University Press.

Szekely, Miguel and Marianne Hilgert (1999), What's Behind the Inequality We Measure: An Investigation Using Latin American Data, mimeo, Inter-American Development Bank.

Sundaram K. and Suresh D. Tendulkar (2001), NAS-NSS Estimates of Private Consumption for Poverty Estimation, *Economic and Political Weekly*, January 13–20.

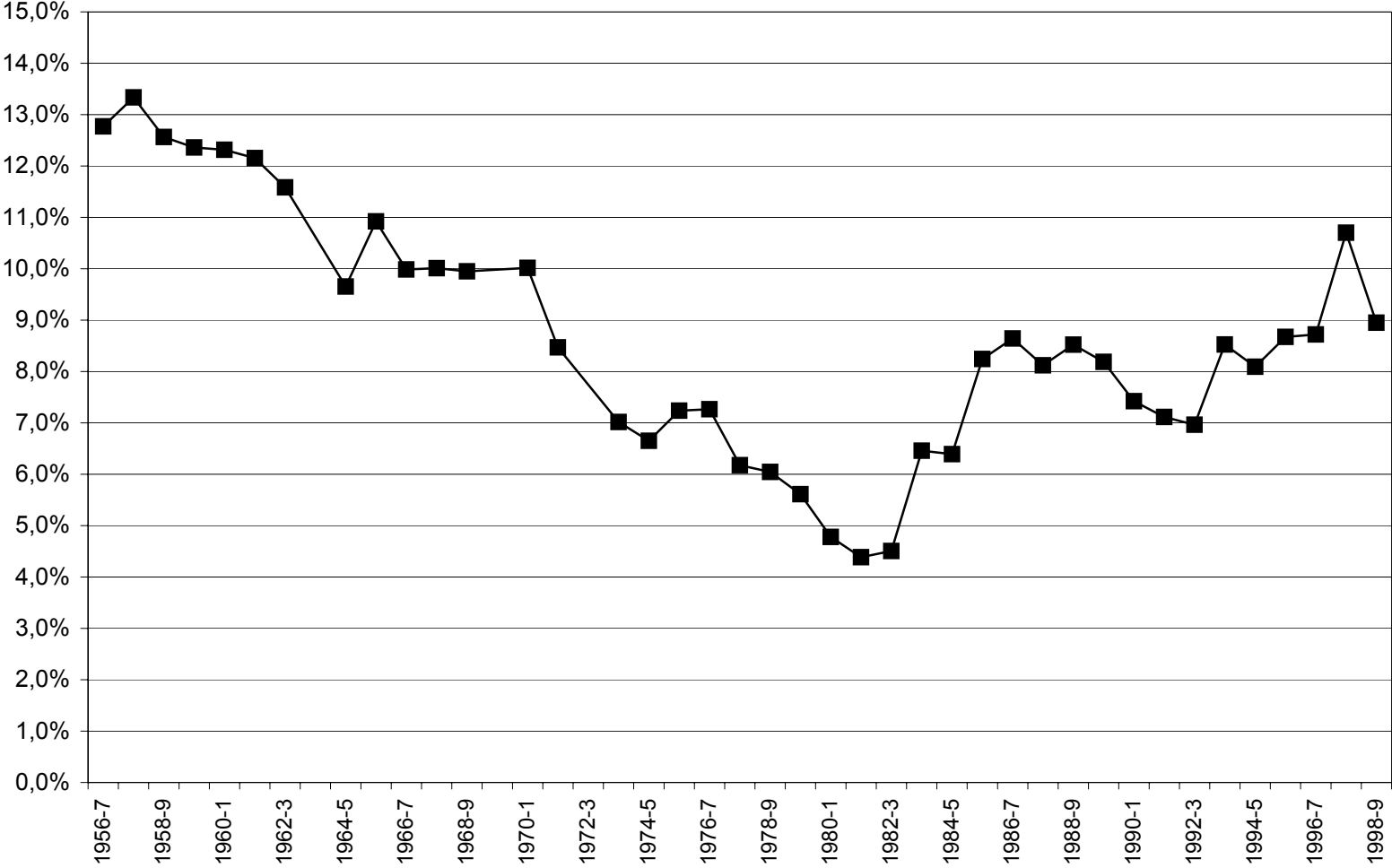The World Bank (2000), India – Policies to Reduce Poverty and Accelerate Sustainable Development, Report No. 19471-IN.

Figure 1 : The top 0,01% income share in India, 1956-2000
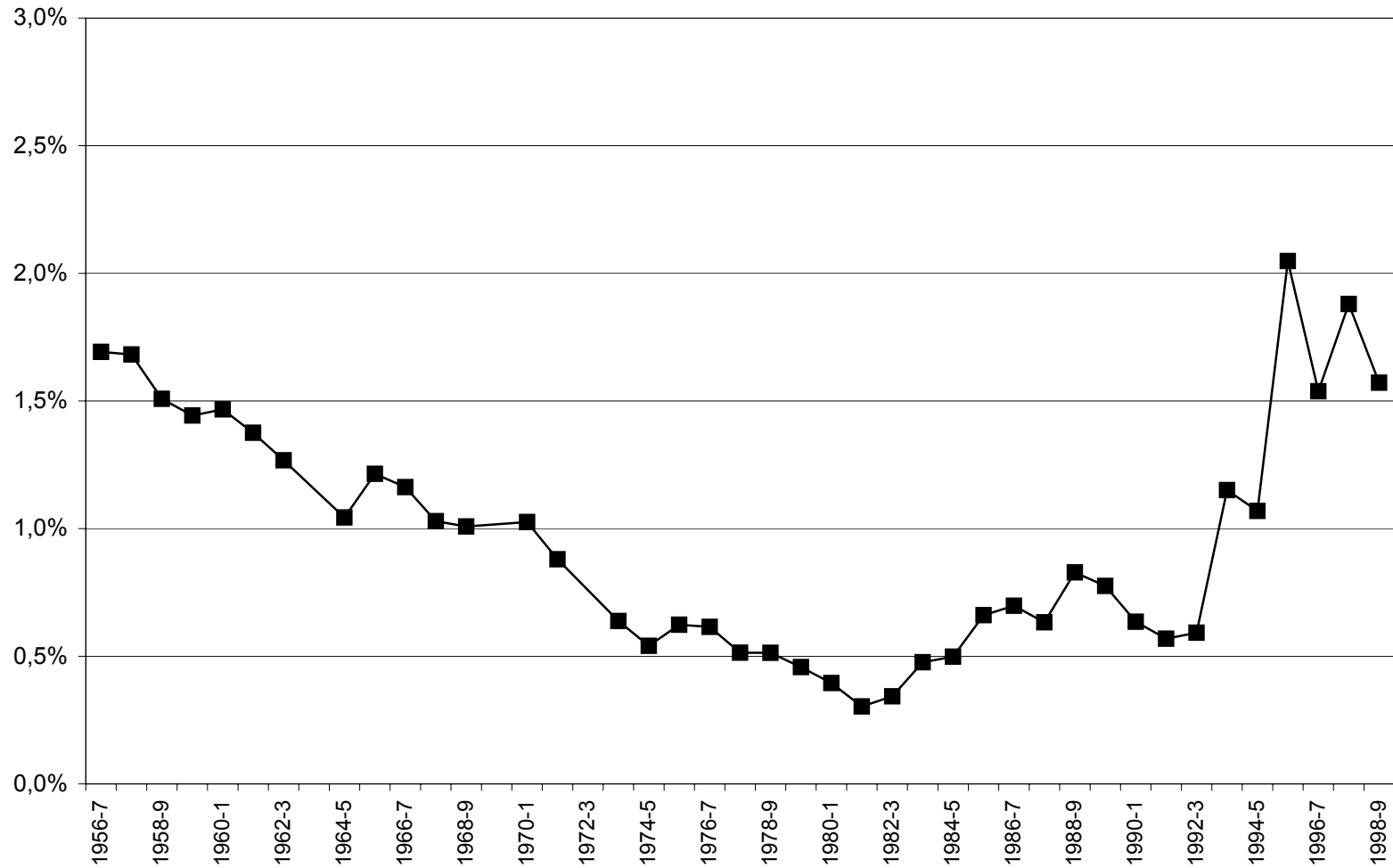
Source: Authors' computations using income tax returns (see Banerjee and Piketty (2003, Table A3, col. (4)))

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Figure 2 : The top percentile income share in India, 1956-2000

Source: Authors' computations using income tax returns (see Banerjee and Piketty (2003, Table A3, col. (1)))

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Table 1: Top income growth during the 1990s : 1999-2000 vs 1987-1988

	1999-00 vs 1987-8 (nominal growth)	1999-00 vs 1987-8 (real growth)
Household consumption/capita (NSS)	+242%	+19%
GDP/capita (NAS)	+337%	+52%
Household consumption/capita (NAS)	+304%	+40%
National income/tax unit (NAS)	+346%	+55%
Top income fractile P99-100 (tax returns)	+392%	+71%
Top income fractile P99,5-100 (tax returns)	+412%	+78%
Top income fractile P99,9-100 (tax returns)	+548%	+125%
Top income fractile P99,99-100 (tax returns)	+1009%	+285%
Top income fractile P99-99,5 (tax returns)	+331%	+50%
Top income fractile P99,5-99,9 (tax returns)	+317%	+45%
Top income fractile P99,9-99,99 (tax returns)	+393%	+71%
Top income fractile P99,99-100 (tax returns)	+1009%	+285%
Consumer price index	+188%	
Share of growth gap accounted for by P99-100		20,1%
Share of growth gap accounted for by P99,5-100		17,2%
Share of growth gap accounted for by P99,9-100		12,7%
Share of growth gap accounted for by P99,99-100		8,0%

Source: Banerjee and Piketty (2003, Table A0, Table A1 and Table A2, row 1999-00/1987-8)

Table 2: Top income growth during the 1980s-1990s : 1999-2000 vs 1981-1982

	1999-00 vs 1981-2 (nominal growth)	1999-00 vs 1981-2 (real growth)
Household consumption/capita (NSS)	+487%	+25%
GDP/capita (NAS)	+700%	+70%
Household consumption/capita (NAS)	+599%	+49%
National income/tax unit (NAS)	+688%	+68%
Top income fractile P99-100 (tax returns)	+1508%	+242%
Top income fractile P99,5-100 (tax returns)	+1747%	+293%
Top income fractile P99,9-100 (tax returns)	+2270%	+404%
Top income fractile P99,99-100 (tax returns)	+3980%	+767%
Top income fractile P99-99,5 (tax returns)	+992%	+132%
Top income fractile P99,5-99,9 (tax returns)	+1392%	+217%
Top income fractile P99,9-99,99 (tax returns)	+1698%	+282%
Top income fractile P99,99-100 (tax returns)	+3980%	+767%
Consumer price index	+370%	
Share of growth gap accounted for by P99-100		39,7%
Share of growth gap accounted for by P99,5-100		33,5%
Share of growth gap accounted for by P99,9-100		19,1%
Share of growth gap accounted for by P99,99-100		9,3%

Source: Banerjee and Piketty (2003, Table A0, Table A1 and Table A2, row 1999-0/1981-2)

Data and Dogma:
The Great Indian Poverty Debate

Editor

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MACMILLAN

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Preface

The genesis of this book was a workshop on poverty held in Delhi in January 2002. This workshop, which was co-sponsored by the WB and the Planning Commission of GOI, was set up to review the current Indian poverty debate, encompassing empirical work, measurement, and future directions for measurement and research. Many of the chapters of this volume were first presented at the workshop and published shortly thereafter in a special edition of the *Economic and Political Weekly* (Vol. 37:4, January 25-31, 2003). They are presented here in (sometimes substantially) updated form. As was widely noted in Delhi, the current work continues an old and distinguished tradition of poverty measurement and debate in India. The current volume includes four papers from that literature, all worth rereading in their own right, and all important to set the framework for the current debates. Finally, there are several chapters representing recent work that was not presented at the workshop, but which are important contributions, and which make this volume a comprehensive account of what is known about Indian poverty at the beginning of the 21st century.

Structure of the Book

Introduction and Overview

1. The Statistical Basis for Poverty Measurement

1.1 The Statistical System

1) Katherine Abraham, "Meeting Policy Makers Information Needs: Lessons from the U.S. Experience"
2) Guy Laroque, "Statistics Versus Economics and Politics"
3) TN Srinivasan, "Commentary on National Statistics Commission Report" (EPW Vol. 37:4, Jan 25-31, 2003)

1.2 Conflicts Between National Accounts and Surveys

4) M. Mukherjee and G.S. Chatterjhee "On the Validity of NSS Estimates of Consumption Expenditure" (*Sankhya/ISI)*
5) TN Srinivasan, PN Radhakrishnan, and A. Vaidyanathan "On the Distribution Expenditures in India: An Evaluation" (*Sankhya/ISI*)
6) B.S. Minhas "Validation of large scale sample survey data: case of NSS household consumption" (*Sankhya/ISI*)
7) A.C. Kulshrestha and Aloke Kar, "Consumer Expenditure from the National Accounts and National Sample Survey"
8) Sundaram and S. Tendulkar, "NAS-NSS Estimates of Private Consumption for Poverty Estimation – A Further Comparative Examination" (EPW Vol. 37:4, Jan 25-31, 2003)

1.3 Revisions and Extensions of the NSS Methodology

9) N.S. Sastry, "District Level Poverty Estimates: Feasibility of Using NSS Household Consumer Expenditure Survey Data" (EPW Vol. 37:4, Jan 25-31, 2003)
10) NSSO Working Group (led by Bhattacharya), "Suitability of Different Reference Periods for Measuring Household Consumption: Results of a Pilot Survey" (EPW Vol. 37:4, Jan 25-31, 2003)

2. Interpreting the Evidence

2.1 *What Happened to Poverty in India in the 1990s?*

11) Abhijit Sen, "Estimates of Consumer Expenditures and its Distribution: Statistical Priorities After the NSS 55th Round" (EPW Vol. 35:51, Dec 16, 2000)
12) Angus Deaton, "Adjusted Poverty Estimates for 1999-2000" (EPW Vol. 37:4, Jan 25-31, 2003)
13) Sundaram and Tendulkar, "Poverty Outcomes in India in the 1990s" (compilation of two articles appearing in past EPWs as well as new work)
14) Abhijit Sen and Himanshu, "Poverty and Inequality in India: Getting Closer to the Truth" (EPW, very recent issues/forthcoming)

2.2 *The Selection of Poverty Lines*

15) Ashok Rudra. "Minimum Levels of Living – A Statistical Examination" (*Sankhya/ISI*)
16) Angus Deaton and Alessandro Tarozzi, "Prices and poverty in India"
17) Angus Deaton, "Prices and poverty in India, 1987–2000" (EPW Vol. 37:4, Jan 25-31, 2003)
18) Angus Deaton and Jean Drèze, "Poverty and inequality in India: a re-examination" (EPW, Sept 7, 2002)

2.3 *Other Data, Other Assessments*

19) Gaurav Datt, Valerie Kozel & Martin Ravallion, "A Model-Based Assessment of India's Progress in Reducing Poverty in the 1990s" (EPW Vol. 37:4, Jan 25-31, 2003)
20) Suman Bery and R. K. Shukla, "NCAER's Market Information Survey of Households – Statistical Properties and Applications for Policy Analysis" (EPW Vol. 37:4, Jan 25-31, 2003)
21) S. S. Bhalla, "Recounting the poor: Poverty in India, 1983-99" (EPW Vol. 37:4, Jan 25-31, 2003)
22) Abhijit Banerjee and Thomas Piketty, "Are the rich growing richer: evidence from the Indian tax data."

3. Broader Perspectives on Poverty

23) Valerie Kozel and Barbara Parker, "A diagnostic profile of poverty in Uttar Pradesh." (EPW Vol. 37:4, Jan 25-31, 2003)
24) R. Meenakshi and B. Viswanathan, "Calorie deprivation in rural India, 1983 to 1999/2000" (EPW Vol. 37:4, Jan 25-31, 2003)
25) Rinku Murghai, M. H. Suryanarayana, and Salman Zaidi, "Measuring poverty in Karnataka, the regional dimension." (EPW Vol. 37:4, Jan 25-31, 2003)