Four questions and answers on growth and poverty reduction in India

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Abstract: *We look at how India's rapid growth and structural transformation —the shift rural to urban, and from agriculture to industry and services – is changing the relationship between economic growth and poverty reduction. Using our newly-constructed dataset of poverty measures for India spanning 60 years, including 20 years since the economic reforms of 1991, we find an acceleration of poverty decline since 1991, despite rising inequality. Post-91 growth was at least as pro-poor as in the preceding decades. Growth in urban areas and in the secondary and tertiary sectors of the economy drove bulk of the post-91 poverty decline.*

Keywords: Economic growth, Structural transformation, Poverty, Economic reforms, India

JEL classifications: F60; I32; P40

1. Introduction

India's economic take-off during the 1990s and the early 2000s is now part of the country's economic folklore. Many an observer has heralded India's arrival at the global economic stage as a result of the acceleration of economic growth over the last two decades or so.[2] This has often been linked to the program of economic reforms in the country, the most important phase of which began in the aftermath of the macroeconomic crisis of 1991. Remarkable as this upturn in economic performance is for a country of India's size, there have been lingering questions as

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[2] More recently, the Macro-Economic Framework Statement 2016-17 (Ministry of Finance) issued with the Union Budget for 2016-17 begins with a statement on the emergence of the Indian economy as "a bright spot in the world economy", a sentiment also echoed in the Economic Survey 2015-16.

to how much the new growth process has benefited poor people, and whether the poverty-growth relationship has changed significantly since the economic reforms.

Absolute poverty in India, as in many other countries, is measured in terms of the ability of the population to afford a minimum standard of living typically specified as a minimum level of per capita consumption or income for the household. Consumption or income, of course, are not the only relevant measures of wellbeing; progress in other social indicators, such as those relating to health, education, housing, water and sanitation amongst others, is also important for a fuller assessment of poverty reduction. However, progress in raising the consumption levels of poor people is of undeniable importance. Four key questions in this regard relate to:

i. Has poverty reduction accelerated with faster economic growth?
ii. Has growth become more pro-poor?
iii. How have rural and urban economic growth contributed to poverty reduction?
iv. How has growth in the primary, secondary and tertiary sectors of the economy contributed to poverty reduction?

This paper offers an overview of the findings from a research program on poverty and growth in India that addresses these questions. The early papers from this research project (such as Ravallion and Datt, 1996) focused on India's pre-reform experience, while naturally the most recent update of this research has given attention to the post-reform period. Datt, Ravallion and Murgai (2016) use a newly-constructed dataset of poverty measures for India based on the National Sample Surveys (NSS) spanning 60 years from the early 1950s to 2011-12, notably also including about two decades of India's high-growth post-reform experience.[3] This makes India unique amongst developing countries in being able to track poverty over such a long period, thus offering a special opportunity to inquire into long-term relationships between the processes of growth, structural transformation and poverty reduction.

Before discussing the key findings on the aforementioned questions, a few preliminary remarks on the data and methods used may be helpful. The poverty series is based on rural and urban distributions of per capita expenditure from more than 50 rounds of the National Sample Survey (NSS). By international standards, the NSS rounds are reasonably comparable over time. One specific issue affecting comparability however is the difference in the recall periods for household consumption used in some of the more recent rounds. While most rounds historically have used a uniform recall period of 30 days for all items of consumption, seven rounds in the post-91 period have instead used a mixed recall

[3] Further details on the dataset can be found in Ozler, Datt and Ravallion (1996), Ravallion and Datt (1996), Datt and Ravallion (2011) and Datt, Ravallion and Murgai (2016).

period (MRP), with longer (one-year) recall for some (mainly non- food) items. The estimates reported below thus control for MRP rounds.

The poverty estimates relate to a poverty line that is about 20% higher than the Alagh-Lakdawala Planning Commission poverty lines (Government of India, 1979 and 1993) and corresponds to a monthly per capita expenditure of Rs. 732 in rural areas and Rs. 1115 in urban areas at 2011-12 prices.[4] These lines correspond to about $1.25 a day at 2005 Purchasing Power Parities. Rural and urban areas are identified as per the Census classification. Separate temporal price indices are used for rural and urban areas (see Datt, Murgai and Ravallion, 2016, for details). Data from the National Accounts Statistics (NAS) on private consumption, net domestic product and its sectoral distribution are meshed in with the poverty data from the NSS by linearly interpolating the annual NAS data to the mid-point of the survey period for each round.

Since its inception, this research project has used three poverty measures: (i) the <u>headcount index</u>, given by the percentage of the population living in households with a consumption per capita less than the poverty line; (ii) the <u>poverty gap index</u>, defined by the mean distance below the poverty line expressed as a proportion of that line, where the mean is formed over the entire population, counting the non-poor as having zero poverty gap; and (iii) the <u>squared poverty gap index</u>, defined similarly to the poverty gap index except that it is the mean of the squared proportionate poverty gaps, such that the resulting measure penalizes inequality amongst the poor.[5]

2. Has poverty reduction accelerated with faster economic growth?

While the exact date for acceleration of growth is difficult to establish conclusively, we take 1991 as the year of a potential structural break coinciding with the onset of extensive economic reforms. We know from India's national accounts that *per capita* income growth in real terms increased nearly two-and-a-half times post-1991 (from 1.8% per year to 4.3% per year) relative to the trend for the preceding three-and-a-half decades (Figure 1). The rates of growth in mean consumption measured from the surveys are lower but still point to significant acceleration since 1991.

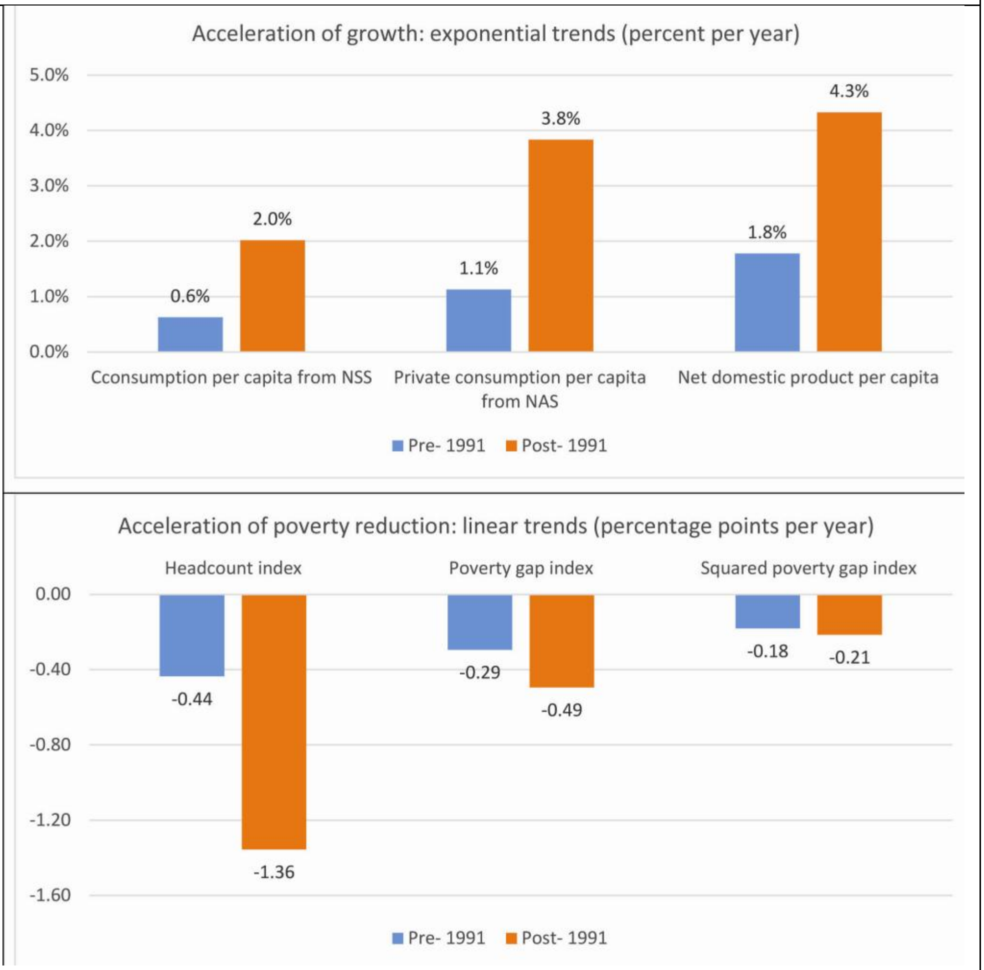
We can also conclude from the NSS survey data that the faster growth did come with faster poverty reduction since 1991, despite the growth process being also associated with an increase in inequality. For instance, the headcount index of poverty declined at the rate of 0.4 percentage points per year during 1957-91; the corresponding annual rate of decline during 1993-2012 was by 1.4 percentage points per year (Figure 1). There was also an acceleration of the decline in the poverty gap and the squared poverty gap indices, though the acceleration for the

[4] The results for the Alagh-Lakdawala lines are similar.

[5] All three measures are members of the class of measures proposed by Foster, Greer and Thorbecke (1984).

latter is not statistically significant. As against these linear trends (also shown in Figure 1), exponential trends indicate significantly faster rates of decline in *all* poverty measures post-91, thus suggesting that faster poverty reduction was not limited to those just below the poverty line. Nonetheless, the relatively limited acceleration in the decline of the squared poverty gap measure reflects the increase in inequality during the post-91 period.

Figure 1: Acceleration of growth and poverty reduction: 1957-2012



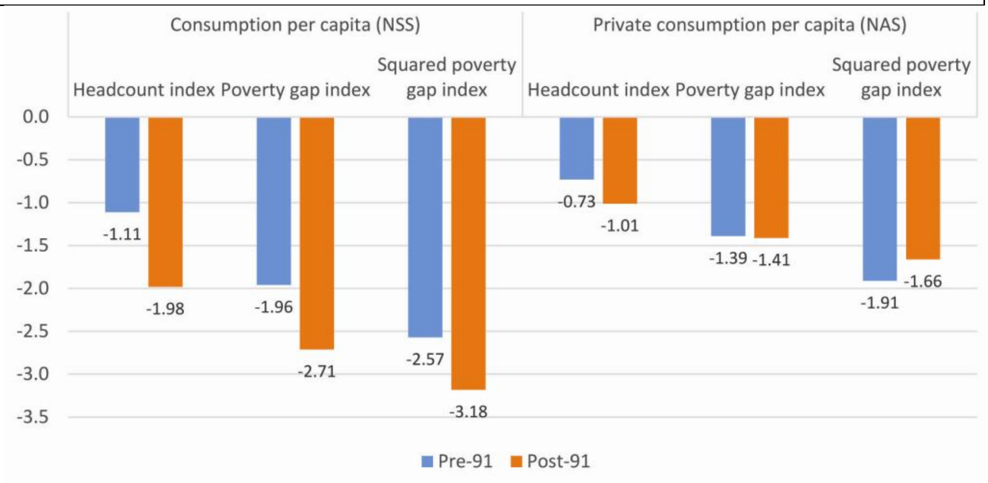
Note: Growth trends based on regressions of (log) mean consumption/income or poverty measures on time. Consumption per capita from NSS a survey is at constant rural 2011-12; private consumption and net domestic product per capita are from national accounts and also at constant 2011-12 prices. Regressions for poverty measures and mean NSS consumption control for MRP rounds of the NSS. Growth rates for pre- and post-1991 sub-periods were estimated as parameters of a single regression, constrained to assure that the predicted values were equal in 1992.

3. Has growth become more pro-poor?

One may next ask whether the faster poverty reduction since 1991 is simply a reflection of faster growth, or has poverty become more responsive to growth. Put differently, does a given rate of growth now deliver more or less poverty reduction than it used to? One measure of such pro-poorness of growth is the percentage decline in a poverty measure (such as the headcount index) associated with a 1% increase in real per capita income or consumption, or what can be termed as the *elasticity* of poverty reduction to growth. Has the elasticity of poverty reduction to growth increased?

It turns out the answer depends to some extent on how growth is measured. If growth is measured in terms of per capita consumption derived from the surveys, there is strong evidence that not only is the post-1991 period one of faster growth, it is also one of more pro-poor growth. The absolute elasticity of the headcount index to growth almost doubled from 1.1 (pre-1991) to 2.0 (post-1991). The absolute elasticities for the poverty gap and the squared poverty gap indices are also significantly higher post-91 (Figure 2).

Figure 2: Elasticity of poverty with respect to growth in mean consumption



Note: Based on regressions of log poverty measures against log consumption per person using 40 surveys spanning 1957/58-2011/12 (except 48th round for the crisis year 1992). All regressions include a control for surveys that used a mixed-recall period. Survey mean is instrumented with lagged survey means (split urban and rural), interval between mid-points of survey periods, time trend, and current and lagged variables for: mean consumption from the national accounts, rural and urban CPIs, and rural population shares. Regressions with NAS mean also control for the difference in the rates of inflation implied by the CPI and the NDP deflator.

Source: Datt, Ravallion and Murgai (2016).

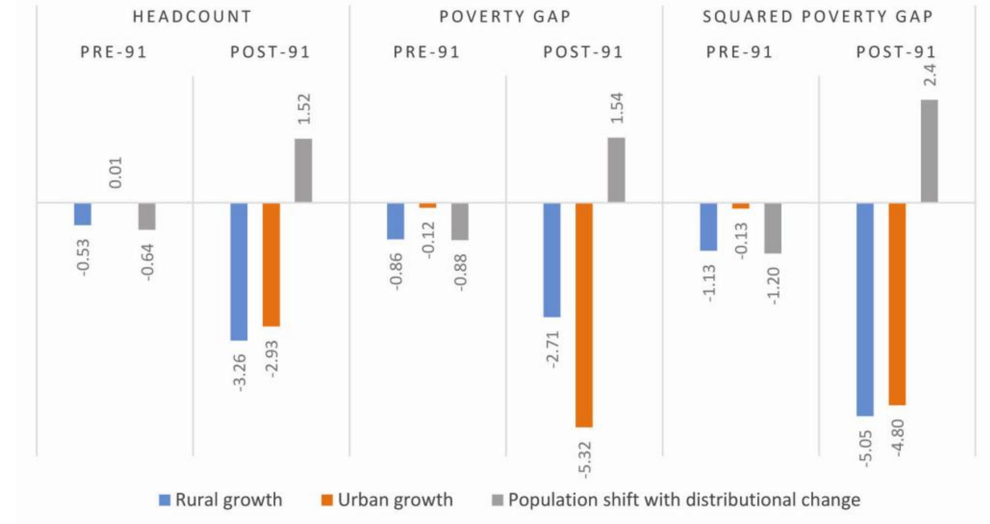
If growth is measured by private per capita consumption from the national accounts, the evidence still points to a higher elasticity for the headcount index post-1991. However, for poverty measures that take into account the depth or severity of poverty, there is no evidence of a higher elasticity of poverty reduction post-1991 (Figure 2).

Taken together, a more conservative reading of the evidence on the elasticities is that growth in the post-1991 period is at least as pro-poor as it was in the pre-1991 period, and there are indications that it has become more pro-poor. It is however notable that in both periods growth is less pro-poor when growth is measured by national accounts, and especially so post-91, when the national accounts based growth elasticities of poverty are only about half of those based on the surveys. This is not surprising since (as already noted in Figure 1), relative to the surveys, the national accounts indicate a significantly greater acceleration of growth since 1991.

4. How have rural and urban growth contributed to poverty reduction?

In the early 1950s, about 85% of the poor lived in rural areas and depended on the rural economy for sustenance. It is thus not surprising to find that it was rural growth that largely determined the magnitude of poverty reduction in the country. This is borne out by a decomposition analysis of the total decline in poverty into three components representing the contributions of (i) rural growth, (ii) urban growth and (iii) a distributional component representing changes in inequality and the shift of population from rural to urban areas. The decomposition results are shown in Figure 3.

Figure 3: Changing contribution of rural and urban growth to national poverty reduction (annual rate of reduction in national poverty attributable to different components)



Note: Based on regressions of changes in log rural and urban poverty measures against consumption -share-weighted rural and urban growth and population shift variables and a control for MRP survey rounds. Survey means are instrumented as before (see Notes to Figure 2)

Source: Datt, Ravallion and Murgai (2016).

The decompositions show that of the total decline in poverty during 1957-1991, almost half could be attributed to rural growth and the other half to a favourable change in distribution. Notably, urban growth (while it reduced urban poverty) contributed little or nothing to national poverty reduction, reflecting weak linkages of urban growth over this period with the rural economy.

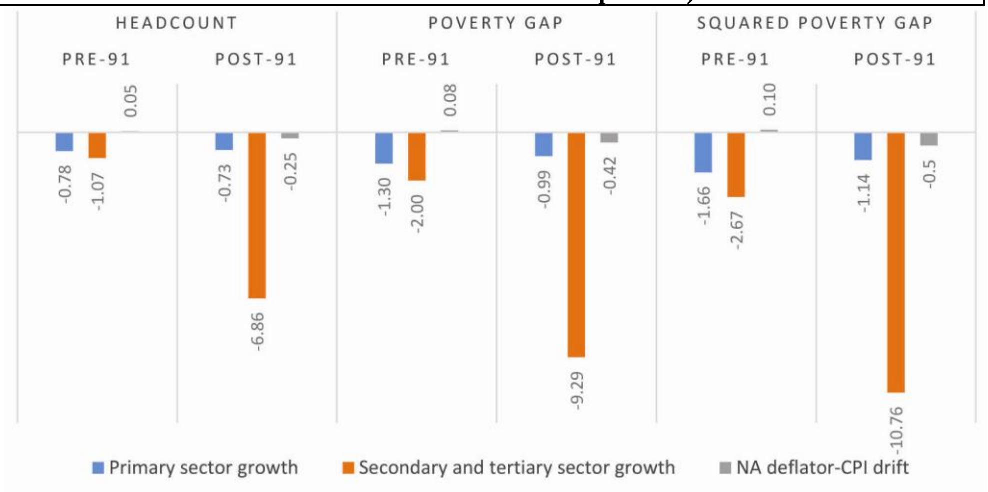
However, there is a striking change in this pattern since the 1990s. In marked contrast to the earlier period, urban growth contributed more than 60% of the total decline in the headcount index since 1991, more than 80% of the decline in the poverty gap index and nearly two-thirds of the decline in the squared poverty gap index. Rural growth contributed a little less than half (about 45%) of the decline in all three poverty measures, and there was an adverse (poverty-increasing) distributional component reflecting higher inequality associated with the new growth trajectory. Rural growth remains important, but now urban growth has emerged as a major driver of national poverty reduction. This is happening both directly through urban growth having a larger impact on urban poverty, but even more importantly, indirectly through its now substantial impact on rural poverty.

5. How has growth in the primary, secondary and tertiary sectors contributed to poverty reduction?

A structural break in the relationship between poverty and the composition of growth is also evident when seen through the lens of growth by output sectors. For all three measures of poverty, we find that pre-1991, only the primary and tertiary sector growth contributed to poverty reduction. By contrast, after 1991, the data point to sector-neutrality (by output) indicating that the marginal effects of growth on poverty decline were similar across sectors; what mattered for poverty reduction was the overall rate of growth rather than the composition of that growth.

The overall contribution of each sector to total poverty decline also depends on the size and growth of each sector. Figure 4 shows the results of a decomposition of poverty reduction by growth across the primary, secondary and tertiary sectors of the economy.

Figure 4: Changing contribution of growth in primary, secondary and tertiary sectors to national poverty reduction (annual rate of reduction in national poverty attributable to different components)



Note: Decompositions of predicted change in national poverty (net of the effect of population growth) based on regressions of changes in log poverty measures against sector-share-weighted growth in primary, secondary and tertiary sector NDP per capita, and controls for MRP survey rounds and the drift between the Consumer Price Index and the National Accounts deflator.

Source: Datt, Ravallion and Murgai (2016).

The relative contribution of primary sector growth has rapidly dwindled from accounting for about two-fifths of the total poverty decline pre-1991 to less than 10% of the total (and larger) poverty decline post-1991. Over 85% of the post-

1991 fall in poverty is on account of tertiary and secondary sector growth. The tertiary sector alone has contributed over 60%. Secondary sector growth has contributed about a quarter. India’s construction boom since 2000, intensive in its use of low-skill labour, has clearly helped assure a more pro-poor growth process from the secondary sector. The rapid decline in the contribution of the primary sector growth to poverty reduction is not surprising in light of the rapid fall in the share of the primary sector in national output, now accounting for less than 15%. Even as the primary sector’s share of employment is still high at about 45%, it represents a small and shrinking segment of the economy in turn being able to exert only a limited impact on national poverty.

India has made significant gains in poverty reduction over the last two decades or so, and strides in poverty reduction have kept pace with the strides in economic growth over this period. However, the Indian economy is changing and so is the relationship between economic growth and poverty reduction. The process of structural transformation of the economy has intensified and with it the traditional sources of both economic growth and poverty reduction are getting displaced. As this process continues, the country can be expected to increasingly turn to growth in its urban and non- agricultural economy to drive future poverty reduction.

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