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Globalization, growth and poverty in India

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Research Paper No. 2006/41

Globalization, Growth and Poverty in India

N. R. Bhanumurthy and A. Mitra *

April 2006

Abstract

In this paper an attempt is made to assess the impact of economic reforms on the incidence of poverty by decomposing the change in poverty ratio between two time points into growth/mean effect, inequality effect and the population shift effect. Based on the National Sample Survey data an analysis has been carried out for two time periods: (i) 1983 to 1993-94 and (ii) 1993-94 to 1999-2000, broadly representing the pre-reform and reform-period respectively, for the rural and urban areas of the fifteen major states, and also for the all-India level. The growth/mean effect, which determines the extent of fall (rise) in poverty incidence due to rise (fall) in mean per capita consumption expenditure, dominates in both the periods over the inequality effect, that estimates the rise (fall) in poverty due to rise (fall) in inequality. It also dominates over the population shift effect, which assesses the net impact on all-areas combined poverty, of a decline (rise) in rural (urban) poverty caused possibly by rural-urban migration. The growth effect, which is beneficial for poverty reduction, seems to have gone up in the reform period. The adverse inequality effect also fell in magnitude in the second period compared to the first. States with a greater beneficial growth effect in the second period relative to the first, also show a fall in the magnitude of an adverse population shift effect in the urban areas, i.e., a relatively less rise in the incidence of urban poverty caused by rural-urban migration.

Keywords: globalization, economic growth, poverty, inequality, population shift effect, decomposition, India

JEL classification: I38, R11, O15

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* Institute of Economic Growth, University Enclave, Delhi
email: (N. R. Bhanumurthy) bhanu@iegindia.org; (Arup Mitra) arup@iegindia.org

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UNU World Institute for Development Economics Research (UNU-WIDER)
Katajanokanlaituri 6 B, 00160 Helsinki, Finland

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1 Introduction

Globalization embodies increased import penetration, export sales, competition in services, foreign direct investment, and exchange rate fluctuations prompted by international capital movements. As Rama (2003) defines, globalization is the combination of these changes in the way the developing countries interact with the rest of the world. In other words, it is the process through which the domestic factors of production such as labour and capital will be integrated with the world economy. The process of globalization in India was initiated in 1991 in order to give an impetus to the output growth rate and to help the economy recover from the foreign exchange crisis and fiscal imbalances. But the benefits of these reforms in terms of rise in incomes are obviously not expected to reach different sections of the population equally. One view is that the poor may benefit from economic growth only indirectly and, hence, the proportional benefits of growth going to the poor will always be less than those accruing to the non-poor. In other words, in the process of economic growth in the initial stages, the positive effects of growth on poor tend to get offset by the adverse effects of inequality rising, as suggested by Kuznets (1955). However, if economic growth is accompanied by a decline in inequality, the poor benefit more than the non-poor—the situation is described in the literature as *pro-poor growth* (see Kakwani, Prakash and Son 2000; Kakwani and Pernia 2000). Even when inequality rises, observed poverty may still decline if the growth effect dominates the inequality effect, that is, the extent of fall in poverty due to growth is larger than the rise in poverty due to a rise in inequality.

Given the wide regional variations in India in terms of socioeconomic development and initial conditions, economic reforms have been initiated at different levels and at different points in time across the states. Most of the reforms have been pursued in the industrial sector, the spread and growth of which show considerable regional variations. Availability of infrastructure, which is a strong determinant of industrial productivity, mobility and income earnings also varies significantly across the states (Mitra 1997). Hence, it is expected that economic growth would have wide regional variations and further that the changing income distribution in the process of growth would also be different across states.

Among several outcomes, population mobility across space is one, which is directly influenced by economic growth. The spatial composition of growth, reflected in terms of rural-urban development disparity, motivates people to shift to areas with better employment prospects. As total poverty is a weighted average of rural and urban specific poverty ratios, the net effect of population mobility on poverty depends on the changes in its rural and urban components. Since economic reforms are more urban based, the spatial composition of growth is expected to change, resulting in a migration of population from rural to urban areas. The decline in the incidence of poverty (rural-urban combined) depends on whether urban employment opportunities are large enough to absorb the increasing supplies of labour from the rural areas. A large number of empirical studies exist to suggest that rural migrants have been able to escape poverty, though they could not graduate to the urban formal sector (Banerjee 1986; Mitra 1994, 2003; Papola 1981). Even when the incidence of urban poverty rises due to rural-urban migration, the decline in the combined poverty ratio may be evident with a fall in the rural poverty incidence occurring in response to out-migration. This is precisely because the weight of urban poverty is much less in the poverty for all-areas combined poverty to the rural poverty.

It is not only the overall growth but also the composition of growth, which is important for poverty reduction. If the poor are mostly concentrated in the agricultural sector, it is natural that agriculture-led growth would reduce poverty. However, as Kuznets (1966) points out, in the process of economic development, both the value-added mix and workforce structure shift away from agriculture. Hence, recommending an agriculture-led growth may be counter-intuitive. One may, therefore, suggest that the growth of the industrial sector or that of the overall commodity-producing sector plays an important role in reducing poverty. However, several tertiary activities also play a key role in generating economic growth. It has been observed that the entire tertiary sector is not parasitic in nature (Bhattacharya and Mitra 1997); a large segment, particularly in the context of liberalization, is strongly associated with the commodity-producing sector. Activities, which were earlier conducted within the manufacturing sector for example, are being undertaken separately because of greater specialization, and, hence, these may form a part of the tertiary sector. This would, therefore, call for a careful interpretation of the tertiary sector rather than treating it purely as redundant. In other words, tertiarization of value added may also play a role in poverty reduction as it can generate employment and simultaneously enhance real income. In other words, in the context of poverty reduction, the changing composition of growth does not imply a rise only in the share of industry, but rather in industry and tertiary sectors both that accompany the declining share of agriculture (see Ravallion and Datt 1996).

According to the 'over-urbanization thesis', if the industry can absorb on a large scale the semi-skilled and unskilled labour released from the agriculture sector, poverty would decline. Hence, it is not merely industrialization in terms of value added, but rather it is the poor vis-à-vis the employment generated in the manufacturing, that is crucial for reducing poverty. Similarly, a rise in industrial productivity translating into a rise in the income of the workers would have implications in terms of a decline in poverty (Mitra 1992). On the whole, both the industrialization of value added and the workforce, resulting in a rise in productivity would help reduce poverty.

In order to examine some of these hypotheses in the context of globalization, we have conducted two decomposition exercises. The first exercise, following Kakwani (2000) and Mazumdar and Son (2002), decomposes the change in incidence of poverty over two timepoints in terms of pure growth effect (holding inequality constant), inequality effect (holding growth constant) and population shift effect. Such an analysis enables a critical analysis of the policy issues and offers a profound understanding of the reform process. However, it may be noted that in doing such an exercise, only the expenditure inequality has been considered which is a gross underestimate of income/asset inequality. Similarly the growth effect is envisaged in terms of mean effect—the mean of consumption expenditure per capita—which is again a gross under-estimate of per capita income. As data on income and its distribution are not available, these crude proxies are followed and are based on the national sample survey data on expenditure per capita and its size distribution.[1] In assessing the population shift effect, the percentages of population residing in urban and rural areas are considered, which in addition to rural-urban migration also include the differentials in rural-urban natural growth of population, and the rise (fall) in the level of urbanization (percentage of rural

[1] There are alternative measures of poverty figures estimated by independent researchers. But since these are different from each other, we have considered the poverty figures based on Planning Commission's Modified Expert Group Methodology.

population) due to reclassification of areas. Hence, it may not be justified to perceive the population shift effect purely in terms of rural-urban migration, which can again comprises inter-state as well as intrastate streams, not deciphered in the study. Therefore while interpreting the results, these limitations need to be kept in view. The second exercise expresses poverty in terms of per capita income, share of industry in gross domestic product, manufacturing labour productivity and the ratio of poor to manufacturing employment. The details about these exercises are discussed in section 4. Section 5 discusses the database used in this study. The empirical results are interpreted in section 6, while section 7 summarizes the major findings of the study. But before discussing the technical framework, in the next section, we discuss the impact of globalization on growth and in section 3 we discuss changes in some of the variables such as incidence of poverty, per capita income and urbanization over time. The analysis has been carried out in the subsequent sections with a view to highlighting the changes that occurred in the pre-reform and reform periods.

2 Globalization and growth

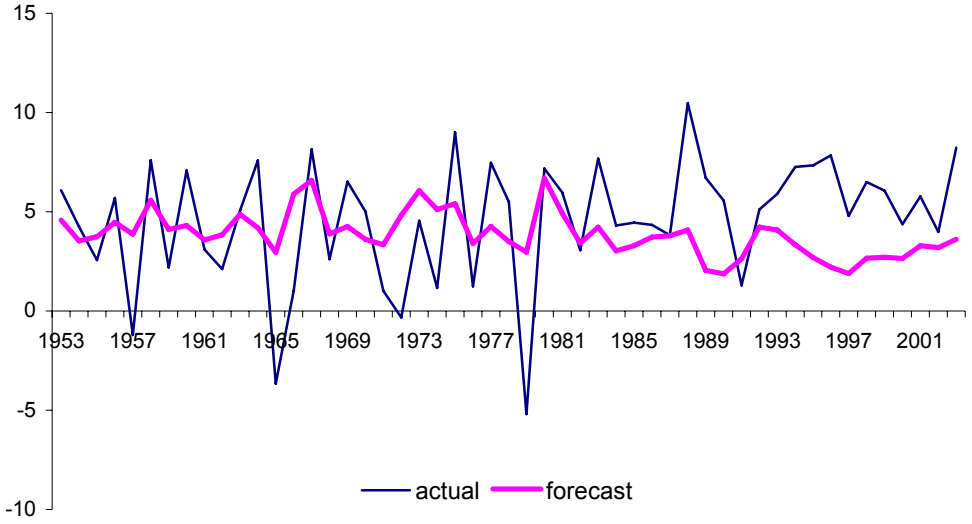
As part of globalization and liberalization in India, the government has undertaken initiatives in certain areas that possibly were hindering the growth of the economy. The production sectors were opened up for the private sector, both the domestic and foreign. This has resulted in the inflow of foreign investment and at the same time, shrinking of public sector. To put it in words, the focus has shifted from equity to growth. Further, the government has tried to remove the state-imposed market distortions to improve efficiency and productivity. The government has also significantly brought down the trade barriers. All these measures are expected to improve the growth performance of the economy.

The policy measures that were initiated in the early 1990s appear to have increased the output growth in the country. This is evident in Figure 1, wherein both actual and forecasts of GDP growth are plotted. The forecasts are based on an appropriate econometric model using the information from 1960/1 to 1990/1. In this exercise we try to see what could have been the GDP growth if the reforms had not initiated in the early 1990s, or if there had been no regime shift. It is quite clear that if there was no reform, the GDP growth might have been well below the actual. This is also clear from Figure 2 wherein the figures on differences between the actual and forecasted GDP levels are presented. As appears from both charts, there has been a structural shift upwards since 1993/4. Furthermore, the average output growth in the reform period has been above 6 per cent, indicating that the Indian economy has shifted above from its 'Hindu rate of growth' of 4 per cent to 'Bharat rate of growth' at 6 per cent. This is a very significant shift and has come within a short period.

This shift in the growth curve is basically due to the change in the composition of GDP. The share of the agricultural sector in GDP, which was nearly 50 per cent, has come down drastically to 22 per cent, while the share of tertiary sector has gone up to 50 per cent, keeping the share of industrial sector almost at its historical figures. But this shift in the value-added composition has not been reflected in the employment structure. Still a large majority of the labourforce depends on the agricultural sector for livelihood, whereas the industry and service sectors are unable to absorb the additional labourforce. This has led to the criticism that the current rise in the output growth is basically a

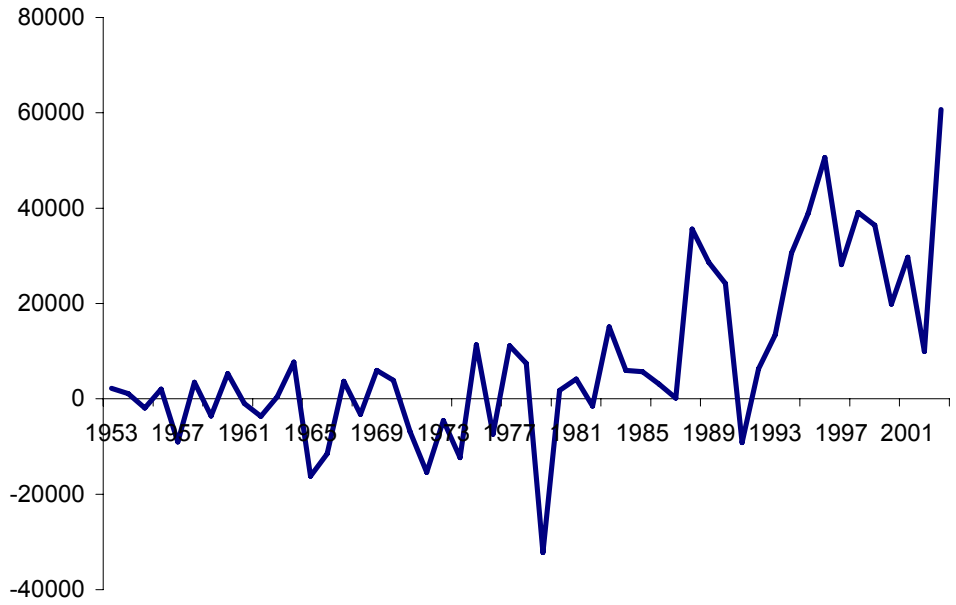
'jobless growth'. One needs to examine whether these are some shortfalls occurring in the initial stages of the globalization process, after which positive gains would follow. Although the international experience is not clear in this regard, this issue needs to be addressed urgently as this would have severe adverse impact on the poor in the economy reducing the possibility of achieving the Millennium Development Goals of the United Nations.

Figure 1
Actual and projected GDP growth



Source: Actual growth figures taken from RBI (2003) and projected growth computed by authors.

Figure 2
GDP growth differentials



Source: Computed by authors based on Figure 1.

3 Some broad indicators

The incidence of poverty in rural India declined from 45.61 per cent in 1983 to 37.27 per cent in 1993/4 (see Table 1). Between 1993/4 and 1999-2000, it declined by 10.18 percentage points, the extent of fall being larger than in the previous period. This trend is similar even in urban India. The decline in poverty has been accompanied by an increase in the average per capita consumption expenditure, which rose by 18.3 and 11.3 per cent (in constant prices) over 1983 through 1993/4 and 1993/4 through 1999-2000 respectively. Per capita GDP also increased by 27.8 and 26.9 per cent over the same periods. This has been accompanied by an increase in the level of urbanization (defined as the ratio of urban population to total population). Workforce participation rate, which is defined as the principal plus subsidiary status worker as a percentage of total population, remained more or less the same in the rural areas in the first subperiod, whereas it declined by almost 2.7 percentage points in the second subperiod. On the other hand, in the urban areas, it increased marginally by 0.7 percentage point in first subperiod and fell subsequently by almost one percentage point in the second period.

It appears that the decline in the incidence of poverty, particularly in the 1990s, has been accompanied by a fall in the workforce participation rate and a rise in per capita income and the per capita consumption expenditure. Can all this be viewed as the contribution of economic reforms, which led to higher growth in the nineties; or to the change in the composition of growth and/or change in inequality in the process of growth? It would, therefore, be interesting to examine the contribution of different factors in reducing poverty over the 1980s and 1990s.

Table 1
Trend in poverty and other variables

	1983			1993-94			1999-2000		
Variables	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Poverty(%)	45.61	42.15	44.48	37.27	33.66	35.97	27.09	23.62	26.1
APCE (Rs.)	240	381	273.5	281.4	458	328.3	309	515.4	367.6
TWFPR	44.5	34.0	42	44.4	34.7	41.8	41.7	33.7	39.4
GDPPC(Rs)		6619			8740			11438	
Urbanization		23.79			26.57			28.4	

Notes: TWFPR = Total workforce participation rate (principal and subsidiary status);
GDPPC = Per capita gross domestic product (factor cost, 1993/4 prices);
Urbanization = Urban population/total population;
APCE = Average per-capita consumption expenditure (1993/4 prices).

Source: GoI (2001).

4 Technical framework

Several studies in the Indian context have been pursued to assess the impact of economic growth on poverty. Ahluwalia (1978) cites evidence in favour of agricultural growth trickling down to benefit the poor in the rural India. Jain and Tendulkar (1990) examine the relative strengths of growth and redistribution in changing the headcount ratio of poverty over the period 1970/1 to 1983. Mitra (1992) shows that the impact of industrial growth on urban poverty was only nominal, which is reconfirmed by Ravallion and Datt (1996) in the case of rural as well as urban areas. Overall, the debate around growth and poverty seems to have arrived at a consensus that growth is

necessary, but not sufficient, for poverty reduction. Growth is said to be pro-poor 'when it is labour absorbing and accompanied by policies and programmes that mitigate inequalities and facilitate income and employment generation for the poor, particularly women and other traditionally excluded groups' (ADB 1999). It is defined as what enables the poor actively and directly to participate in and significantly benefit from economic activity (Kakwani and Pernia 2000). Chen and Ravallion (2000), for instance, argue that persistent poverty in many countries is the result of persistent inequalities—both economic and non-economic—that have prevented the poor from participating in the growth that did occur. Hence, a strategy that is biased in favour of the poor to enable them to benefit proportionally more than the rich needs to be the basis of pro-poor growth (Kakwani and Pernia 2000).

Decomposing the change in the poverty index into a growth and distribution effect was initiated by Kakwani and Subbarao (1990) and Jain and Tendulkar (1990) while quite a few alternative decomposition methods have been developed subsequently, for example by Datt and Ravallion (1992), Kakwani (2000) and Mazumdar and Son (2002) and a synthesis of these methods are given in appendix. Based on this, the present study estimates below an equation to decompose the change in the incidence of poverty in terms of mean effect, inequality effect and the effect due to population shift from rural to urban areas, in fifteen major Indian states individually, and at the all-India level for the two sub-periods 1983 to 1993/4 and 1993/4 to 1999-2000.

$$\frac{\Delta P}{P} = \sum_i \frac{\bar{f}_i P_i}{P} \frac{M_i}{P_i} + \sum_i \frac{\bar{f}_i P_i}{P} \frac{I_i}{P_i} + \sum_i \frac{\bar{P}_i f_i}{P} \frac{\Delta f_i}{f_i}$$

where f_k and P_k are the population share and poverty index of the kth group, respectively, and '*M*' and '*I*' are mean and inequality effect. (Besley, Burgess and Esteve-Volart (2004) also examine these issues with the help of the decomposition exercise following Datt and Ravallion (1992). But, as it may be noted in the appendix, the problems in Datt and Ravallion (1992) were addressed in the methodology developed by Kakwani (2000) and Mazumdar and Son (2002) and, hence, the present study follows the exact decomposition methodology developed by the later).

Equality, as defined by Tendulkar and Jain (1995), is an unambiguous reduction in poverty as well as an increase in social welfare. However, to judge distributional outcomes entirely on the basis of relative inequality, i.e., in terms of a reduction in the Gini coefficient, could be faulty. This is because the same value of Gini coefficient can be associated with different Lorenz curves reflecting very different kinds of relative inequalities. Similarly, a simple headcount measure of poverty or the poverty gap index is actually the special cases of the class of Foster-Greer-Thorbecke (1984) poverty index, capturing the severity of poverty. Hence, limitations of our analysis arising due to the fact that we simply use the headcount measure of poverty and that the inequality index implicit in our analysis refers to Gini coefficient, need to be kept in view while interpreting the results. Further, as the methodology adopted here is an exact decomposition, we safely derive the inequality effect as a residual after estimating the growth effect and the population shift effect from the change in the incidence of poverty.

Further, to understand the linkage between poverty, per-capita income and sectoral value added, we have also estimated multiplicative decomposition[2] of poverty ratio in a particular period.

$$P = \left(\frac{GDP}{Population}\right)\left(\frac{Agriculture + Industry}{GDP} * 100\right)\left(\frac{Poor}{Agriculture + Industry}\right);$$

Here *P* is the poverty ratio. In this decomposition the headcount measure of poverty is expressed in terms of per capita income, the share of commodity sector (agriculture and secondary, i.e., manufacturing, construction, electricity, gas and water, etc.) in total gross domestic product and the poor dependency ratio relative to the total commodity sector value added. In other two variants that are presented in footnote, poverty is expressed as per capita income, industrialization as a share of organized manufacturing value added and the ratio of poor to organized manufacturing value added, indicating the poor that the organized industry has to support. In the third variant, poverty is decomposed into per capita income, industrialization defined as the percentage share of organized manufacturing value added, the ratio of poor relative to employment in the organized manufacturing and the inverse of labour productivity in the organized manufacturing.

Taking the logarithm transformation of both the sides, each variant can be reduced to an additive form. Hence, the inter-temporal difference in each of these expressions gives the rate of growth of change in the headcount measure of poverty being expressed in terms of the rate of growth of each component listed on the right hand side. The data that we have for this study are explained in the next section.

5 The database

In this study we try to decompose the changes in poverty between two periods, i.e., 1983 to 1993/4 and 1993/4 to 1999-2000, and between two regions, i.e., rural and urban, by using two methods that are specified in the previous section. But only the methodology developed by Kakwani (2000) and Mazumdar and Son (2002) is used in the case of fifteen major Indian states. For the purpose of comparison, we take the distribution of consumer expenditure data from the 38th, 50th and 55th rounds of consumer expenditure surveys conducted by National Sample Survey Organization for the years 1983, 1993/4 and 1999-00, respectively.[3] Also, we have adjusted the base year expenditures with the prices of terminal year. The price indices used are state specific price deflators for rural and urban areas separately, which were used in the modified expert group methodology to update the poverty line of Rs 49 and Rs 56.6 in 1973-74

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2 The other two variants are $P = \left(\frac{GDP}{Population}\right)\left(\frac{Mfg.valueadded}{GDP} * 100\right)\left(\frac{Poor}{Mfg.valueadded}\right);$

$P = \left(\frac{GDP}{Population}\right)\left(\frac{Mfg.valueadded}{GDP} * 100\right)\left(\frac{Poor}{Mfg.employment}\right)\left(\frac{Mfg..employment}{Mfg.valueadded}\right)$

3 Strictly speaking the results from 55th round data on consumption expenditure are not comparable with the earlier rounds because of the possible intermingling of responses due to adoption of dual recall periods (7 days and 30 days) in the 55th round. For details see Deaton and Drèze (2002) and Sundaram (2001).

prices for rural and urban areas, respectively (GoI 2002). It is found that the distribution of expenditure class intervals in each round is different. We have reclassified the baseyear expenditure class intervals in terms of terminal year class intervals. In doing so, we assume that the number of persons and the per-capita expenditure within the class interval are proportionately related. We have interpolated the population for 1983, 1993/4 and 1999-2000 based on the population census data for the years 1981, 1991 and 2001. For the second method, we have taken GDP (at factor cost, in 1993/4 prices), agricultural and secondary sector value added data from government of India's Economic Survey, 2002-03. The data on value added and workers employed in the organized manufacturing sector are taken from the Annual Survey of Industries for the requisite years and the value-added figures have been converted into 1993/4 prices. For employment in the manufacturing sector, we take the total number of workers instead of the total persons engaged, as the latter includes highly skilled jobs, which may not be available to the unskilled and semi-skilled job seekers. Hence, in assessing the relative burden of the poor in terms of the number of poor vis-à-vis employment in the high productivity organized manufacturing sector, only the number of workers is considered to be appropriate.

6 Empirical Analysis

Looking at the observed change in the incidence of poverty we note that at the all-India level the fall in the 1990s (1993/4 through 1999/2000, reform period hereafter) seems to be higher than during 1983 to 1993/4 (pre-reform period hereafter). The rural-urban differences are noteworthy: rural poverty dropped by a little more than 10 percentage point in the reform period, whereas it was around 8.3 percentage point in the pre-reform period, and urban poverty fell by 8.38 and 8.74 percentage points in pre-reform and reform periods, respectively (see Table 2).

Table 2
Change in the incidence of poverty in the 1980s and the 1990s

	Change in rural poverty between:		Change in urban poverty between:		Change in all-areas poverty between:	
States	1983 & 1993/4	1993/4 & 1999/2000	1983 & 1993/4	1993/4 & 1999/2000	1983 & 1993/4	1993/4 & 1999/2000
AP	-10.61	-4.87	2.03	-11.7	-6.72	-6.42
Assam	2.41	-4.97	-14.0	-0.26	0.39	-4.77
Bihar	-6.16	-13.91	-12.83	-1.59	-7.26	-12.36
Gujarat	-7.62	-9.01	-11.25	-12.3	-8.58	-10.14
Haryana	7.46	-19.75	-7.77	-6.39	3.68	-16.31
Karnataka	-6.45	-12.5	-2.68	-14.89	-5.08	-13.12
Kerala	-13.27	-16.38	-21.13	-4.28	-14.99	-12.71
MP	-8.26	-3.58	-4.68	-9.94	-7.26	-5.09
Maharashtra	-7.3	-14.21	-5.11	-8.34	-6.58	-11.84
Orissa	-17.81	-1.71	-7.51	1.19	-16.73	-1.41
Punjab	-1.25	-5.6	-12.44	-5.6	-4.41	-5.61
Rajasthan	-7.04	-12.72	-7.45	-10.64	-7.05	-12.13
Tamil Nadu	-21.51	-11.93	-7.19	-17.66	-16.63	-13.91
Uttar Pradesh	-4.17	-11.06	-14.43	-4.5	-6.22	-9.7
West Bengal	-22.25	-8.95	-9.91	-7.55	-19.19	-8.64
India	-8.38	-10.18	-8.43	-8.74	-8.51	-9.87

Note: The change is indicated in terms of the terminal year figure minus the base year figure.

Source: Computed by the authors.

Following the methodology of Mazumdar and Son (2002), the change in poverty has been decomposed into the growth effect, inequality effect and the effect due to population shift from rural to urban areas. This exercise has been carried out for both pre- and reform periods broadly classified as 1983 to 1993/4 and 1993/4 to 1999-2000. The decomposition has been done for rural and urban areas separately and for fifteen states and also for whole India.

From Table 3 it may be noted that between 1983 and 1993/4 the growth effect was -14.28 and -5.66 per cent for rural and urban areas respectively. It seems that in the process of growth, inequality had been accentuated as the inequality effect was positive (0.19 and 0.89 per cent for rural and urban areas, respectively), implying that inequality raised poverty. However, the growth effect has been much larger than the inequality effect in terms of absolute magnitude and, hence, this helped the poverty decline during this period. As regards the population shift effect, rural-to-urban migration obviously reduced the poverty in the rural areas (-2.59 per cent). Although in the urban areas it led to an increase in the incidence of poverty (by 2.28 per cent), the net effect judged in terms of the change in overall poverty (rural-urban combined) is seen to be beneficial as it dropped by 0.3 per cent. In other words, rural to urban migration helped reduce poverty by enabling the rural migrant poor to participate in urban-based activities, which could generate comparatively higher incomes than those in the rural areas. At the all-India level (rural and urban combined) the growth effect (-19.54 per cent) dominated over the inequality effect (1.07 per cent), though the latter is seen to have a tendency of increasing poverty. In other words, the adverse effects of rise in inequality have been less than beneficial effects of growth, which resulted in a decline in poverty by 19.17 per cent.

It is quite evident from Table 4 that in the reform period, i.e., 1993/4 to 1999-2000, the growth effect continued to be beneficial as far as the poverty reduction in the rural areas is concerned, and the magnitude increased to a considerably higher level (-22.12 per cent). However, the inequality effect rose from 0.19 per cent in the first period to 1.59 per cent. Though growth accentuated inequality in the 1990s, the inequality effect has been dominated by the growth effect and, hence, poverty declined to a larger extent than the corresponding fall in the previous period. Interestingly, in the urban areas, the inequality effect became almost zero (0.04) per cent in the second period which was nearly one (0.89) per cent in the first period. Growth possibly reduced inequality by helping the poor access the benefits of growth in the reform era. The growth effect on poverty also went up in magnitude from -5.66 to -6.72 per cent over the same period and thus reduced the incidence of urban poverty. The phenomenon of no adverse inequality effect in urban India in the post-reform period is noteworthy. However, urban economy being only one-fourth of the total, the inequality effect for the whole of India still turned out to be adverse (1.63 per cent) in the1990s , indicating increasing effect on poverty. But since the growth effect (-28.83 per cent) dominated over the inequality effect, it could more than offset the adverse effects of inequality and, thus, reduced the poverty (-27.42 per cent). As regards to the population shift effect, rural-to-urban migration seems to have reduced poverty in the rural areas (by 1.64 per cent), but raised the incidence of urban poverty (by 1.43 per cent). However, the net effect of the population shift on poverty has been beneficial (-0.21 per cent) suggesting that rural-urban migration helped the overall poverty to decline. But it may be noted that the population shift effect on poverty declined in magnitude in the second period (-0.21) compared to the first (-0.3), which is suggestive of a possible decline in the net population shift from rural to urban areas in the 1990s compared to the 1980s.

Table 3
Decomposition of change in poverty between 1983 and 1993/4

	Growth			Inequality			Population			Total		
States	Rural	Urban	All areas	Rural	Urban	All areas	Rural	Urban	All areas	Rural	Urban	All areas
Andhra Pradesh	-28.69	1.3	-27.39	1.73	0.69	2.42	-2.17	3.81	1.64	-29.13	5.8	-23.33
Assam	4.96	-3.77	1.19	0.35	0.04	0.39	-1.48	0.5	-0.98	3.83	-3.23	0.6
Bihar	-8.72	-2.72	-11.44	0.1	0.06	0.16	-0.59	0.39	-0.2	-9.21	-2.27	-11.48
Gujarat	-12.54	-12.34	-24.88	-2.92	0.86	-2.06	-2.72	3.5	0.79	-18.18	-7.98	-26.16
Haryana	26.54	-7.79	18.75	1.25	-1.51	-0.26	-7.21	6.01	-1.19	20.59	-3.29	17.3
Karnataka	-11.75	-1.97	-13.72	0.03	-0.17	-0.14	-2.06	2.58	0.52	-13.78	0.44	-13.34
Kerala	-25.57	-12.06	-37.63	0.35	-0.06	0.29	-4.97	5.38	0.42	-30.18	-6.74	-36.92
Madhya Pradesh	-14.23	-2.58	-16.8	1.32	0.49	1.81	-2.5	2.83	0.33	-15.41	0.74	-14.66
Maharashtra	-11.92	-5.15	-17.07	1.44	0.72	2.16	-3.69	3.35	-0.34	-14.17	-1.08	-15.25
Orissa	-22.75	-1.53	-24.28	-1.0	0.04	-0.96	-1.49	1.16	-0.34	-25.25	-0.33	-25.58
Punjab	-7.82	-21.71	-29.53	2.36	-0.83	1.53	-1.99	2.78	0.79	-7.45	-19.76	-27.21
Rajasthan	-15.77	-4.64	-20.41	-0.12	-0.15	-0.28	-1.4	1.6	0.2	-17.29	-3.2	-20.5
Tamil Nadu	-27.42	-5.2	-32.62	0.28	0.36	0.63	-2.74	2.75	0.01	-29.88	-2.1	-31.98
Uttar Pradesh	-6.78	-6.23	-13.01	-0.38	0.34	-0.04	-1.71	1.65	-0.07	-8.87	-4.25	-13.12
West Bengal	-29.61	-4.98	-34.59	0.05	0.08	0.13	-0.9	0.47	-0.43	-30.46	-4.43	-34.89
India	-14.28	-5.66	-19.94	0.19	0.89	1.07	-2.59	2.28	-0.3	-16.68	-2.49	-19.17
CV	-113.64	-92.87	-77.26	392.03	951.82	309.56	-67.79	65.50	940.77	-93.72	-161.96	-76.42

Note: CV is coefficient of variation across the states (excluding all India); Source: Computed by the authors.

Table 4
Decomposition of change in poverty between 1993/4 and 1999-2000

	Growth			Inequality			Population			Total		
States	Rural	Urban	All areas	Rural	Urban	All areas	Rural	Urban	All areas	Rural	Urban	All areas
Andhra Pradesh	-16.93	-14.43	-31.35	1.5	0.79	2.3	-0.06	0.16	0.09	-16.09	-14.08	-28.96
Assam	-11.72	-0.32	-12.04	1.01	0.11	1.12	-1	0.18	-0.82	-11.71	-0.03	-11.74
Bihar	-21.67	-0.43	-22.1	-0.28	0.04	-0.24	-0.12	0.08	-0.04	-22.07	-0.31	-22.38
Gujarat	-24.35	-18.31	-42.66	0.54	0.01	0.55	-1.23	1.51	0.28	-25.04	-16.79	-41.83
Haryana	-55.08	-8.55	-63.63	-1.82	0.39	-1.43	-0.16	0.11	-0.04	-57.06	-8.05	-65.11
Karnataka	-25.48	-14.14	-39.63	0.06	-0.48	-0.42	-1.29	1.78	0.49	-26.71	-12.84	-39.55
Kerala	-46.33	-3.56	-49.89	-0.23	0.16	-0.07	0.18	-0.22	-0.05	-46.39	-3.63	-50.01
Madhya Pradesh	-5.93	-5.62	-11.55	-0.45	-0.02	-0.48	-0.96	1.07	0.11	-7.35	-4.57	-11.92
Maharashtra	-21.73	-9.52	-31.24	-1.14	0.31	-0.83	-1.83	1.84	0.01	-24.7	-7.36	-32.06
Orissa	-3.45	0.34	-3.11	0.43	0.01	0.44	-0.95	0.82	-0.13	-3.97	1.17	-2.8
Punjab	-34.23	-15.67	-49.9	1.82	0.5	2.32	-2.01	1.88	-0.13	-34.42	-13.29	-47.71
Rajasthan	-35.5	-9.64	-45.14	-0.17	0.65	0.49	-0.22	0.27	0.06	-35.88	-8.71	-44.59
Tamil Nadu	-20.28	-20.36	-40.63	-0.38	0.52	0.14	-4.37	5.1	0.73	-25.03	-14.74	-39.76
Uttar Pradesh	-21.48	-2.16	-23.65	-0.05	-0.09	-0.14	-0.61	0.55	-0.06	-22.15	-1.7	-23.85
West Bengal	-17.62	-6.25	-23.87	-0.51	0.37	-0.14	-0.33	0.17	-0.16	-18.46	-5.71	-24.17
India	-22.12	-6.72	-28.83	1.59	0.04	1.63	-1.65	1.43	-0.21	-22.17	-5.25	-27.42
CV	-57.84	-79.41	-51.35	4284.22	151.03	430.90	-114.24	131.32	1495.49	-55.91	-80.35	-51.73

Note: CV is coefficient of variation across the states (excluding all India); Source: Computed by the authors.

Results from the second decomposition exercise, for which three variants are taken, are presented in Tables 5 and 6 for the 1980s and 1990s, respectively. From the results it is evident that the ratio of poor to organized manufacturing value added fell sharply by 69.4 per cent between 1983 and 1993/4. The other two components namely, per capita income and industrialization index, increased by 28 and 19 per cent, respectively. The net effect of all these changes is seen to have reduced poverty. Hence, it is the expansion of the organized manufacturing in terms of value added that has resulted in an overall decline in poverty in the first period. In the second period, too, the manufacturing value added per the poor continues to reduce poverty, suggesting the importance of expansion of this sector in the context of poverty reduction. However, it may be clarified here that even when the growth rate of manufacturing value added is positive, its share in total GDP may still decline if other components within the tertiary sector in particular are growing rapidly. Since some of these components in the tertiary sector are actually expanding fast in the recent years and they hold possibilities of creating employment opportunities for the poor through direct or indirect linkages among sectors, the declining share of industry in total GDP also appears to be contributing to the reduction in poverty. This finding need not conflict with the statement made above that expansion of the industry contributes to poverty reduction: both growth in manufacturing value added per poor and a very fast growth of the tertiary sector, which tends to reduce the overall share of industry in total GDP, possibly occur simultaneously. Hence the findings relating to the role of industrialization in reducing poverty and, at the same time, the growth of tertiary sector activities holding opportunities for the poor both seem to have important policy implications.

In the second variant, this particular phenomenon is made more distinct. While in the first period both the share of commodity sector value added and the ratio of poor to commodity sector value added resulted in a decline in the incidence of poverty, in the second period it is primarily the decline in the percentage share of commodity sector value added that contributed to reduction in poverty, thus indicating the tertiary sector growth being pro-poor.

In the third variant, where the rate of growth of poverty is expressed in terms of the growth rate of per capita GDP, growth rate of industrialization, the rate of growth of inverse of manufacturing labour productivity and the rate of growth of the ratio of poor to manufacturing employment, the last two factors primarily caused the decline in poverty in the first period. However, the fall in the ratio of the poor to manufacturing employment was only 6 per cent in the 1980s. On the other, in the second period, the contribution of this factor to the reduction in poverty went up to 15 per cent. Since the denominator, i.e., employment in the organized manufacturing, actually fell in absolute terms in the second period, it is the decline in the absolute number of the poor, which resulted in the fall in the ratio of poor to manufacturing employment. If manufacturing employment would also have increased during 1993/4-1999/2000, the ratio of the poor to manufacturing workers could have caused a much larger decline in the incidence of poverty. The rise in manufacturing labour productivity seems to have contributed to a fall in poverty to a larger extent in the second period as compared to the first period. In addition, the expansion of the tertiary sector in the second period also seems to have brought down the incidence of poverty. On the whole, as the composition of growth has changed, labour productivity and employment growth in the organized industry are crucial to poverty reduction.

Table 5
Decomposition of change in poverty between 1983 and 1993/4

Variables	Model 1	Model 2	Model 3
ΔPOV%	-0.22	-0.22	-0.22
ΔGDPPC	0.28	0.28	0.28
ΔIND%	0.19		0.19
ΔCOMM%		-0.097	
Δ(POOR/COM)		-0.398	
Δ(POOR/MEM)			-0.06
Δ(MEM/MVA)			-0.626
Δ(POOR/MVA)	-0.694		

Table 6
Decomposition of change in poverty between 1993/4 and 1999/2000

Variables	Model 1	Model 2	Model 3
ΔPOV%	-0.32	-0.32	-0.32
ΔGDPPC	0.264	0.265	0.265
ΔIND%	-0.172		-0.172
ΔCOMM%		-0.65	
Δ(POOR/COMM)		0.06	
Δ(POOR/MEM)			-0.15
Δ(MEM/MVA)			-0.26
Δ(POOR/MVA)	-0.413		

Notes: Where POV% = Poverty ratio;
GDPPC = Per-capita GDP;
IND% = Share of manufacturing output in total GDP (in percentage);
COMM% = Agricultural and allied activities value added and secondary sector value added (in percentage);
POOR = Total number of people below poverty line;
MEM = Total number of workers in manufacturing sector;
MVA = Gross value added by the manufacturing sector; 'Δ' represents change between two periods.

At the state level, from Tables 3 and 4, all the other states except for Assam and Haryana registered a fall in the incidence of rural poverty in the 1980s, and in the 1990s each of the major states recorded a decline. In the case of urban areas with the exception of Andhra Pradesh and Orissa in the 1980s and 1990s, respectively, all the other states show a decline in the incidence of poverty. However, the extent of decline varies considerably across states, though in the rural areas it seems to have fallen in the 1990s compared to the previous decade: the coefficient of variation of the change in rural poverty dropped from 98.75 in the first period to 51.03 in the second period. On the other hand, the coefficient of variation increased from 61.58 to 70.21 in the urban areas of the states during the same period, indicating a rise in the interstate variations of change in the incidence of urban poverty in the reform period.

It may be interesting to spell out our hypothesis at this stage. As economic reforms are likely to bring in higher growth, the growth or mean effect is expected to go up in the reform period. Though the extent of fall in the incidence of urban poverty in the 1990s has been only marginally higher than in the 1980s as noted above, the hypothesis of a

higher growth or mean effect in the second period may still be valid. In addition to this, the inequality effect might have fallen in the second period compared to the first, if economic reforms aim at generating pro-poor growth, that is, employment generation occurring in the process of economic growth (Kakwani and Pernia 2000). Further, as the coefficient of variation of the change in the incidence of urban poverty rose in the 1990s over the 1980s we can hypothesize that the economic reforms executed at different levels across the states have generated different mean and/or inequality effects.

In the light of these hypotheses, we may examine the empirical results. From Table 3 it may be noted that the growth/mean effect dominated over the inequality effect as well as the population shift effect in most of the states during 1983 to 1993/4, which brought in a decline in the observed poverty ratio. Even in rural Assam and Haryana, where the observed poverty ratio actually increased between 1983 and 1993/4, the growth effect mainly accounted for this rise. However, in urban Andhra Pradesh, the rise in observed poverty has been caused by all the three components. In fact the population shift effect turns out to be slightly higher than the growth effect. In all the other states, a decline in the observed poverty incidence in the rural and urban areas is mainly attributed to the growth effect.

Although the inequality effect was positive in sign suggesting that in the process of growth, inequality rose and accentuated poverty, it could not neutralize the beneficial effects of growth on poverty (see Table 3). In the rural areas of Gujarat, Orissa, Rajasthan and Uttar Pradesh, and in the urban areas of Haryana, Karnataka, Kerala, Punjab and Rajasthan, the inequality effect turned out to be negative in sign, suggesting that inequality fell in the process of growth and thus contributed along with the mean effect to a reduction in poverty. This is an interesting feature and needs further analysis, as to why inequality effect turned out to be beneficial in these states and not elsewhere, but this is outside the scope of our paper.

Although urban poverty increased, due to rising levels of urbanization (percentage of population residing in the urban areas) the decline in the percentage of rural population ushered in more than a proportionate fall in rural poverty in several states such as Assam, Bihar, Haryana, Maharashtra, Orissa, Uttar Pradesh and West Bengal. Thus in these states, the population shift effect helped the all-area combined poverty to decline during the period 1983 to 1993/4 (see Table 3).

In the reform period, the growth effect continued to dominate over the other two effects, and it also accounted for much of the decline in the incidence of poverty in most of the states (see Table 4). The only exception in this respect is urban Orissa, where the observed poverty rose by 1.19 percentage points, caused by both adverse growth and inequality effects. In urban India though, the growth effect continued to be dominant in the reform period, and it is interesting to note that the adverse effect of inequality fell in this period compared to the 1980s and became almost negligible. Second, despite a rise in the adverse effects of inequality in rural India in the second period relative to the first, in a large number of states (e.g., rural areas of Bihar, Haryana, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal) the inequality effect turned out to be beneficial in the sense that, like the growth effect, it also helped poverty to fall. This is possibly because growth became pro-poor in these states by generating employment opportunities. As regards the population shift effect, it continued to be beneficial at the all-India level. In other words, the fall in the incidence of rural poverty due to a decline in the percentage of rural population continued to be

more than the rise in the incidence of urban poverty caused by the rise in the level of urbanization between 1993/4 and 1999/2000. However, in terms of magnitude the population shift effect for all areas fell marginally from -0.3 in the first period to -0.21 in the second period.

On the whole, the beneficial effect of growth on poverty increased in magnitude in the reform period relative to the pre-reform period in several states both in the rural and urban areas. Except for Andhra Pradesh, Madhya Pradesh, Orissa, Tamil Nadu and West Bengal, the rural areas of all other states recorded an improvement in the growth effect. Similarly, except for Assam, Bihar, Kerala, Orissa, Punjab and Uttar Pradesh, the urban areas of all other states registered an increase in the growth effect. The adverse effect of inequality corresponding to all areas (rural-urban combined) fell in several states like Andhra Pradesh, Bihar, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh and West Bengal, although at the all-India level it went up from 1.07 per cent to 1.63 per cent.

Based on Tables 3 and 4 different size classes have been formed to represent the growth effects in both the periods, and the states have been distributed across these size classes. If the growth effect is greater than zero (> 0), it is considered to be adverse as it raises the incidence of poverty instead of reducing it. The higher the magnitude with a negative sign, the higher the beneficial growth effect. Table 7, which corresponds to the rural areas of the states, offers a mixed picture. While states like Madhya Pradesh, Orissa, Andhra Pradesh, West Bengal and Tamil Nadu moved from relatively higher size classes in the pre-reform period to relatively lower size classes in reform period, several other states moved to higher size classes of growth effect from the lower size

Table 7
Cross tabulation of states in terms of growth effect on poverty changes in two periods in the RURAL areas (in percentage points)

GROWTH EFFECT		1993/4 – 1999/2000					
		> 0	0 to -10	-10 to -15	-15 to -20	-20 to -25	< -25
1983-1993/4	> 0			Assam			Haryana
	0 to -10					Bihar Uttar Pradesh	Punjab
	-10 to -15		Madhya Pradesh			Gujarat Maharashtra all India	Karnataka
	-15 to -20						Rajasthan
	-20 to -25		Orissa				
	< -25				Andhra Pradesh West Bengal	Tamil Nadu	Kerala

Source: Computed by the authors.

Table 8
Cross tabulation of states in terms of growth effect on poverty changes in two periods in the URBAN areas (in percentage points)

GROWTH EFFECT		1993/4 – 1999/2000					
		> 0	0 to -10	-10 to –15	-15 to -20	-20 to -25	< -25
1983-1993/4	> 0			Andhra Pradesh			
	0 to -10	Orissa	Assam Bihar Haryana MP Maharashtra Rajasthan Uttar Pradesh West Bengal all India	Karnataka		Tamil Nadu	
	-10 to -15		Kerala		Gujarat		
	-15 to -20						
	-20 to -25				Punjab		
	< -25						

Source: Computed by the authors.

classes over the same period. On the other hand in the urban areas, relatively few states like Orissa, Kerala and Punjab moved down from higher size classes in the pre-reform period to lower size classes in the reform period and states like Andhra Pradesh and Tamil Nadu experienced a perceptible rise in terms of growth effect (see Table 8). However, a large number of states remained in the same size class of growth effect in both the periods. But notwithstanding this stagnancy, the growth effect in the urban areas does not seem to have deteriorated in a large number of states.

It would be interesting to examine whether states with a higher growth effect particularly in the urban areas in the 1990s over the previous decade also experienced lower magnitudes of an adverse population shift effect in the urban areas. The answer is in the affirmative because several states like Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and West Bengal which recorded a higher growth effect in the urban areas in the 1990s relative to the 1980s also experienced a lower population shift effect in the urban areas. The only exception is Tamil Nadu.[4] In other words, these are the states where higher growth effects in the reform period reduced the extent of rise in the incidence of urban poverty

4 Tamil Nadu recorded a massive increase in urban population between the 1991 and 2001 census years possibly due to re-classification of areas as urban in 2001, which were rural in 1991. As a result there has been a decline of rural population in 2001 compared to 1991, even in absolute terms. Decline in fertility alone could not have caused this because it could not have fallen only in the rural areas, but in rural and urban areas both. Also it is unlikely that fertility decline would bring in a fall in population in absolute terms. Rural-to-urban migration also could not have reduced the rural population in absolute terms. Rapid increase in so-called urban population caused urban poverty to rise.

occurring in the process of expanding urbanization. From this it may be inferred that as reforms enhanced the growth effects in the urban areas of several states, they also reduced the deleterious effects of population rise on poverty in the urban areas of the same states.

It has been widely noted that economic growth varies considerably across space; even within India, states have recorded different growth rates, which do not seem to have any tendency towards convergence in the long run (Sachs, Bajpai and Ramiah 2002). Such divergence across states is noted not only in terms of growth in state domestic product but also in terms of growth in average per capita consumption expenditure (Deaton and Drèze 2002). Among several factors that explain the divergence in the economic growth across the states, it is the extent of economic reforms initiated in these states that is important for discussion. For this purpose, some of the reform indicators were looked at. The reform indicators are looked at in terms of level of FDI (foreign direct investment), change in fiscal deficit (as a percentage of gross state domestic product, (GSDP) and the change in public-private employment ratio (in the organized sector). The data on FDI show considerable variations across states, which have again undergone changes over the years. In fact only six states namely Delhi, Karnataka, Andhra Pradesh, Tamil Nadu, Gujarat and Maharashtra have attracted the bulk of the FDI with a negligible share in other states. By the end of the last decade the distribution of FDI among these top states was as follows: Delhi (9 per cent), Karnataka (19 per cent), Andhra Pradesh (11 per cent), Tamil Nadu (20 per cent), Gujarat (9 per cent) and Maharashtra (32 per cent) (*Economic Survey of Karnataka*, 2001-02). From Table 9 it may be further noted that states such as Andhra Pradesh, Gujarat, Karnataka, Kerala, Maharashtra, Punjab, and Tamil Nadu experienced a sharp decline in the public-private employment ratio between 1991 and 2000. The figures in Table 9 give the proportion of baseyear (1991) public-private employment ratio to the terminal year (2000) public-private employment ratio; hence, the larger the ratio, the higher the shift away from the public sector, which is taken as an outcome of shrinking public sector following from the structural adjustment programme.

Table 9
Some indicators for the extent of economic reforms at state level

States	Ratio of public to private employment ratio in 1991 vis-à-vis 2000 (1	Change in fiscal deficit/GSDP between 1994/5 to 1999-2000 (2
Andhra Pradesh	1.40	-0.8
Assam	0.94	—
Bihar	1.02	-5.6
Gujarat	1.15	-3.1
Haryana	1.06	-2.9
Karnataka	1.60	0.1
Kerala	1.08	-1.3
Madhya Pradesh	0.96	-1.5
Maharashtra	1.07	-2.7
Orissa	0.73	-2.8
Punjab	1.12	-1.6
Rajasthan	1.05	-3.2
Tamil Nadu	1.29	-1.5
Uttar Pradesh	1.03	-2.4
West Bengal	0.93	-5.4

Sources: (1 Calculated by authors from data in GoI (2002); (2 GoI (nd).

In terms of fiscal deficit as a percentage of GSDP it may also be noted that fiscal reforms seems to have taken place in Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh, Punjab and Tamil Nadu. Taking FDI as a major indicator and any one of the other two, the following states may be identified as the most reforming ones: Andhra Pradesh, Karnataka, Gujarat, Maharashtra and Tamil Nadu. Interestingly these are the states, which also experienced a perceptible increase in the growth/mean effect in the urban areas in the post-reform period over the pre-reform period (see Table 7). Even in the rural areas of Gujarat, Karnataka and Maharashtra the growth effect on poverty increased during the same period (see Table 8). Though the growth effect in rural Andhra Pradesh and Tamil Nadu declined in the second period, it has still been much higher than that of many other states.

Inequality seems to have increased in Andhra Pradesh and Tamil Nadu in the process of growth in the urban areas in the second period, which raised the deleterious effect of inequality on poverty. However, in other three states the inequality effect fell in the second period compared to the first period. Though urban poverty increased due to rise in urbanization, except Tamil Nadu, in all other four states its adverse effect came down sharply.[5] On the whole, reforms seem to have had a positive effect on poverty in these states. And conversely the remaining nine states, where reforms have not been initiated on a large scale, do not seem to have experienced any major increase in growth/mean effect on poverty in the urban areas in the second period compared to the first. Hence, with wider implementation of reforms across states, poverty can be reduced sharply in the coming years.

Notwithstanding the divergences in reforms and growth, the convergence in the growth/mean effect on poverty in the reform-period is quite evident from Tables 2 and 3. From the decomposition analysis, as we examine the coefficient of variation of the growth/mean effect across states, a perceptible decline seems to have taken place in the reform period compared to the pre-reform period. In the rural areas it dropped from 113.64 in the pre-reform period to 57.84 in the reform period and in the urban areas the fall was from 92.87 to 79.41 during the same period. This tends to support our argument that despite the divergence arising from economic reforms pursued at different levels across states, the beneficial effects with regard to poverty reduction has a converging tendency.

7 Conclusion

The effect of globalization on the poor is a matter of serious concern and has raised both academic and political debates in various countries. In this paper an attempt has been made to assess the impact of economic reforms on the headcount measure of poverty. This is done in terms of a decomposition analysis splitting the percentage change in the incidence of poverty between two time points in terms of growth/mean effect, inequality effect and the population shift effect. The decomposition has been pursued for two timeperiods: one from 1983 to 1993-94 and another from 1993-94 to 1999-00, described as pre-reform and reform periods respectively, although strictly speaking reforms were

5 In Tamil Nadu re-classification of areas, as mentioned above, led to a massive increase in urban population, which otherwise would have remained as rural areas.

initiated from July 1991. While the growth/mean effect has been dominant and has resulted in a decline in the incidence of poverty in both the periods and in most of the states, inequality, which in general rose in the process of growth, raised the poverty ratio at the all-India level. However, in the rural areas of a large number of states the inequality effect turned out to be beneficial in the reform period. Even in the urban areas of several states and at the all-India level too the adverse inequality effect fell considerably in the reform period compared to the pre-reform period. The population shift effect, which measures the net effect of a rise (and fall) in the percentage of population residing in urban (and rural) areas on the incidence of poverty, appeared to be beneficial in at least seven of the fifteen major states and at the all-India level too, in both the periods. In other words, the overall incidence of poverty in these states fell, though rural-urban migration might have raised the incidence of urban poverty.

Economic reforms have been pursued at different levels across states, and this seems to have enhanced the interstate variations in economic growth. These reforms have also led to a change in the composition of growth, that is, the shift in value added mix towards industry and tertiary activities, and it seems to have caused a larger decline in the incidence of poverty in the nineties compared to the eighties, which is evident from the second exercise in our study. Also, the labour productivity growth and employment growth in the organized industry are crucial to poverty reduction through their direct and indirect effects on the rest of the economy. Other than the role of agriculture in a few states like West Bengal, the rapid growth of new components of tertiary sector, such as information technology, business process outsourcing services, financial institutions, and infrastructure services must have impacted upon the economic growth at varied level across states. But, interestingly, the beneficial growth/mean effect on poverty increased in magnitude in most of the states in the reform period relative to the pre-reform period and more importantly, its variation across states dropped considerably. This is possibly because of good governance in the rapidly growing and reforming states, and the demonstration effect of this in the slowly growing states. The deleterious effect of inequality on poverty also shows a declining tendency in several states in the reform phase compared to its previous period, possibly because growth became pro-poor. The population shift effect, which showed a tendency of raising urban poverty, also fell across states in magnitude in the second period compared to the first. And states with greater (and beneficial) growth effects in the reform period relative to pre-reform period also show lower (and adverse) population shift effects in the urban areas, i.e., a relatively less rise in the incidence of urban poverty caused by rural-urban migration. Reforms seem to have a close association with a rise in growth effects, indicating that both economic growth and its ability to reduce poverty are conceded in the reforming process. A strategy of growth with employment generation would help the poor benefit from economic reforms directly and rapidly, and this would not only enhance the growth effect but would also make inequality and population shift effects more beneficial to poverty reduction.

The extent of globalization in India indeed enhanced the growth path of output from its traditional low levels. But the impact of this high growth on poverty seems to have been substantial, at least in terms of our empirical results, as it led to a fall in the incidence of poverty in both rural and urban areas and across the states depending upon the level of globalization. Further, our results show that the growth effect on poverty is much higher than the inequality effect, implying that there might have been an increase in the inequality but it was neutralized by the beneficial effect of growth. However, the fact that the inequality effect was unfavourable to the poor in at least some of the regions,

suggests that the direct benefits of globalization have been much higher among the rich compared to the poor. From this one may be hesitant to say that the rise in output growth in India in the reform period is pro-poor. Further, this also indicates that if there were any shortfall in the output from the expected levels, it would only hit the poor more adversely than the rich. Many emerging countries in Asia have also experienced this pattern of adversity, which affected different sections of the population unequally. It may be noted that at the time of Asian financial crisis, it was the poorer section that was affected badly through loss of employment and decline in the social support schemes. Hence, this results from India and other emerging market economies show that globalization has the potential to help poor if and only if it is managed prudently.

Appendix

Synthesis of decomposition methods.

Let the change in poverty between two periods 'j' and 'k' be 'ΔP_{jk}' and the incidence of poverty be,

$$P = P(Z, \mu, L(t)) \tag{1}$$

where 'P' is the poverty ratio, 'Z' is the poverty line, 'μ' mean income (or expenditure), and 'L(t)' the Lorenz ratio.

And the change in poverty can be defined as,

$$\Delta P_{jk} = Q(M_{jk}, I_{jk}), \tag{2}$$

where 'M_{jk}' and 'I_{jk}' are change in poverty due to mean and inequality effect respectively. Kakwani and Subbarao (1990) estimate 'M_{jk}' by taking the change in mean and keeping Lorenz curve of the 'jth' period constant. 'I_{jk}' has been estimated by taking the change in Lorenz curve and keeping mean of the 'jth' period constant. But this decomposition was not an exact one and contains the residual term. Datt and Ravallion (1992) has defined this residual term as

$$\varepsilon_{jk} = -M_{kj} - M_{jk} \tag{3}$$

But this decomposition is not symmetric as it is sensitive to the reference period.

Another method suggested by Jain and Tendulkar (1990) defines that the change in poverty can be decomposed as

$$\Delta P_{jk} = M_{jk} + I^*_{jk} \text{ and } \Delta P_{jk} = M^*_{jk} + I_{jk}$$

where

$$M^*_{jk} = P(Z, \mu_k, L_k(t)) - P(Z, \mu_j, L_k(t)) \text{ and}$$

$$I^*_{jk} = P(Z, \mu_k, L_k(t)) - P(Z, \mu_k, L_j(t))$$

Though this procedure is an exact one, this was criticized on the ground that the mean effect and the inequality effect have been estimated by using different reference period.

Kakwani (2000) tries to propose a method that takes care of the weaknesses that are found in the previous ones. It defines the mean and inequality effect as

$$M^*_{jk} = \frac{1}{2}[P(Z, \mu_k, L_j(t)) - P(Z, \mu_j, L_j(t)) + P(Z, \mu_k, L_k(t)) - P(Z, \mu_j L_k(t))] \tag{4}$$

and

$$I^*_{jk} = \frac{1}{2}[P(Z,\mu_j,L_k(t)) - P(Z,\mu_j,L_j(t)) + P(Z,\mu_k,L_k(t)) - P(Z,\mu_k L_j(t))] \quad (5)$$

Hence the decomposition would be written as,

$$\Delta P_{jk} = M^*_{jk} + I^*_{jk} \quad (6)$$

In addition to the growth and inequality effect, Mazumdar and Son (2002) include the population shift effect in the decomposition exercise.

Assuming that there are two demographic groups as i=1 and 2, the change in poverty can be expressed as

$$\frac{\Delta P}{P} = \sum_i \frac{\bar{f}_i P_i}{P} \frac{M_i}{P_i} + \sum_i \frac{\bar{f}_i P_i}{P} \frac{I_i}{P_i} + \sum_i \frac{\overline{P_i} f_i}{P} \frac{\Delta f_i}{f_i} \quad (7)$$

where f_k and P_k are population share and poverty index of the kth group, respectively.

And $\bar{f}_i = \frac{f_{ij} + f_{ik}}{2}$, $\overline{P_i} = \frac{P_{ij} + P_{ik}}{2}$

It may be noted that '*M*' and '*I*' are mean and inequality effect, respectively, similar to that of 'M^*' and 'I^*' of Kakwani (2000) and this is an exact decomposition of the change in percentage of poverty. Here f_i and P_i are population share and poverty index of the ith group, respectively. $\bar{f}_i$ and $\overline{P_i}$ are the ith group averages of the respective values at two time points. 'P' is the headcount ratio of poverty for all areas (rural and urban combined). ΔP is the change in poverty between two time points. The third term on the right hand side represents the change in poverty due to population shift. Δf_i is the change in population share between two time points of the ith group. In our present analysis, 'i' stands for rural and urban areas.

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