Uneven Growth in China and India

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Abstract: The paper reviews evidence on the ways in which recent economic growth has been uneven in China and India and what this has meant for inequality and poverty. Drawing on analyses based on household survey data and aggregate data from official sources, we show that growth has indeed been uneven—geographically, sectorally and at the household-level—and that this has meant uneven progress against poverty, less poverty reduction than might have been achieved had growth been more balanced, and an increase in income inequality. The paper then examines why growth was uneven and why this should be of concern. The discussion is structured around the idea that there are both "good" and "bad" inequalities—drivers and dimensions of inequality and uneven growth that are good or bad in terms of what they imply for both equity and long-term growth and development. We argue that policies are needed that preserve the good inequalities—continued incentives for innovation and investment—but reduce the scope for bad ones, notably through investments in human capital and rural infrastructure that help the poor connect to markets.

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1. Introduction

Economic growth in China and India since the 1980s has been accompanied by substantial—in the case of China, dramatic—reductions in the aggregate incidence of absolute poverty measured in terms of income or consumption. Figure 1 displays the trends for the two countries over the period from 1981 to 2001. The headcount rates of poverty are calculated on as comparable a basis as is currently feasible with the data available. The poverty line is the World Bank's dollar-a-day global standard of about $32.74 per month at 1993 Purchasing Power Parity. China started this period with the higher poverty rate, but this soon changed.

However, concerns are being expressed about the distributional impacts of the growth processes in both countries. The domestic debate about growth-promoting reforms has become increasingly contentious. It is widely felt that the gains from growth have been spread too unevenly, with some segments of the population left behind in relative and even absolute terms. This unevenness has shown up as rising income inequality by conventional measures in both countries. These developments in turn have led some to question the sustainability of growth.

What is one to make of this? In what ways has growth been uneven? Are the data suggesting rising inequality to be believed? If so, should the fact that segments of the population appear to have been left behind be of concern? And does this pose a risk to the sustainability of growth and poverty reduction?

After noting a number of data issues, we review evidence on the ways in which growth has been uneven in China and India and what that has meant for inequality and poverty. Drawing on analyses based on existing household survey data and aggregate data from official sources, we show that growth has indeed been uneven—geographically, sectorally and at the household-level—and that this has meant uneven progress against poverty, less poverty reduction than might have been achieved had growth been more balanced, and an increase in income inequality. We then turn to why growth was uneven and why this should be of concern. Here, we draw on the evidence that is available. But because of the complexity of the underlying issues and the difficulties of settling them in an empirically rigorous manner, the discussion is necessarily somewhat more speculative. We structure the discussion around the idea that there are both "good" and "bad" inequalities—drivers and dimensions of inequality and uneven growth that are good or bad in terms of what they imply for both equity and long-term growth and development.

We argue that the development paths of both India and China have been influenced by, and have generated, both types of inequalities and that while good inequalities—most notably those that reflect the role of economic incentives—have been critical to the growth experience thus far, there is a risk that bad inequalities—those that prevent individuals from connecting to markets and limit investment and accumulation of human capital and physical capital—may undermine the sustainability of growth in the coming years. We argue that policies are needed that preserve the good inequalities—continued incentives for innovation and investment—but reduce the scope for bad ones, notably through investments in human capital and rural infrastructure that help the poor connect to markets.

2. Data issues

There are always reasons to be skeptical about economic statistics and measures of inequality and poverty are no exceptions. The issues are rather different in these two countries.

A number of data problems have clouded past assessments of what has been happening to poverty and inequality in China. Some of these problems are common to other countries (developing and developed) while others are seemingly unique to China. Comparability between urban and rural areas is a greater problem in China where the National Bureau of Statistics (NBS) uses different survey instruments for urban and rural areas (whereas it is a unified survey instrument in India, as elsewhere). The two nationally representative annual surveys for China that we will draw on are the annual Rural Household Survey (RHS) and the annual Urban Household Survey (UHS).

For the RHS there are also comparability problems over time, as discussed in Ravallion and Chen (2007). One of the more serious problems is that there was a change in valuation methods for consumption of own-farm production in the RHS in 1990 when public procurement prices (held below market prices) were replaced by local selling prices.[1] For 1990 (the only year for which the two methods can be compared), Ravallion and Chen (2007) show that the new valuation method generates slightly lower inequality; for 1990 the aggregate Gini index for rural China drops from 31.5 percent to 29.9 percent; the rural headcount index of poverty drops

[1] Until the mid-1990s, public procurement prices for grain were held below market prices. Using these prices to value own consumption over-estimates the true extent of both poverty and inequality. This practice was largely abandoned from 1990s onwards in favor of using local selling prices for valuation.

substantially, from 37.6 percent to 29.9 percent. This reflects the high share of consumption from own-farm product among China's poor.

Another problem in past work has been the failure to adjust for spatial cost-of-living differences. This can affect distributional comparisons over space and time. The extent of urban–rural disparities drops appreciably once one corrects for the fact that the urban cost of living is higher (Ravallion and Chen, 2007). Also the positive trend in urban–rural inequality since around 1980 (noted by many authors in the literature) vanishes once one allows for the fact that the rate of inflation has been higher in urban areas than rural areas, although a marked positive trend in urban–rural inequality since the mid-1990s is still evident.

In common with most countries, the bulk of the analysis of poverty and inequality in China (and India) has relied on repeated cross-sectional surveys, in which the samples at each date are treated as independent. Thus one does not track the living standards of the same households over time. We do not then know how much of the poverty at one date is persistent, and how much is transient (reflecting fluctuations in living standards, including movements in and out of poverty). (Some lessons from panel data studies will be reviewed later in the paper.)

Lack of public access to the micro data for China has restricted the ability of researchers to try to address these data concerns. However, the micro data have been available for some selected provinces and time periods. Ravallion and Chen (1999) used the micro data for four provinces of southern China to correct for both the valuation methods for consumption of own product and the deflators. The corrections to the original survey data tend to entail lower measured inequality and they attenuate the rate of increase in inequality over time.

Not all the likely data problems mean a lower true level of inequality or a lower rate of increase over time. For example, if we could correct for selective compliance (whereby the relatively well off are less well represented in surveys) then we may well find higher inequality.[2] However, we currently have no basis for correcting this problem in either China or India.

Poverty monitoring in India since the 1960s has been mainly based on the household expenditure surveys done as part of the National Sample Surveys (NSS). The salient features are that household consumption expenditure per person is used as the individual welfare indicator and the poverty line that is intended to have a fixed real value across time and space (urban and rural areas of states) is determined by combined geographic and inter-temporal deflators. The

main data issue is that assessing what has been happening to poverty and inequality in India during the 1990s has been clouded by a comparability problem between the two main surveys available for the 1990s.[3] However, the surveys for 1993/94 and 2004/05 are highly comparable.

There are concerns about how well surveys measure incomes or consumptions. Survey-based consumption and income aggregates for nationally representative samples typically do not match the aggregates obtained from national accounts (NA). This is to be expected for GDP, which includes non-household sources of domestic absorption. Possibly more surprising are the discrepancies found with both the levels and growth rates of private consumption in the NA aggregates; Ravallion (2003) provides evidence. The discrepancies between levels and growth rates of consumption as measured by India's NSS and NA have been of particular concern, Yet here too it should be noted that (as measured in practice) private consumption in the NA includes sizeable and rapidly growing components that are typically missing from surveys (Deaton, 2005).[4] However, aside from differences in what is being measured, surveys do encounter problems of under-reporting (particularly for incomes; the problem appears to be less serious for consumptions) and the aforementioned problems of selective non-response.[5]

There are also a number of data problems in making comparisons between these countries. These include that fact that China has traditionally used household income (per capita) as the ranking variable while India has used consumption (per capita). (We return to this point when we compare inequality measures.) Also, the available data on spatial differences in the cost-of-living are still rather weak in both countries. And purchasing power comparisons between the two countries are confounded by a number of concerns about the underlying price data and standard index-number problems. We will largely ignore these data problems in this paper, although that is not because we think them unimportant; rather, it is because this paper is not the place to dwell on them.

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2 This is not necessarily the case, but there is supportive evidence for the US (Korinek et al., 2006).

3 The comparability problem is discussed in Deaton (2001), Datt and Ravallion (2002) and Sen and Hiamnshu (2004a).

4 Deaton and Kozel (2005) provide a useful compilation of papers on this and related issues of poverty measurement in India.

5 In measuring poverty some researchers have replaced the survey mean by the mean from the national accounts (GDP or consumption per capita); see, for example, Bhalla (2002) and Sala-i-Martin (2002). This assumes that the discrepancy is distribution neutral, which is unlikely to be the case; for example, selective non-response to surveys can generate highly non-neutral errors (Korinek et al., 2005). For further discussion in the context of poverty measurement in India see Ravallion (2000).

However, one data-related issue that should be flagged is how well conventional inequality measures capture the significance attached to certain between-group inequalities. Naturally, any conventional inequality measure puts weight on such differences. However, it is far from obvious that those weights accord well with the significance attached to between-group inequalities, as argued by Kanbur (2001). While this raises a number of deeper questions about individualism and the role of group identities that are beyond our present scope, we will note the extra significance attached to certain between-group disparities in both China and India.

3. Ways in which growth has been uneven

Growth in China and India over the last quarter century has indeed been uneven, which has been apparent in several (related) dimensions, with implications for inequality, poverty reduction and human development in the two countries. This section makes four claims:

- Growth was uneven across states in India and provinces in China and this has meant uneven progress against poverty.
- Growth has been sectorally uneven, with primary sector growth rates lagging behind growth rates in the secondary and tertiary sectors in both China and India, and with rural incomes growing more slowly than urban incomes.
- There has also been uneven growth at the household level. In particular, incomes at the top of the distribution increased much faster than those at the bottom in both countries. That has meant rising inequality—dramatically so in the case of China.
- Because the more rapid growth of both countries has been so uneven in these dimensions, it has sometimes brought disappointing outcomes in terms of progress against poverty and other ("non-income") dimensions of well-being.

Growth has been geographically uneven

The aggregate growth performances of China and India mask considerable unevenness of growth at the sub-national level. Chinese provincial GDP growth rates (between 1978 and 2004) ranged from a low of 5.9 percent in Qinghai to a high of 13.3 percent in Zhejiang. In India, among the 16 major states, Bihar (including the newly created state of Jharkand) had the lowest growth rate, namely 2.2 percent, while Karnataka had the highest, 7.2 percent.

While state and provincial-level growth rates in the last twenty five years have been higher and less volatile than in prior decades—for instance, in India, except for the Green

Revolution states of Punjab and Haryana and the state of Maharashtra, growth rates before the 1980s were at most 2 percent per annum—the variation in growth rates has meant increasing regional disparities in both countries. The increase has been more pronounced in the case of India where states that were initially poorer have grown more slowly, resulting in unconditional divergence in both absolute and relative terms.[6] This is apparent in Figure 2, which plots the average annual growth rate of real per-capita state GDP against a state's initial per-capita GDP relative to the poorest state. India's poorer states are still experiencing positive growth, but the high growth rates, post reform, have been elsewhere.

In China, provinces that were initially poorer have managed to keep pace with the initially wealthier provinces in terms of aggregate growth rates (Figure 2). That has meant no divergence in relative terms, but absolute differences across provinces have increased. There have also been signs of divergence regionally between the coastal and inland areas of China.[7]

The spatial unevenness of growth has contributed to uneven progress against poverty in two ways. Firstly, because household-income growth has been closely associated with poverty reduction at the sub-national level in both India and China,[8] the fact that growth was geographically uneven has meant that progress against poverty was uneven as well, with some states and provinces seeing far more rapid reduction in poverty than others. In China, the coastal areas fared better than inland areas. The trend rate of decline in the poverty rate between 1981 and 2001 was 8 percent per year for inland provinces, versus 17 percent for the coastal provinces. In India, most of the western and southern states—peninsular India (with the exception of Andhra Pradesh)—did comparatively well, while the more backward BIMARU states of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh, along with states in the eastern region, achieved relatively little poverty reduction between 1993–94 and 1999–2000.

Secondly, in both countries, the most rapid growth did not occur where it would have had the most impact on poverty. This is evident if one compares growth rates across provinces with the growth elasticities of poverty reduction weighted by the initial shares of total poverty. (The

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6 Econometric tests indicating more marked growth divergence for India in the post-reform period can be found in Ghosh (2006).

7 See Chen and Fleisher (1996), Jian et al. (1996), Sun and Dutta (1997), Raiser (1998) and Kanbur and Zhang (1999). Milanovic (2005) describes the regional inequalities within five federations, including China and India.

8 This is clearly documented for India by Datt and Ravallion (1996, 2002) and Deaton and Dreze (2002), and by Ravallion and Chen (2006) in the case of China.

weights assure that this gives the impact on national poverty of growth in a given province.) Had the pattern of growth favored provinces where growth would have had the greatest impact on poverty, we would find a negative correlation between the growth rate and the share-weighted elasticity. However, for neither country does one find any relationship, one way or the other (see Ravallion and Chen, 2007, for China and Datt and Ravallion, 2002, for India.)

Growth has been sectorally uneven

Growth rates in the primary sector (agriculture) have not only lagged behind those in the secondary (industry) and tertiary (services) sector, but have actually declined over the last quarter century (Figure 3).

In nominal terms, urban incomes and expenditures have clearly increased faster than rural incomes over the past quarter century in both countries. India has seen a steady increase in the ratio of urban to rural mean real consumption levels from just below 1.4 in 1983 to about 1.7 in 2000. Even in 1981, the urban-to-rural ratio of nominal mean incomes in China was around 2.5—much higher than it has ever been in India. And since then, while there have been periods when the ratio of urban-to-rural mean incomes fell, the overall trend has been upward.

Adjusting for cost-of-living differences clouds these trends somewhat. For China, the urban rate of inflation has been higher than for rural areas and once one allows for this fact, one no longer finds a trend increase over time in the ratio of the urban mean to the rural mean (Ravallion and Chen, 2007).[9] However, there have been sub-periods, including the period from 1997 to the present, during which the relative urban-rural disparity has risen. Moreover, even allowing for cost-of-living differences, the absolute gap between rural and urban incomes has increased appreciably. This is also true of India.

The sectoral composition of growth mattered for poverty reduction in both countries. This can be seen clearly if we divide GDP per capita into three sources, primary, secondary and tertiary, and estimate the following regression for the rate of change in the poverty measure:

$$\Delta \ln P_t = \pi_0 + \sum_{i=1}^{3} \pi_i s_{it} \Delta \ln Y_{it} + \varepsilon_t \qquad (1)$$

[9] There are other data problems with ambiguous implications for urban-rural disparities. The undercounting of rural migrants in China's urban areas is likely to lead to an overestimation of the level and growth rate in the ratio of the urban mean to the rural mean. Against this effect, urban survey response rates tend to be lower than for rural areas and it be safely assumed that the rich tend to have lower response rates. Our discussions with the staff of China's National Bureau of Statistics suggest that this problem is growing over time in China.

where Y_{it} is GDP per capita from source i=1,2,3, $s_{it} = Y_{it} / Y_t$ is the source's share, and ε_t is a white-noise error term. Note that the sector-specific growth rates are share-weighted in (1) to allow for the fact that two sectors growing at the same rate will not have the same aggregate impacts when one sector accounts for a smaller share of aggregate income than the other. When share-weighted, one obtains a straightforward testable hypothesis for whether the composition of growth matters; only in the special case in which $\pi_i = \pi$ for i=1,2,3, does equation (1) collapse to a simple regression of the rate of poverty reduction on the rate of GDP growth ($\Delta \ln Y_t$).[10]

Table 1 provides regressions for the rate of change in poverty over time (that is, the difference in the log of the headcount rate of poverty) on both the overall rate of per-capita GDP growth (that is, the change in the log of GDP per-capita), as well as the share-weighted rates of growth of GDP in each of the three sectors (equation 1).

For China, the overall elasticity of the headcount index to GDP growth was –2.6. However, when one decomposes growth by sector, it is clear that its composition mattered greatly to the rate of poverty reduction. The impact of growth in the primary sector was far higher (by a factor of about four) than for growth in either the secondary or tertiary sectors. The impacts of the latter two sectors are similar.

For India, too, the sectoral composition of growth was important, although tertiary sector growth was relatively more important than in China.[11] This probably reflects the difference between the two countries in the distribution of agricultural land. In rural China, starting conditions at the outset of the reform process entailed relatively low levels of inequality in access to land. The de-collectivization process that started in the late 1970s achieved a relatively equal allocation of access to agricultural land, at least within communes. (Between communes, the only way to equalize land allocation would have been to allow mobility of people, which was not considered a desirable option.) This meant that agricultural growth was a powerful instrument against poverty and inequality in China (Ravallion and Chen, 2007). The distribution of agricultural land was and is clearly more unequal in India, and that naturally attenuates the

[10] This test is due to Ravallion and Datt (1996). Note that these regressions are best viewed as decomposition tools rather than causal models of poverty reduction. Deeper explanations must endogenize growth rates and their composition; Ravallion and Chen (2007) provide models of poverty reduction in China that try to make some progress in that direction.

[11] Note that the coefficients on secondary and tertiary-sector growth for India are of approximately equal size but opposite sign (table 1). This suggests that the (share-weighted) difference in growth rates is picking up a distributional effect on poverty reduction.

impact of agricultural growth on poverty relative to that found in China. Note also that India's overall growth elasticity of poverty reduction is appreciably lower than China's (Table 1).

Increases in rural incomes, whether from agricultural growth or (particularly in the case of China) from increased rural non-farm employment, also turn out to have been critical for overall poverty reduction. Table 2 gives regressions of the rate of change in poverty over time (difference in the log headcount index) on the share-weighted growth rates of rural and urban mean incomes and a term capturing the effect of any shifts in population from rural to urban areas. It can be seen that in both countries, growth in rural incomes is the only statistically significant correlate of poverty reduction. Ravallion and Chen (2007) also report an alternative decomposition for China, which exploits the analytic (additivity) properties of the headcount index, whereby the national index is the population-weighted mean of the urban and rural indices. This decomposition makes somewhat different assumptions to the regression decomposition. However, it confirms the quantitative importance of rural economic growth; about 72 percent of the reduction in the headcount index that occurred in China between 1981 and 2001 is attributable to rural poverty reduction, versus 5 percent due to urban and 23 percent due to the population shift from rural to urban areas.

The results in Tables 1 and 2 imply that the particular form of sectorally uneven growth China and India experienced—primary sector growth rates lagging behind growth rates in the secondary and tertiary sectors, and rural incomes growing more slowly than urban incomes—has meant less poverty reduction than might have been the case otherwise. A sense of how much extra poverty reduction might have been achieved from a more balanced growth path can be obtained through counterfactual simulations in which it is assumed that all three sectors grow equally—meaning that the sector shares of GDP in 1981 would have remained constant over time—and the estimates from Table 1 are used to calculate the implied rate of poverty reduction under different assumptions about the overall (common) rate of GDP growth. So, for instance, had it been possible to achieve a balanced growth path while maintaining the GDP growth rates China actually achieved between 1981 and 2001, the mean rate of poverty reduction would then have been 16.3 percent per year, rather than 9.5 percent. Instead of 20 years to bring the headcount index down from 53 percent to 8 percent it would have taken about 10 years.

A similar exercise for India suggests that were it not for the sectoral and geographic imbalance of growth, the national rate of growth since reforms began in full force in the early

1990s would have generated a rate of poverty reduction that was double India's historical trend rate (Datt and Ravallion, 2002). The evidence also suggests that states with relatively low levels of initial rural development and human capital development experienced lower elasticities of poverty reduction to economic growth (Ravallion and Datt, 2002).

Of course one can question whether in fact a more sectorally balanced growth path could have been achieved without lowering the overall growth rate, and so this exercise should be viewed as an upper bound on what might have been possible. There do appear to be signs of a sectoral tradeoff in that the correlation between China's primary sector growth rates and the combined growth rate of the secondary and tertiary sector was –0.41 over this period, implying that a more balanced growth path in which the growth rate of the primary sector was higher might have meant less growth overall. But it is worth noting that the negative correlation is statistically quite weak—a significance level of 6 percent—and that there were sub-periods (1983–84, 1987–88 and 1994–96) in which both primary sector growth and combined growth in the secondary and tertiary sectors were both above average (Ravallion and Chen, 2007). Later we return to the question of whether either country faces an aggregate growth-equity trade-off.

Income growth has been uneven across households

The unevenness of economic growth across households at different levels of living can be seen clearly in the growth incidence curve (GIC), which gives the annualized rate of growth over the relevant time period at each percentile of the distribution (ranked by income or consumption per person).[12] Figure 4 gives the growth incidence curves for China and India, for 1993 to 2004/5. In both cases, growth rates at the bottom of the distribution were lower than those at the top. The gradient is less steep for India. Growth rates in China for the richest percentiles were about double those for the poorest. Strikingly, however, even the growth rates for the poorest percentile in China exceed those for the richest percentile in India over this period.

Figure 4 may well understate growth rates for the richest. As we have noted, large sample nationally representative surveys (such as used to estimate Figure 4) do not typically pick up what is happening at the extreme upper tails of the distribution. In the case of India, evidence from other sources indicates that incomes at the top end have risen dramatically. For instance, Banerjee and Piketty (2005), based on a study of tax returns, report that the super-rich in India—

[12] On the precise definition and properties of the GIC see Ravallion and Chen (2003).

that is, those at the 99.99th percentile—experienced growth in incomes of over 285 percent between 1987/88 and 1999/00, resulting in annual PPP incomes of around $160,000 per person.

Figure 5 displays the trends in income inequality for the two countries. From a cross-country perspective, India remains a relatively low-income inequality country (World Bank, 2005, 2007), although this is no longer true of China. The Gini index of income inequality for China rose from 28 percent in 1981 to 41 percent in 2003, though not continuously, and more in some periods and provinces.[13]

Note that the fact that the inequality measures for China use income while those for India use consumption (per capita) does not account for the difference in measured inequality as in Figure 5. For a few years it is possible to measure inequality using consumption for China. When one does, the consumption-based inequality measure is only slightly lower than that based on incomes, and it is still appreciably higher than for India (Chen and Ravallion, 2007).

In the case of India, one finds that the Gini index rose in the 1990s, although the increase was far less pronounced than in China (Figure 5).[14] It is too early to say if India is undergoing a trend increase in inequality similar to what China has experienced. As can be seen from Figure 5, on looking back over time, rising inequality in India is seen to be a recent phenomenon.[15] Indeed, there is no statistically significant trend increase in consumption inequality in India up to the early 1990s (Bruno et al., 1998).[16]

Perceptions "on the ground" that inequality is rising markedly in India do not appear to sit easily with the impression given by Figure 5. Popular opinion can be mistaken, but nor are the data perfect. As we have noted, the survey-based numbers may well understate the relative gains to the rich, and that is consistent with the evidence from tax returns. The visible changes in

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[13] Note that the latter figure is somewhat lower than past estimates for China; this is because corrections have been made for changes in survey-valuation methods (as discussed above) and urban-rural cost-of-living differences, which have tended to rise over time because of higher inflation in urban areas (as price controls and subsidies were progressively removed on certain goods, including housing). Without these corrections, the estimate of the Gini index for 2003 rises to over 45 percent instead of 41 percent.

[14] Figure 5 uses the NSS "thick samples" only. The thin samples for the 1990s also confirm the increase in inequality (Ravallion, 2000).

[15] Note that longer term comparisons are only possible using the uniform recall period data, using the Deaton method of correcting for the comparability problem in the 1999/00 data.

[16] At the time of writing, the 61st round of the NSS, for 2004/5, has not yet been released. This will give a (keenly awaited) indication of whether the signs of rising inequality in the 1990s have been sustained. Only preliminary tabulated results were available to us at the time of writing, but they suggest that the increase in inequality in India since the early 1990s that is evident in figure 6.5 has continued through to 2005, and may well have accelerated, although this should be investigated more thoroughly when the micro data become available.

consumption patterns and lifestyles that the rich have achieved may well not be reflected properly in the survey-based inequality measures. Also, and possibly more importantly, the perception of sharply rising inequality in India may well also reflect rising absolute inequality, as reflected in the absolute gaps between the rich and the poor, as distinct form the proportionate gaps. There is evidence that many people view inequality in absolute terms rather than relative terms (Amiel and Cowell, 1999).[17]

The unevenness of growth has contributed to rising inequality

Since both countries started their reform periods with sizeable rural–urban gaps in mean living standards, the unevenness of the subsequent growth process, in which urban incomes increased faster than rural incomes, is likely to have put upward pressure on aggregate inequality. The time series data and regressions presented in Ravallion and Chen (2007) provide direct evidence of this for China. Controlling for growth in rural and urban incomes, the rising urban population share has had no significant effect on aggregate inequality, and the periods when the urban–rural disparity in mean income rose (fell) were the periods when overall inequality rose (fell). But it would also seem that the rising urban–rural gap now has a salience in popular and governmental circles that far exceeds its likely contribution to a conventional inequality or poverty metric. This appears to stem in part from the (plausible) belief that the urban–rural divergence reflects (in part at least) urban biases in the reform processes and complementary public spending choices. This is reinforced by actual or perceived abuses of local political powers at the expense of poor farmers or the landless rural poor (the recurrent land disputes of land contracts and land-use conversions in rural China are examples).

Similarly, regional inequality concerns loom large in both countries, although the quantitative importance of increasing disparities across regions (provinces and states) appears to be greater in India. While these between-group inequalities have carried weight in policy discussions, it is important to note that growing inequality within both urban and rural areas have been a major component of the increase in overall inequality; for China rising inequality within rural areas has been an important dynamic in overall inequality while in India inequality has risen more within urban areas than rural areas.

[17] For further discussion of the implications of the absolute-inequality concept for assessments of economic growth and reform see Ravallion (2004a) and Atkinson and Brandolini (2004).

The sectoral composition of GDP growth—cutting across the urban and rural divide —is also a significant correlate of the changes in inequality. For instance, regressions of the sort reported in Table 1, with share-weighted sectoral GDP growth rates as covariates, but with the change in inequality (change in the log of the Gini index) as the dependent variable indicate that in China, primary sector growth has been associated with lower inequality overall, while there is no correlation with growth in either the secondary or tertiary sectors (Ravallion and Chen, 2007). There is also evidence of a lagged primary-sector growth effect, with a similarly sized impact as the current year's effect. Regressing the change in log national Gini index ($\Delta \ln G_t$) on the two-year moving average of the primary sector growth rate ($\Delta \ln Y_{1t}$) one obtains:

$$\Delta \ln G_t = \underset{(4.563)}{0.0522} - \underset{(-3.723)}{0.746}(\Delta \ln Y_{1t} + \Delta \ln Y_{1t-1})/2 + \hat{\varepsilon}_t^G \quad R^2=0.463;\ n=20 \qquad (2)$$

Note that the intercept indicates a strong positive trend in inequality, of about 5% per annum.

Of course, other factors impinged on the changes in aggregate inequality in China besides changes in agricultural incomes. Two other factors that appear to have influenced aggregate inequality, side-by-side with agricultural growth rates, are the pace of urbanization and the rate of inflation. Adding these to the above regression we obtain:[18]

$$\Delta \ln G_t = \underset{(4.104)}{0.083} - \underset{(-3.346)}{0.744}(\Delta \ln Y_{1t} + \Delta \ln Y_{1t-1})/2 - \underset{(-2.670)}{0.969}\Delta \ln U_{t-1} + \underset{(2.247)}{0.175}\Delta \ln P_t + \hat{\varepsilon}_t^G \quad R^2=0.605 \qquad (3)$$

Here *U* denotes the urban population share and *P* is the Consumer Price Index (we used the rural index). The impact of primary sector growth remains strong, but we also find an inequality-decreasing effect of urbanization,[19] and that higher inflation rates entail higher inequality. The pro-poor distributional effect of lower inflation is consistent with evidence for other countries.[20]

How much higher would the rate of primary sector growth need to have been to stem the rise in aggregate inequality? The above elasticity implies that a (moving average) growth rate of 7.0 percent per annum would be needed to avoid rising inequality, whereas the mean primary-sector growth rate was 4.6 percent per annum between 1981 and 2001. Only in two periods, the

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[18] There is also evidence of a significant effect of past inequality; adding $\Delta \ln G_{t-1}$ its coefficient is -0.348 (t-ratio=-3.11); other coefficients remains significant and the R2 rises to 0.681. However, with 20 observations (one of which is lost in the dynamic specification) it is not clear how robustly one can expect to identify dynamic effects. We confine this discussion to the simpler model in the following regression.

[19] The fit improved with a one year lag in the effect of urbanization, which is plausible.

[20] Including Easterly and Fischer (2001) and Dollar and Kraay (2002) both using cross-country data, and Datt and Ravallion (1998) using data for India.

early 1980s and the mid-1990s, were agricultural growth rates in China high enough to prevent rising inequality. The divergence between the actual growth rates in the primary sector GDP and the minimum needed to prevent rising inequality is particularly striking in the most recent period. The recent composition of economic growth in China has clearly been inequality increasing.

It is too early to say with confidence that India's (more recent) rise in inequality stems from similar factors. Nonetheless, we can be reasonably sure that the "urban bias" in India's growth process since reforms began has put upward pressure on overall inequality.

4. Why growth was uneven and why this matters

Why was growth uneven—in the aggregate as well as sectorally and geographically—and what is one to make of this unevenness? Should the fact that in both India and China, segments of the population appear to have been left behind (at least thus far) be of concern? And should we worry that inequality has risen?

These questions are more easily posed than answered because of the multiple complex processes through which uneven growth and inequality are generated and reproduced. Policies play a role but so do initial conditions in the form of history (for example, inherited institutions) and geography (as a determinant of access to markets and public services). Economic forces are undoubtedly important, but so too are political and social factors. Answering these questions in a rigorous fashion is beyond the scope of this paper. What we can do, however, is provide an assessment based on our interpretation of the evidence from various sources.

We structure the discussion around a distinction between good and bad inequalities—drivers and dimensions of uneven growth that are good or bad in terms of what they imply for how the living standards of poor people evolve over time. We argue that the post-reform development paths of both India and China have been influenced by and have generated both types of inequalities.

Good inequalities

Good inequalities are those that reflect and reinforce market-based incentives that are needed to foster innovation, entrepreneurship and growth. Scattered evidence suggests that the rise in inequality with the introduction of market reforms in both India and China is at least in part a reflection of newly-unleashed market-based incentives at work, in contrast with the earlier

period of artificially low levels of inequality brought about by regulatory distortions and interventions that suppressed incentives for individual effort and innovation.

Perhaps the leading example of the role that good inequalities (and the economic incentives that underlie them) have played in China's growth is the stimulus to agricultural production in the early 1980s provided by the Household Responsibility System (HRS). Under the HRS, rural households were assigned plots of land and became the residual claimants on the output from that land, significantly enhancing the incentives for production. Prior to that, land had been farmed collectively, with all members sharing the output more-or-less equally. Incentives for individual effort in this setting were naturally very weak, and the reforms to this system were critical in stimulating rural economic growth at the early stages of China's transition (Fan, 1991; Lin, 1992). Initially these reforms are likely to been inequality-reducing, by raising rural incomes relative to urban areas. However, soon some farm-households did better than others—depending on farming acumen, agro-climatic conditions and access to markets—putting upward pressure on inequality within rural areas.

Another example is provided by Park et al. (2004) in their analysis of the rise in urban wage dispersion in China during the current reform period. At the outset of that period, urban China had a system of fixed wage scales, allocation of labor by government and (hence) low returns to schooling (Fleisher and Wang, 2004). There were few incentives for work-effort or skill-acquisition. From this legacy of wage compression and low labor mobility, China moved gradually in the 1990s to a market-based system featuring a dynamic non-state sector and an increasingly open labor market. With reforms that expanded the scope for employment in a growing private sector and the emergence of a competitive labor market, wage dispersion within skill categories and experience cohorts has increased considerably and returns to schooling have risen (Park et al., 2004; Heckman and Li, 2004). Looking forward, a further implication of the emergence of a more convex structure of returns to education in post-reform China (whereby the increase in returns to education has tended to be at higher levels of schooling) is that generalized increases in the level of schooling will put upward pressure on aggregate inequality, though they will probably be poverty reducing. In India, too, one sees growing variance in wages, attributable in part to increasing wage dispersion within educational attainment categories, which in turn reflect increasingly competitive product and labor markets (Dutta, 2005).

Yet another example of how increasing disparities might reflect the growth-enhancing role of incentives comes from considering the increasing variation in the growth performance of Indian states during the 1990s, when some states significantly accelerated their growth, while others lagged behind. Both Ahluwalia (2000) and Kohli (2006) conjecture that the increase can be attributed, at least in part, to the greater responsiveness of private investment flows to differences in the investment climate in different states. As Kohli (2006) notes, that in turn appears to have provided—subject to the constraints imposed by state-level political considerations and capacity—some incentives to state leaders to adopt measures to improve the business environment, to woo private investment. This stands in contrast to earlier periods when the share of public investment in total investment was much larger.

There is evidence that the impact of incentives was magnified by the presence of agglomeration economies in industrial activity in India. Lall and Chakravorty (2005) show that industrial diversity (which is higher in metropolitan and mixed industrial regions) has cost-reducing effects, through agglomeration economies. Because of this, private industrial units favored locating in existing high-density industrial areas, increasing the degree of industrial clustering. On the other hand, the location decisions of state-owned industry appeared to have been much less driven by these cost considerations and were possibly motivated by a desire for greater regional balance. The conclusion that Lall and Chakravorty draw is that the reforms and the scaling back of public investments, and the emergence of the private sector as the primary source of new industrial investments that was associated with it, contributed to higher levels of spatial inequality in industrial activity.

Bad inequalities

The processes underway in India and China are almost certainly less benign and less automatic than the account above suggests. Geographic poverty traps, patterns of social exclusion, unequal opportunities for enhancing human capital, lack of access to credit and insurance, corruption and uneven influence can all conspire to simultaneously fuel rising inequality and prevent certain segments of the population from making the transition out of traditional low-productivity activities. Credit market failures often lie at the root of the problem; it is poor people who tend to be most constrained in financing lumpy investments in human and physical capital. These bad inequalities—rooted in market failures, coordination failures and

governance failures—prevent individuals from connecting to markets and limit investment in human and physical capital.[21]

We focus on two dimensions of bad inequalities. The first relates to location in the presence of externalities, impediments to mobility and heavy dependence of local states on local resources. These features can generate geographic poverty traps whereby living in a well-endowed area entails that a poor household can eventually escape poverty, while an otherwise identical household living in a poor area sees stagnation or decline. This is one possible reason why initially poorer provinces have often seen lower subsequent growth (Figure 6).

While these observations from aggregate data are suggestive that such traps might exist, they are hardly conclusive. More rigorous micro evidence of the geographic externalities that underlie such traps can be found in Jalan and Ravallion (2002) and Ravallion (2005), using farm-household panel data for rural China. The geographic attributes conducive to individual prospects of escaping poverty include both publicly-controlled endowments (such as the density of rural roads) and largely private ones (such as the extent of agricultural development locally).

The second dimension of undoubted importance relates to inequalities in human resource development—often linked to credit market failures on the demand side but also reflecting governmental failures in service delivery. We argued above that the rising returns to schooling and increasing dispersion of wages represent 'good' inequalities because they reflect freer labor markets with increased incentives for work and skill-acquisition. But naturally, those with relatively little schooling and few assets, or little access to credit are less able to respond these incentives and are less well positioned to take advantage of the new opportunities unleashed by market-oriented reforms. And thus, inequalities in human capital are 'bad ineqaulities' in that they have retarded poverty reduction through growth in both countries.[22]

Basic schooling was far more widespread in China at the outset of the reform period than in India; China has achieved close to universal primary education. But inequalities in educational attainment beyond primary school remain, and have become an increasingly important source of

[21] World Bank (2005, Chapter 5) provides a useful overview of the arguments and evidence on how certain inequalities can be inefficient, notably when they entail unequal opportunities for advancement. Also see the excellent overview of the theoretical arguments in Aghion et al. (1999).

[22] Note that the claim that inequalities in human capital are "bad" is not inconsistent with our earlier point that certain inequalities in outcomes, reflected for instance in increasing wage dispersion, are "good." The latter stem from variation in returns that reflect differences in effort. The former arises from differences in endowments that are the result of both supply-side governmental failures and demand-side market failures (especially in credit-markets).

disadvantage because a junior high school education, and in some instances, a senior high school education, has become a de facto prerequisite for accessing non-farm work particularly in urban areas, where wages far exceed the shadow wages in farming. Thus, lack of schooling is now an important constraint on prospects of escaping poverty in China, as elsewhere.

India's schooling inequalities are clearly larger than those of China (both at the beginning of the reform period and since).[23] Inequality of schooling attainments has clearly been an important factor inhibiting pro-poor growth. The differences we have seen in the impacts of non-farm economic growth on poverty reflect inequalities in a number of dimensions; low farm productivity, low rural living standards relative to urban areas and poor basic education all inhibited the prospects of the poor participating in growth of the non-farm sector (Ravallion and Datt, 2002). Interstate differences in initial levels of schooling appear to have been the dominant factor in explaining the subsequent impacts of non-farm economic growth on poverty. Those with relatively little schooling and few assets, or little access to credit, were less well positioned to take advantage of the new opportunities unleashed by market-oriented reforms.

Policy impediments, policy biases and policy neglect

Errors of both omission and commission in policy have contributed to the unevenness of growth in both countries, and the failure of growth to translate into larger impacts on poverty and human development. These errors have taken one of three forms: first, policies that have impeded the functioning of markets; second, policies that have been biased in favor of particular regions or industries; and third, policies that have neglected certain spheres of activity where public interventions were in fact necessary.

In India, it has been argued that restrictive labor regulations and widespread preferences in favor of small-scale industries are impediments to more broad-based growth. While motivated (ostensibly) by distributive considerations, these policies are believed to have instead restricted firm growth, dampened job creation and hindered the movement of labor out of agriculture in India (World Bank, 2006). Only eight million workers are protected by this legislation, in a country of one billion; "Current labor regulations seem to be protecting workers in jobs by 'protecting' other workers from having jobs." (World Bank, 2006, p.17). These regulations are unlikely to have helped labor absorption, and may well have helped create a situation in which the fraction of the labor force in India that remains in agriculture far exceeds that of other

countries with similar shares of agricultural value added (Virmani, 2005). And despite the increase in GDP growth, the rate of job creation in India has failed in recent years to keep up with increases in the size of the labor force, which has led some to characterize India's growth experience as "jobless growth" (Mehta, 2003). While these observations are suggestive, the costs to the poor of these policies have yet to be rigorously quantified.

In China, impediments to the movement of labor out of agriculture through internal migration have come in part from governmental restrictions under the *houkou* system, whereby a person has to have an official registration to reside in an urban area and use its facilities. Those born with an agricultural registration have had a hard time getting urban registration.[24] Other costs of migration facing rural households include the risk of losing one's (administratively allocated) land allocation at the origin and various forms of discrimination against rural migrants in urban areas. A rough estimate of the magnitude of these policy-induced costs of migration is provided by Shi et al., (2004) who report that even after controlling for worker characteristics and cost-of-living differences provide, urban wages are about 50 percent higher. The high costs of migration underlying these gaps have probably been both poverty and inequality increasing. There are also similar restrictions on within-rural and within-urban migration.

Sizeable aggregate output losses from these inequality-increasing restrictions on migration are likely. Not only is labor miss-allocated across sectors, but the restrictions make it harder for China to realize agglomeration economies (Au and Henderson, 2006). Under the (plausible) assumption that these costs of migration lower earnings in the poorer (labor-surplus) sector, they will increase poverty and inequality. Other policy biases against the poor have included public spending and industrial policies that have favored China's coastal areas over the (poorer) inland regions.

In both countries, an important area of policy neglect has been service delivery. The deficiencies of India's education system (and not just from the point of view of the poor) are well known (Drèze and Sen, 1995; PROBE, 1999). Issues of service quality loom large in these concerns (World Bank, 2006). While starting from greater equity in service delivery (though even then with large gaps between urban and rural areas) China has also seen growing

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23 Evidence supporting this claim can be found in World Bank (2005).

24 In spite of this, China has still had a more rapid rate of urbanization than has India. China's urban population share rose from 19 percent in 1980 to 39 percent in 2002. In India (with no such restrictions) the urban share of the population rose from 23 percent to 28 percent over the same period.

inequalities in access to health and education (Zhang and Kanbur, 2005). The weaknesses and inter-regional disparities in service delivery in both countries can be traced, at least in part, to the large and rising disparities in public spending per capita between rich and poor areas, with rather weak fiscal redistribution and (hence) heavy dependence of local governments on local resources. We return to this point when we discuss policies.

Dynamics: Good inequalities can turn into bad ones

Without the appropriate institutional checks and balances, rising inequality, even if it is initially of the "good" variety, can engender phenomena such as corruption, crony capitalism, rent-seeking or efforts by those who benefit initially from the new opportunities to restrict access of others to those opportunities or alter the rules of the game so as to preserve their initial advantages.[25] Thus bad inequalities emerge over time.

The growth and subsequent performance of China's township and village enterprises (TVEs) provides an example of this dynamic at work. The emergence and growth of TVEs in various parts of China starting in the mid-1980s is often cited as a successful example of the country's strategy of incremental institutional innovation—in this case, economic decentralization under which local governments were given the right to establish TVEs and retain the profits generated by them (Oi, 1999). The implied autonomy and control, combined with a hard budget constraint imposed from above provided exactly the right incentives at the outset to invest and operate efficiently. The resultant increase in rural non-farm output and employment, was spatially uneven, but probably inequality reducing overall (given the rural base for this innovation) and contributed to China's growth up to the mid-1990s.

However, with the proliferation of TVEs and the increased competition this implied in various product categories, pressures emerged for local and provincial governments to protect the (local) markets of the TVEs and enterprises under their control. The result was increasing impediments to inter-jurisdictional trade and to entry by outside firms, leading to fragmentation of China's domestic product and factor markets and a deterioration in the investment climate in many localities (World Bank, 2005).

Perceptions and tolerance for inequality: The "bad" can drive out the "good"

Bad inequalities are doubly harmful. First, they directly reduce the potential for growth because segments of the population are left behind, lacking the opportunity to contribute to the

[25] Antecedents to this argument can be found in the writings of North (1990) and Hellman (1998).

growth process. Second, on top of these direct human and economic costs, persistent bad inequalities in a setting of heightened aspirations can yield negative perceptions about the benefits of reform. Because it is difficult for citizens to disentangle the sources of the aggregate inequality in observed outcomes—to determine whether the underlying drivers are good or bad—societal intolerance for inequality of any kind emerges. And that can trigger social unrest or harden resistance to further needed reforms, thereby (indirectly) threatening the sustainability of growth. In effect, the persistence of bad inequalities drives out the good ones.

In China, Han and Whyte (2006) report results of a survey of over 3,000 Chinese adults interviewed in 2004; 40 percent of respondents "strongly agreed" that inequality in the country as a whole is "too large" while a further 32 percent "agreed somewhat" with this view. An astonishing 80 percent favored "governmental leveling" to assure a "minimum standard of living" (split roughly equally between "strong agree" and "agree somewhat"). Interestingly, the correlates of perceptions of unfair inequalities did not suggest that the concern was greatest among those most disadvantaged, such as farmers or migrants from rural areas. Also notable is that most respondents did feel that education, ability and effort were rewarded in China.

Such high levels of concern about inequality do not imply dissatisfaction with the distributive outcomes of economic reforms. However, there are also signs that perceptions of (or direct experience with) bad inequalities is translating into growing dissatisfaction with reforms in both countries. Social protests about various perceived injustices are becoming common in China. Land disputes have been especially common in rural and peri-urban areas, where the poorly-defined land rights of farmers leave ample opportunities for local officials and developers to expropriate a large share of the rent from land-use conversions. In a poll conducted by the Chinese Academy of Social Sciences in 2002, 60 percent of the 15,000 respondents thought that party and government officials had benefited the most from reforms, while other polls (cited in Pei, 2006) consistently rank corruption as one of the most serious problems facing China. In examining the economic underpinnings of social unrest in China, Keidel (2005) makes the point that dissatisfaction with the economic dislocations caused by reforms, which are a necessary part of engendering good inequalities, have been amplified by corruption and malfeasance within state-owned enterprises and local governments. Police records reported in official bulletins cited by Gill (2006) indicate that the number of collective protests, violent confrontations and demonstrations deemed to be incidents of social unrest has risen nearly tenfold from 8,300 in

1993 to almost 80,000 in 2005. Pei (2006) argues that such social discontent has made it more difficult for China to undertake the reforms needed to address remaining structural weaknesses, notably in the financial system—reforms that a study by the IMF (2003) suggest might be critical to sustaining growth. Thus, Pei (2006) talks of China's "trapped transition."

In India, the political failure of the "Shining India" electoral campaign of the BJP in 2004 has been widely attributed to its neglect of the emerging inequalities in the wake of pro-growth reforms. Such attributions are always questionable, but there is also evidence from attitudinal surveys suggesting that rising inequality is a popular concern in India. In a 2004 National Election Survey, three quarters of the respondents indicated that the reforms of the past decade and a half had only benefited the rich (Suri, 2004). Within India's democratic polity, such sentiments have resulted in political pressures that have forced the government to postpone needed reforms (Bardhan, 2005). For instance, last year the government had to withdraw plans to privatize 13 leading industrial public-sector undertakings. The concerns about rising inequality and slow progress against poverty have also led to various new antipoverty programs, which we return to.

5. Preserving the good inequalities and reducing the bad ones

Putting in place the right mix of policies and institutions to ensure that growth is sustained and broad-based is now high on the policy agenda of both governments. While inequality has been prominent in (at least) the rhetoric of Indian politics for decades, it is a relatively new concern in China, although it has emerged as a major concern in recent years.[26]

Should policy makers be so worried about rising inequality? Possibly it is inevitable to some degree. Over five decades ago, Arthur Lewis (1954) observed that the defining feature of structural transformation in economies with large pools of surplus labor is the gradual transfer of surplus labor from "traditional" low-productivity activities to "modern" high-productivity activities. Lewis argued that this process is inevitably accompanied initially by rising levels of inequality as some make the transition and others are, at least temporarily, left behind.[27] As

[26] Han and Whyte (2006) quote results of a survey in 2004 of senior public officials done by the Communist Party's Central Party School which found that income inequality was the highest expressed concern, dominating all other issues..

[27] The dimensions along which this productivity divide are manifested—rural vs. urban, traditional vs. modern agriculture, agriculture vs. industry, etc.—will naturally vary from context to context, even within a country.

Lewis put it: "Development must be inegalitarian because it does not start in every part of the economy at the same time."

If indeed what we are witnessing in China and India is such a process of structural transformation, it may only be a matter of time before those left behind catch up. The rise in inequality would then be a transitional phenomenon, although because the transition is occurring on a decadal scale (even for a rapidly changing society and economy such as China's), inequality might continue to rise for several more years. And even when the transition is complete, because of the good drivers of inequality set in motion by the reforms, there will almost certainly be an increase in the steady-state inequality relative to that in the pre-reform period.

However, as this paper has argued, there are also a number of reasons to suggest that policy makers concerned with assuring rising absolute levels of living, especially for the poor, should be concerned about the "bad inequalities." In the this section we try to provide a simple conceptual framework for thinking about what policy makers in China and India should do about rising inequality, and review some of the policy options, including those recently implemented in both countries.

Defining the challenge and avoiding misdiagnoses

We take it to be self-evident that that the objective is sustainable pro-poor growth, by which we mean growth that benefits poor people, so as to bring large and lasting reductions in the extent of absolute poverty. Efforts to attenuate the bad inequalities should not then undermine the drivers of good inequality to the point where the longer-term living standards of poor are threatened. The challenge will be to identify the mix of policies that directly target the bad inequalities without undermining the good ones.

From that starting point, it is clear that we should not accept redistributive policies that come at the expense of lower longer-term living standards for poor people. Accepting that there is no aggregate trade-off between mean income and inequality does not mean that there are no trade-offs at the level of specific policies. Reducing inequality by adding further distortions to an economy may well have ambiguous effects on growth and poverty reduction. But nor should it be presumed that there will be such a trade-off with all redistributive policies. The potential for "win-win" policies stems from the fact that some of the factors that impede growth also entail

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And which dimensions are most relevant will clearly matter for thinking about policy. The larger point, however, is that there is some axis along which the dualism is manifested.

that the poor share less in the opportunities unleashed by growth. More rapid poverty reduction requires a combination of more growth, a more pro-poor pattern of growth and success in reducing the antecedent inequalities that limit the prospects for poor people to share in the opportunities unleashed by a growth economy.

Learning from the past: Avoiding false tradeoffs

The experience of China and India over the last quarter century offers important lessons regarding the broad policy directions that are necessary and possible. The first is that the idea of an aggregate tradeoff between growth and equity is often, though not always, a false one. As we have argued above, the trade off exists for certain inequalities but not others. The right combination of policies can yield win-win-win combinations of growth, reduction in poverty and declining (or at least non-increasing) inequality.

Testing for the existence of an aggregate growth-equity trade off poses a number of analytic problems. In the case of China, it is at least suggestive that on comparing growth rates with changes in inequality over time one finds no sign that higher inequality has been the price of China's high growth. The correlation between the growth rate of GDP and log difference in the Gini index is only –0.05; the regression coefficient has a t-ratio of only 0.22. This test does not suggest that higher growth *per se* meant a steeper rise in inequality. While the level of inequality rose at the same time that average income rose, this reflects their common time trends rather than genuine co-movement. The periods of more rapid growth did not bring more rapid increases in inequality; indeed, the periods of falling inequality (1981–85 and 1995–98) had the highest growth in average household income. Also, the sub-periods of highest growth in the primary sector (1983–84, 1987–88 and 1994–96) did not come with lower growth in other sectors (Ravallion and Chen, 2006). Nor does one find that the provinces with more rapid rural income growth experienced a steeper increase in inequality; if anything it was the opposite.

The sources of higher primary sector growth rates in China were probably very different between the early 1980s and the mid 1990s. In the former period, agricultural growth was stimulated (in large part we expect) by the much-enhanced incentives for production achieved by the introduction of the household-responsibility system (as discussed above), whereby farmers became the residual claimants on farm output.[28] In the second period (the mid-1990s) the higher

[28] The literature has pointed to the importance of the reform to this system in stimulating rural economic growth at the early stages of China's transition (Fan, 1991; Lin, 1992).

agricultural incomes appear to have come from a substantial reduction in implicit taxation of the sector. From the early 1980s to the mid-1990s, the government has operated a domestic food grain procurement policy by which farmers are obliged to sell fixed quotas to the government at prices that are typically below the local market price (but were left free to sell the remainder at market prices). For some farmers this was an infra-marginal tax, given that they produce more food grains than their assigned quota, but for others it will affect production decisions at the margin; Ravallion and Chen (2006) provide evidence that the reduction in this implicit tax brought substantial income gains to the rural economy and especially to the poor.

Helping the rural poor connect to markets

Attenuating the rise in inequality and assuring more rapid poverty reduction will require raising incomes in the lagging rural areas of both countries and this will require improved access to markets. The question of how this should be done is often framed as a choice between investing in poor-area development (jobs to people) or facilitating out-migration (people to jobs). Posing the choice this way almost certainly over-simplifies the problem. Migration to urban areas is likely to be pro-poor in both countries. However, out-migration will often not be feasible for poor rural households without the right sort of investments in poor areas, both in human resource development and agriculture. Conversely, while there may be scope for further increases in agricultural incomes (e.g., through diversification into higher value crops) or for promoting rural non-farm employment, the share of agriculture in GDP is bound to decline in both countries, and geography and remoteness limit the possibilities of non-agricultural economic activity in poorer regions.

We instead frame the question in terms of identifying and correcting the underlying market and governmental failures and redressing the asset inequalities that lock the poor out of profitable opportunities for self-advancement. From this perspective, in both countries, there are three priorities.

First, rural infrastructure should have a high priority. China started its reform period with very poor rural infrastructure. Fiscal and borrowing constraints meant that it was some 10 years before it was feasible to embark on a massive expansion of infrastructure, such as the roads program that started around 1990. The differences in rural infrastructure across counties have strong explanatory power for subsequent consumption growth at the farm-household level in

rural China (Jalan and Ravallion, 2002). Quite reasonable rates of return are possible from well-designed programs for developing infrastructure in poor rural areas (Ravallion and Chen, 2005b).

In India, the poor quality of rural infrastructure is widely acknowledged as an impediment to growth and poverty reduction. It is believed that there are high returns in terms of achieving more equitable growth from better rural finance and infrastructure in India, although this is not simply a matter of building facilities but raises deeper issues about the need for reforming existing institutional arrangements and provider incentives (World Bank, 2006).

Second, better policies are needed for delivering quality health and education services to poor people. And third, policies are needed that allow key product and factor markets (for land, labor and credit) to work better from the point of view of poor people. In India this includes further deregulation of formal-sector labor markets. In the case of China, reducing the policy impediments to migration, and legal reforms to allow a market in land-use rights in rural China, giving farmers titles over land-use rights that they can sell, mortgage or pass onto their children, are priorities. China has resisted embarking on agricultural land market reform. Neighboring Vietnam did take this step in the 1990s, and the available evidence suggests that, on balance, this reform has helped in reducing poverty (Ravallion and van de Walle, 2007).

Fiscal policy will play an important role in realizing these priorities. But much depends on fiscal resource mobilization and exactly how that spending is done. Removing biases against the poor in taxation and spending policies will be essential. As we have noted, reducing the government's implicit taxation of farmers through food grain procurement quotas has been a powerful instrument against poverty in China. From this point of view, China's recent policy to give tax breaks to farmers in poor regions is surely welcome, although without alternative revenue sources in poor areas one can expect either a decline in the local public investments and services needed for poverty reduction, or further poorly-compensated expropriations of farm-land by local authorities aiming to profit by selling the land to non-farm activities.

A second continuing issue in both countries is how to enhance local-level fiscal resources in poor areas. The priority both countries now give to the decentralization of social spending will have limited impacts on poverty and human development outcomes unless it comes with central efforts to assure greater fiscal redistribution to poor regions from better-off—and increasingly better-off—regions.

Recent initiatives

Policy makers and political leaders in both countries are clearly trying to find ways to help the rural poor connect to the process of growth. In China, the reduction and progressive elimination of agricultural taxes and fees and the limited introduction of subsidies for primary education in poor counties during the latter half of the 10th Five-Year Plan were early indications of a significant shift in the government's priorities towards a greater emphasis on improving welfare in the countryside.[29] A key component of the plan is a package of measures aimed at what the leadership has termed, "building a new socialist countryside".[30] The package calls for a systemic elimination of all agricultural taxes. But the elimination of agricultural taxes and fees raises new concerns. As we have noted, for many rural local governments, particularly in interior provinces and in poorer areas, these taxes and fees have been the main source of revenues from which to finance local public services, notably health and education. Not only does this potentially jeopardize access to and the quality of health and education services, given the huge disparities in the revenue bases of local governments, there are also implications for consumption poverty. China has been relatively unique in the high savings rates found among the poor. While a complete and detailed analysis of this question is yet to be done, common sense and conventional wisdom suggest that (apart from any intrinsic cultural proclivities for thrift) precautionary saving for uninsured health (and other) shocks, savings to finance educational costs, and life-cycle savings to fund old-age living expenses all play an important role in explaining why China's poor save so much.

The government appears to be well-aware of this concern, and a large part of the increased spending under the "building a new socialist countryside " initiative is to be directed towards education and health services in the countryside. Among the initiatives mentioned are plans to provide several billion Yuan in supplementary funding for tens of millions of poor primary and junior middle school students and to offer free nine-year compulsory education to rural students. The central government also plans to double its subsidies for farmers if they join a state-backed medical cooperative fund designed to reduce the financial burdens of farmers. Other

[29] First announced at the meeting of the Central Party Committee of the Chinese Communist Party in October 2005, the reorientation in policy has been written in to the 11th Five Year Plan formally adopted by the National People's Congress in its 2006 annual session.

[30] According to the budget tabled at the National Peoples Congress, the Chinese government plans to spend 340 billion Yuan (US$42 billion) in agriculture, rural areas and farmers in 2006, which is 14 percent more than the previous year, and represents 22 percent of the increase in government spending from last year.

elements of the plan include increased subsidy payments for farmers and further government investment in rural public works.

The "Minimum Livelihood Guarantee Scheme," popularly known as *Dibao* has been the Government of China's main response to the new challenges of social protection in the more market-based economy. This aims to guarantee a minimum income in urban areas, by filling the gap between actual income and a "*Dibao* line" set locally. While in theory this would eliminate *Dibao* poverty, the practice appears to fall well short of that goal due largely to imperfect coverage of the target group (Chen et al., 2006). Geographic inequities in the program, stemming from its heavily decentralized implementation, appear to have also reduced its impact (Ravallion, 2007). Reforming the program and expanding coverage—including to (risk-prone) rural areas—pose a number of challenges.

If indeed these plans are implemented effectively and targeted to poorer areas and poorer households in rural China, the prospects for poverty reduction, especially reduction in the number of consumption poor, during the 11th Five-Year Plan look promising.

There have also been a number of new initiatives in India. The Rural Employment Guarantee Act of 2005 guarantees 100 days of work a year at the minimum agricultural wage rate to at least one member of every family. This is expected to have a large impact of rural poverty, although it is far from obvious that the scheme is the most cost-effective option for this purpose, once one considers all of the costs involved, including the forgone incomes of program participants (Murgai and Ravallion, 2005).

The Government of India's 2006-2007 budget also calls for substantially increased spending on rural infrastructure, job creation, health and education. New programs include *Bharat Nirman* (Building India) project to provide electricity, all-weather road connectivity and safe drinking water to all of India's villages and *Sarva Siksha Abhiyan,* which aims to assure a minimum standard of elementary education. These programs are not explicitly targeted to poor areas, but in all likelihood that will be the outcome given that villages lacking these services and facilities will tend to be poor.

6. Conclusions

Aggregate economic growth is rarely balanced across regions or sectors of a developing economy, and neither China nor India is an exception. We have seen that the post-reform pattern

of growth has not been particularly pro-poor in either country. In China, growth in the primary sector (primarily agriculture) did more to reduce poverty and inequality than growth in either the secondary or tertiary sectors. In India, with higher initial inequality in access to land than China, agricultural growth was less important than tertiary sector growth. In both countries, there has been a marked geographic unevenness in the growth process, with numerous lagging regions, including some of those that started off among the poorest.

Income inequality is rising, although India has not yet experienced the same trend increase in inequality that China has seen. Poverty in both countries is not becoming any more responsive to aggregate economic growth and is becoming more responsive to rising inequality. India's poor did not start the reform period with the same advantages as China's poor, in terms of access to land and education. Persistent inequalities in human resource development and access to essential infrastructure within both countries, but probably more so in India, are clearly impeding the prospects for poor people to share in the aggregate economic gains spurred by reforms. The geographic dimensions of their inequalities and the associated disparities in fiscal resources and governmental capabilities loom large as policy concerns for the future in both countries.

In the future, it will be harder for either country to maintain its past rate of progress against poverty without addressing the problem of high and rising inequality. However, it is not particularly useful to talk about "inequality" as a homogeneous entity in this context. Policy needs to focus on the specific dimensions of inequality that create or preserve unequal opportunities for participating in the gains from future economic growth. Arguably both countries are seeing a rise in these bad inequalities over time as the good inequalities (conducive to efficient growth) turn into bad ones, and the bad inequalities drive out the good ones.

While both countries need to be concerned about the "bad inequalities" we have pointed to, we suspect that it is China where the near-term risk that rising inequality will jeopardize growth is greater. Arguably, the Chinese authorities have been able to compensate for rising inequality by achieving high growth rates; by this view, it is the rising inequality that fuels growth in China, through the political economy of maintaining "social stability." The "catch 22" is that the emerging bad inequalities in China will make it harder to promote the growth that will be needed to compensate for those inequalities. Maintaining sufficient growth will require even greater efficacy of the policy levers used to promote growth.

Whether or not the problem of rising inequality is successfully addressed, there are likely to be implications for the rest of the world. If the problem is not addressed, then there is a risk that the high growth rates will not be maintained, with spillover effects for trade and growth elsewhere. If it is addressed, and depending on exactly how this is done, there may be some short-term costs to growth, although (as we have argued) redressing the bad inequalities would actually be good for growth. There may also be consequences for the pattern of trade, such as through a change in the sectoral composition of growth; for example, in both countries there appears to be potential for cash crop expansion, which would attenuate one important source of concern about rising inequality, and it can be expected that a non-negligible share of this expansion in domestic cash-crop output would be exported.

The new initiatives underway in both countries are probably steps in the right direction, although continuous evaluative research will be needed on the efficacy of these approaches relative to alternatives. There are important but poorly resolved issues concerning the appropriate balance between types of interventions. But an even harder challenge remains, namely to improve governance—capacity, accountability and responsiveness—notably (but not only) at the local level. If this challenge is left unmet, the ultimate efficacy of any of these initiatives will be in doubt.

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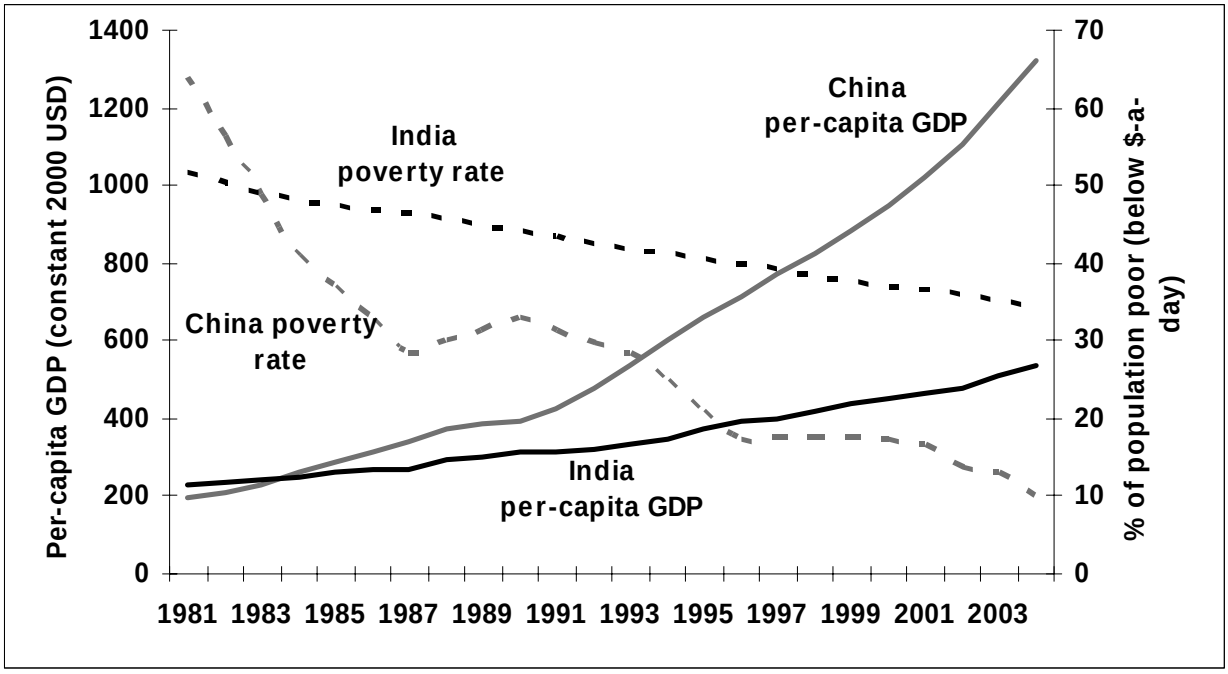
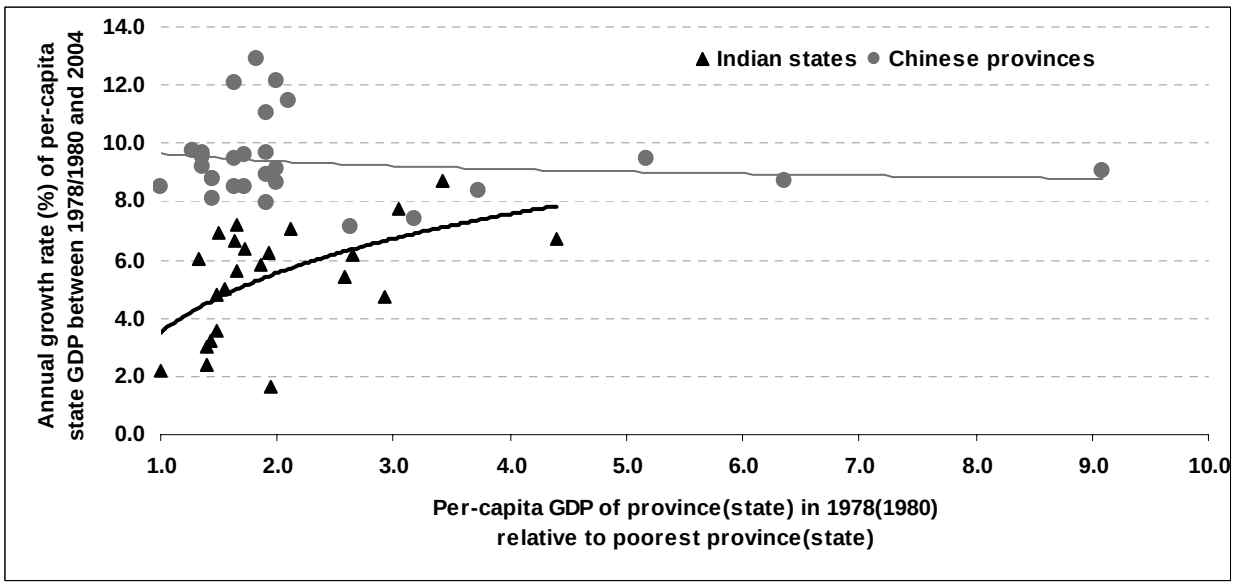
Figure 1: Growth and poverty reduction in China and India, 1981–2004



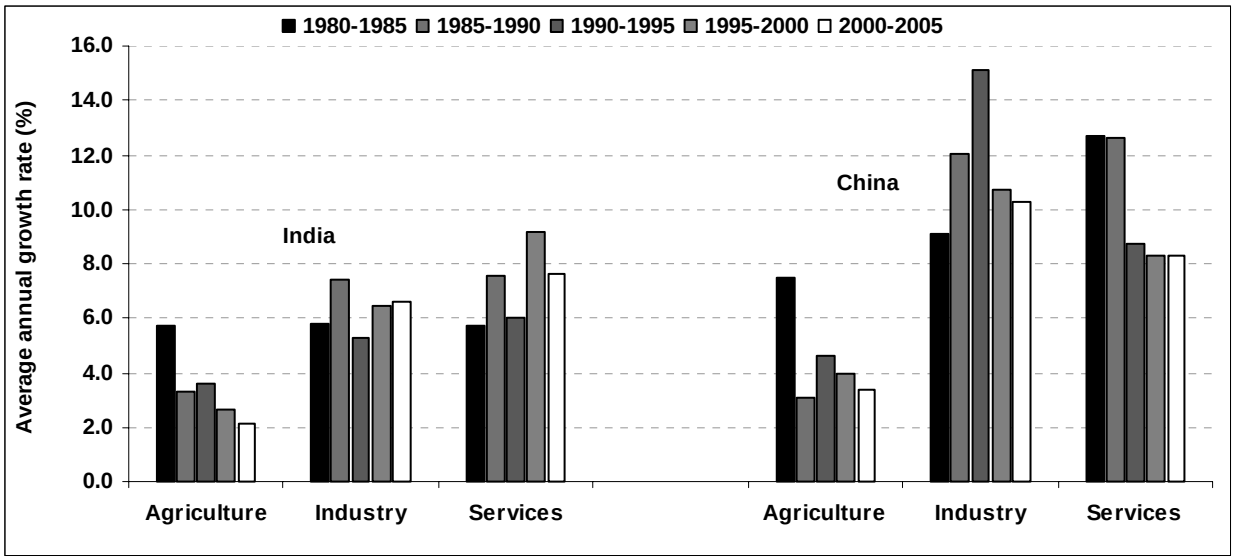
Source Poverty measures from Chen and Ravallion (2007).

Figure 2: Growth rates at the sub-national level in China and India



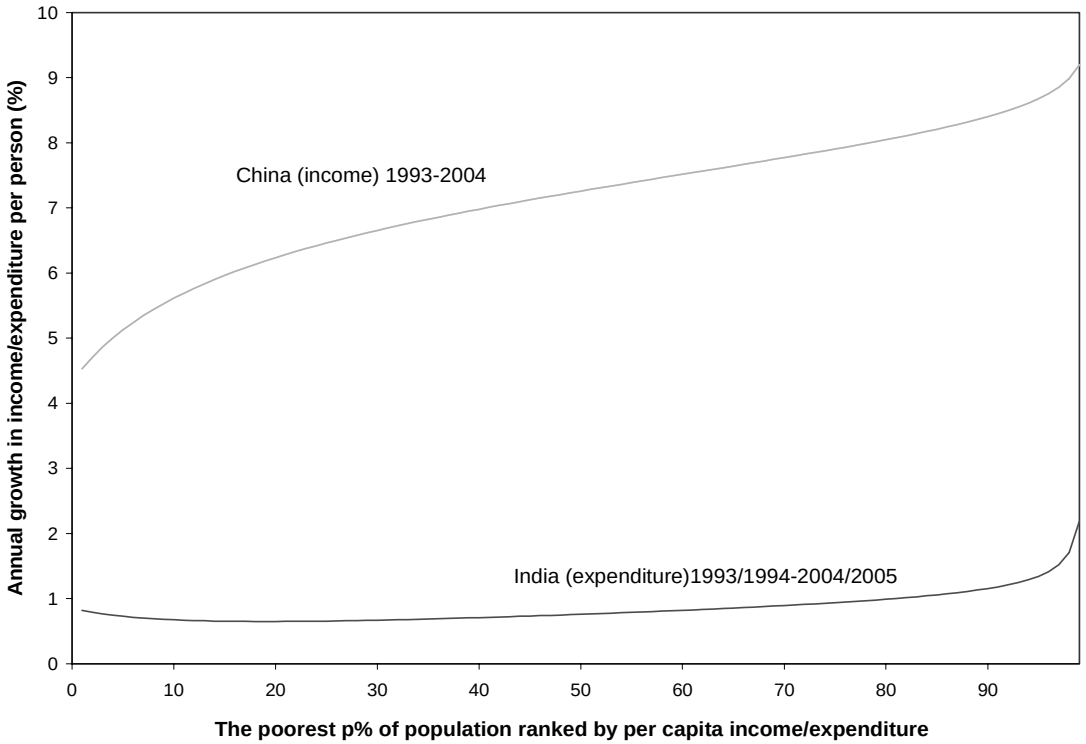
Source: China Statistical Yearbook (various years); Central Survey Organization, Government of India

Figure 3: Sectoral GDP growth rates in China and India, 1980–2005



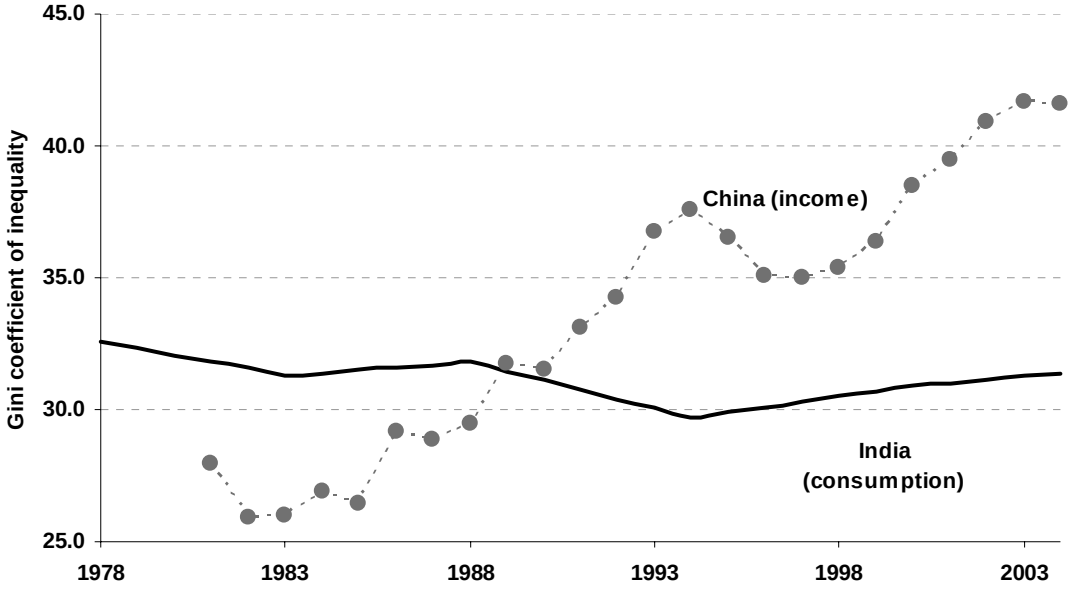
Source: China Statistical Yearbook (various years); Central Survey Organization, Government of India

Figure 4: Growth incidence curves for China and India



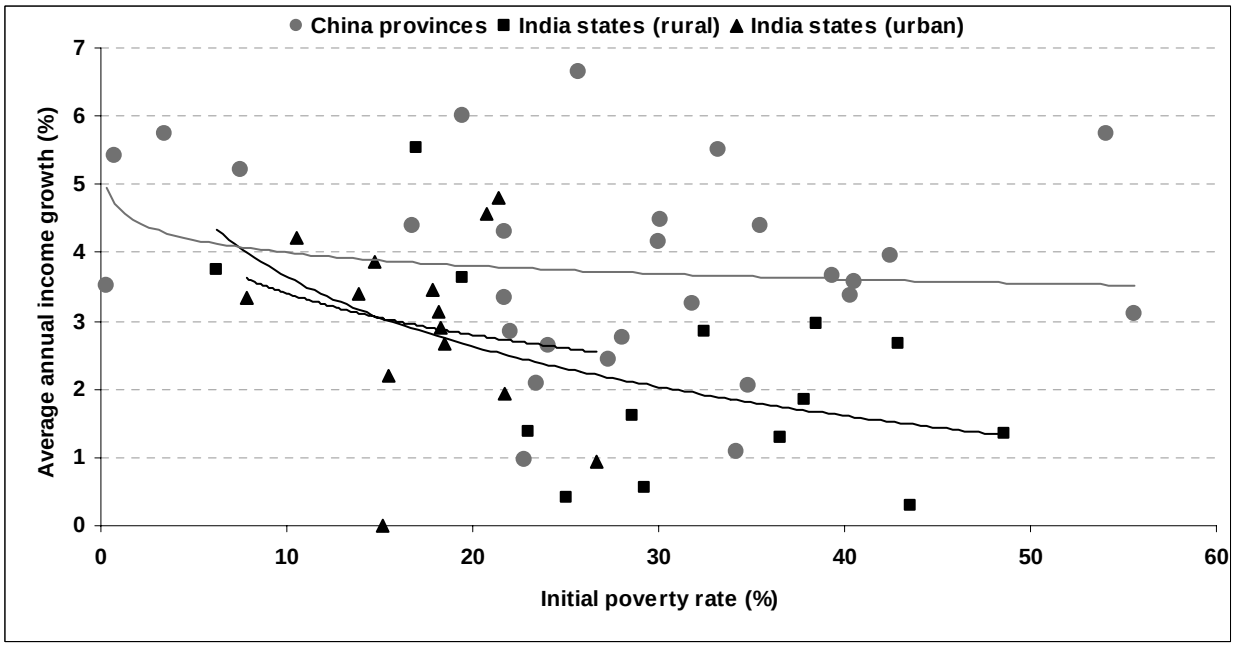
Source: Authors' calculations. These are updated versions of the growth incidence curves for China (using household income) found in Ravallion and Chen (2003) and Ravallion (2004b) for India (household expenditure on consumption).

Figure 5: Trends in income inequality for China and India



Source: Authors' calculations for India and Ravallion and Chen (2007) for China.

Figure 6: Growth rates at the sub-national level in China and India



Source: China Statistical Yearbook (various years); Central Survey Organization, Government of India

Table 1: Poverty reduction and the sectoral composition of growth: China and India

	China			India	
Growth rate of GDP per capita	–2.60	n.a.	n.a.	–0.99	n.a.
	(–2.16)			(–3.38)	
Primary (share-weighted)	n.a.	–8.07	–7.85	n.a.	–1.16
		(–3.97)	(–4.09)		(–2.96)
Secondary (share-weighted)	n.a.	–1.75	n.a.	n.a.	3.41
		(–1.21)			(1.84)
Tertiary (share-weighted)	n.a.	–3.08	n.a.	n.a.	–3.42
		(–1.24)			(–2.74)
Secondary + tertiary	n.a.	n.a.	–2.25	n.a.	n.a.
			(–2.20)		
R^2	0.21	0.43	0.42		0.75

Source: Ravallion and Chen (2007) for China (1981–2001) and Ravallion and Datt (1996) for India (1951–1991).
Note: t-ratios in parentheses.

Table 2: Poverty reduction and the urban–rural composition of growth

	China	India
Growth rate of mean rural income (share-weighted)	–2.56	–1.46
	(–8.43)	(12.64)
Growth rate of mean urban income (share-weighted)	0.09	–0.55
	(0.20)	(–1.37)
Population shift effect	0.74	–4.46
	(0.16)	(–1.31)
R^2	0.82	0.90

Note: t-ratios in parentheses.
Source: Ravallion and Datt (1996) (for India) and Ravallion and Chen (2007) (for China).