The decline of rural earning inequality in India

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Articles

While earnings inequality remained virtually unchanged in urban India between 2004-05 and 2011-12, it declined sharply in rural India over this period. This column finds that although the change in the distribution of education among paid workers had an inequality-increasing effect, there was a net decline in rural inequality because returns to increased levels of education improved more for low-earning workers than high-earning ones.

In their discussion of India's economic growth, Kotwal, Ramaswami and Wadhwa (2011) point to the existence of two Indias: "One of educated managers and engineers who have been able to take advantage of the opportunities made available through globalization and the other—a huge mass of undereducated people who are making a living in low productivity jobs in the informal sector—the largest of which is still agriculture." This column is about the second India that mainly resides in its rural parts.

Agriculture is the mainstay of the rural economy in India and it continues to employ the largest share of the Indian workforce. However, its contribution to gross value added (GVA) is much smaller. In 2011, the employment shares of agriculture, industry, and services were 49%, 24% and 27%, respectively, whereas their shares in GVA were 19%, 33% and 48%, respectively. In addition, between 2004-05 and 2011-12, real gross domestic product (GDP) in these sectors grew at 4.2%, 8.5% and 9.6% per annum, respectively, making agriculture the slowest growing sector of the economy. Given these figures, the concern about whether high overall GDP growth has benefitted those at the bottom, and to what extent they have benefitted compared to those at the top, is extremely pertinent for rural India.

Earnings inequality in India

We use two rounds of the nationally representative 'Employment Unemployment Surveys' (EUS) conducted by the National Sample Survey Organisation (NSSO) for the years 2004-05 and 2011-12 (Khanna et al. 2016). Our target population is wage earners between the ages of 15 and 64 (working age) living in rural areas of India. In both years, wage earners constituted a quarter of the rural working-age population and represented about 104 million paid workers in 2004-05, and 118 million in 2011-12.

Over the seven-year period, we find that the earnings distribution shifted to the right and became less dispersed. The average real weekly earnings increased from Rs. 391 to about Rs. 604, while median increased from Rs. 263 to 457. For 2004-05, the all-India official rural

poverty line was Rs. 447 per capita per month. Thus, the average (median) real monthly earnings was 3.5 (2.4) times the poverty line, and in 2011-12 it was 5.4 (4.1) times this value.

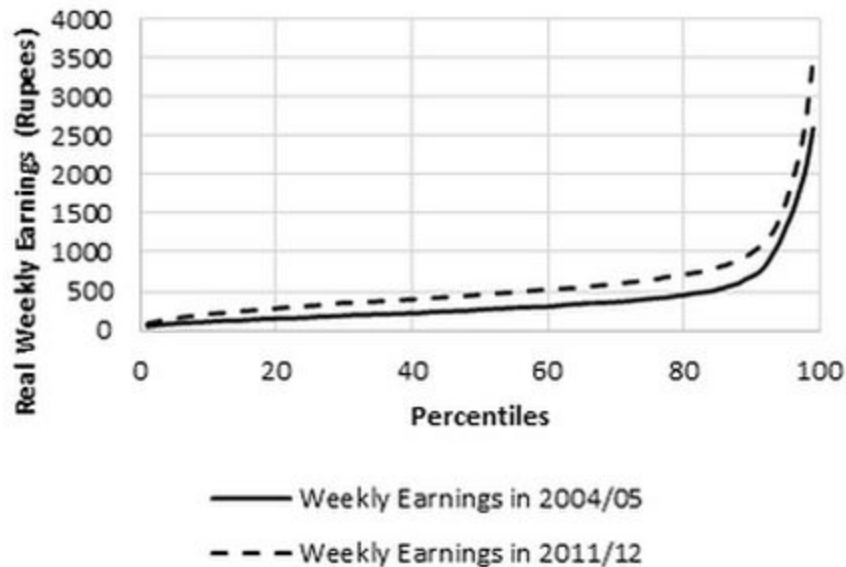Figure 1. Real weekly earnings, by percentile, 2004-05 and 2011-12

Figure 1 plots the real weekly earnings at each percentile[1] for 2004-05 and 2011-12. At each percentile, earnings were higher in 2011-12 than in 2004-05. The gap between the two curves reveals that the increase in earnings was, in absolute terms, greater for higher percentiles. For instance, real weekly earnings increased by Rs. 99 at the first decile, Rs. 194 at the median, and Rs. 307 at the ninth decile. However, as seen in Figure 2, the percentage increase in earnings was greater at the lower end of the distribution. For instance, earnings increased by 91% at the first decile, 74% at the median, and by 44% at the ninth decile. Thus, earnings inequality - defined in relative rather than absolute terms - declined over the seven-year period.

Figure 2. Change in log of real weekly earnings, by percentile, 2004-05 to 2011-12
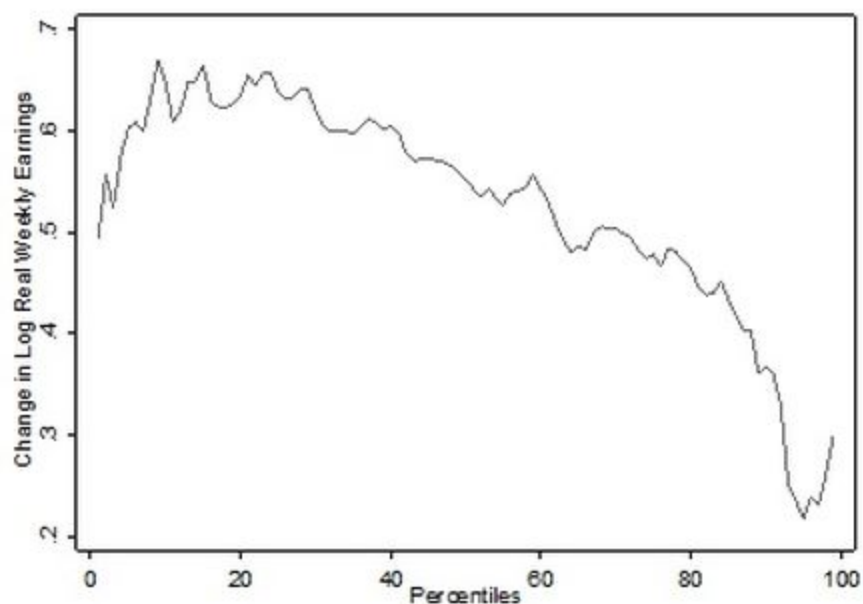
The decrease in inequality is also reflected in the Gini coefficients[2]. The Gini coefficient of real weekly earnings fell from 0.462 to 0.396. This is in sharp contrast to the picture in urban India where earnings inequality remained virtually unchanged over the period: The Gini coefficient of real weekly earnings in urban India was 0.506 in 2004-05 and 0.499 in 2011-12.
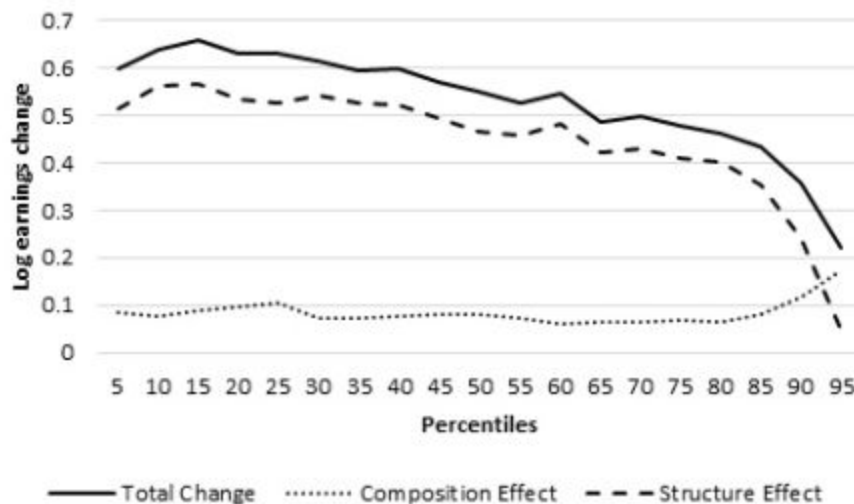
Decomposition of the change in earnings

Figure 3 shows the results of the decomposition of the change in the (log) real earnings distribution at different vigintiles (vigintiles refer to the 19 points that divide the wage earners into 20 groups of equal size in ascending order of earnings). A decomposition exercise essentially divides the observed change in earnings over the seven-year period into two parts: a composition effect and a structure effect. This is done by constructing a hypothetical earnings distribution that combines worker characteristics (such as the share of male workers, and the shares of workers with different levels of education)[3]as observed in 2004-05, with the rates of return (essentially how the labour market rewards males versus females, and how it rewards illiterates, high schoolers and college graduates) as observed in 2011-12. Consequently, the difference between the 2004-05 distribution and the hypothetical distribution gives us the structure effect, that is, the part arising due to changes in the rates of return keeping the distribution of characteristics fixed at 2004-05 levels; while the difference between the hypothetical distribution and the 2011-12 distribution gives the composition effect, that is, the part due to changes in the distribution of worker characteristics keeping the rates of return fixed at 2011-12 rates.

In Figure 3, the dashed line representing the structure effect closely follows the bold total change line, is in the positive domain and is downward sloping. From this, one can conclude that most of the decline in inequality occurred because the returns improved a lot more for low earners (typically low skilled, women, illiterates) than for high earners (typically high skilled, men, college graduates). In fact, it is clear that while changing characteristics did lead

to an improvement in real earnings throughout the distribution, it had an inequality-increasing effect (the dotted line is in the positive domain but is upward sloping at higher percentiles). Thus, if the 'wage structure' had been held constant over the period, earnings inequality would have risen due to the change in worker characteristics.

Figure 3. Aggregate decomposition of earnings

Detailed decomposition of the composition effect reveals that the inequality-increasing effect was mainly driven by changes in the distribution of education among paid workers: over the seven-year period the share of illiterates decreased from 45% to 35.6%, while shares of all other levels of education, ranging from primary to college and beyond, increased. On the other hand, the change in the industrial composition, mainly arising from a shift from agriculture to construction, led to decreased earnings inequality. Detailed decomposition of the structure effect reveals that the inequality-decreasing effect was driven by lower returns to higher levels of education for workers at the top end of the earnings distribution in 2011-12 compared to 2004-05.

Conclusions and policy implications

For wage earners who constituted about a quarter of the rural working-age population, we find that real earnings increased at all percentiles. Using consumption expenditure data that span the entire population, other studies (Kotwal et al. 2011) have also documented an improvement in all parts of the distribution. Taken together, there is clear evidence that economic growth in India in the post-reform period (after the early 1990s) has been accompanied by a reduction in poverty. Our analysis also reveals that while the rural Gini fell over this period, it remained virtually unchanged in urban India. This suggests that the dynamics of earnings is different for the two sectors. This could be because the underlying structural characteristics are different across the two sectors. For example, while agriculture is the largest employer in rural India, for urban India it is services. It could also be the result of different redistributive policies followed in the two sectors. These aspects need to be recognised when designing future policies to tackle inequality in the two regions.

One cannot be certain that this trend of declining earnings inequality will continue into the future. Regardless of the underlying causes of the recent decline in earnings inequality in rural India, volatility in global crop prices, and the drought conditions recently experienced by large parts of the country because of two consecutive weak monsoons are important reminders that policies designed to foster employment opportunities and wage growth of unskilled workers outside of agriculture are crucial for improving the economic well-being of the rural workforce in India.

Notes:

1. A percentile (or a centile) is a measure used in statistics indicating the value below which a given percentage of observations in a group of observations fall. For example, the 20th percentile is the value (or score) below which 20% of the observations may be found.
2. Gini coefficient is the most commonly used measure of inequality. The coefficient varies between 0 (reflecting complete equality) and 1 (reflecting complete inequality).
3. The complete set of worker characteristics that we consider are gender, marital status, religion, caste, education, industry, occupation and state of residence.

Further Reading

- Khanna, Shantanu, Deepti Goel and René Morissette (2016), "Decomposition Analysis of Earnings Inequality in Rural India: 2004—2012", *IZA Journal of Labor & Development*; 5: 18.
- Kotwal, Ashok, Bharat Ramaswami and Wilima Wadhwa (2011), "Economic Liberalization and Indian Economic Growth: What´s the Evidence?", *Journal of Economic Literature*, 49(4):1152-1199. Available here.

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