Does India's Employment Guarantee Scheme Guarantee Employment?

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Abstract: In 2005 India introduced an ambitious national anti-poverty program, now called the Mahatma Gandhi National Rural Employment Guarantee Scheme. The program offers up to 100 days of unskilled manual labor per year on public works projects for any rural household member who wants such work at the stipulated minimum wage rate. The aim is to dramatically reduce poverty by providing extra earnings for poor families, as well as empowerment and insurance. If the program worked in practice the way it is designed, then anyone who wanted work on the scheme would get it. However, analysis of data from India's National Sample Survey for 2009/10 reveals considerable un-met demand for work in all states. The authors confirm expectations that poorer families tend to have more demand for work on the scheme, and that (despite the un-met demand) the self-targeting mechanism allows it to reach relatively poor families and backward castes. The extent of the un-met demand is greater in the poorest states—ironically where the scheme is needed most. Labor-market responses to the scheme are likely to be weak. The scheme is attracting poor women into the workforce, although the local-level rationing processes favor men.

JEL: H53, I38
Keywords: workfare, rural poverty, employment, targeting, women

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1.   Introduction

In 2006, India embarked on an ambitious attempt to fight rural poverty. The National Rural Employment Guarantee Act of 2005 created a justiciable "right to work" for all households in rural India through the National Rural Employment Guarantee Scheme, renamed the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in 2009. This promises 100 days of work per year to all rural households whose adults are willing to do unskilled manual labor at the statutory minimum wage notified for the program. Work is to be made available to anyone who asks for it within 15 days of receiving an application to work, failing which the state government is liable to pay an unemployment allowance. Open village meetings (*Gram Sabhas*) are supposed to identify suitable projects and local government institutions (*Gram Panchayats*) are given a central role in planning and implementation.

There are a number of distinct ways in which such a scheme tries to reduce poverty. The most direct and obvious way is by providing extra employment and income to the poorest in rural areas. The long-standing incentive argument is that the work requirements entail that the scheme will be "self-targeting" in that the non-poor will not want to do such work, and also prevents dependency as poor people will readily turn away from the scheme when better opportunities arise.[2]

Furthermore, by linking the wage rate for such work to the statutory minimum wage rate, and guaranteeing work at that wage rate, such a scheme is essentially a means of enforcing that minimum wage rate on all casual work, including that not covered by the scheme. Indeed, the existence of such a program can radically alter the bargaining power of poor men and women in the labor market, and also poor people living in not-so-poor families, by increasing the reservation wage (the fall-back position if a bargain is not struck). They may then benefit even if they do not in fact participate in the program.

A scheme such as this can also provide valuable insurance against the many risks faced by India's rural poor in their daily lives. Even those who do not normally need such work can

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[2] On the incentive arguments for workfare schemes see Besley and Coate (1992).

benefit from knowing it is available. This can help underpin otherwise risky investments. And the gains to the poor can also come with efficiency gains given existing labor market distortions.[3]

The scheme also tries to address some of the causes of poverty in rural India.[4] By its "bottom-up," demand-driven nature, it aims to empower the rural poor to help them take actions in various domains that help them escape poverty. It would be naïve to think that such empowerment will emerge overnight amongst poor people who have faced a history of exclusion from the processes of public action, and of subjugation to the will of local elites. However, creating the legal right is certainly a first, positive, step.

The idea of an "employment guarantee" is clearly important to realizing the full benefits of such a scheme. The gains depend heavily on the scheme's ability to accommodate the supply of work to the demand. That is not going to be easy, given that it requires an open-ended public spending commitment; similarly to an insurance company, the government must pay up when shocks hit. This kind of uncertainty about disbursements in risky environments would be a challenge for any government at any level of economic development.

If the maximum level of spending on the scheme by the center is exogenously fixed for budget planning purposes then rationing may well be unavoidable at any socially acceptable wage rate. Or, to put the point slightly differently, the implied wage rate—given the supply of labor to the scheme and the budget—may be too low to be socially acceptable, with rationing deemed (implicitly) to be the preferred outcome.[5]

Even if flexibility in spending is not an issue, accommodating supply to demand could still be a challenge, particularly in poor areas. Here it should be noted that the provisions of the Act do not imply that there will be zero cost to the local (State or lower-level) governments when employing workers under MGNREGS. The center covers a large share of the cost. [6] However,

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[3] The distortions could be due to monopsony power in rural labor markets (Basu et al., 2009) or labor-tying (Basu, 2011). Nor does the distortion need to be in the rural labor market; it could also be in the urban labor market, generating excess migration to urban areas (Ravallion, 1990).
[4] The scheme also tries to reduce future poverty by creating useful assets. This is not an issue we address here.
[5] The policy choice between limited coverage at a socially acceptable ("living") wage and wide coverage is studied in Ravallion (1991).
[6] The Central Government bears 90 percent of all variable costs. This includes wage costs and three-quarters of the non-wage component (working on an assumed 60:40 labor capital ratio). The Centre also provides an additional 6% of program costs to the States to defray the costs of administering the scheme. States are responsible for paying

there are still (relatively skilled) labor requirements at the local level in organizing projects and workers.[7] This burden may well be higher in poor areas, making it harder to afford and implement such a complex scheme.

This paper examines the performance thus far of MGNREGS in meeting the demand for work across states. We examine the evidence for India as a whole using the household-level data from the National Sample Survey for 2009/10. We also use these data to understand who gets rationed and how this affects the scheme's ability to reach India's rural poor and other identity-based groups, notably backward castes, tribes and women. We also discuss the role played by wage setting on the scheme, and how rationing might be influencing labor market responses. Finally, we take a closer look at women's participation and how this is influenced by the rationing of work under MGNREGS.

2. Performance in meeting the demand for work across states

The participation rate (P) in MGNREGS can be defined as the proportion of rural households who obtain work on the scheme. This can be thought of as the product of the "demand rate" (D)—defined as the proportion of rural households who want work on the scheme—and one minus the "rationing rate" (R)—defined as the proportion amongst those who wanted work who did not get it. Thus for state i we have the following identity:

$$P_i = (1 - R_i)D_i \tag{1}$$

Notice that the share of households who are rationed is the product of the rationing rate and the demand rate. We shall call this the excess demand ($ED_i \equiv R_iD_i = D_i - P_i$).

As noted, if MGNREGS worked in practice the way it is designed there would be no unmet demand for work. This is, of course, an exacting standard. In practice there may be frictions in implementation leading to some unmet demand, such that those wanting work do not

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unemployment allowances from their own budget.
[7] The scarcest manpower resource locally is the junior engineer or panchayat technical assistant who can prepare technical estimates and draw up engineering plans for the works. Andhra Pradesh (AP) has used information technology to reduce the need for such skilled local staff, by developing standardized and computerized templates for the engineering plans of common types of works. AP is the exception however. Most other states face shortages of such skilled local staff.

get it in a timely manner. The rationing rate will depend in part on how effective the scheme's implementation is at quickly responding to demand.

How can we measure the true demand for work and hence the rationing rate? The administrative data indicate virtually no un-met demand for work on MGNREGS. According to the administrative data, 52.865 million households in India demanded work in 2009/10, and 99.4% (52.53 million) were provided work.[8] However, this is deceptive. What is called "demand for work" in the administrative data is unlikely to reflect the true demand. Several studies have found that the work application process and the system for recording demand for work is not yet in place.[9] Further, state and local governments have an incentive not to report un-met demand given that this implies they should pay unemployment allowances. Also, some people will undoubtedly be deterred from formally obtaining job-cards, demanding work from the officials, or do not even know that they have the right to make such demands.[10]

A better measure of demand for work is obtained by asking people directly in their homes and independently of the scheme. The data we use here comes from the 66th Round of the NSS for 2009/10 which included questions on participation and demand for work in MGNREGS that allow us to estimate demand and rationing rates across states. The survey was conducted between July 2009 and June 2010 in all states. The Employment-Unemployment Survey ("Schedule 10.0") included three questions on the program: (i) whether the household has a job card; (ii) whether it got work on the scheme during the last 365 days, for which responses were coded under three options: got work, sought but did not get work, and did not seek work in MGNREGS; and (iii) if the household got work, the number of days of work, and the mode of payment. In addition, the daily status block in Schedule 10 collected information on activities for all household members during the week preceding the survey, including number of days worked and wages received, if the respondent worked on MGNREGS public works (PW).

Note that in this paper we limit our definition of participation and rationing to whether households got work or did not get work. Unmet demand can also take the form of fewer days of work than desired. Many households who participated were no doubt rationed in that they would

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[8] Data is from the official Government of India website for MGNREGS (http:\\nrega.nic.in).
[9] This is described in a number of the papers in Khera (2011).
[10] In Dutta et al. (2012) we provide supportive evidence on this point for Bihar, based on our surveys in 2009/10.

have liked more days of work and still had fewer than the 100 days stipulated by the Act. We have no choice but to ignore this aspect of the scheme's performance since the National Sample Survey (NSS) did not ask how many more days of work the household wanted; all we know is whether the household wanted work on the scheme.

Table 1 gives the participation rate, the demand rate and the rationing rate across states, as well as the rural headcount index (H)—the proportion of the population living below our updated versions of the Planning Commission's latest poverty lines. (The table also gives the female share of employment, to which we return later.) "Demand" is defined as either getting work on the scheme or seeking work but not getting it. For India as a whole, 45% of rural households wanted work on the scheme. Of these, 56% got work—a national rationing rate of 44%. The rationing rate varied from 15% in Rajasthan to 84% in the Punjab. Only three states have rationing rates under 20%. There is clearly a large excess demand for work.

A striking observation about the data in Table 1 is that participation rates are only weakly correlated with the rural headcount index across states, as can be seen in Figure 1. If MGNREGS worked the way the Act intended then this weak correlation would be surprising, as one would expect the scheme to be more attractive to poor people, and hence have higher take up in poorer states. The same point holds for public spending on MGNREGS. Table 2 gives summary statistics on spending per capita for 2009/10 and 2010/11. The correlation between MGNREGS spending per capita and the poverty rate is -0.02 using spending in 2009/10 and 0.04 for 2010/11.

Why is MGNREGS not more active in poorer states? We postulate that being a poor state has two opposing effects on participation. First, there is an effect of greater poverty via a higher demand for MGNREGS work. Call this the "demand effect" of poverty. We see confirmation of this in Figure 2, which shows the expected positive correlation between D and H (r=0.50). The second effect is that poorer states tend to have greater un-met demand for work on the scheme. Call this the "rationing effect." We suggest three reasons why the rationing effect would work in the opposite direction to the demand effect. First, poorer states will be less able to afford the share of the costs that are borne by the state and local governments. Second, poorer states will tend to have weaker capacity for administering such a scheme. Third, the poor may well be less empowered in poorer states. As we will see in the next section, both poor and non-poor people have a demand for work on the scheme, though the demand is greater amongst the poor. If poor

people tend to have less power to influence local decision making (reflected in lower awareness of their rights under the Act), then a higher poverty rate will lead the state government to put less weight on the need to accommodate the demand for work.[11]

We cannot say anything from these data about the relative importance of these three factors to the overall rationing effect. But we can certainly confirm that there is evidence of a rationing effect. Poorer states have greater unmet demand for MGNREGS, as can be seen in Figure 3, which plots the excess demand—i.e., the share of the rural population that is rationed, as given by the rationing rate times the demand rate—against the poverty rate. However, it should be also noted that there is variation among poorer states. Some of the poorest states (Bihar, Jharkhand and Orissa) have low participation rates and high levels of unmet demand. This is in contrast to other poor states like Chhattisgarh, Rajasthan, Madhya Pradesh and West Bengal that perform better in providing employment under the scheme. For example, at a similar poverty rate, Chhattisgarh has a participation rate almost five times that of Bihar. Public spending is also lower in Bihar at roughly one-third of the level in Chhattisgarh.

Using the identity in equation (1), we can do a simple regression decomposition for identifying these two effects in the data by writing:

$$D_i = \alpha^D + \beta^D H_i + \varepsilon_i^D \tag{2.1}$$

$$ED_i = \alpha^{ED} + \beta^{ED} H_i + \varepsilon_i^{ED} \tag{2.2}$$

(Here ε_i^k for $k=D$, ED are zero-mean regression error terms and α^k, β^k are parameters.) Thus equation (2.1) minus (2.2) gives how the overall participation rate varies with H. The regression coefficient of demand for MGNREGS (based on the NSS responses) on the state poverty rate is 0.583 (st. error=0.189), meaning that a ten percentage point increase in the poverty rate comes with about a 6 percentage point increase in the share of rural households demanding MGNREGS work, on average. The regression coefficient of ED on H is 0.434 (st.error=0.097). The net effect (the estimate of $\beta^D - \beta^{ED}$) is 0.149, but it is not significantly different from zero (st.error=0.293). Statistically, the two opposing effects can be said to cancel each other out,

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[11] Note that this third reason for the direct effect of poverty is not consistent with a model of public decision making based on standard utilitarian calculus. For then one would expect the policy weight on accommodating the demand for work to be higher in states with a higher share of poor people who need that work more than the non-poor.

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giving the relationship in Figure 1, whereby poorer states have no higher participation in MGNREGS, despite the greater demand for work on the scheme.

To better understand this strong rationing effect of poverty, in Dutta et al. (2012) we study more closely the performance of the state of India with the highest poverty rate, Bihar. Drawing on various (qualitative and quantitative) data sources, including our own special-purpose surveys, we argue that low administrative capacity for implementing the scheme and weak empowerment of poor people are at work in Bihar. Furthermore, we argue that changing one alone will not assure that MGNREGS will reach its potential in India's poorest areas. Effective action on both fronts will be necessary,

3.   Is rationing undermining the self-targeting mechanism?

By insisting that participants do physically demanding manual work at a low wage rate, workfare schemes such as MGNREGS aim to be <u>self-targeted</u>, in that non-poor people will not want to participate. The substantial rationing that we have demonstrated above raises the question of how well this self-targeting mechanism works in practice. The fact that there is rationing does not mean that targeting will not be pro-poor. For one thing, the manual work requirement at a low wage rate will still discourage non-poor people from wanting to participate. For another, the local authorities doing the rationing may well favor the poor. The local officials who are deciding who gets work could either enhance or diminish the scheme's targeting performance. There has been no comprehensive national assessment of targeting performance. The quantitative studies that have been done so far have been based on selected samples and the tests used have often been problematic.[12] What does the evidence from the NSS survey for 2009/10 suggest?

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[12] Jha et al. (2009) report evidence that households with larger landholdings were <u>more</u> likely to participate in the scheme in Andhra Pradesh (AP), though they find evidence of better targeting in Rajasthan. They conclude that the scheme is being "captured" by the non poor in AP. Note, however, that their regressions control for other variables that may well capture poverty, including occupation and whether the household has a BPL card. The full regressions are not presented in their paper, but it may well be that having a BPL card (say) is already capturing the pro-poor targeting of MGNREGS, but that the BPL card puts too high a weight on landlessness from the point of view of explaining participation. Then the amount of land may appear to have the wrong sign, even though the scheme is targeting the poor. By contrast, the results of Liu and Deininger (2010) suggest quite pro-poor targeting of MGNREGS in AP. Shariff (2009) reports participation regressions for MGNREGS in selected backward districts of northern states (including some districts in Bihar). Some of the regression coefficients also suggest perverse targeting. Shariff is careful in interpreting the results though the same inferential concerns hold as for the study by

Table 3 gives the participation rate, demand rate and the rationing rate by rural household quintiles defined on household consumption per person from the survey.[13] As expected, we see that demand for work on MGNREGS declines with consumption per person. Richer households are less likely to want to do this work, although there is demand even amongst the richest quintile in rural areas. Consistently with the incidence of expressed demand, we also see that the proportion of households who have obtained job cards declines with consumption per person. But notice that the demand rate is higher than the proportion with job cards; there are many households who express demand for work who have not obtained job cards.

Across India as a whole, the rationing rate tends to rise with consumption per person. The local-level processes of deciding who gets work amongst those who want it entails that poorer households are less likely to be rationed, although the difference is modest. Thus we see that the participation rate declines with household consumption per person even more steeply in proportionate terms than the demand rate.[14] By contrast the absolute gap between the participation rates for the poorest quintile and the richest is attenuated by rationing, given that its overall incidence (the excess demand rate) falls with consumption (Table 3).

Quintile averages lose a lot of detail. Figure 4 provides a finer representation of the data using the household-level data from the NSS. Panel (a) gives the non-parametric regression function—a locally smoothed scatter plot—of the participation rate against consumption per person, with the latter converted into ranks and normalized to be between 0 and 100. Thus the horizontal axis gives the percentile of the consumption distribution.[15] The lower panel (b) gives the rationing rate. (The demand rate shows a similar pattern to panel (a), though at higher levels given the rationing.) In both cases we also give the regression functions with controls for state effects, adding dummy variables for the state and using the PLREG procedure of Lokshin (2006).

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[13] Household quintiles were drawn after correcting per capita consumption for cost-of-living differences across states using the price deflators implicit in the Tendulkar poverty lines.

[14] The participation rate for the richest quintile is a lower proportion of that for the poorest than is the case for the corresponding demand rates.

[15] Alternatively one can just use (say) log consumption per person. However, given the uneven spread of the data across levels of consumption, this can be deceptive. Using percentiles instead assures a uniform distribution of the data.

We see that the participation rate declines rather slowly until one reaches about the 50th percentile of the rural distribution. In fact there is no perceptible decline in participation in a neighborhood of the national headcount index of poverty of 36%; households just below the official poverty line are no more likely to participate in MGNREGS than those just above the line. The marked decline in participation rates does not emerge until we get to the upper half of the rural consumption distribution. By the 90th percentile, the participation rate reaches about 10%. Although far fewer "rich" rural households participate, there are still some. This could reflect recent shocks, or poor individuals within generally well-off households.

The rationing rate follows a U-shape, declining initially as consumption increases until one reaches about the median, but then rising. However, this clearly stems from the high rationing rates in poor states that we have demonstrated above. Thus we see that, when we add state fixed effects, a steady increase in the rationing rate emerges as consumption increases across the whole distribution (Figure 4(b)).

The fact that the rationing rate tends to be lower for the poor does not, however, imply that more rationing would improve targeting. What the numbers in Table 3 and Figure 4(b) reflect is the rationing process at a given level of participation. When the participation rate rises through a reduction in rationing the self-targeting mechanism will start to play a bigger role. We will see evidence of this when we compare targeting performance across states with very different participation rates.

Also notice that, amongst participants, the days of work received shows a slightly positive gradient with consumption per person. The pro-poor targeting is achieved through both demand for work and the rationing of work, not by the amount of work actually received.

It is of interest to compare targeting performance across states. There are many measures of "targeting performance" in the literature that might be used for this purpose. Ravallion (2009) surveys the various measures and tests their performance in predicting the impacts on poverty of a large antipoverty program in China, called the *Di Bao* program. (This provides cash transfers targeted to those with income below the locally-determined *Di Bao* poverty lines.) Amongst all standard targeting measures, the one that performed the best (and by a wide margin) in predicting the program's impact on poverty was the "targeting differential" (*TD*), originally proposed by

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Ravallion (2000). The reason is that TD better reflects differences in coverage—the proportion of the poor receiving the program—than other standard measures, which focus more on how well the scheme avoids leakage—the proportion of the non-poor receiving the program. This is likely to hold for other programs besides *Di Bao*.

In the present context, this can be defined as the difference between the MGNREGS participation rate for the poor and that for the non-poor. In obvious notation:

$$TD_i = P_i^{poor} - P_i^{non-poor} \tag{3}$$

Here P^i (i=poor, non-poor) is again the participation rate (as defined by equation (1)), but this time differentiated between the poor and non-poor. To interpret the targeting differential, note that when only poor people get help from the program and all of them are covered, $TD = 1$, which is the measure's upper bound; when only the non-poor get the program and all of them do, $TD = -1$, its lower bound. This measure is easy to interpret, and it automatically reflects both leakage to the non-poor and coverage of the poor.

Table 4 gives the *TD* and participation rates for the poor and non-poor.[16] Participation rates among the poor vary enormously across states, from a low of 0.10 in Maharashtra to a high of 0.73 in Rajasthan. They also vary a lot among the non-poor. Although participation rates are always higher for the poor, the gap with that for the non-poor is not large. The targeting differential for India as a whole is 0.12. (The *TD* for China's *Di Bao* program mentioned above was 0.27.) Madhya Pradesh has the highest *TD*, at 0.22, while Kerala has the lowest, at 0.01.

Table 4 gives the rationing rates for the poor and non-poor. Consistently with the all-India results in Table 3, we see that the non-poor are rationed more than the poor in almost all states (the only exceptions are Kerala and Rajasthan).

The *TD* is determined by how the demand rates and the rationing rates vary between the poor and non-poor. We can use a simple decomposition method to show how much of the *TD* is due to each factor:

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[16] To divide the population into poor and non-poor, we use poverty lines that deliver the same poverty rates using the abridged consumption module in the Employment Schedule, as those that are obtained from the Consumption schedule, and reported in Table 1.

$$TD_i = (1 - \overline{R})(D_i^{poor} - D_i^{non-poor}) - \overline{D}(R_i^{poor} - R_i^{non-poor}) + residual \qquad (4)$$
$$(\text{"Self-targeting effect"}) \quad (\text{"Rationing effect"})$$

Here the bars denote fixed reference values, while D^i and R^i are the demand rates and rationing rates for i=poor, non-poor, respectively. *TD* can thus be interpreted as the "self-targeting effect" (greater demand for work amongst the poor) net of the rationing effect (the extent to which the poor might be rationed more). (Since the decomposition is not exact—given the nonlinearity in equation (1)—there is also a residual.)

Applying this decomposition, and using the all-India values for the reference we find that 85.6% of the national TD is attributable to the difference in demand between the poor and non-poor while 13.7% is due to the difference in rationing rates. (The residual is negligible.) There are differences across states, though the demand effect dominates in 17 of the 20 states. So, despite the rationing, the bulk of the pro-poor targeting is coming through the self-targeting mechanism.

Targeting performance is better in states with higher overall participation rates. Figure 5 plots the two participation rates from Table 4 against the overall participation rate (Table 1). We see that the TD—the gap between the two lines—rises with the overall participation rate, and the two are strongly correlated (r=0.748).

Targeting performance also tends to be worse in the states with higher levels of rationing (the correlation between TD and rationing rate is -0.71). However, this arises because overall participation rates are low in states with higher degrees of rationing. Indeed, once one controls for the participation rate, there is no significant partial correlation between the TD and the rationing rate (the t-statistic is -0.611).[17]

So we find that higher overall participation rates tend to come with better targeting performance and lower rationing rates. The fact that targeting performance improves as the program expands makes this an example of what Lanjouw and Ravallion (1999) call "early capture" by the non-poor, which they showed to be a common feature of access to safety-nets

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[17] The TD is also positively correlated with the demand rate (r=0.671), but this too vanishes when one controls for the participation rate (the t-statistic for the partial correlation coefficient is 0.151).

and schooling in India.[18] Lanjouw and Ravallion also show in a theoretical model of the political economy of targeted programs that for programs with relatively large start-up costs, early capture by the nonpoor may be the only politically feasible option (especially when the start-up costs must be financed domestically). So this feature of MGNREGS is possibly not surprising.

Targeting by social groups (castes and tribes) is another dimension of interest. Qualitative studies have suggested that scheduled castes (SC), scheduled tribes (ST) and women—groups that have traditionally been excluded—have benefitted disproportionately from the scheme.[19] We shall return to discuss participation by women in section 5. Here we focus on the scheme's performance in reaching ST, SC and other backward caste (OBC) households.

Table 5 gives the participation rates by these groupings. Nationally, 42% and 34% of rural ST and SC households respectively participated. Participation was lower for OBCs at 21% and lowest for all others, at 16%. But there is a wide range across states. For STs, the range is from 6% of households participating in Maharashtra to 82% in Rajasthan, while for SC households it is from 2% to 65%, and for the same states. Figure 6 plots the participation rates against the overall participation rates across states. Similarly to targeting by poverty status, we see that the participation rates for ST, SC and OBCs rise faster as the overall participation rates rise, suggesting that the targeting of disadvantaged castes improves with program expansion.

Table 5 also gives the targeting differential for ST, SC and OBCs together, defined as their (weighted) average participation rate less the participation rate for "others." This "caste TD" varies from -0.02 in Assam to 0.29 in Chhattisgarh, with a national mean of 0.12, almost identical to the national "poverty TD" in Table 4. Similarly to the poverty TD, the "caste TD" is positively correlated with the overall participation rates (r=0.723).

4.   Wages and rationing on MGNREGS

There have been a number of concerns about the stipulated wage rates for the program. On the one hand, it is argued that setting scheme wages below the state-mandated rates under the Minimum Wages Act is a violation of the law and tantamount to "forced labor," a stand that has

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[18] Lanjouw and Ravallion (1999) study public works programs, the Integrated Rural Development Program, the Public Distribution System and school enrolments. They used data for the 1990s.
[19] See Drèze and Khera (2009).

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been recently upheld by the Supreme Court.[20] On the other hand, concerns have been raised that the wage rate on MGNREGS is being set too high, relative to actual casual labor market wages. The concern here is that the scheme will attract workers from market work and so bid up the market wage rate.[21] (Though to many supporters of the scheme this is counted as a benefit.)

What does the evidence suggest? Table 6 gives the average wage rates from the administrative data. These are calculated as total MGNREGS spending on unskilled labor divided by total person days of employment provided.[22] The table also reports estimates for average wages in (private) casual labor from the NSS for the same year.[23]

We see that it is not the case that the MGNREGS wage rate is everywhere well above the market wage rate. Indeed, for India as a whole the two wages are quite close. If rural India was one labor market one might conjecture that the scheme has indeed brought the two wage rates into parity. However, rural India is not one labor market, as mobility is clearly imperfect. Across states we see that for half of them the MGNREGS wage rate in 2009/10 is actually lower than the average wage rate for casual labor (Table 6).

Given the extent of rationing we have reported earlier in this paper, it does not seem plausible that the scheme would be having a large impact on wages for other casual work, let alone resulting in a higher casual wage than for MGNREGS in half the states. For example, with only 17% of those who wanted work on the scheme in Punjab getting that work, it is hard to believe that the fact that the casual (non-PW) wage rate is above the MGNREGS wage rate is due to competition with the scheme for workers.

That said, we do find that the relative wage—defined as the mean wage rate for casual (non-PW) labor divided by the MGNREGS wage—tends to be lower in states with higher levels of un-met demand, as measured by the difference between the demand rate and the participation

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[20] The Supreme Court has refused to stay a recent Karnataka High Court verdict that affirms that the Central Government is liable to pay wages in tandem with the state minimum wage rate.
[21] Evidence for this effect is reported by Imbert and Papp (2011) who compare districts that started early on the scheme with those that started later. However, they do not examine the extent of rationing.
[22] Note that the scheme stipulates both piece rates and daily rates. Under the piece rate, whether a given worker can earn the mandated wage rate depends on her work effort. If the scheme attracts workers with lower than average physical ability then the realized average wage rate by our calculations can fall short of the mandated wage.
[23] Note that the reference periods for MGNREGS and casual market wages reported in the table are slightly different (see notes to Table 6).

rate. Let W_i / W_i^{EGS} be the relative wage in state I, where W_i is the wage rate in the (non-PW) casual labor market and W_i^{EGS} is the MGNREGS wage rate. The correlation coefficient between $\ln(W_i / W_i^{EGS})$ and un-met demand (ED_i) is –0.558 which is significant at the 1% level.[24]

However, there are two reasons to question whether this really reflects greater tightening of the casual labor market in states where there is less un-met demand for work on the scheme. First, the implied relative wage rate at zero rationing is too high to be believed. We postulate that the relative wage depends on the excess demand as follows:[25]

$$\ln(W_i / W_i^{EGS}) = \alpha + \beta(D_i - P_i) + \varepsilon_i \qquad (5)$$

The expected value of the log relative wage rate when all demand for work on MGNEGS has been satisfied is then given by α. Using the data in Table 1 and 5, the estimated value of α is 0.398 (st. error=0.105) and the estimate of β is –1.777 (st. error=0.519; R^2=0.311.) This implies that, when all demand for work is satisfied, the market wage rate would be 50% higher than the MGNREGS wage rate.[26] Yet the work is very similar, and there is no obvious reason why such a differential would exist in equilibrium.

Second, the excess demand variable could well be picking up some other factor correlated with it. Following our discussion in section 2, poverty is a plausible candidate. Adding the poverty rate to equation (5), we find that the effect of excess demand becomes insignificant (prob.=0.19) while the poverty rate is significant (a coefficient of 0.828, with st. error of 0.333). A higher poverty rate may be associated with greater landlessness and hence a larger supply of casual labor, bringing down the wage rate.

5.   Rationing and the participation of women

Nationally, almost half (48%) of the employment as registered in the administrative data for 2009/10 goes to women.[27] This is very high for a country where a minority of women

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[24] The fit is slightly better using the log relative wage; using W_i / W_i^{EGS} instead the correlation coefficient is -0.520.

[25] Using W_i / W_i^{EGS} as the dependent variable the estimated intercept is 1.466 (s.e.=0.132). We also tried a quadratic function of *ED* but this did not improve the fit.

[26] Note that exp(0.398)=1.489 is the implied ratio of the levels of wages.

[27] While the administrative data are clearly inadequate for measuring aggregate demand for work, there is no

participates in the paid labor force; for example, women's participation rate in MGNREGS is about twice their share of other (non-PW) casual wage work.[28] The variation across states is striking; between the two extremes, only 7% of the work goes to women in Jammu & Kashmir as compared to 88% in Kerala (Table 1). The female share on MGNREGS work is greater than their share of the work in the casual wage labor market in all states.

Women are less likely to participate (relative to men) in MGNREGS in poorer states. Figure 7 plots the share of person days of employment going to women against the poverty rate. We see a negative correlation (r = −0.47). By contrast, women's share of casual (non-PW) wage work tends to be slightly higher on average in poorer states, though the difference is not statistically significant (r=0.09). While the scheme is clearly bringing women into the paid workforce, it is less effective in doing so in states with higher poverty rates.

Why do we see less of the available work going to women in poorer states? The NSS does not allow us to identify rationing at the individual level (it is a household variable). However, we can gain some clues to how rationing has affected women from the inter-state comparisons. It would seem unlikely that the effect of household poverty on <u>demand</u> for work amongst women is any different than amongst men. Assuming that the effect of being a poorer state on demand for work is the same for men and women, the pattern in Figure 7 suggests that the rationing process is less favorable to women in poorer states.

Do women have equal access to the scheme, when they need it? Again, we cannot give a direct answer from the survey data. However, the patterns in the inter-state data are suggestive. We observe a negative correlation between the female share of work and the overall rationing rate (Figure 8). It might be conjectured that this correlation actually reflects differences in the extent of poverty. Women may well be less aware of their rights and less empowered to demand work in poorer states. For example, when other work is scarce, they may get crowded out by men. However, the negative correlation between the female share of work and the rationing rate persists when we control for the poverty rate, as can be seen in Table 7, which gives regressions for the female share of employment on MGNREGS against both the rationing rate and the

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obvious reason to question their veracity for measuring the gender composition of the work provided.
[28] We estimate that the share of women in the total person days of casual labor in 2009/10 was 23.3%, based on the 2009/10 NSS.

poverty rate. This negative correlation between the overall rationing rate and the share of work going to women implies that women are more likely to be rationed than men.

In Dutta et al. (2012) we are able to directly measure rationing at the individual level in Bihar, using our specially designed surveys. Then we find direct evidence that the rationing rate is higher for women than men. In the first round of our survey (2008/09) the rationing rate (R) was 85% for women in Bihar, versus 65% for men. This had narrowed somewhat by the second round (2009/10) to 85% versus 74%, but only because of greater rationing of men.

Gender differences in the opportunities available in the casual labor market can also be expected to influence demand for work. We find that the female market wage rate has a significant negative effect on women's share of the work provided, while the male wage rate has the opposite effect (Table 7).[29] The female wage relative to the male wage is the relevant variable. This suggests that there is an intra-household substitution effect; for example, when casual labor market opportunities are good for men but bad for women this makes it easier for women to get the (limited) number of jobs available on the scheme.[30] The wage effect is strong statistically, and greatly increases the explanatory power.[31] The negative effect of rationing on women's access to the scheme also persists when we control for differences in the wages received for private (non-PW) casual work. The final column gives our preferred regression in which the share of MGNREGS work going to women depends on the overall rationing rate— implying that women are more rationed than men—and the female market wage relative to the male wage.

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[29] We tested an encompassing specification in which the log of the male wage rate, log of the female wage rate and log of the MGNREGS wage rates entered separately. The homogeneity restriction that the sum of the coefficients equals zero could not be rejected (F(1,14)=0.41; prob.=0.53), but nor could we reject the null that it was the log of the female wage relative to the male wage that mattered, with the MGNREGS wage having no effect (F=1.49; prob.=0.26). Also, the MGNREGS wage rate on its own was not significant. So we opted for a specification in which it is the log of the relative wage that is the regressor as in Table 7. Table 7 also gives a specification with male and female wages entering separately.

[30] A similar result was found by Datt and Ravallion (1994) in studying time allocation within households in response to the availability of work under Maharashtra's Employment Guarantee Scheme.

[31] We also tested for an effect of the female share of other (non-public works) casual labor. This is endogenous but it allows us to control for local social norms that influence the propensity for women to do any casual wage labor. The new variable was not, however, significant and the coefficients on the other variables were affected little.

6.   Conclusions

There has been much public debate about India's Mahatma Gandhi National Rural Employment Guarantee Scheme since it was introduced. There have been many media reports and some selective surveys, covering at most a few states and/or selected districts. This paper uses India's National Sample Survey of 2009/10 to test some of the claims that have been made in past debates using data for all the major states of India. We have focused on a distinctive and important feature of MGNREGS: the guarantee of employment at the stipulated wage rates.

We confirm expectations that the demand for work on MGNREGS tends to be higher in poorer states. This appears to reflect the scheme's built-in "self-targeting" mechanism, whereby non-poor people find work on the scheme less attractive than do poor people.

However, actual participation rates in the scheme are not (as a rule) any higher in poorer states where it is needed the most. The reason for this paradox lies in the differences in the extent to which the employment guarantee is honored. The answer to the question posed in our title is clearly "no." Rationing is common, but far more so in some of the poorest states.

We do not find that the local-level processes determining who gets work amongst those who want it are generally skewed against the poor. There are sure to be places where this is happening (and qualitative field reports have provided examples). But it does not appear to stand up as a generalization. We do find evidence that the poor fare somewhat less well when it comes to the total number of days of work they manage to get on the scheme. However, despite the pervasive rationing we find, it is plain that the scheme is still reaching poor people and also reaching the scheduled tribes and backward castes.

Participation rates on the scheme are higher for poor people than others. This holds at the official poverty line, but the scheme is also reaching many families just above the official line. It is only at relatively high consumption levels that participation drops off sharply. This should not be interpreted as indicating that well-off families in rural India are turning to MGREGS. There may well be shocks that are not evident in the household consumption aggregates. And there may be individual needs for help that are not evident in those aggregates.
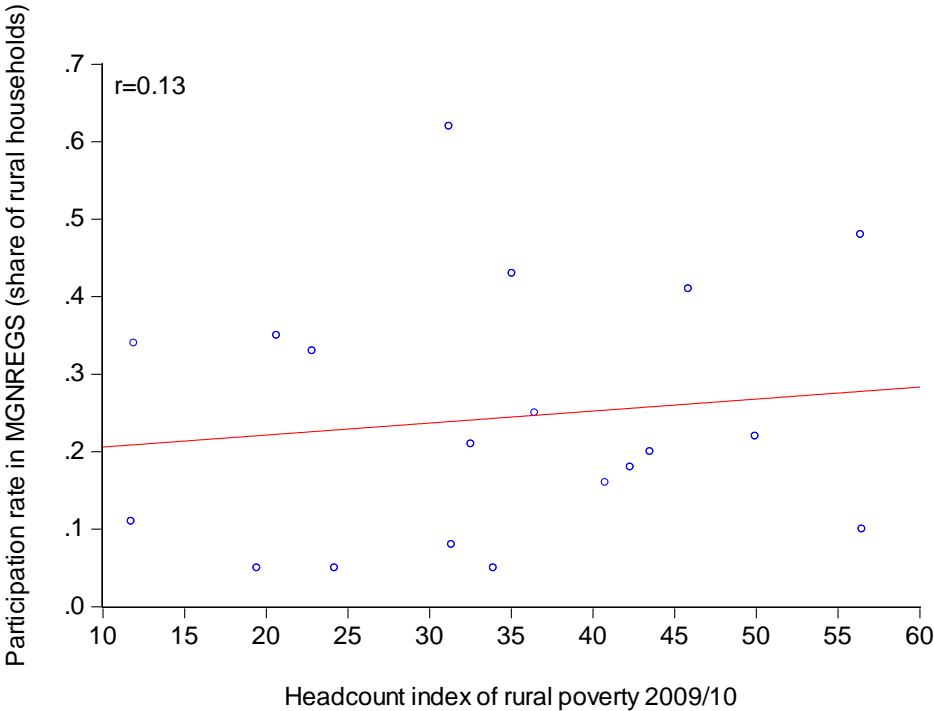
Targeting performance varies across states. Some of those living above the official poverty line in better-off states will no doubt be relatively poor, and need help from the scheme. The overall participation rate seems to be an important factor in accounting for these inter-state differences in targeting performance, with the scheme being more pro-poor and reaching scheduled tribes and backward castes more effectively in states with higher overall participation rates.

While the allocation of work through the local-level rationing process is not working against the poor, there are clearly many poor people who are not getting help because the employment guarantee is not in operation almost anywhere (Himachal Pradesh, Rajasthan and Tamil Nadu could be counted as the exceptions, where 80% or more of those who want work got it). And other potential benefits of the scheme to poor people are almost certainly undermined by the extensive rationing, notably the empowerment gains and the insurance benefits. The first-order problem for MGNREGS is the level of un-met demand.
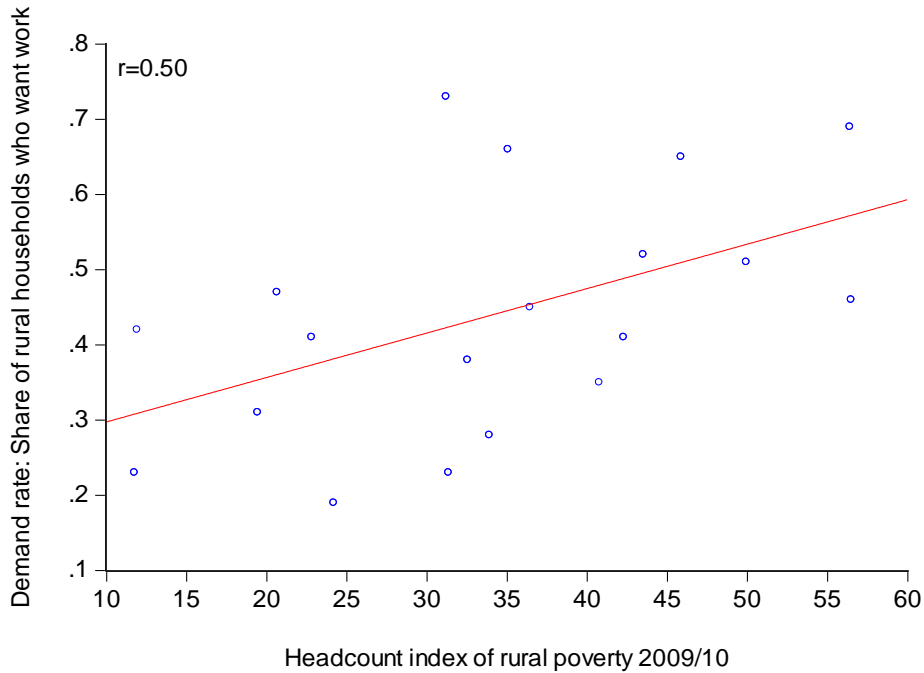
While the scheme is clearly popular with women—who have a participation rate that is double their participation rate in the casual labor market—the rationing process does not appear to be favoring them. We also find evidence of a strong effect of relative wages on women's participation—both wages on the scheme relative to the market wage and the male-female differential in market wages. As one would expect, poor families often choose whether it is the man or the woman who goes to the scheme according to relative wages.

It has been claimed by some observers that the scheme is driving up wages for other work, such as in agriculture; some observers see this as a good thing, others not. For India as a whole, we find that the scheme's average wage rate was roughly in line with the casual labor market in 2009/10. This might look like a competitive labor market equilibrium, but that view is hard to reconcile with the extensive rationing we find. Interestingly, we do find a significant negative correlation between the extent of rationing and the wage rate in the casual labor market relative to the wage rate on the scheme. Although this is suggestive, on closer inspection we are more inclined to think that other economic factors are at work. Indeed, the correlation largely vanishes when we control for the level of poverty. Poorer states tend to see both more rationing of work on the scheme and lower casual wages—possibly due to a greater supply of labor given the extent of rural landlessness.

Figure 1: Participation rates in MGNREGS are only weakly correlated with the incidence of poverty across the states of India

Figure 2: Demand for MGNREGS work is greater in poorer states

Demand rate: Share of rural households who want work (y-axis)

r=0.50

Headcount index of rural poverty 2009/10 (x-axis)

Figure 3: Poorer states have greater unmet demand for work on MGNREGS

Share of rural households who were rationed (y-axis)

r=0.74

Bihar
Jharkhand
Orissa
Punjab
Chhattisgarh
Kerala
Himachal Pradesh
Rajasthan
Tamil Nadu

Headcount index of rural poverty 2009/10 (x-axis)
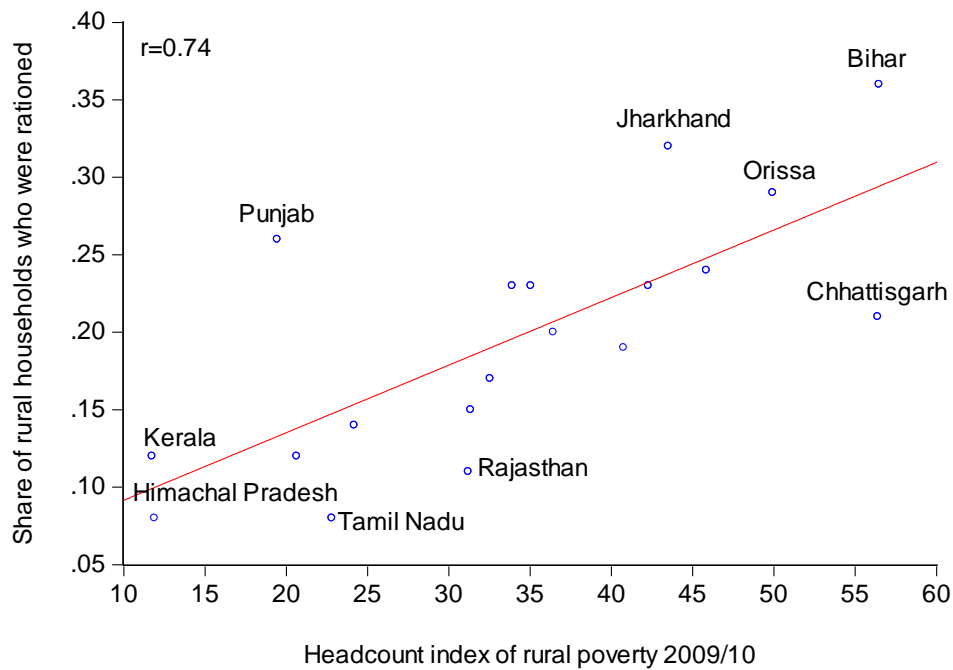
Figure 4: Participation, demand and rationing by consumption per person, rural India

(a) Participation rate

Participation rate in MGNREGS as a function of consumption
Rural India

Percentile ranked by consumption per person
(1=poorest; 100=richest)

LOWESS
PLREG WITH STATE CTRL

(b) Rationing rate

Rationing rate on MGNREGS as a function of consumption
Rural India

Percentile ranked by consumption per person
(1=poorest; 100=richest)

LOWESS
PLREG WITH STATE CTRL
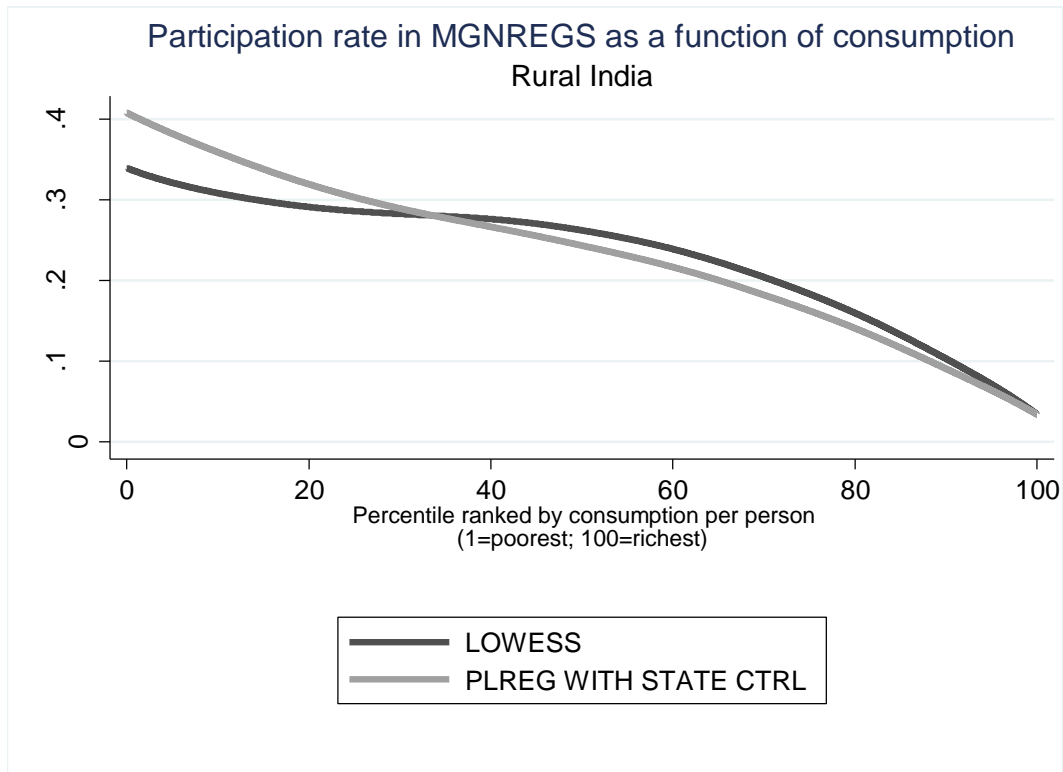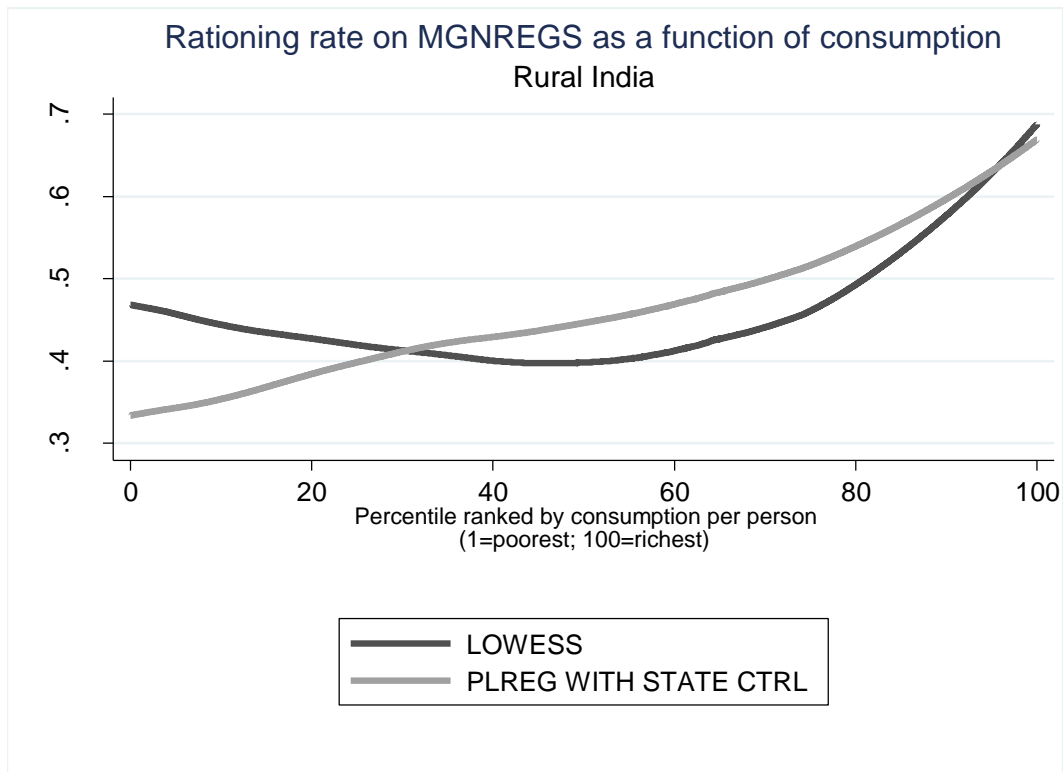
Figure 5: The participation rate of poor households in MGNREGS rises faster than that for the nonpoor as the overall participation rate increases
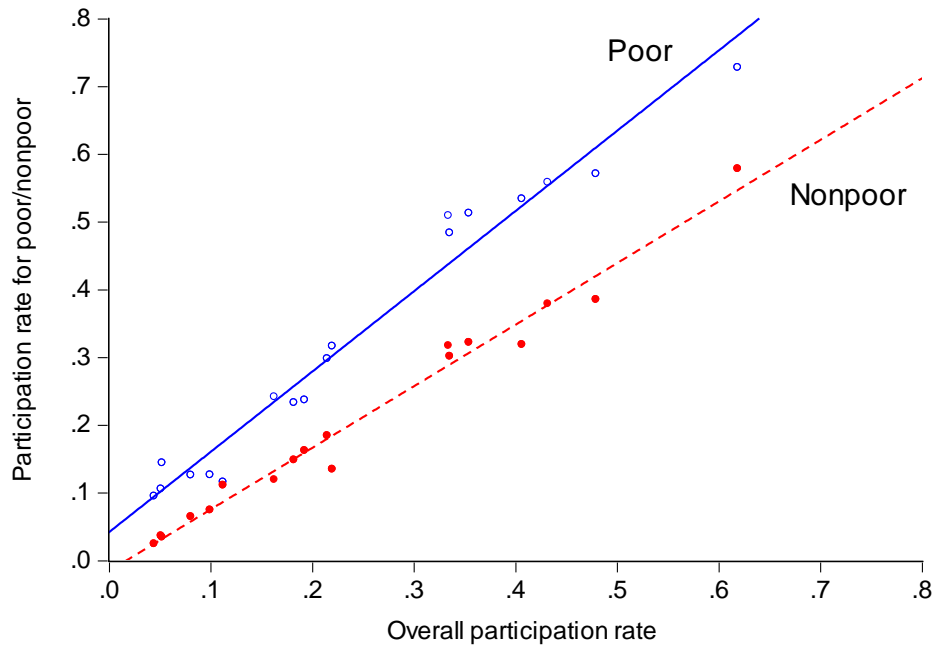
Figure 6: Participation rates for ST, SC and OBC in MGNREGS rise faster than that for 'other' castes as the overall participation rate increases
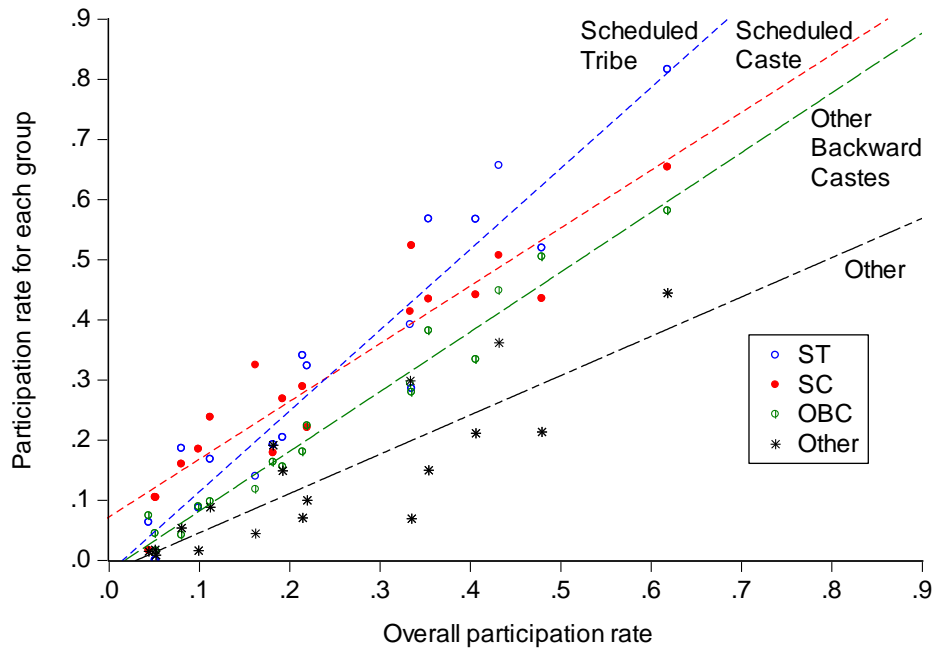
Figure 7: The share of work going to women tends to be lower in poorer states
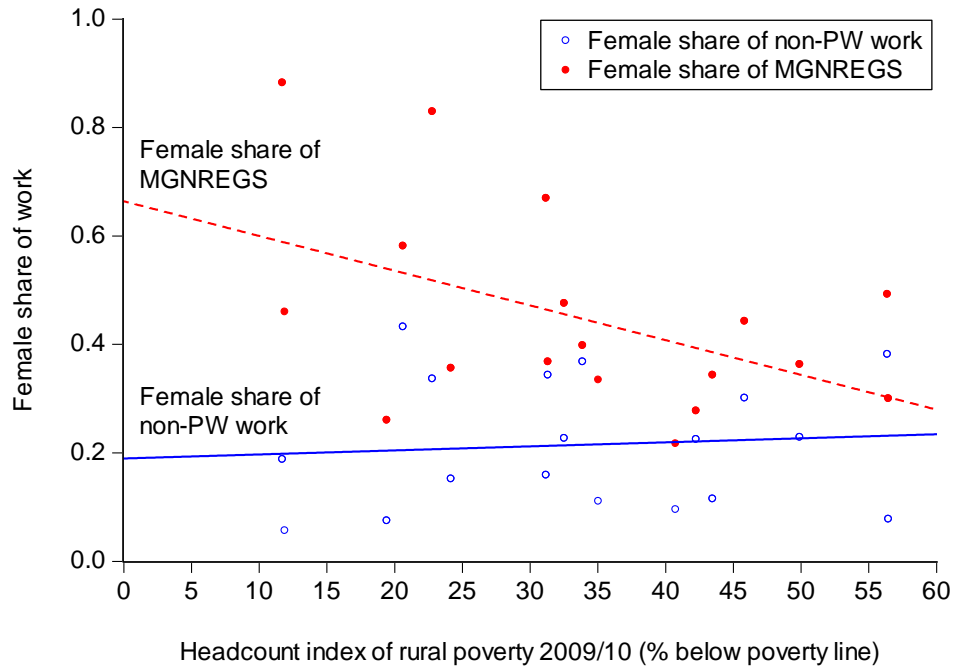
Figure 8: Higher rationing tends to come with a lower share of the work going to women

Table 1: Summary statistics 2009/10

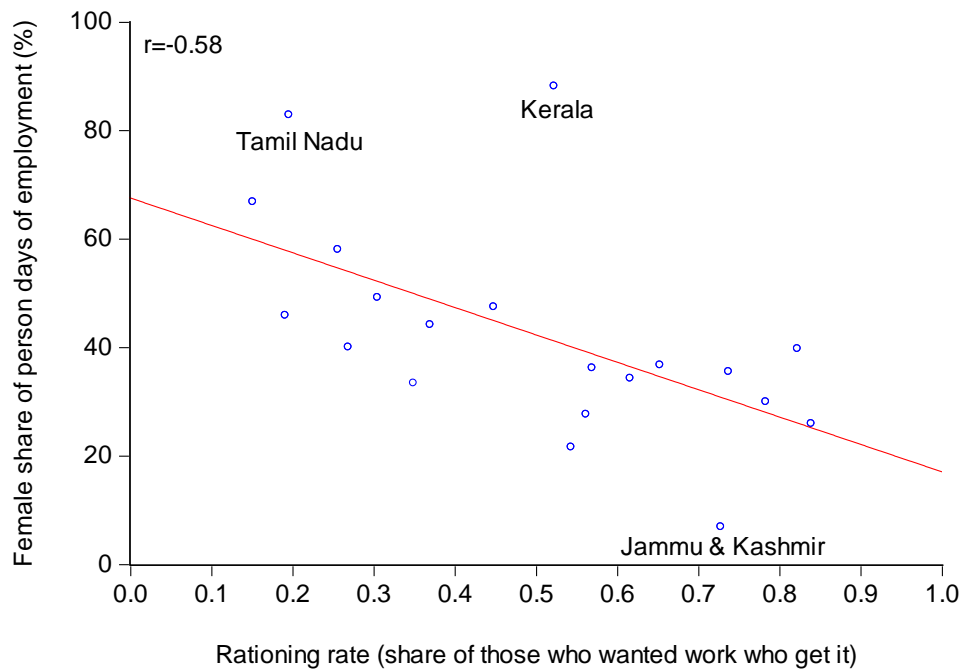| State	Headcount index of poverty (% below poverty line)	Participation rate (share of rural h'holds working on MGNREGS)	Demand rate (share of rural h'holds who want work on MGNREGS)	Rationing rate (share of rural h'holds who wanted work but did not get it)	Female share of employment on MGNREGS (% of total person days)
Andhra Pradesh	20.64	0.354	0.472	0.249	58.1
Assam	42.28	0.182	0.413	0.559	27.7
Bihar	56.47	0.099	0.461	0.785	30.0
Chhattisgarh	56.39	0.479	0.690	0.306	49.2
Gujarat	32.54	0.215	0.382	0.438	47.5
Haryana	24.18	0.051	0.195	0.738	35.6
Himachal Pradesh	11.90	0.334	0.418	0.202	46.0
Jammu & Kashmir	n.a.	0.097	0.334	0.709	7.0
Jharkhand	43.50	0.192	0.517	0.628	34.3
Karnataka	31.34	0.080	0.228	0.648	36.8
Kerala	11.74	0.112	0.232	0.517	88.2
Madhya Pradesh	45.85	0.406	0.646	0.371	44.3
Maharashtra	33.90	0.044	0.277	0.840	39.8
Orissa	49.93	0.220	0.507	0.567	36.3
Punjab	19.44	0.052	0.312	0.833	26.0
Rajasthan	31.2	0.618	0.732	0.155	66.9
Tamil Nadu	22.81	0.335	0.414	0.190	82.9
Uttar Pradesh	40.75	0.162	0.350	0.536	21.7
Uttarakhand	n.a.	0.292	0.406	0.280	40.1
West Bengal	35.05	0.432	0.658	0.344	33.4
All India	36.43	0.249	0.447	0.444	48.1

Notes and sources: Poverty rates are based on Tendulkar poverty lines updated from 2004/05 to 2009/10 using state-specific consumer price indices for agricultural laborers (CPIAL) and per capita consumption expenditures in Schedule 1.0. Poverty rates for J&K and Uttarakhand not reported because data not available on state-level CPIAL. Female share of person days from MGNREGS administrative data (http:\\nrega.nic.in). Remaining columns from authors' calculations from unit record data of 2009/10 National Sample Survey Schedule 1 (for headcount rate) and Schedule 10.

Table 2: Program expenditures per capita across states

	Expenditure per capita (Rs)	
	2009/10	2010/11
Andhra Pradesh	749	896
Assam	406	358
Bihar	214	309
Chhattisgarh	723	884
Gujarat	214	226
Haryana	87	128
Himachal Pradesh	936	837
Jammu and Kashmir	221	445
Jharkhand	586	539
Karnataka	742	683
Kerala	186	276
Madhya Pradesh	734	707
Maharashtra	54	60
Orissa	281	455
Punjab	89	98
Rajasthan	1133	647
Tamil Nadu	555	744
Uttar Pradesh	389	365
Uttarakhand	406	539
West Bengal	335	399
All India	464	477

Notes and sources: Cumulative expenditures (including wage and non-wage spending) in current prices during the 2009/10 and 2010/11 FY were obtained from the Ministry of Rural Development website (http:\\nrega.nic.in). To calculate expenditure per capita the authors used the population projections for 2009 and 2010 done by Registrar General of India.

Table 3: Coverage of MGNREGS across consumption quintiles of the rural population of India, 2009/10

Quintiles	Participation rate	Demand rate	Rationing rate	Excess demand rate	Share of HHs with jobcard	Mean person days amongst participating HHs	Mean person days among all rural HHs
Q1 (Poorest)	0.335	0.609	0.450	0.274	0.465	33.7	11.3
Q2	0.297	0.540	0.450	0.243	0.414	36.2	10.7
Q3	0.273	0.507	0.462	0.234	0.385	38.3	10.4
Q4	0.226	0.434	0.479	0.208	0.329	40.0	9.0
Q5 (Richest)	0.138	0.309	0.553	0.171	0.218	40.0	5.5
All	0.242	0.462	0.476	0.220	0.347	37.4	9.0

Notes: The participation rate is the share of rural households working on MGNREGS. The demand rate is the share of rural households who want work on the program. The rationing rate is the share of those who wanted work who did not get it. *Source*: Authors' estimates from NSS (2009/10).

Table 4: Targeting performance of MGNREGS across states

State	Participation rate for the poor	Participation rate for the non-poor	Targeting differential	Rationing rate for the poor	Rationing rate for the non-poor
Andhra Pradesh	0.513	0.322	0.191	0.215	0.259
Assam	0.233	0.149	0.085	0.523	0.590
Bihar	0.127	0.075	0.052	0.756	0.816
Chhattisgarh	0.571	0.386	0.186	0.260	0.366
Gujarat	0.298	0.185	0.114	0.319	0.490
Haryana	0.106	0.037	0.069	0.701	0.760
Himachal Pradesh	0.510	0.318	0.192	0.173	0.206
Jharkhand	0.237	0.163	0.075	0.613	0.641
Karnataka	0.126	0.065	0.061	0.503	0.703
Kerala	0.116	0.112	0.005	0.535	0.516
Madhya Pradesh	0.534	0.319	0.215	0.297	0.438
Maharashtra	0.096	0.025	0.071	0.738	0.898
Orissa	0.317	0.135	0.182	0.509	0.650
Punjab	0.145	0.035	0.110	0.729	0.872
Rajasthan	0.728	0.579	0.149	0.166	0.150
Tamil Nadu	0.484	0.302	0.182	0.093	0.219
Uttar Pradesh	0.242	0.120	0.122	0.483	0.582
West Bengal	0.559	0.379	0.179	0.282	0.376
All India	0.325	0.210	0.115	0.428	0.463

Notes: Households classified into poor or non-poor based on poverty lines for Schedule 10 that would yield the same state-specific poverty rates as estimated from Schedule 1, and reported in Table 1. All-India figures reported in this table include only the states shown. *Source:* Authors' calculations from NSS (2009/10).

Table 5: Participation rates and targeting by caste

	Scheduled Tribes	Scheduled Castes	Other Backward Castes	Weighted mean for ST, SC and OBC	Others	Targeting differential for ST/ backward castes
Andhra Pradesh	0.567	0.434	0.382	0.412	0.150	0.262
Assam	0.192	0.179	0.163	0.174	0.191	-0.017
Bihar	(0.087)	0.185	0.089	0.116	0.016	0.100
Chhattisgarh	0.519	0.435	0.504	0.500	0.214	0.286
Gujarat	0.340	0.289	0.180	0.252	0.070	0.181
Haryana	(0.000)	0.105	0.044	0.071	0.018	0.054
Himachal Pradesh	0.392	0.413	0.294	0.376	0.298	0.077
Jammu and Kashmir	(0.054)	0.134	0.109	0.114	0.090	0.024
Jharkhand	0.204	0.268	0.155	0.197	0.149	0.048
Karnataka	0.186	0.160	0.042	0.089	0.054	0.035
Kerala	(0.168)	0.238	0.098	0.123	0.088	0.035
Madhya Pradesh	0.567	0.442	0.334	0.433	0.211	0.222
Maharashtra	0.063	0.017	0.074	0.058	0.015	0.044
Orissa	0.323	0.220	0.224	0.253	0.100	0.153
Punjab	(0.000)	0.104	0.016	0.082	0.009	0.074
Rajasthan	0.816	0.654	0.581	0.644	0.444	0.200
Tamil Nadu	(0.286)	0.523	0.279	0.338	0.069	0.269
Uttar Pradesh	(0.140)	0.325	0.118	0.191	0.044	0.146
Uttarakhand	0.388	0.513	0.082	0.321	0.278	0.043
West Bengal	0.656	0.507	0.449	0.521	0.362	0.159
All India	0.415	0.336	0.214	0.279	0.155	0.124

Notes: TD for ST/backward castes is defined as the difference between the (weighted) mean participation rate of ST, SC and OBCs and that for others.   ST figures in parentheses had less than 100 sampled ST households and so might be unreliable. All-India figures include states not shown in the table. *Source:* Authors' calculations from NSS (2009/10).

Table 6: Average wages on MGNREGS and in casual labor 2009/10

	Average wage rate on MGNREGS (Rs/day)	Average casual wage rate (Rs/day)		
		Overall	Male	Female
Andhra Pradesh	91.9	98.5	115.4	75.7
Assam	87.0	90.1	94.4	74.9
Bihar	97.5	79.4	81.0	65.8
Chhattisgarh	82.3	68.8	70.8	65.5
Gujarat	89.3	83.3	87.3	71.0
Haryana	150.9	139.6	146.1	99.1
Himachal Pradesh	109.5	139.6	141.4	110.2
Jammu & Kashmir	93.3	158.3	157.5	n.a.
Jharkhand	97.7	101.2	103.6	82.2
Karnataka	86.0	84.5	96.9	62.8
Kerala	120.6	206.5	226.6	119.3
Madhya Pradesh	83.7	69.0	74.5	58.1
Maharashtra	94.3	75.2	86.0	58.2
Orissa	105.9	75.6	81.0	59.1
Punjab	123.5	130.4	133.5	91.8
Rajasthan	87.4	125.7	132.3	94.3
Tamil Nadu	71.6	110.8	132.1	72.6
Uttar Pradesh	99.5	94.3	97.0	69.2
Uttarakhand	99.0	118.7	122.1	96.7
West Bengal	90.4	85.3	87.8	65.9
All India	90.2	93.1	101.5	68.9

Notes: MGNREGS wage rates estimated as total expenditure on wages (excluding skilled or semi-skilled) divided by total number of person days of employment for FY 2009/10 (April 2009 to March 2010). Casual wages for June 2009 to July 2010 period, based on NSS 66th round survey. "All India" includes smaller states not reported. Note that we do not report the female wage rate for Jammu & Kashmir, as we found it was based on a sample of only 7 observations and was not reliable. (The sample estimate of 206.5 was also implausibly high relative to the male wage). *Sources*: Casual wages from *Key Indicators of Employment and Unemployment in India, 2009/10*, NSSO, Govt. of India (June 2011). MGNREGS expenditure and employment data are from the state-wise Monthly Progress Reports (www.nrega.nic.in).

Table 7: Regressions for the female share of employment in MGNREGS

	Full sample	Sample with headcount index available		Sample with male and female wages available	
Constant	0.676	0.829	0.193	0.131	0.697
	(8.671)	(5.341)	(0.887)	(0.246)	(3.922)
Rationing rate	-0.505	-0.419	-0.307	-0.456	-0.469
	(-3.758)	(-2.898)	(-2.904)	(-5.108)	(-5.972)
Headcount index of rural poverty	n.a.	-0.515	0.241	n.a.	n.a.
		(-1.538)	(1.518)		
Female casual non-PW wage (log)	n.a.	n.a.	-0.549	-0.744	n.a.
			(-2.056)	(-3.475)	
Male casual non-PW wage (log)	n.a.	n.a.	0.675	0.806	n.a.
			(5.156)	(3.556)	
Female wage relative to male wage (log)	n.a.	n.a.	n.a.	n.a.	-0.836
					(-3.301)
R^2	0.336	0.467	0.811	0.692	0.687
SEE	0.164	0.145	0.093	0.111	0.108
N	20	18	18	19	19

Notes: The dependent variable is the share of total person days of employment on MGNREGS going to women. The rationing rate is the share of those who wanted work who did not get it. The headcount index is the percent of population below the poverty line. The t-ratios in parentheses are based on White standard errors.

References

Basu, Arnab K., 2011, "Impact of Rural Employment Guarantee Schemes on Seasonal Labor Markets: Optimum compensation and Workers' Welfare," *Journal of Economic Inequality*, in press.

Basu, Arnab K., Nancy H. Chau, and Ravi Kanbur, 2009, "A Theory of Employment Guarantees: Contestability, Credibility and Distributional Concerns," *Journal of Public Economics* 93: 482-497.

Besley, Timothy, and Stephen Coate, 1992, "Workfare vs. Welfare: Incentive Arguments for Work Requirements in Poverty Alleviation Programs," *American Economic Review* 82(1): 249–61.

Datt, Gaurav and Martin Ravallion, 1994, "Transfer Benefits from Public Works Employment," *Economic Journal* 104: 1346-1369.

Drèze, Jean and Reetika Khera, 2009, "The Battle for Employment Guarantee," *Frontline*, 26(1): 3-16.

Dutta, Puja, Rinku Murgai, Martin Ravallion and Dominique van de Walle, 2012, *Rozgar Guarantee? Assessing India's Biggest Anti-Poverty Program in India's Poorest State*, World Bank, Washington DC, forthcoming.

Gaiha, Raghav, 1997, "Rural Public Works and the Poor: The Case of the Employment Guarantee Scheme in India," in S. Polachek (ed.) *Research in Labour Economics*, Connecticut: JAI Press.

Imbert, Clément and John Papp, 2011 "Equilibrium Distributional Impacts of Government Employment Programs: Evidence from India's Employment Guarantee," mimeo, Paris School of Economics.

Jha, Raghbendra, Sambit Bhattacharyya, Raghav Gaiha and Shylashri Shankar, 2009, "'Capture' of Anti-Poverty Programs: An Analysis of the National Rural Employment Guarantee Program in India," *Journal of Asian Economics* 20(4): 456-464.

Khera, Reetika, (ed.), 2011, *The Battle for Employment Guarantee*, New Delhi: Oxford University Press.

Lanjouw, Peter and Martin Ravallion, 1999, "Benefit Incidence and the Timing of Program Capture," *World Bank Economic Review* 13(2): 257-274.

Liu, Yanyan and Klaus Deininger, 2010, "Poverty Impacts of India's National Rural Employment Guarantee Scheme: Evidence from Andhra Pradesh, mimeo, World Bank.

Lokshin, Michael, 2006, "Difference-Based Semiparametric Estimation of Partial Linear Regression Models," *STATA Journal* 6(3): 377-384.

Ravallion, Martin, 1990, "Market Responses to Anti-Hunger Policies: Wages, Prices, and Employment," In Jean Drèze and Amartya Sen (eds) *The Political Economy of Hunger: Volume 2*. Oxford: Oxford University Press.

_____, 1991, "On the Coverage of Public Employment Schemes for Poverty Alleviation," *Journal of Development Economics* 34: 57-80.

_____, 2000, "Monitoring Targeting Performance when Decentralized Allocations to the Poor are Unobserved," *World Bank Economic Review* 14(2): 331-45.

_____, 2009, "How Relevant is Targeting to the Success of an Antipoverty Program?" *World Bank Research Observer* 24(3): 205-231.

Ravallion, Martin, Gaurav Datt, and Shubham Chaudhuri, 1993, "Does Maharashtra's 'Employment Guarantee Scheme' Guarantee Employment? Effects of the 1988 Wage Increase," *Economic Development and Cultural Change* 41: 251–75.

Shariff, Abusaleh, 2009, "Assessment of Outreach and Benefits of National Rural Employment Guarantee Scheme in India," *Indian Journal of Labor Economics* 52(2): 243-268.