Labor Market Impacts of a Large-Scale Public Works Program: Evidence from the Indian Employment Guarantee Scheme

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The rural poor in many developing countries face severe challenges of seasonal unemployment, underemployment and lack of access to credit, making it difficult for households to have adequate sources of income at all times. At the same time, standard government programs meant to target this population are often hampered by incomplete information on eligible households, corrupt government officials, and sluggish and over-centralized implementation structures. In this situation, government public works programs are increasingly seen as a potential silver bullet for reducing poverty by providing employment to the rural poor: They allow households to decide if and when to sign up for manual labor work, which increases program flexibility, allows the tailoring of the program to local conditions, and abolishes the need for other formal eligibility criteria.

We still know relatively little about how well such programs work in developing countries, however, and about how they affect the workings of rural labor markets. This makes evaluations of existing schemes very important. Arguably, the largest and most ambitious public works program in the developing world is the Indian National Rural Employment Guarantee Scheme (NREGS)\(^1\): NREGS is based on the National Rural Employment Guarantee Act (NREGA) passed in the Indian parliament in 2005. The act provides a legal guarantee of up to 100 days of public-sector employment per year for each rural household, which sets this program apart from most other government schemes across the world that lack such guarantees. Additionally, NREGS is a very large program since it applies to all rural households (or about 70% of the Indian population). This is also reflected in high annual expenditures on the scheme which are typically around 1% of Indian GDP\(^2\). All of this means that understanding the effects NREGS has on wages and employment of the rural population are highly policy-relevant questions.

Intuitively, NREGS should affect rural labor markets in several important ways: Under NREGS, households can apply for work at any time of the year, and the paid minimum wage is often higher than private-sector wages for comparable jobs in agriculture since minimum wage laws in India are typically not well enforced. This means that public employment should be an attractive alternative source of employment for many casual workers especially during the agricultural off-season when only few job opportunities exist in many rural villages. If rural labor markets are relatively competitive, this implies that we should expect private

\(^{1}\) The program is also often referred to as NREGA (National Rural Employment Guarantee Act) since the act provides the legal basis of the program. The program was officially renamed to Mahatma Gandhi National Rural Employment Guarantee Scheme in 2009 but the original names continue to be used in many academic and public policy debates.

\(^{2}\) For more details on NREGS and the analysis of its impacts, the full research paper is available at http://ftp.iza.org/dp6858.pdf

\(^{3}\) Indian GDP was about $1.8 trillion in 2011, for example.
wages to rise in response to NREGS, and private employment to fall: To compete with NREGS, big landowners have to pay higher wages, but since this increases their cost of hiring workers, they will also employ fewer workers to the extent that they can do so, although this possibility may be limited during peak times like the harvesting season. Wage impacts of NREGS should therefore be stronger during the main agricultural season when households can really choose between public- and private-sector jobs, rather than during the off-season. Additionally, we should expect the impact of NREGS to be much stronger for women than for men: Under the government scheme, men and women are paid equally, which is in stark contrast to the relatively substantial gender wage gap in the private agricultural labor market. Female employment under NREGS is additionally encouraged by the legal provision that at least one third of the NREGS workforce has to be female. Public-sector employment should therefore be much more attractive for women than for men, and we should see this be reflected in a substantially higher private wage increase for women than for men, for example. To credibly test these hypotheses empirically is not trivial, however. The Indian government introduced the program across the country in three phases between 2006 and 2008, but started the program in the poorest districts first. This means that just comparing districts that already had access to the program at a given point to districts that did not yet implement NREGS leads to potentially misleading results: Poorer districts are very different from richer districts, and are likely to also show different wage and employment trends across time. So an analysis that compares NREGS districts to non-NREGS districts could incorrectly conclude that the results reflect the impact of the government program when they may simply be driven by differential labor market developments in poor and rich districts. To circumvent this problem, I use institutional knowledge on the likely algorithm the Indian government used to assign districts to specific implementation phases. Intuitively, my empirical strategy relies on the idea that the Indian government somewhat arbitrarily decided on the total number of districts that would receive NREGS in a given phase, say 200, and then chose the 200 poorest districts that did not yet have access to the program for that phase. This implies that the last few districts that were just “poor enough” to receive NREGS in a given phase should be very similar to districts that were just “too rich” to get the program in that phase since the cutoff was chosen arbitrarily by the government. Therefore, any differences that we see in wage and employment outcomes in these two types of districts should just be driven by the fact that some districts are implementing NREGS whereas the rest do not yet have access to the program, rather than be due to any other intervening factors. I compare these districts in the agricultural year 2007-2008 when a substantial number of rural districts had not yet received the program. Using this empirical strategy, the results suggest that the introduction of NREGS has had very limited impacts on the rural Indian labor market: I find no statistically significant impacts of the scheme on private-sector agricultural employment for men, although the signs of the estimated coefficients are consistent with the hypotheses advanced above. The estimated private wage impacts of the scheme are very close to zero, and I do not find any evidence for a substantial increase in government employment in NREGS districts at any time of the year. Employment effects are also absent for women: Again, NREGS does not have a statistically significant impact on either public- or private-sector employment, although the signs of the effects go in the right direction. In contrast to male wages, however, overall female private-sector wages increase by about 20%. This effect is concentrated during the agricultural main season, whereas there are no significant wage increases for women during the off-season. Overall, these results suggest that NREGS in its current form is not a silver bullet in the fight against poverty. Despite substantial expenditures on the scheme and an ambitious legal framework, I do not find any evidence of large increases in government work provided by this public-works program. Anecdotal evidence points to widespread rationing of NREGS employment as the most likely explanation for this, since local institutions often seem to have
administrative problems with handling the high demand for work. Despite such implementation issues, NREGS has substantially raised private-sector wages for women, but not for men, which has narrowed the private-sector gender wage gap considerably. These effects are concentrated during the main agricultural season when women can choose between private and public employment, and therefore indicates that the potential availability of alternative employment, even if imperfect, forces private employers to increase female wages.

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