

# **Dissertation Abstract**

Laura Zimmermann  
Department of Economics  
University of Michigan

## **Why Guarantee Employment? Three Essays on the World's Largest Public-Works Program**

The Indian government started implementing the world's largest public-works program, the National Rural Employment Guarantee Scheme (NREGS), in 2006. With annual expenditures of about one percent of Indian GDP (\$12 billion in 2008) and a legal guarantee of 100 days of public employment per year for all rural households, NREGS is the flagship example of the resurgence of interest in public-works programs in developing countries by both policymakers and researchers in the last couple of years. Such a large interest in public-works programs may be surprising given the available evidence of the often mixed success of such schemes in developed countries and of implementation problems like rationing and corruption in the developing-country context. My dissertation therefore seeks to understand what kind of benefits NREGS created that may have made its introduction optimal from a government's viewpoint despite the known drawbacks.

### **Chapter 1: Why Guarantee Employment? Evidence from a Large Indian Public-Works Program (Job Market Paper)**

This paper focuses on the labor-market impacts of NREGS: One often advanced argument for why public-works programs might be more effective in developing countries is the idea that such schemes primarily function as a safety net in settings with incomplete insurance markets, while developed-country programs often suffer from too ambitious human capital accumulation goals or problems with crowding out private-sector employment. There is still little evidence on the causal labor-market impacts of public-works programs in developing countries, however.

To analyze this issue in the Indian context empirically, I uncover and reconstruct the government algorithm that assigned districts to implementation phases and use a regression-discontinuity design to estimate the NREGS impacts on employment and wages at a time when the program had only partially been rolled out across the country. Additionally, I set up a household time-allocation model that allows households to take up the employment guarantee scheme both as an alternative form of employment and as a safety net after bad economic shocks. Among other testable predictions, the model implies that the safety-net function of NREGS affects a household's optimal time allocation even if no negative shock occurs by making some occupations relatively less risky than before.

My empirical results suggest that the overall labor-market impacts of NREGS are very limited, with no increases in public employment or the casual private-sector wage. Take-up of the program increases after bad rainfall shocks, however, and men leave the private sector even in the absence of a negative shock. These results are consistent with the employment guarantee primarily functioning as a safety net rather than as a simple alternative form of employment. While I do not find that the safety net feature has large positive impacts on household expenditures, at least in the short run, the occupational substitution effect potentially still has important welfare implications for the rural poor.

### **Chapter 2: Guns and Butter? Fighting Violence with the Promise of Development (with Gaurav Khanna)**

A second potential advantage of a large government program like the Indian employment guarantee scheme is the improvement of internal security since there is a

growing awareness in developing countries that government anti-poverty programs may play an important role in the fight against internal security threats. In this paper, we analyze whether the introduction of NREGS has affected the intensity of violence in the Maoist conflict, which India's prime minister referred to as the biggest security challenge the Indian state has ever faced. We exploit the availability of detailed data on incidents of insurgency-related violence and use the regression discontinuity approach.

The results show that violence increases in the short run but that this effect dissipates over time. While we discuss and test the implications of a number of potential explanations, we find that the empirical patterns as well as anecdotal evidence on the conflict are most consistent with the citizen-support channel: A program like NREGS promises economic benefits to the poor and may therefore improve the relationship between the government and its citizens in conflict areas, since the local population feels neglected by the state and instead sympathizes with the insurgents who claim to be fighting for the poor. The introduction of NREGS may therefore make civilians more willing to share information on insurgents with the police, which in turn improves the police's effectiveness in tracking down rebels, leading to an increase in overall violence in the short run, but a reduction in violence over time as the insurgents lose ground.

### **Chapter 3: Jai Ho? The Impact of a Large Public-Works Program on the Government's Election Performance in India**

Lastly, the Indian government may have derived electoral benefits from the introduction of NREGS. Anecdotal evidence suggests that the employment guarantee program strengthened the central government coalition's pro-poor image and helped it get re-elected. Given the fact the program is predominantly funded by the central government but implemented locally, an important question in political economy is whether voters in federal countries attribute the responsibility for the program to the national or the local level.

Exploiting the fact that while all rural districts were treated at the time of the national election, but that the length of exposure differed discontinuously by implementation phase, my empirical results using a regression-discontinuity design suggest that both the government parties and incumbents of any party benefitted from the employment guarantee. The empirical patterns I find are consistent with the results from the other papers that the actual economic benefits from NREGS are limited but that the promise of development nevertheless increases the population's support for the government: The electoral benefits tend to be highest in the districts with the shortest exposure to NREGS, where the anticipation effect is likely to be strongest. Support for the government parties in districts with the longest exposure is concentrated in areas where the implementation quality of the scheme is high, however. These impacts suggest that the promise of development may generate short-term electoral benefits, but that these impacts only persist if the government programs are implemented well.