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## Transportation Stimulus Spending and Long Term Unemployment

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## **Goals and Methodology:**

Our work evaluated the effectiveness of Recovery Act highway infrastructure spending for the specific purpose of creating construction jobs and boosting overall employment in specific regions—such as Economically Distressed Areas (EDAs)—during the great recession. For this purpose, we built a new database using the full project-level records from Recovery.gov (no longer available online), and combined with county-level employment data from a number of sources that draw from unemployment insurance and payroll tax administrative records.

The information in the combined database allowed us to confront several challenges that have arisen in previous attempts to evaluate the employment effects of stimulus spending. First, basic estimates of job creation often rely on reported body counts of employees working directly on specified government-funded projects; this, of course, does not measure the true causal job impact so long as some of those workers would have remained employed regardless of the public expenditure. To overcome this problem, we used the richness of the data to implement a variable-treatment-intensity difference-in-differences estimator that compares detailed industry-level employment tabulations for observably similar counties in the same state that received different level of spending for reasons unrelated to latent construction-sector trends.

Second, the Recovery.gov data report contained both the detailed site locations and the locations of contractors' offices for all highway construction projects funded by the Recovery act, which allowed us to evaluate employment impacts near construction sites and near contractor offices. Preliminary analyses indicated the importance of considering vendor and project location jointly, as vendors are highly mobile (at least within states). To the extent that causal employment effects near employment sites were not detected, we considered the possibility that this was because jobs supported by such work were not based in the same locale as the construction.

## **Data:**

In an effort to enhance accountability and transparency, the Recovery Act required that the reason and site of every expenditure using stimulus funds be centrally reported and made available on a website: [www.recovery.gov](http://www.recovery.gov). From this repository, we assembled a comprehensive dataset of each highway construction project funded by the Recovery Act, including information on the amount spent, the precise geographic location of the project, the date of completion, the nature of the project, and, crucially, the name and location of the business establishments who won bids to be vendors for most projects. This unique dataset not only allows for analysis of project impacts at fine geographic levels, it also permits one to observe where contracting establishments are located relative to the projects at a national level. To our knowledge, this is the first such dataset with national coverage.

The finest geographic unit with detailed industry-level employment data is the county, which we used as the primary local labor market concept. Using the microdata we have collected, there are two distinct senses in which a local labor market might be exposed to stimulus funds: one might examine the effect of spending on projects located in a given place (“project spending”), or one could examine the effect of the amount of payments made to general-contracting establishments located in that place (“vendor payments”). We examined both notions of “receiving stimulus funds” as treatment variables. Employment outcomes were taken from two distinct datasets concerning employment by establishment: the Census County Business Patterns (CBP) and the Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW). While these datasets are meant to measure similar objects (employment levels in counties), they are based on different data sources, have slightly different coverage, and use different employment concepts (the former draws from payroll tax records, while the latter is based on unemployment insurance taxes). When possible, we constructed outcome variables using each dataset to ensure that results were not driven by features peculiar to one data

collection methodology. We supplemented these data with a rich set of county-level demographic, economic, and policy attributes.

## **Findings:**

Prior to testing for employment effects, our primary concern was that funds may have been targeted to regions with worse temporary downturns, so that any observed return to trend may have been confused for a policy outcome when no such effect existed. However, we were surprised to find little evidence of any targeting based on observable employment trends. We believe this is because projects were prioritized based on their completion horizon, so few projects were sited *in response* to the policy; instead ARRA funds likely secured planned projects that might otherwise have been cancelled.

Also surprisingly, we found fairly precise zero estimates of employment effects of construction in the construction country. Across a range of increasingly demanding specifications, we consistently obtained the same result—there is little to no impact of highway spending on local highway construction employment in the county or Commuting Zone of construction projects. Given this finding, one should not expect any broader local employment effects nearby, nor could we find evidence of any.

However, while these findings are consistent with a story in which federal spending crowded-out private and local spending, the unique nature of the data enabled us to offer a simpler explanation: contract firms are selected by competitive bidding and firms will bid for projects in a large radius if they can offer a low price; therefore, most construction laborers working on a given project are employed by firms in different labor markets. Thus, the first step in the stimulus transmission mechanism is already highly geographically diffuse, limiting the ability of policy makers to use construction spending to boost local labor demand.

Unsurprisingly, the firms that were vendors on Recovery Act projects were disproportionately located in locales with large highway construction sectors. It is plausible that the funds that flowed to these “employer” counties led to better economic outcomes than if the Recovery Act had not been enacted. However, because the ultimate “destination” of the federal expenditures was selected by competitive bidding and not project site selection concerns, and because these winning firms would have provided heightened competition on non-Recovery-Act projects in counterfactual scenarios, it is difficult to make conclusive claims about counterfactuals using cross-sectional variation in the data.

## **Conclusions:**

We found that there is little to no county-level impact of highway spending on local employment outcomes reported by employers. There appears to be no effect on local highway construction employment, overall construction employment, or total private sector employment. Moreover, our estimates are sufficiently precise and robust that—in contrast to earlier work—we can rule out large effects on any of these outcomes. We have proposed a simple explanation for the ineffectiveness of construction as a place-based employment policy: contracting firms were selected by competitive bidding, and firms tend to bid for projects in a large radius if they can offer a low price.

Our work has highlighted under-appreciated challenges that limit the ability to use road construction to help economically distressed areas, as competitive highway procurement draws firms from a wide geographic radius. In particular, this research highlights a trade-off between spending funds quickly using low cost bidders on the one hand, and promoting job creation in distressed regions on the other. We therefore conclude that infrastructure construction is not effective as a way to stimulate local labor markets in the short-run, so long as projects are allocated by competitive bidding.

Policymakers looking to increase employment in a geographically delimited region using construction projects would need to change procurement rules, for example, by instituting a “hire local” policy. While such provisions would likely increase the costs of construction, they deserve consideration if boosting employment is an explicit goal of a policy in addition to the value of infrastructure improvement itself. Such considerations should be explicitly considered in future cost-benefit analyses of infrastructure projects meant to promote job expansion.