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Brookings: Why Does Building and Maintaining Highways In the US Cost So Much?

Building infrastructure in the U.S. costs substantially more than in other countries. For example, on a per-mile basis, the U.S. spends three times as much as other upper- and middle-income countries on certain transportation infrastructure. In a [paper](#) presented at the 2024 Municipal Finance Conference at Brookings by Will Nober of Columbia University, Cailin Slattery of the University of California, Berkeley, and Zachary Liscow of Yale University surveyed infrastructure procurement practices and collected project-level data across the 50 states to help explain why U.S. costs are so high.

The authors identify two major factors. The first is the limited capacity of state departments of transportation (DOT). Survey respondents widely agreed that DOTs have become understaffed over time and that reliance on consultants drives up costs. A one standard deviation increase in state capacity (measured by state DOT employment per capita) is correlated with 16% lower costs. One standard deviation in increased consultant use is associated with 20% (\$70,000) higher costs per lane-mile of roadways on average.

The second factor is the limited competition in the market for government construction contracts. Most state DOTs report doing little bidder outreach, and there are fewer construction firms in most states than there were 10 years ago. A one standard deviation (12 percentage points) increase in outreach to bidders to increase the pool is correlated with 17.6% lower costs. This translates to a decrease of \$65,000 per lane-mile and \$1 million at the project level. Moreover, an additional bidder on a project was associated with 8.3% lower costs, approximately \$460,000 for the average project. The authors also found that state DOTs that provide more details at the time of the bid-letting have lower costs, while states with more change orders, which are often the result of poor planning, have higher costs.

To learn more about the role of state capacity in driving infrastructure costs, Liscow, Nober, and Slattery collect data on individual DOT engineers in California. They find that a substantial amount of the variation in the cost of a resurfacing project can be explained by which engineer is assigned to it. Specifically, replacing a construction engineer at the 95th percentile of the cost distribution with a median engineer would reduce costs by 5.3% on average: \$24,000 per mile; \$220,000 per average project.

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