

DISSERTATION DEFENSE

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“Cost and Efficiency in Dynamic Government Outsourcing: Evidence from the Dredging Industry”

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This dissertation contains essays on government outsourcing and identification of dynamic binary choice models. The first essay, titled “Mixed-Delivery of a Public Good: An Empirical Case Study of the Dredging Industry,” provides a descriptive analysis of the United States dredging industry. The industry has several features that make it an interesting area to study delivery of public goods; most notably, provision of dredging services in the US are split between in-house provision by the US Army Corps of Engineers and contracting out to private sector dredging companies. Patterns of in-house government project selection suggest that government prefers to complete smaller projects and also indicates the presence of complementarities across projects arising from travel distance between project sites.

In the second essay, “Semi-parametric Identification of Dynamic Binary Choice Models,” I give conditions under which both the per-period payoffs for each state and the distribution of the random, unobserved component of agent utility are identified. Most previous work in dynamic discrete choice models has used the assumption that the distribution of choice-specific utility shocks are known. I show that two conditions suffice to identify this distribution: first, that there is a period in which there is no future value component for agents. This can arise due to either non-stationary state transitions or a finite time horizon. Second, I assume that there is a state variable that enters into the utility for one of the choices through a known function. This allows for identification of the distribution of the unobserved utility component through variation in this state variable in the static periods.

Finally the last essay, titled “Cost and Efficiency in Government Outsourcing,” builds a dynamic binary-choice model of government outsourcing decisions and applies the model to the dredging industry described in the first essay. I investigate the effect of government outsourcing on total expenditures and efficiency by considering how outsourcing decisions are determined along two dimensions: (i) cost differences between private firms and government suppliers of public goods and (ii) dynamics arising from cost complementarities and capacity constraints. Identification of the model uses the identification results from the second chapter, and allows for identification of the full distribution of government project costs. Model estimates indicate substantial cost savings due to outsourcing but also that government presence in the market is important for cost reduction. A counterfactual policy experiment featuring direct competition between government and private sector firms finds a total expenditure reduction of 17.1%.