MATTHEW O'KEEFE

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EDUCATION

Northwestern University

PhD Economics, Anticipated June 2024

- Committee: Robert Porter (chair), Mar Reguant, Vivek Bhattacharya
- Job market paper: "Markets, Hierarchies, and External Costs in Marcellus Shale Wastewater Reuse"
- Fields: Industrial Organization, Econometrics, Organizational Economics

University of Chicago

BS, Mathematics with specialization in Economics, 2014

WORKING PAPERS

Markets, Hierarchies, and External Costs in Marcellus Shale Wastewater Reuse

Market frictions such as transaction costs create a wedge between the real and shadow costs of polluting activities. I develop an equilibrium model of insourcing and outsourcing to quantify frictions at the firm boundary in the context of the market for fracking wastewater in Pennsylvania. In this setting, firms transport wastewater excessively long distances by truck to avoid market exchange, resulting in inefficient greenhouse gas emissions, air pollution, and elevated spill risk. Counterfactual simulations imply that, under a Pigouvian tax on trucking, marginal external costs are greater than marginal private costs under integration. Conversely, a Pigouvian subsidy to market participation induces sorting on non-targeted components of private cost, raising marginal external costs. In this context, market design interventions can be both a substitute for and complement to conventional environmental regulation.

Improving FTR Markets with Better Product Design: Contract Tenor, Market Thickness, and Efficiency

Financial transmission rights (FTRs) are an important class of contracts in decentralized energy markets. This paper explores how market operators' contract design choices affect the efficiency of FTR allocation. With shorter contract tenors, generators and electricity customers can obtain better hedging portfolios for anticipated deliveries. However, short contracts can directly or indirectly reduce market thickness in the FTR auction, leading to welfare losses. In order to understand the significance of this tradeoff I build and estimate a stylized empirical model of the Midcontinent ISO (MISO) FTR allocation mechanism. Relative to a counterfactual with longer contracts, MISO's current contract design reduces welfare losses from congestion risk by $2.4M, or about 1% of total welfare, at firms' estimated risk preferences. However, reduced auction proceeds result in aggregate welfare losses, highlighting the value of careful contract design.

OTHER RESEARCH IN PROGRESS

Information Aggregation in Auctions: Evidence from the MISO FTR Market

TEACHING EXPERIENCE

Northwestern University

Teaching Assistant (all Undergraduate)

- Econometrics (Winter 2022)
- Business Strategy (Spring 2020)
- Introduction to Microeconomics (Fall 2019, Winter 2020)

OTHER RESEARCH AND PROFESSIONAL EXPERIENCE

Northwestern University

Research Assistant to Vivek Bhattacharya, 2020-Present

Microsoft Research

Research Intern, Summer 2021 (Virtual)

- Collaborated with Vasilis Syrgkanis, Brendan Lucier, Markus Möbius
- Applied partial identification techniques to recover preferences from matching data

University of Chicago Booth School of Business

Pre-doctoral Research Assistant to Eric Budish, 2016-2018

Analysis Group

Analyst, 2015-2016

OTHER

Programming Python, R, Julia, Matlab, SAS

Languages English (native)

Personal Married, one child