Matthew O'Keefe

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Northwestern Economics

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Contact Information

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Fields

Research: Industrial Organization, Energy and Environmental Economics
Teaching: Industrial Organization, Econometrics, Microeconomics

Education

Ph.D., Economics, Northwestern University (anticipated) 2018-24
Dissertation: Empirical Studies in Industrial Organization
Committee: Robert Porter (Chair), Mar Reguant, Vivek Bhattacharya

B.S., Mathematics with specialization in Economics, University of Chicago 2011-14

Job Market Paper

"Firm Boundaries and External Costs in Shale Gas Production" (link)

Abstract: Wastewater reuse in the shale gas industry reduces firms' private costs and mitigates many of the local environmental harms associated with fracking. Most reuse occurs within the firm boundary, but rival operators often exchange (or "share") wastewater prior to reuse. I analyze how firms choose between internal reuse and sharing in Pennsylvania. To do so, I build a market-level model of wastewater management in which the extent of the sharing market is determined endogenously by firms' make-vs-buy decisions. Estimating the model, I find that transaction costs associated with sharing are large — approximately $6 per barrel on average — but heterogeneous. Variation in the estimates reveals several channels for potential policy interventions to improve sharing markets. However, increased sharing may be undesirable: because firms' operations are clustered geographically, internal reuse typically reduces transportation-related external costs. Pigouvian interventions that simultaneously address sharing market imperfections and environmental externalities can worsen local environmental harms.

Working Papers

"Improving FTR Markets with Better Product Design: Contract Tenor, Market Thickness, and Efficiency" (link)

Abstract: Financial transmission rights (FTRs) are an important class of contracts for managing congestion 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 ("load") can obtain better hedging portfolios for anticipated congestion risk. However, speculator participation in FTR auctions responds endogenously to contract design. Speculators can extract greater rents when markets are thinner, leading to welfare losses for load firms (who are residual claimants on auction revenues). In order to understand the significance of this tradeoff I build and estimate a stylized empirical model of the FTR allocation mechanism used by Midcontinent ISO (MISO), a large decentralized energy market. Relative to a counterfactual with longer contracts, MISO's current contract design reduces load firm welfare losses from congestion risk by $2.4M per year, or about 1% of total welfare at firms' estimated risk preferences. However, overall load firm welfare falls by $40-60M due to reduced auction proceeds, highlighting the value of careful contract design.

Research in Progress

"Information Aggregation in Auctions: Evidence from the MISO FTR Market"

Abstract: Financial transmission rights (FTR) markets are characterized by a complex strategic environment. Nevertheless, market prices are often a reliable predictor of future congestion prices. I explore whether the informational efficiency of FTR auctions is likely to carry over to an environment with more volatile congestion patterns (for example, due to greater renewable generation). In order to do so, I estimate an empirical model of Bayes-Cournot competition that microfounds information aggregation in FTR auctions. This approach enables me to account for essential features of FTR markets that are difficult to incorporate into standard multiunit auction models, such as endogenous participation, cross-auction strategic linkages, and cross-auction information spillovers.

"Misallocation of water. The role of storage" with Francisco Pareschi

Presentations

21st Annual International Industrial Organization Conference (IIOC) 2023

Fellowships & Awards

Dissertation University Fellowship, Northwestern University 2022-24
Northwestern University Fellowship 2018-19
University Scholarship, University of Chicago 2011-14

Teaching Experience

Teaching Assistant, Northwestern University 2019-22
Introduction to Microeconomics (Undergraduate)
Business Strategy (Undergraduate)
Econometrics (Undergraduate)

Teaching Assistant (Problem Sets), Yale University 2021-22
Competition Economics and Policy (MBA/JD)

Research Assistance

Prof. Vivek Bhattacharya, Northwestern University 2020-23
Prof. Eric Budish, University of Chicago Booth (Full-time) 2016-18
Profs. Anup Malani and Christian Leuz, University of Chicago 2013-14

Internships

Microsoft Research (with Vasilis Syrgkanis) 2021

Employment

Analyst, Analysis Group 2015-16

Languages

English (native)

References

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