Matthew O'Keefe

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Northwestern Economics

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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'

Abstract: Wastewater reuse in the shale gas industry mitigates many of the local environmental harms associated with fracking. Most reuse occurs within the boundary of the firm, but rival operators often exchange (or "share") wastewater prior to reuse. To quantify environmental spillovers from the tradeoff between insourcing and outsourcing, I embed frictions at the firm boundary in an empirical model of wastewater management. Estimating the model with data from Pennsylvania, I find that only 55% of insourcing volume is attributable to intrinsic cost efficiencies as opposed to sharing frictions. However, since firms' operating acreage is typically contiguous, excessive insourcing reduces transportation-related external costs from emissions and air pollution by 13% in equilibrium. A Pigouvian regulator who views frictions at the firm boundary as welfare-irrelevant distortions optimally provides heterogenous outsourcing subsidies in addition to corrective environmental taxes, reducing social costs by up to $0.72 per barrel, but increasing external costs by 14% relative to a policy without subsidies. My findings highlight two distinct inference problems for a Pigouvian regulator: the problem of inferring transaction costs, and the problem of assessing their welfare-relevance.

Working Papers

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

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 can obtain better hedging portfolios for anticipated congestion risk. However, speculator participation responds endogenously to contract design. Speculators can extract greater rents when FTR markets are thinner, leading to welfare losses for load firms. In order to understand the significance of this tradeoff I build and estimate a stylized empirical model of 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, but reduces load firm welfare overall by $40-60M due to reduced auction proceeds, highlighting the value of careful contract design. However, the sign of the net welfare effect is sensitive to the estimated risk preference parameter, and reverses for reasonable alternatives.

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.

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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