Berkeley
UNIVERSITY OF CALIFORNIA

MATTHEW A. TARDUNO

Contact Information

318 Giannini Hall, UC Berkeley
tarduno@berkeley.edu
https://matt-tarduno.github.io
+1-585-880-4777

Doctoral Studies

University of California, Berkeley
PhD, Agricultural and Resource Economics, Expected completion May 2022
Graduate Student Researcher, the Energy Institute at Haas

FIELDS: Environmental Economics, Public Economics

Professor James Sallee
sallee@berkeley.edu
+1 (773) 316-3480
Department of Agricultural
& Resource Economics

Professor Reed Walker
rwalker@berkeley.edu
+1 (510) 965-3298
Department of Economics
Haas School of Business

Professor Michael Anderson
mlanderson@berkeley.edu
Department of Agricultural
& Resource Economics

Placement Officers

Professor Sofia Villas-Boas
sberto@berkeley.edu
+1 (510) 409-4341

Professor Max Auffhammer
auffhammer@berkeley.edu
+1 (510) 643-5472

Diana Lazo
lazo@berkeley.edu
+1 (510) 642-3345

Prior Education

Williams College	B.A. Mathematics, Economics	2016

Teaching

MBA Microeconomics	Haas School of Business (James Sallee)	2021
Intermediate Microeconomics	Dept. of Agricultural & Resource Economics (Calanit Kamala)	2018

Grants, Fellowships, and Awards

2021 Research Fellow, *Law, Economics, and Politics Center at UC Berkeley*,
Berkeley XLab Research Grant

2020 Research Fellow, *Law, Economics, and Politics Center at UC Berkeley*.
Berkeley XLab Research Grant, Sacheti Family Fellowship.

Research Papers

"For Whom the Bridge Tolls: Congestion, Air Pollution, and Second-Best Road Pricing"
JOB MARKET PAPER. [Most Recent Version]

Abstract: Cities are increasingly adopting road pricing policies to address the congestion and air pollution externalities associated with urban driving. A first-best road pricing scheme would charge road users according to the social damages associated with each trip. In practice, road pricing often takes the form of *cordon zones* — regions in the center of a city where road users are charged for entry. These pricing schemes deviate from the first-best policy in two key ways: First, feasible cordon systems cannot account for all of the heterogeneity in trip-level externalities. Second, cordon zones leave nearby roads unpriced, allowing for externality leakage. As a result, it is generally unclear how to optimally set cordon prices. In this paper, I adapt models from public finance to demonstrate how to optimally set cordon prices in the face of these policy imperfections. Calculating optimal prices requires information about (i) the heterogeneity in marginal trip-level externalities, (ii) the relationship between these externalities and individual price-responsiveness, and (iii) the elasticity of substitution between priced and unpriced trips. I then use administrative microdata from bridge tolls in the San Francisco Bay Area to back out each of these parameters. Armed with this model of urban driving demand, I calculate optimal prices for planned cordon zones in three cities âââ San Francisco, Los Angeles, and New York. In each city, I find that leakage drives optimal peak-hour prices ($2-7) well below average social damages ($4-12). As a result, optimal cordon policies are relatively ineffective at internalizing congestion and pollution externalities: In these three cities, second-best cordon prices recover 15 to 40% of the welfare gains that would be achieved under an (infeasible) Pigouvian policy. To conclude, I discuss the prospects for improving the performance of congestion pricing through expanding spatial coverage or allowing for granular time-of-day pricing.

Tarduno, Matthew. **"The congestion costs of Uber and Lyft"** *The Journal of Urban Economics*, 2021, 122, 103318. [Publication][Ungated]

Abstract: I study the impact of transportation network companies (TNC) on traffic delays using a natural experiment created by the abrupt departure of Uber and Lyft from Austin, TX. Applying difference in differences and regression discontinuity specifications to high-frequency traffic data, I estimate that Uber and Lyft together decreased daytime traffic speeds in Austin by roughly 2.3%. Using Austin-specific measures of the value of travel time, I translate these slowdowns to estimates of citywide congestion costs that range from $33 to $52 million dollars annually. Back of the envelope calculations imply that these costs are similar in magnitude to the consumer surplus provided by TNCs in Austin. Together these results suggest that while TNCs may impose modest travel time externalities, restricting or taxing TNC activity is unlikely to generate large net welfare gains through reduced congestion.

Research in Progress

"What drives support for inefficient environmental policies?" [Pilot Results]

Negative externalities are often regulated with performance standards (e.g., fuel economy standards) where economic theory suggests that price-based mechanisms (e.g., fuel taxes) offer a more efficient alternative. The relative political advantage of performance-based policies is puzzling: Given the cost-effectiveness of Pigouvian taxation and the ability of governments to pair these policies with redistribution, it should be possible to construct a price-based regulation that dominates a performance-based alternative on at least one of the three dimensions of efficacy, fairness, or cost, holding fixed the others. In this paper, I use an information provision experiment to understand what drives differences in voter support for these two policy types. Specifically, this experiment allows me to answer two questions: How do voters' perceptions of policy cost, effectiveness, and regressivity influence policy support? And do misperceptions of policy attributes explain the relative popularity of nontax corrective policies? Preliminary results from a pilot experiment conducted around a 2020 energy ballot initiative suggest that voters overestimate the effectiveness of performance-based policies at reducing carbon emissions. Oaxaca-blinder decompositions, however, suggest that differences in beliefs about policy attributes explain only a quarter of the difference in support for performance vs. price-based policies. As a result, neither rectifying misperceptions about policy attributes, nor redesigning price-based policies to compensate swing voters appear likely to significantly bolster support for price-based corrective policies.

"Understanding the role of information in the willingness to pay for clean air" with Reed Walker

"Can targeted rebates foster equity in congestion pricing schemes?" with James Sallee

Prior Employment	**Stanford University**	Research Assistant to Marcella Alsan	2016-2017

Talks UC Berkeley Environment and Resource Economics Seminar (2020, 2021); NC State Camp Resources (2021); UC Berkeley Law, Economics and Politics Center (2021); Giannini Agricultural and Resource Economics Student Conference (2019).

Activities	*Giannini Agricultural and Resource Economics Student Conference* (Organizer)	2020
	Berkeley ARE Diversity, Equity, and Inclusion Committee (Pedagogy Subcomittee Member)	2020-2021
	Student-Faculty Relations Committee	2021