

Jesse Fleischer Buchsbaum

CONTACT INFORMATION	33 North LaSalle Street, Suite 1600, Chicago, IL 60602 jbuchsbaum@uchicago.edu		
ACADEMIC APPOINTMENTS	Postdoctoral Scholar, University of Chicago Energy & Environment Lab, July 2022 - Present		
DOCTORAL EDUCATION	University of California, Berkeley PhD, Agricultural and Resource Economics, May 2022 Primary Field: Environmental and Resource Economics Secondary Field: Industrial Organization Graduate Student Researcher, The Energy Institute at Haas		
	<u>Professor Meredith Fowlie</u> fowlie@berkeley.edu +1 (510) 642-4820 UC Berkeley Department of Agricultural & Resource Economics	<u>Professor Catherine Hausman</u> chausman@umich.edu +1 (734) 615-6951 University of Michigan Ford School of Public Policy	<u>Professor Michael Greenstone</u> mgreenst@uchicago.edu +1 (773) 702-8250 University of Chicago Department of Economics
RESEARCH INTERESTS	Energy and Environmental Economics; Industrial Organization; Applied Econometrics		
PRIOR EDUCATION	UC Berkeley , Berkeley, CA USA M.S. Agricultural and Resource Economics, May, 2018 University of Michigan , Ann Arbor, MI USA B.S. Economics and Mathematics, May, 2015		
GRANTS AND AWARDS	2022 Outstanding Graduate Student Instructor Award 2021 Energy Institute at Haas and The Opportunity Lab Initiative on Equity in Energy and Environmental Economics (\$5,250) 2021 J-PAL North America's COVID-19 Recovery and Resilience Initiative (\$50,000) 2017 NSF Graduate Research Fellowship Program Honorable Mention 2015 Osterweil Prize (Awarded by University of Michigan Department of Economics for "an outstanding record in economics and the greatest degree of social awareness") 2015 Graduated with High Honors (Awarded by the University of Michigan Department of Economics)		
RESEARCH PAPERS	Are consumers more responsive to prices in the long run? Evidence from electricity markets (Job Market Paper) One fundamental question of economics is how consumers respond to price variation in the long run, with applications across a variety of fields. But there is a dearth of causally-identified long-run elasticity estimates, due to challenging empirical conditions. In this paper, I leverage a novel source of exogenous and persistent price variation to estimate the long-run price elasticity of demand in the setting of residential electricity. In this setting, I find that consumers are sixteen times as responsive to prices in the long run compared to the short-run, with elasticity estimates of -2.24 and -0.14		

respectively. I explore mechanisms and find that in the long run, consumers respond differently to temperature across price regimes, with these differences accounting for 34% of the observed consumption differences. These findings highlight the potential impacts of price-based policies on demand and emphasize the importance of setting prices to reflect social marginal costs.

Spillovers from Ancillary Services to Wholesale Power Markets

with Catherine Hausman, Johanna L. Mathieu, and Jing Peng

Accepted at The RAND Journal of Economics and NBER Working Paper. [Past version available here.](#)

In electricity markets, generators are rewarded both for providing energy and for enabling grid reliability. The two functions are compensated with two separate payments: energy market payments and ancillary services market payments. We provide evidence of changes in the generation mix in the *energy* market that are driven by exogenous changes in an *ancillary services* market. We provide a theoretical framework and quasi-experimental evidence for understanding the mechanism, showing that it results from the multi-product nature of power plants combined with discontinuities in costs. Although research in economics typically focuses solely on the energy market, our results suggest that spillovers between markets are important as well. Furthermore, policy changes relating to grid operations, grid reliability, or climate change could have unintended effects.

Are inspections going to “waste”? A national field test of machine learning vs. expert judgement to improve EPA regulatory compliance

with Michael Greenstone and Katherine Meckel

With the U.S. Environmental Protection Agency, we developed a machine learning model to predict sites where inspections would uncover severe violations of hazardous waste regulations. We estimate that using our model to target inspections would increase the “hit rate” by 46%. As is often the case, the model’s data are highly selected (representing about 2% of sites), suggesting that classic selection bias concerns make our estimate’s relevance to the full population unknown. We therefore conducted a national field test of the model’s versus the EPA’s inspection targets; the model’s relative performance was even better, increasing the hit rate by 79%.

RESEARCH IN
PROGRESS

Exploring Bill Affordability for Low-Income Electricity Customers in California

with Meredith Fowlie

Bill affordability is an enormous challenge for households across the United States. In response to rapidly mounting arrearages, utility companies are implementing affordability programs, including price subsidies, debt forgiveness, and more. We collaborate with a local power provider to run randomized experiments that allow us to estimate how low-income customers respond to policies that reduce electricity prices to a targeted group of low-income households. We use standard economic methods to evaluate how each intervention changes customers’ behaviors in electricity bill payment and electricity consumption, exploring what drives behavioral changes by considering treatment effect heterogeneity. Furthermore, because the penalties for electricity non-payment are small in comparison to other types of debt, we evaluate the impacts of the program on other types of borrowing behaviors, including credit card, student loan, auto, and other types of debt, as well as credit scores. The results of this study will provide insight into the mechanisms that drive utility customer behaviors in payment and consumption, the broader welfare implications of affordability programs, as well as the policy instruments that will be most effective in enhancing bill affordability.

Leakage and Evasion from Local Regulation: Evidence From Heavy-Duty Trucking in California

with Fiona Burlig, Ludovica Gasse, and Michael Greenstone

Particulate matter pollution poses a great threat to human health, and heavy-duty diesel trucks are among the largest sources of this pollution in the U.S. In California, these trucks face stringent emissions standards, but the effectiveness of these standards remains unclear due to potential evasions and leakage. We study the impacts of the Truck and Bus Regulation (TBR) on truck registrations, evasion, and emissions leakage to other states. The study leverages TBR’s phased-in

rollout and extensive registration data in a difference-in-differences analysis to study the effects of TBR on leakage. We show that TBR had a substantial impact on vehicle de-registration, especially for older trucks. We then evaluate the extent of leakage of polluting trucks out of state who remain registered in California, and evasion of polluting trucks that remain on the road in California but register in a different states. The findings from this study have the potential to inform the design of new policies to curb emissions from the transportation sector worldwide.

Randomized Controlled Trial of Expanding Diversity in Economics Program

with Michael Greenstone and Erik Hurst

Economics lags other disciplines in inclusivity both as a field of study and career track, with disproportionately low representation of women and racial and ethnic minority groups, relative both to the population at large and to other academic disciplines. To address this challenge, the Becker Friedman Institute at the University of Chicago has launched the “Expanding Diversity in Economics program” (EDE Program) to help attract underrepresented undergraduate students to economics. Although diversity and inclusion programs are increasingly common in educational and workplace settings, virtually no rigorous evidence of their effectiveness exists. This study is the first longitudinal randomized controlled trial to evaluate the causal impact of a diversity program in economics on applicant outcomes: students’ choices of courses and major, graduate study, career track, and pursuing research in economics. We randomize selection into the program from a pool of top applicants. We stratify on economic status and international / domestic student status, and balance across key demographic characteristics and education outcomes. We track outcome data with eight rounds of surveys to study the impact of program participation on applicant outcomes.

Power System Decarbonization Policies: How Good is Second-Best?

with Catherine Hausman, Johanna L. Mathieu, and Jing Peng

The U.S. power system faces a 2035 decarbonization target though the exact pathway to the target remains unclear. Policy instruments, like carbon taxes and forcing coal plants to retire through various mechanisms, could help achieve the target. It is critical to understand and compare the performances of these policies as adoption of any such policy could lead to significant costs, different emissions pathways, and political challenges. In this paper, we explore the ramifications of adopting a “second-best” decarbonization policy. Specifically, we assume a particular carbon tax to be the “optimal” policy and compare it to “suboptimal” carbon tax and forced coal retirement policies in terms of emissions and costs. We use a power system dispatch model that co-optimizes unit commitment, energy, and regulation capacity to simulate system evolution over multiple years, including retirements and renewables/storage expansion, under each policy scenario. Our case study highlights the trade-offs between “optimal” and “suboptimal” policies. We find that “suboptimal” carbon taxes could achieve similar emissions results because, counter-intuitively, higher carbon taxes do not always achieve more emission reductions due to the complexity of dispatch and retirements. In contrast, forced coal retirements result in lower costs but higher emissions than the “optimal” policy, with a large range of possible outcomes across different retirement cases.

PRESENTATIONS	2023	Association for Public Policy Analysis & Management (APPAM) Fall Research Conference
	2023	Heartland Environmental & Resource Economics Workshop
	2023	Energy Policy Institute at the University of Chicago (EPIC) Lunch Seminar
	2023	UC Berkeley Environmental and Resource Economics Seminar (ERE)
	2023	Western Economics Association International (WEAI) Annual Conference
	2023	Association of Environmental and Resource Economists (AERE) Summer Conference
	2023	Midwest Economics Association (MEA) Annual Conference
	2021	AERE Summer Conference
	2020-21	UC Berkeley Electricity Markets Seminar
	2020-21	UC Berkeley Environmental and Resource Economics Seminar (ERE)
	2020	Giannini Foundation of Agricultural and Resource Economics Student Conference (GARESC)

TEACHING	2021	Graduate Student Instructor, <i>Regulation of Energy and the Environment</i> , Meredith Fowlie, UC Berkeley
	2017-18	Grader, <i>Introductory Applied Econometrics</i> , Sofia Villas-Boas, UC Berkeley
PROFESSIONAL AND SERVICE ACTIVITIES	2021	Referee for Journal of the Association of Environmental and Resource Economists (JAERE), Journal of Environmental Economics and Management (JEEM), and Utilities Policy Mentor, Energy Institute and Opportunity Lab Undergraduate Initiative on Equity in Energy and Environmental Economics
	2020-22	Founder and organizer, Economics of Race and Equity Reading Group, UC Berkeley
	2020-22	Member, DEI Subcommittee on Research and Pedagogy, UC Berkeley
	2020	Conference organizer, Giannini Foundation of Agricultural and Resource Economics Student Conference (GARESC)
PRIOR EMPLOYMENT		Environmental Law & Policy Center , Chicago, IL USA <i>Economic Policy Associate</i>
		June 2015 - June 2017