Job Market Candidates **2023-2024**

MIT Economics

	Applied Econometrics	Applied Microeconomics	Behavioral	Development	Economic History	Econometrics	Economics of Education	Economics of Race	Environmental Economics	Finance	Health	Industrial Organization	International Economics	Labor	Macroeconomics	Machine Learning	Market Design	Networks	Organizational	Political Economy	Public Economics	Spatial Economics	Statistics	Theory	Transportation Economics	Urban Economics
Corradini, Viola	S						S							P												
Corrao, Roberto																		S	S					P		
de la Barrera, Marc										S			S	S	P											
Enriquez, Brandon	S	S						S						P												
Gao, Ying																			S					P		
Halperin, Basil										P					P									S		
Harris, Adam												P														
Ho, Lisa			S	P										S												
Kim, Bumsoo										S			P		P									S		
Majerovitz, Jeremy	S			P											P											
Molina, Carlos			S	S																P						
Page, Lucy			P	S					P											S						
Quist, Kramer																										
Rafkin, Charlie			P																		P					
Ruebeck, Hannah			P				S							P												
Russo, Anna									P		S	P					S				P					
Seo, Jaeeun													P		S							S				
Soltas, Evan														S							P					S
Vijaykumar, Suhas						P										S							S			
Weiwu, Laura					S								P	P												S

P= Primary Field, S= Secondary Field

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DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
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DISSERTATION: "Essays on Labor and Education Economics"

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PRIOR EDUCATION

Bocconi University — 2017
MSc in Economic and Social Sciences
110/110 Cum Laude

Bocconi University — 2015
BSc in Economic and Social Sciences
110/110 Cum Laude

CITIZENSHIP Italian

LANGUAGES English (fluent), Italian (native), French (intermediate)

FIELDS Primary Fields: Labor Economics

Secondary Fields: Economics of Education, Applied Econometrics

TEACHING EXPERIENCE

14.32/320 Econometric Data Science (undergraduate/master) Teaching Assistant to Professor Josh Angrist	2022, 2024
14.661 Labor Economics I (graduate) Teaching Assistant to Professors Daron Acemoglu and Parag Pathak	2020
14.33 Research and Communication in Economics (undergraduate) Teaching Assistant to Professors Nina Roussille and Isaiah Andrews	2024 (planned)
Teaching Assistant at Bocconi University IT Education Services Center (Stata, Excel, VBA)	2014-2017

RELEVANT POSITIONS

Research Assistant to Professors Joshua Angrist and Parag Pathak (MIT)	2020-2022
PhD Research Intern (Bank of Italy, Rome)	2020
Research Assistant to Professor Benjamin Olken (MIT and JPAL Southeast Asia, Jakarta)	2019
Research Assistant to Professors Eliana La Ferrara and Guido Tabellini (Bocconi University)	2017-2018
Intern (European Commission, Chief Economist Team, DG Comp, Brussels)	2016

FELLOWSHIPS, HONORS, AND AWARDS

Jerry A. Hausman Dissertation Fellowship	2022-2023
B. Stringher scholarship (particolarmente meritevole), Bank of Italy	2020
Guido Cazzavillan PhD Fellowship	2018-2020
MIT Department of Economics Fellowship	2018-2020
Bocconi Graduate Merit award	2015-2017
Nella Bertazzoni Graduate scholarship	2015-2017

PROFESSIONAL ACTIVITIES

Referee: AER:Insights, Journal of Development Economics

Conferences and Presentations

AEA/ASSA Annual Meeting	2024
NYC Department of Education; GeFam Society of Family and Gender Economics; National Network of Education Research - Practice Annual Forum; NBER Summer Institute Labor Studies* **coauthor presenting*	2023
NEUDC; Labor and Employment Relations Association Annual meeting	2022

Service: Organizer, MIT Labor Lunch (2021-2022)

PUBLICATIONS

"Unilateral Divorce Rights, Domestic Violence and Women's Agency: Evidence from the Egyptian Khul Reform" *Journal of Development Economics,* January 2023. (with Giulia Buccione)

We investigate whether the introduction of the right to unilateral, no-fault, divorce for women has an impact on domestic abuse, investments in children's human capital, women's labor force participation, and other proxies of women's agency in the context of the Egyptian Khul reform of 2000. We employ a difference in differences design, comparing mothers of children older than the age cutoffs used to assign the children's custody to the mother, to mothers of younger children, before and after the reform. The first group of women is less affected by the legislative change in terms of being able to make credible divorce threats because it faces higher divorce costs, including the loss of alimony and the marital house. Results suggest that the introduction of Khul decreased domestic abuse and increased investments into children's education while we do not find significant effects on labor force participation.

RESEARCH PAPERS

"Information and Access in School Choice Systems: Evidence from New York City" (Job Market Paper)

In urban school districts, disadvantaged students often attend lower quality schools. This paper asks whether information about quality can reduce this gap using data from New York City schools. I exploit the introduction of school letter grades correlated with causal value added as a natural experiment. School quality ratings shifted Black and Hispanic students' choices more than those of white students, reducing inequality in access to high value-added schools and racial achievement gaps. Based on a structural model of school choice, racial differences in the response to school grades reveal a role for differences in both beliefs and preferences. Estimates suggest that Black and Hispanic students hold beliefs that are more uncertain and slightly less accurate than white students. The survey data I collected among NYC parents confirms these information disparities. White students' strong preferences for school attributes other than quality, however, explain most of their reduced sensitivity to information. Choice model simulations suggest that providing students with accurate quality metrics is likely to boost achievement, especially for nonwhites. The salutary effect of quality information on racial achievement gaps is enhanced by the removal of academic screening and geographic priorities from admissions rules. Coarsening information about high-quality or oversubscribed schools offers a partial substitute for changes in admissions screening and priorities. Such policies can increase test scores among lower achieving students more than providing perfect information.

"Collective Bargaining for Women: How Unions Can Create Female-Friendly Jobs" *Reject and Resubmit: The Quarterly Journal of Economics*
(with Lorenzo Lagos and Garima Sharma)

Why aren't workplaces better designed for women? We show that changing the priorities of those who set workplace policies can create female-friendly jobs. Starting in 2015, Brazil's largest trade union federation made women central to its bargaining agenda. Using a difference-in-differences design that exploits variation

in affiliation to the federation, we find that "bargaining for women" increases female-centric amenities in collective bargaining agreements, which are then reflected in practice. These changes lead women to queue for jobs at treated establishments and separate from them less—both revealed preference measures of firm value. We find no evidence that these gains come at the expense of employment, wages, or firm profits. Our results suggest that changing institutional priorities can narrow the gender compensation gap.

"Overcoming Racial Gaps in School Preferences: The Role of Peer Diversity on School Choice" (with Clemence Idoux)

Differences in school choice by race contribute to school segregation and unequal access to effective schools. Conditional on test score and district of residence, Black and Hispanic families consistently choose schools with fewer white and Asian students, lower average achievement, and lower value-added. This paper combines unique survey data and administrative data from NYC to study what drives these disparities and shows that attending a more integrated middle school can mitigate them. Our extensive post-application survey with guardians of high school applicants reveals that information gaps and homophily in school preferences explain cross-race differences in choice. Attending a more integrated middle school affects information and social preferences, reducing racial gaps in school choice. Instrumental variable estimates show that middle school students exposed to more peers from a different race apply to and enroll in high schools that are also more diverse. These effects are consistent across racial groups, particularly benefiting Black and Hispanic students who enroll in higher value-added high schools. Crucially, we show that these results cannot be explained by changes in middle school test scores but rather by shifts in the known school options and preferences for peer diversity.

RESEARCH IN PROGRESS

"What matters for school demand estimation: the role of consideration sets, beliefs about schools and admission chances" (with Clemence Idoux)

We quantify the importance of accounting for misinformation and biases in applicants' beliefs in the estimation of demand for schools. We conduct a large post-application survey among parents and guardians of high school applicants in NYC, where students can choose from more than 500 programs and are centrally assigned to schools through deferred acceptance. The survey elicits applicants' beliefs about school characteristics and about their admission chances at competitive programs, their awareness about available schools, and strategic reporting of school preferences. We match the survey responses to administrative data on respondents' high school choices, demographics, and test scores to study how information and beliefs affect reported school preferences. This exercise quantifies the extent to which overlooking deviations from full information and truthful reporting compromises the accuracy of school demand estimates. Additionally, this analysis will provide insights into whether choice occurs on an

equitable playing field or if misinformation and biases disproportionately affect students from more disadvantaged backgrounds.

"Gender, Transports and Labor Market Access in Cairo" (with Giulia Buccione)

We study how transportation could increase female labor force participation in Egypt, where women are largely underrepresented in the labor market. We have access to novel commuter surveys and data mapping the transport network of Cairo, the largest city in the Middle East and North Africa region. We find that women are willing to pay more and to undertake longer commutes than men to avoid walking and taking transport modes perceived as unsafe. We plan to collect original survey data to investigate how access to safe transportation affects labor force participation and whether the competitive incentives in the current decentralized transport market could be re-designed to better address women's transportation needs.

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PRIOR EDUCATION

Bocconi University:
Bachelor of Science, *summa cum laude* 2015
Master of Science, *summa cum laude* 2017

CITIZENSHIP Italian

GENDER: Male

LANGUAGES Italian, English, Spanish

FIELDS

Primary Fields: Theory

Secondary Fields: Organizational Economics, Networks

TEACHING EXPERIENCE

Graduate Class in Game Theory, MIT Economics 2021
Teaching Assistant to Professors Drew Fudenberg and Muhamet Yildiz

Graduate Class in Organizational Economics, MIT Sloan 2020
Teaching Assistant to Professor Bob Gibbons and Charles Angelucci

Math camp instructor for the MicroMasters Program in Data, Economics, and Development Policy, JPAL, MIT 2020

FELLOWSHIPS AND AWARDS

Gordon B. Pye Dissertation Fellowship, MIT 2022-2023
Marco Fanno Ph.D. Fellowship, Unicredit & Universities Foundation full-tuition and stipend scholarship 2018-2020
Bocconi Merit Awards, full-tuition scholarship 2016-2017

PROFESSIONAL ACTIVITIES

Refereeing:
Econometrica, Journal of Political Economy, American Economic Review: Insights, Theoretical Economics, Journal of Economic Theory, American Economic Journal: Microeconomics, Mathematics of Operation Research, Games and Economic Behavior, Journal of Mathematical Economics, Mathematical Social Sciences.

Presentations:
2023: ACM EC' 23 (King's College London), SAET 2023, SITE Workshop on Market Design (Stanford University), Microsoft Research New England Lab.
2022: North American Summer Meeting of the Econometric Society (University of Miami), Barcelona School of Economics Summer Forum on Networks, D-Tea (Paris School of Economics), Stony Brook International Conference on Game Theory, European Summer Meeting of the Econometric Society (Bocconi University),
2021: D-Tea,
2020: World Congress of the Econometric Society (Bocconi University), European Winter Meeting of the Econometrics Society.

Invitations to Conferences:
2023: NBER Spring Political Economy Meeting (Discussant), Cowles Conference in Economic Theory, The European Summer Symposium in Economic Theory.
2022: Cowles Conference in Economic Theory, Simons Institute at Berkeley:

Workshop on the Economics of Networks (Presented at poster session).

PUBLICATIONS

"Dynamic Opinion Aggregation Long-run Stability and Disagreement" (with S. Cerreia-Vioglio and G. Lanzani) *Forthcoming at The Review of Economic Studies*

"Nonlinear Pricing with Under-Utilization: A Theory of Multi-Part Tariffs" (with J.P. Flynn and K. Sastry) *American Economic Review, 113, 836-60, 2023*

"Communication Protocols under Transparent Motives'' (with Y. Dai) *Extended Abstract at ACM EC Conference Proceedings, 2023.*

"Epistemic game theory without types structures: An application to psychological games" (with P. Battigalli and F. Sanna) *Games and Economic Behavior, 120, 28-57, 2020.*

"Incorporating belief-dependent motivation in games" (with P. Battigalli and M. Dufwenberg) *Journal of Economic Behavior & Organization, 167, 185-218, 2019*

RESEARCH PAPERS

"The Mediation Market: The Case of Soft Information" (Job Market Paper)

This paper proposes a theoretical framework that combines information design and mechanism design to analyze markets for mediation services between an informed and an uninformed party. The mediator receives compensation from the informed party and must rely on information that is voluntarily reported. We describe all the outcomes that can be induced via a meditation contract, and compare the optimal outcomes when the mediator has the bargaining power (i.e., monopolistic mediation) with those when the informed party has it. The main finding is that mediation contracts often reveal more information with a monopolistic mediator because they give up some information rents to retain incentive compatibility. Unlike the conventional logic of quality under-provision for physical goods, here the attempt to capture information rents can lead to increased information disclosure. These findings shed light on the controversial matter of whether a monopolistic market for information intermediaries, such as rating agencies for financial securities, is more or less desirable than a competitive one.

"Persuasion and Matching: Optimal Productive Transport"
(with A. Kolotilin and A. Wolitzky) *RR at The Journal of Political Economy*

We consider a general problem of assigning one-dimensional inputs to productive units, which we call optimal productive transport. The model covers Bayesian persuasion (assigning states of the world to posterior beliefs), club

economies (assigning workers to firms, or students to schools), robust option pricing (assigning future asset prices to price distributions), and partisan gerrymandering (assigning voters to districts). We show that it is always optimal to pool at most two input types in each unit, and that such pairwise production plans are the only solutions under a non-singularity condition (the twist condition). Our core results provide conditions under which more extreme input pairs should produce higher or lower output, so that output is single-dipped or single-peaked on each set of nested input pairs. We also provide conditions for the optimality of either input segregation or negative assortative matching, where all input pairs are nested. Methodologically, our results rely on novel duality and complementary slackness theorems.

"(Un-)Common Preferences, Ambiguity, and Coordination"
(with S. Cerreia-Vioglio and G. Lanzani)

We study the "common prior" assumption and its implications when agents have preferences beyond SEU. We consider interim preferences consistent with the same ex-ante evaluation and characterize the latter in terms of higher-order expectations. Agents are mutually dynamic consistent with the same ex-ante evaluation if and only if all the higher-order expectations limits coincide. We characterize the equilibrium prices in financial beauty contests. Differently from the SEU case, the limit price does not coincide in general with the common ex-ante expectation. Moreover, when the agents share the same benchmark probabilistic model, high-coordination motives eliminate their concern for misspecification in equilibrium, exposing them to a divergence between the market price and the fundamental value of the security.

"Optimally Coarse Contracts'' (with J. Flynn and K. Sastry)

We study when a principal's difficulty in describing payoff-relevant outcomes leads contracts to be optimally incomplete. Our setting is a general principal-agent model in which agents' actions are partially contractible and the principal can choose the extent of contractibility at a cost. We first characterize implementable and optimal incomplete contracts for any fixed extent of contractibility. We next show that, if costs of contractibility satisfy a generalized notion of having a \textit{strictly positive marginal cost}, then contracts are optimally \textit{coarse}: they specify finitely many outcomes out of a continuum of possibilities. This provides a general foundation for incomplete contracts: even with arbitrarily small costs of contractibility, optimal contracts leave almost all outcomes unspecified. We apply these results to study when and why wage contracts have coarse tiers. In additional applications, we rationalize coarse product tiers in further assignment problems that feature menu costs, privacy concerns, and quality certification.

"Adversarial forecasters, surprises, and randomization''
(with D. Fudenberge and D. Levine)

An adversarial forecaster representation sums an expected utility function and a measure of surprise that depends on an adversary's forecast. These representations are concave and satisfy a smoothness condition, and any concave preference relation that satisfies the smoothness condition has an adversarial forecaster representation. Because of concavity, the agent typically prefers to randomize. We characterize the support size of optimally chosen lotteries, and how it depends on preference for surprise.

"On Concave Functions over Lotteries" (with D. Fudenberge and D. Levine) *RR at Journal of Mathematical Economics*

In this note, we disprove the claim that a continuous and concave function over lotteries that also satisfies best-outcome independence admits a representation as a minimum of affine functions by exhibiting a finite-dimensional example. We then show that continuity and upper semi-continuity are equivalent to an "infimum" representation and that this representation is equivalent to continuity and concavity in the finite-dimensional case. Our counterexample has important implications for the theory of convex preferences over lotteries.

"Nonlinear Fixed Points and Stationarity: Economic Applications" (with S. Cerreia-Vioglio and G. Lanzani)

We consider the fixed points of nonlinear operators that naturally arise in games and general equilibrium models with endogenous networks, dynamic stochastic games, and in models of opinion dynamics with stubborn agents. We study limit cases that correspond to high coordination motives, infinite patience, and vanishing stubbornness in the applications above. Under monotonicity and continuity assumptions, we provide explicit expressions for the limit fixed points. We show that, under differentiability, the limit fixed point is linear in the initial conditions and characterized by the Jacobian of the operator at any constant vector with an explicit and linear rate of convergence. Without differentiability, but under additional concavity properties, the multiplicity of Jacobians is resolved by a representation of the limit fixed point as a maxmin functional evaluated at the initial conditions. In our applications, we use these results to characterize the limit equilibrium actions, prices, and endogenous networks, show the existence of the asymptotic value in a class of zero-sum stochastic games with a continuum of actions, and compute a nonlinear version of the eigenvector centrality of agents in networks.

"Targeting in Networks and Markets: An Information Design Approach"

In many economic settings, heterogeneous information is aggregated through channels such as social networks or markets' prices. Moreover, information is often controlled and manipulated as to influence the final outcome. The goal of this paper is to introduce aggregation mechanisms in an otherwise standard information design environment and analyze their effect on the information released and on economic outcomes. First, the analysis provides a benchmark

irrelevance result: when the designer can target every receiver and the aggregator is linear, it is without loss of optimality to consider public experiments that do not depend on the aggregation mechanism. Differently, if the designer can target only a subset of receivers, then the most prominent individuals are chosen. Next, comparative statics results that link the informativeness of the optimal policy to the underlying aggregation process are discussed. Finally, motivated by robustness concerns, it is shown that the main findings extend to a class of nonlinear aggregation mechanisms.

"Duality, common priors and no-trade" (with S. Morris)

In this paper, we extend the belief-based approach for the representation of information (cf. Kamenica and Gentzkow, 2011) to a multiple-agent setting. First, we characterize the feasible distributions over higher-order beliefs that can arise from private signals, when the agents share a common prior, in terms of no-trade properties. This allows us to derive interpretable implications of the common prior assumption and to improve on existing results such as the Critical Path Theorem of Kajii and Morris (1997). Second, motivated by the recent growing interest in information design and information robustness, we extend our no-trade characterization to the feasible distributions of coarsenings of higher-order beliefs, such as expectations or actions. Toward this result, we introduce the notion of coarsened type spaces that extend the classical notion due to Harsanyi by allowing each type to be assigned to multiple beliefs that are consistent with given restrictions, such as obedience for action recommendations. With this, we provide a unifying analysis of the common-prior implications as well as a linear-duality toolkit to analyze general information-design problems. From the technical side, we use methods based on the Kantorovich duality of optimal transport and the marginal problem of Strassen (1965) that may reveal fruitful for related applications in information economics.

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PRIOR EDUCATION

Universitat Pompeu Fabra	2016
Master in Economics Research	
Barcelona School of Economics	2015
Master in Economics	
Universitat Politècnica de Catalunya	2014
Civil Engineering	
Universitat Politècnica de Catalunya	2014
Industrial Engineering	

CITIZENSHIP Spanish

GENDER Male (he/him)

LANGUAGES English, Spanish, Catalan

FIELDS Primary Fields: Macroeconomics, Finance

Secondary Fields: Labor, International

TEACHING EXPERIENCE

14.462 Advanced Macroeconomics II (Graduate)	2022-2023
Teaching Assistant to Ricardo Caballero and Ivan Werning	
14.461 Advanced Macroeconomics I(Graduate)	2020-2021
Teaching Assistant to Martin Beraja and Ivan Werning	
14.451 Dynamic Optimization (Graduate)	2020-2021
Teaching Assistant to Ivan Werning and Christian Wolf	
15.060 Data Models and Decisions (Executive MBA)	2021-2022
Teaching Assistant to David Gamarnik	
Advanced Macroeconomics (Graduate, BSE)	2018
Teaching Assistant to Jaume Ventura	
International Economics (Undergraduate, UPF)	2018
Teaching Assistant to Andrea Caggese	
CFIS mentor (Undergraduate, UPC)	2015

RELEVANT POSITIONS

Research Assistant to Prof. Lawrence D.W. Schmidt	2020-2023
Research Assistant to Prof. Ivan Werning	2019-2021

FELLOWSHIPS, HONORS, AND AWARDS

Stanley Fischer (1969) Fellowship, MIT	2018-20
La Caixa Fellowship	2018-20
La Pedrera Foundation Fellowship	2016
CFIS Fellowship	2012-15

RESEARCH PAPERS

"Monopsony in New Keynesian Models" (Job Market Paper)

I study how monopsonistic labor markets affect the wage and price dynamics of an economy subject to nominal rigidities in a model with on-the-job search with preference heterogeneity. I derive new implications for the Philips Curves. An increase in monopsony power, either due to reduced search effort or an increase of preference heterogeneity, flattens the wage curve. An increase of product market power, steepens it. When setting prices, firms consider the direct wage costs and the cost of hiring and retaining workers, and the second term is the main driver of inflation on the calibrated model. Higher monopsony increases the relevance of hiring cost, which coincides with wage markdown, and makes the price Philips curve more inflationary. Overall, a demand shock generates more price and wage inflation, and a bigger decline in the real wage, the more monopsonistic is the economy.

"Currency Pegs, Trade Deficits and Unemployment: A Reevaluation of the China Shock" (with Masao Fukui and Bumsoo Kim)

We study how the interaction between China's productivity growth and exchange rate peg to the US dollar affected US manufacturing, trade deficit and overall welfare. Empirically, we document that in response to similar surges in Chinese exports, countries pegging to the US dollar experienced larger declines in manufacturing and trade deficits compared to floating countries. Theoretically, we develop a dynamic model of trade featuring endogenous imbalances and nominal rigidity. Consistent with the previous evidence, we show that under an exchange rate peg, a permanent foreign productivity growth creates trade deficits and unemployment at Home, and potentially generate welfare losses. Quantitatively, we compare the realized economy with a counterfactual economy in which an identically growing China floated its currency with respect to the US dollar, and find that China's exchange rate peg is responsible for 0.4 million manufacturing job losses in 2000-2012 and 1.4 percentage points of the US trade deficit (% GDP) over the same period. The China shock still increases US aggregate welfare, but the peg reduces the welfare gains from China's growth by 32%. We consider the dynamic effects of short-run safeguard tariffs and alternative monetary policies.

"Model (non-)disclosure in supervisory stress tests" (with Ying Gao and Bumsoo Kim)

We study the Federal Reserve's problem of disclosing the models it uses in supervisory stress tests of large banks. Banks argue that nondisclosure leads to inefficiencies stemming from uncertainty, but regulators are concerned that full disclosure can lead to banks gaming the system. We formalize the intuition behind this trade-off in a stylized model where both the regulator and banks have imperfect, private ``models" about a risky asset, and the regulator uses its own model to `stress test' the investment. We show that if the regulator uses its model to test the banks' investment, full disclosure is suboptimal, and the regulator may benefit from hiding the model when the bank's model is more precise than the regulator's own model. The key idea is that hiding the regulator's model forces the bank to guess it using the bank's own models, effectively eliciting the bank's private information. We also show that if the regulator can fine-tune disclosure policies, the regulator can approximately enforce the first-best action of banks, as if the regulator fully knew all the private information held by banks. The intuition is closely related to the Cremer and McLean (1988) information rent extraction result.

RESEARCH IN PROGRESS

"Phillips Curve and Optimal Monetary Policy Targets under Imperfect Labor Reallocation" (with Masao Fukui and Bumsoo Kim)

"The income distribution effects of inflation" (with Lawrence D.W. Schmidt, John Rothbaum)

"Model Agnostic Dynamic Programming" (with Tim de Silva)

Traditional dynamic programming requires a mathematical model of the transition function of the state. Using Reinforcement Learning techniques, we develop a framework that allows more general transition functions. The modeler does not need to know the transition function as long as it can simulate realizations of it or observe realizations from data. We apply it to the income fluctuations problem. First, we show that the agent is able to learn the process and achieve the same value as the traditional method. Next, we quantify the miss optimization loss of assuming the income process is an AR1 but instead feeding the process with real income realizations.

"Wage posting and preference heterogeneity"

Both wage posting and idiosyncratic preference heterogeneity are common sources of monopsony power but interpreted independently. While both forces, in separate, lead to higher labor market power from firms, its interaction implies an increase of wage inequality. The inclusion of preference heterogeneity induces low productivity firms to reduce wages, waiting for workers that derive high utility from working with them, and raises wages of high productivity firms, since now workers can be poached from lower ranked firms. An implication of the model is that welfare inequality is lower than wage inequality.

MIT Economics

BRANDON ENRIQUEZ

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PhD, Economics, Expected completion June 2024
DISSERTATION: "Essays in Labor Economics"

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PRIOR EDUCATION

University of Maryland, Baltimore County — 2017
Bachelor of Arts, Economics and Mathematics
Summa Cum Laude

CITIZENSHIP USA

GENDER: Male

FIELDS

Primary Fields: Labor Economics

Secondary Fields: Economics of Race, Applied Microeconomics, Applied Econometrics

TEACHING EXPERIENCE

Graduate Labor Economics – 14.661	Fall 2022
TA to Prof. Josh Angrist and Daron Acemoglu	
Undergraduate Econometrics – 14.32	Fall 2020
TA to Prof. Anna Mikusheva	
Undergradute Seminar on World Poverty – 14.73	Fall 2020
TA to Prof. Esther Duflo, Frank Schilbach, David Atkin	

RELEVANT POSITIONS

Staff Economist, White House Council of Economic Advisers	2021-22
Research Assistant to Prof. David Autor	2017-20
Research Assistant to Prof. David Autor and Joshua Angrist	2016-17
Research Assistant to Prof. Parag Pathak	2016-17

FELLOWSHIPS, HONORS, AND AWARDS

Ford Foundation Dissertation Fellowship	2023
Russell Sage Foundation Dissertation Research Grant	2023
National Science Foundation Graduate Research Fellowship Program	2017

PROFESSIONAL ACTIVITIES

Referee: Journal of Public Economics

Conference Presentations:
MIT Public Finance/Labor Workshop (2023)
Annual Meeting of the International Institute of Public Finance (2023)
Basic Income Guarantee Conference (2023)
ADP State of the Labor Market Summit (2020)
PhD Excellence Initiative Workshop (2019, 2022)

PUBLICATIONS

"Wage Garnishment in the United States: New Evidence from Administrative Payroll Records" (with Anthony DeFusco and Maggie Yellen (2023)) *Forthcoming, American Economic Review: Insights*

Wage garnishment allows creditors to deduct money directly from workers' paychecks to re-pay defaulted debts. We document new facts about wage garnishment between 2014–2019 using data from a large payroll processor who distributes paychecks to approximately 20%of U.S. private-sector workers. As of 2019, over one in every 100 workers was being garnished for delinquent debt. The average garnished worker experiences garnishment for five months, during which approximately 11% of gross earnings is remitted to their creditor(s). The beginning of a new garnishment is associated with an increase in job turnover rates but no intensive margin change in hours worked.
NBER Working Paper No. 30724

"The Short-Term Labor Response to the Expanded Child Tax Credit" (with Damon Jones and Ernie Tedeschi (2023)) *AEA: Papers and Proceedings* (113): 401-405.

We estimate the extensive and intensive margin labor supply response to the monthly Child Tax Credit disbursed in 2021 as a part of the American Rescue Plan Act. Using Current Population Survey microdata, we compare labor supply outcomes among households who qualify for varying relative increases in household income, as a result of their income level and household size. We do not find strong evidence of a change in labor supply for families receiving the credit. The results are robust to alternative labor supply models, where households respond mainly to cash on hand or changes in the annual budget set.
NBER Working Paper No. 31110

RESEARCH PAPERS

"Racially Disparate Effects of the Japan Trade Shock" (Job Market Paper) (with Fidan Ana Kurtulus)

Abstract: Black manufacturing workers faced pervasive occupational segregation during the 1960s and 1970s, preventing their advancement into higher-paid supervisory and managerial jobs in the manufacturing sector, and instead concentrating them in middle-skill blue-collar production work. These jobs were most vulnerable to the Japan trade shock, which reduced the demand for American-made manufacturing goods, including cars, electronics, and machinery. In this paper, I evaluate effects of the Japan trade shock on manufacturing employment; whether these effects were racially disparate; and, most importantly, I test whether differential occupational exposure drove racially disparate effects. Using detailed establishment-level data and a shift-share IV design, I find that the shock caused substantial decreases in overall manufacturing employment and in Black manufacturing operator employment. I find that two-thirds of the decrease in Black operator employment (relative to White operator employment) was due to disparate occupational exposure. I show that discrimination mediates the disparate exposure of Black workers to the shock. The Japan shock decreased Black income in affected areas, driven entirely by occupational employment changes, rather than within-occupation income changes. Taken together, these results show that aggregate sector-level trade shocks can have deleterious effects on minority workers when minorities are concentrated in exposed occupations.

RESEARCH IN PROGRESS

"Employment Effects of the Pandemic Unemployment Insurance Expansion" (with David Autor and Nela Richardson)

During the COVID-19 pandemic, the federal government expanded unemployment benefits through the Federal Pandemic Unemployment Compensation program, which provided an additional $600 in weekly benefits

for unemployed workers. Using matched employer-employee data covering 1/5 of the US private-sector workforce, we study the impact of the FPUC program on businesses. While we find little overall effect of FPUC on firm payrolls, we find a pronounced effect on small businesses. The FPUC led to a large increase in small business reopening and a significant decrease in small business closures. Small business employment increased, driven by increased re-hires and decreased separations. We find no effect of the expansion on wages. The results are consistent with a framework where small businesses face more uncertainty in filling vacancies than large businesses – uncertainty that is magnified when worker flows into employment are lower.
(slides coming soon)

"The Role of Japan Shock in Stalling Black Progress"

Blue-collar manufacturing jobs were a disproportionate share of good-paying Black jobs in the 1960s and 1970s; Wilson (1996) attributes the rise of persistent Black urban poverty to the disappearance of these aforementioned manufacturing jobs over the subsequent three decades. In this paper, I evaluate the role of Japanese trade in stalling Black progress. I find that the Japan trade shock increased poverty, increased single parenthood and decreased marriage rates, and increased incarceration in affected areas. I find these effects are long-lasting, with differences lasting 20 years after the Japan shock ended. Taken together, these results confirm the Wilson (1996) hypothesis that deindustrialization had pejorative effects for urban Black communities.

"Firm Hiring and Incentives to Hire Applicants with Criminal Convictions"

In the United States, a single felony conviction can permanently restrict access to employment. While much research has studied the mixed record of so-called ban-the-box policies on improving labor market prospects of prior offenders, this project focuses on a potentially important, largely understudied policy tool that seeks to catalyze hiring of job applicants who are newly released from incarceration: the federal Work Opportunity Tax Credit ("WOTC"), which provides firms $2400 for hiring an applicant with a felony conviction within one year of their conviction or release from prison. Using matched employer-employee data covering 1/12 of the US private-sector workforce, I leverage administrative features in the utilization of the data providers' tools assisting firms to generate a near-experimental comparison, to measure the effects of WOTC on hiring of returning citizens.

"Effects of Temporary Wage Subsidies During Economic Downturns"

In contrast to the wide literature on the effects of permanent business wage subsidies on employment and wages, which generally finds small effects, less research has examined the effects on temporary wage subsidies on labor markets. In response to the economic devastation wrought by the pandemic, the

federal government created the Employee Retention Tax Credit (ERTC) to aid businesses adversely affected by pandemic and pandemic stay-at-home orders. The ERTC provides businesses a maximum total amount $26,000 per worker over the 2020-2021 period, depending on the firm size which fiscal quarters the worker was furloughed vs employed. Using matched employer-employee data covering 1/12 of the US private-sector workforce, I study the effects of the ERTC on employment, payroll, and small business reopening.

"Intersectional Effects of Affirmative Action Policies: Evidence from EEO-1 Records" (with Fidan Kurtulus and Laura Weiwu)

"The Role of Unions in Mediating Disparate Exposure to Japanese Trade"

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DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
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DISSERTATION: "Essays on Signaling and Disclosure"

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PRIOR EDUCATION

Massachusetts Institute of Technology (MIT) 2018
B.S, Math and Economics, Phi Beta Kappa

CITIZENSHIP USA **GENDER** Female

LANGUAGES English (native), Chinese (fluent)

FIELDS Primary Fields: Theory

Secondary Fields: Organizational

TEACHING EXPERIENCE

14.122 Microeconomic Theory II 2020-22
Teaching Assistant to Professor Glenn Ellison
Course evaluations: 6.4/7, 6.3/7, 6.8/7
14.121 Microeconomic Theory I 2022

Teaching Assistant to Professor Jonathan Weinstein
Course evaluations: 6.9/7

14.127 Advanced Game Theory 2021
Teaching Assistant to Professor Drew Fudenberg
Course evaluations: 6.0/7

14.125 Market Design 2021
Teaching Assistant to Professor Parag Pathak
Course evaluations: 7.0/7

14.26 Organizational Economics 2021
Teaching Assistant to Professor Charles Angelucci
Course evaluations: 6.4/7

6.042 Mathematics for Computer Science 2015
Teaching/Lab Assistant (TLA) to Professor Albert Meyer

RELEVANT POSITIONS

Research Intern, Microsoft Research New England 2022
Research Assistant to Professor Robert Gibbons 2021
Research Assistant to Professor Drew Fudenberg 2020
Research Assistant to Professor Alex Wolitzky 2019
Research Assistant to Prof. Whitney Newey & Prof. Jerry Hausman 2016-20
Winter Intern, NERA Economic Consulting 2017
MIT-PRIMES Circle Research Mentor 2015-17

FELLOWSHIPS, HONORS, AWARDS

Jerry A. Hausman Fellowship, MIT 2020-23
MIT Presidential Fellowship, MIT 2018-20
Phi Beta Kappa 2018

PROFESSIONAL ACTIVITIES

Presentations
The European Summer Meeting of the Econometric Society (2022), The Stony Brook International Conference on Game Theory (2022)

Refereeing
Economic Theory

PUBLICATIONS

"A Reputation for Honesty" (with Drew Fudenberg and Harry Pei)
Journal of Economic Theory, September 2022.

We analyze situations where players build reputations for honesty rather than for playing particular actions. A patient player faces a sequence of short-run opponents. Before players act, the patient player announces their intended action after observing both a private payoff shock and a signal of what actions will be feasible that period. The patient player is either an honest type who keeps their word whenever their announced action is feasible, or an opportunistic type who freely chooses announcements and feasible actions. Short-run players only observe the current-period announcement and whether the patient player has kept their word in the past. We provide sufficient conditions under which the patient player can secure their optimal commitment

payoff by building a reputation for honesty. Our proof introduces a novel technique based on concentration inequalities.

RESEARCH PAPERS

"Inference from Selectively Disclosed Data" (Job Market Paper)

We consider the disclosure problem of a sender with a large data set consisting of hard evidence who wants to persuade a receiver to take higher actions. Because the receiver will make inferences based on the distribution of the data they see, the sender has an incentive to drop observations to mimic distributions that would be observed under better states. We predict what data the sender discloses using a model that approximates large datasets with a continuum of data. It is receiver-optimal for the sender to play an *imitation strategy*, under which they submit evidence that imitates the natural distribution under some more desirable target state. We characterize the partial-pooling outcomes under these imitation strategies and show that they can be supported by data on a subset of outcomes that maximally distinguish higher states. Relative to full information, the equilibrium with voluntary disclosure benefits senders with access to large datasets and unfavorable states at the expense of those with little data or a favorable state, and all senders prefer for the receiver to increase their prior weight on a state if and only if its value exceeds their equilibrium payoff.

"Model (non-)disclosure in supervisory stress tests" (with Marc de la Barrera and Bumsoo Kim)

We study the Federal Reserve's problem of disclosing the models it uses in supervisory stress tests of large banks. Banks argue that nondisclosure leads to inefficiencies stemming from uncertainty, but regulators are concerned that full disclosure can lead to banks gaming the system. We formalize the intuition behind this trade-off in a stylized model where both the regulator and banks have imperfect, private ``models" about a risky asset, and the regulator uses its own model to `stress test' the investment. We show that if the regulator uses its model to test the banks' investment, full disclosure is suboptimal, and the regulator may benefit from hiding the model when the bank's model is more precise than the regulator's own model. The key idea is that hiding the regulator's model forces the bank to guess it using the bank's own models, effectively eliciting the bank's private information. We also show that if the regulator can fine-tune disclosure policies, the regulator can approximately enforce the first-best action of banks, as if the regulator fully knew all the private information held by banks. The intuition is closely related to the Cremer and McLean (1988) information rent extraction result.

RESEARCH IN PROGRESS

"Information Transmission in Hierarchies" (with Nicole Immorlica, Brendan Lucier, and Markus Mobius)

Middle managers in organizational hierarchies have local information about the projects they manage that can inform selection and funding decisions. We consider how managers who are aligned with the principal can use their private

information via pre-selection or post-selection of projects/agents to vie for funding when the final selection process is a firm-wide, winner-take-all contest with the ability to influence outcomes via costly effort. In a case with nonproductive signaling effort, the costs of signaling are minimized by using the manager's information to post-select eligible projects after effort is fixed, rather than pre-selecting the projects eligible to exert effort to compete. The effect is driven by a steep increase in motivation to compete when the agent is informed that they will face less local competition.

"Competition and Coordination in Multi-Agent Delegated Search" (with Nicole Immorlica, Brendan Lucier, and Markus Mobius)

A principal has a problem to solve and delegates the search for solutions to multiple agents with distinct capabilities. Each agent's chance of success, given that they invest in the costly search, is private information. Such delegated search can suffer from miscoordination, in which agents can either underinvest or overinvest in search due to expectations about the potential for other agents to discover redundant solutions. We show that miscoordination can still occur when the agents' preferences are fully aligned with the principal, since the most productive agents can be crowded out by others' investment in inferior equilibria; however, the price of anarchy is bounded. When agents are instead privately motivated for the principal to implement their own solution, search intensity increases in aggregate. In other words, competition risks inefficient overinvestment. However, in some cases, the principal can design a targeted policy to allocate credit to successful agents such that the stronger incentives under competition can disrupt the worst equilibria and thereby reduce the cost of miscoordination.

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DOCTORAL STUDIES

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PRIOR EDUCATION

University of Chicago — 2015
B.S., Mathematics, Economics, Chinese

CITIZENSHIP USA

GENDER Male

FIELDS Macroeconomics, Finance, Theory

TEACHING EXPERIENCE

14.02 Principles of Macroeconomics (undergraduate) — 2022
Teaching Assistant to Professor Jim Poterba

14.04 Intermediate Microeconomic Theory (undergraduate) — 2022
Teaching Assistant to Professor Robert Townsend

14.02 Principles of Macroeconomics (undergraduate) — 2021
Teaching Assistant to Professor Martin Beraja

	14.453 Economic Fluctuations (graduate)	2021
	Teaching Assistant to Professor Iván Werning	
	14.03 Microeconomic Theory and Public Policy (undergraduate)	2021
	Teaching Assistant to Professor Tobias Salz	
	14.02 Principles of Macroeconomics (undergraduate)	2020
	Teaching Assistant to Professor Martin Beraja	

RELEVANT POSITIONS

Research Assistant to Professor Martin Beraja	2019
Data Scientist, Uber Technologies	2017-18
(Ubernomics, under Professor John A. List)	
Research Analyst, AQR Capital Management	2015-16

FELLOWSHIPS, HONORS, AND AWARDS

Open Philanthropy AI Worldviews Contest, first prize	2023
Global Priorities Fellowship (Global Priorities Institute)	2022
Emergent Ventures Grant (Mercatus Center)	2021
WCEG Doctoral Grant (Washington Center for Equitable Growth)	2021
Humane Studies Fellow (Institute for Humane Studies)	2021
Oskar Morgenstern Fellow (Mercatus Center)	2021
Avanessians Fellowship (MIT)	2018–present
Phi Beta Kappa (UChicago)	2015
Becker-Friedman Institute Award for Outstanding Undergraduate Service (UChicago)	2015

PROFESSIONAL ACTIVITIES

Refereeing

Journal of Political Economy, Journal of Political Economy Microeconomics

Presentations

Equitable Growth conference	2022
WashU: Economics Graduate Student Conference	2021
UChicago: Advances with Field Experiments	2019
AEAs	2018
Université Paris-Sud: RITM	2017
UChicago: Advances with Field Experiments	2017

PUBLICATIONS

"Toward an understanding of the economics of apologies: evidence from a large-scale natural field experiment" (with Ben Ho, John A. List, and Ian Muir), *The Economic Journal,* 2022.

We use a theory of apologies to analyze a nationwide field experiment involving 1.5 million Uber ridesharing consumers who experienced late rides. Several insights emerge. First, apologies are not a panacea: the efficacy of an apology and whether it may backfire depend on how the apology is made. Second, across treatments, money speaks louder than words – the best form of apology is to include a coupon for a future trip. Third, in some cases sending an apology is worse than sending nothing at all, particularly for repeated apologies. For firms,

caveat venditor should be the rule when considering apologies.

RESEARCH PAPERS

"Optimal monetary policy under menu costs" (with Daniele Caratelli) **(Job Market Paper)**

We analytically characterize optimal monetary policy in a multisector economy with menu costs, and show that it "looks through" sectoral shocks even when they affect inflation. In a baseline parameterization, optimal policy stabilizes nominal wages. This *nominal wage targeting* contrasts with inflation targeting, the optimal policy prescribed by the textbook New Keynesian model in which firms are permitted to adjust their prices only randomly and exogenously. More generally, under menu costs, inflation and output should move inversely: following negative shocks, inflation should be allowed to rise. The key intuition is that, unlike the optimal policy, stabilizing inflation causes shocks to spill over across sectors, needlessly increasing the number of firms that must pay the fixed cost of price adjustment. Finally, we show in a rich quantitative model that moving from inflation to nominal wage targeting reduces the welfare loss from menu costs.

"The ZLB is NBD: 5 theses on the New Keynesian 'liquidity trap'"

I make five conceptual points about optimal monetary and fiscal policy at the zero lower bound (ZLB) in representative agent New Keynesian models, using the simplest possible version of such a model.

1. Monetary policy is typically described as facing a time consistency problem at the zero lower bound; but if ZLB episodes are a *repeated* game rather than a one-shot game – as is empirically realistic – then the time consistency problem can be easily overcome by reputational effects.
2. The ZLB is not special, in terms of the constraint it creates for monetary policy: an *intra*temporal rigidity, such as the minimum wage or rent control, creates exactly the same kind of constraint on monetary policy as the *inter*temporal rigidity of the ZLB.
3. Austerity is stimulus: in the representative agent New Keynesian model, fiscal stimulus works through the *change* in government spending. Promising to cut future spending – committing to austerity – has precisely the same effect on inflation and the output gap as a decision to raise spending today.
4. Fiscal stimulus can be contractionary, when targeted heterogeneously: if fiscal spending is targeted at certain sectors, this can in fact lower inflation and deepen the output gap.
5. Fiscal policy faces a time consistency problem at the ZLB, just as monetary policy does.

Overall, I suggest that – in this class of models – the power of monetary policy at the ZLB has been underrated, and the power of fiscal policy has been overrated.

"Transformative AI, existential risk, and asset pricing" (with Trevor Chow and J. Zachary Mazlish)

We study the implications of transformative artificial intelligence for asset prices, and in particular, how financial market prices can be used to forecast the arrival of such technology. We take into account the double-edged nature of transformative AI: while advanced AI could lead to a rapid acceleration in economic growth, some researchers are concerned that building a superintelligence misaligned with human values could create an existential risk for humanity. We show that under standard asset pricing theory, either possibility – aligned AI accelerating growth or unaligned AI risking extinction – would predict a large increase in *real interest rates*, due to consumption smoothing. The simple logic is that, under expectations of either rapid future growth or future extinction, agents will save less, increasing real interest rates. We contribute a variety of new empirical evidence confirming that, contrary to some recent work, higher growth expectations cause higher long-term real interest rates, as measured using inflation-linked bonds and rich cross-country survey data on inflation expectations. We conclude that monitoring real interest rates is a promising framework for forecasting AI timelines.

"Competing fiat moneys and nominal rigidities" (with Adam Baybutt and J. Zachary Mazlish)

Monetary economics traditionally does not consider a market-based benchmark: when we study trade, we start with a benchmark of free trade; when we study monetary economics, however, we start with a benchmark of central banking. This paper aims to fill that gap. We study competition among unbacked, costless ("fiat") moneys. First, under flexible prices, there is a first welfare theorem for money: When producers of such moneys have commitment technology — such as blockchain technology — then competition implements the optimum quantity of money. Second, under nominal rigidities where the competing moneys also serve as competing units of account, then competition *can* also implement the equivalent of "optimal monetary policy" to avoid macroeconomic fluctuations, if the competing moneys pay interest.

RESEARCH IN PROGRESS

"Experimentally reducing menu costs: evidence from one of the world's largest retailers" (with Daniele Caratelli)

"Decomposing the Great Stagnation: Baumol's cost disease vs. 'ideas are getting harder to find'" (with J. Zachary Mazlish)

"Inelastic markets in the short run, elastic markets in the long run" (with J. Zachary Mazlish)

MIT Economics

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CURRENT POSITION
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DOCTORAL STUDIES
Massachusetts Institute of Technology (MIT)
PhD, Economics, June 2023
DISSERTATION: "Essays on Industrial Organization"

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PRIOR EDUCATION
Yale University 2017
B.S. Economics & Applied Mathematics, magna cum laude
Phi Beta Kappa

CITIZENSHIP United States **GENDER** Male

FIELD

Industrial Organization

TEACHING EXPERIENCE

14.271: Industrial Organization I (MIT, graduate) 2020
Teaching Assistant to Professors G. Ellison and S. Ellison

14.272: Industrial Organization II (MIT, graduate) 2021
Teaching Assistant to Professors N. Rose and M. Whinston

14.20: Industrial Organization (MIT, undergraduate) 2021
Teaching Assistant to Professor N. Rose

RELEVANT POSITIONS

Research Assistant for Professor Tobias Salz (MIT) 2019

Research Assistant for Professor Dave Donaldson (MIT) 2018

Research Assistant for Professor Michael Peters (Yale) 2016 - 2017

FELLOWSHIPS, HONORS, AND AWARDS

Postdoctoral Fellowship (NBER) 2023 -
Graduate Research Fellowship (NSF) 2018 - 2023
George & Obie Shultz Fund Grant (MIT) 2020
John Krob Castle 1963 Fellowship (MIT) 2017 - 2018

PROFESSIONAL ACTIVITIES

Refereeing: *American Economic Journal: Applied Economics*

Presentations:
International IO Conference (IIOC): Rising Stars Session (April 2021)
MIT Center for Transportation and Logistics Research Seminar (March 2021)

RESEARCH PAPERS

Human Decision-Making with Machine Prediction: Evidence from Predictive Maintenance in Trucking (with Maggie Yellen)
(Job Market Paper)

In this paper, we study the role of predictive artificial intelligence (AI) in human decision-making. Using a rich decision-level data set from the maintenance of heavy-duty trucks, we document how the repair decision-making of expert technicians changes with the introduction of an AI tool designed to predict the risk of truck breakdowns. We develop and estimate a dynamic discrete choice model of technician decision-making. The resulting estimates show that technicians with the AI tool exhibit a substantially better ability to predict breakdown risk than those without the tool. This improvement in predictive ability translates into better results: The AI tool reduces the total costs that technicians incur by $343-$686 per truck per year. Furthermore, with the AI tool, technician decision-making is nearly optimal;

only 5% more cost savings could feasibly be achieved with further improvements in decision-making quality.

Long-Term Relationships in the US Truckload Freight Industry
(with Thi Mai Anh Nguyen)
(Conditionally accepted, *American Economic Journal: Microeconomics*)

This paper provides evidence on the scope and incentive mechanisms of long-term relationships in the US truckload freight industry. In this setting, shippers and carriers engage in repeated interactions under fixed-rate contracts that allow for inefficient opportunism. The main dynamic mechanism involves shippers using the threat of relationship termination to deter carriers from short-term opportunism. This threat and the potential of future rents induce more carrier cooperation. We test this mechanism against likely alternatives and analyze relationship scope for different carrier types. We find that incentive schemes do not exploit the full temporal and spatial scope of relationships.

Long-term Relationships and the Spot Market: Evidence from US Trucking (with Thi Mai Anh Nguyen)

Long-term informal relationships play an important role in the economy, capitalizing on match-specific efficiency gains and mitigating incentive problems. However, the prevalence of long-term relationships can also lead to thinner, less efficient spot markets. We develop an empirical framework to quantify the market-level tradeoff between long-term relationships and the spot market. We apply this framework to an economically important setting—the US truckload freight industry—exploiting detailed transaction-level data for estimation. At the relationship level, we find that long-term relationships have large intrinsic benefits over spot transactions. At the market level, we find a strong link between the thickness and the efficiency of the spot market. Overall, the current institution performs fairly well against our first-best benchmarks, achieving 44% of the relationship-level first-best surplus and even more of the market-level first-best surplus. The findings motivate two counterfactuals: (i) a centralized spot market for optimal spot market efficiency and (ii) index pricing for optimal gains from individual long-term relationships. The former results in substantial welfare loss, and the latter leads to welfare gains during periods of high demand.

RESEARCH IN PROGRESS

Which Workers Benefit from AI? Estimating Heterogenous Effects on Productivity

This extension of my job market paper aims to explore heterogeneity in how technicians utilize a predictive AI tool in making engine repair decisions for heavy-duty trucks. By combining data on technician characteristics with rich data on repair decisions, this study seeks to address two pivotal questions: First, how might the quality of technicians' decision-making vary with experience? Second, how does the introduction of a predictive AI tool differentially affect the quality of decision-making for technicians with

different experience levels? The first question speaks to the returns to experience in this context. The second speaks to whether predictive AI tools act as complements to or substitutes for such experience. The findings aim to offer insights into the distributional impacts of predictive AI on professional human decision-makers, as well as potential effects on incentives for these decision-makers to invest in experience (i.e., human capital).

Long-term Relationships and Supply Chain Resilience (with Thi Mai Anh Nguyen)

Recent supply chain disruptions have highlighted the vulnerability of the goods economy to upheaval in freight transportation markets. In the US, the trucking industry may represent a particular susceptibility, both because of its singularly central role (72% of all domestic shipments are transported by truck) and because of its peculiar market institutions. As described in our first two papers, long-term relationships, rather than a centralized spot market, are the key means of arranging trucking transactions. This likely affects the ability of the industry—and thus, the US goods economy as a whole—to adjust to shocks. If transactions in this industry were arranged through a spot market, we would expect price signals to effect a rapid adjustment to shocks. However, in a world where transactions are actually arranged through a decentralized network of informal long-term relationships with prices that are (at least in the short-run) fixed, this may not be true. With this motivation in mind, this study analyzes—at the micro level—how shocks affect relationship stability and—at the macro level—how such shocks are transmitted through relationship networks.

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DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
PhD, Economics, Expected completion May 2024
DISSERTATION: "Essays in Development Economics"

DISSERTATION COMMITTEE AND REFERENCES

Professor Esther Duflo
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Professor Frank Schilbach
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Professor David Atkin
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PRIOR EDUCATION

Massachusetts Institute of Technology — 2017
Bachelor of Science in Computer Science & Mathematical Economics

Schwarzman College, Tsinghua University — 2018
Master of Global Affairs

CITIZENSHIP USA, UK **GENDER** Female

LANGUAGES English (native), Chinese, French (both intermediate), Hindi (beginner)

FIELDS

Primary Field: Development Economics

Secondary Fields: Labor Economics, Behavioral Economics

TEACHING

Understanding Randomization (Research Staff Training) Workshop for J-PAL, IPA, & EPoD research associates	2022
Data Analysis with R Workshop for J-PAL research associates	2021
Development Economics (PhD level) Teaching Assistant to Professors Ben Olken and Jishnu Das	2020
The Challenge of World Poverty (undergraduate) Teaching Assistant to Professor Frank Schilbach	2020

FELLOWSHIPS, HONORS, AND AWARDS

NBER Gender in the Economy Dissertation Fellowship	2022-2023
Jameel (J-PAL) Fellowship	2021-2022
John Krob Castle (1963) Fellow	2019-2020
Walter A. Rosenblith Presidential Fellowship	2018-2019
Schwarzman Scholar, Tsinghua University	2018-2019
Phi Beta Kappa	2017

RESEARCH GRANTS (PRIMARY PI)

Wellspring via the Agency Fund ($104,000)	2022
STEG Small Research Grants (£14,842)	2022
J-PAL Jobs & Opportunities Initiative Piloting ($16,012) & Main Study ($46,921)	2021
J-PAL Gender & Economic Agency Initiative Main Study ($21,562)	2021
The Weiss Fund in Development Economics Piloting ($14,590) & Main Study ($49,938)	2021, 2022
George and Obie Schultz Fund ($14,000)	2021, 2022

PROFESSIONAL ACTIVITIES

Referee: *American Economic Review*, *American Economic Review: Insights*.

Presentations:

North East Universities Development Consortium (NEUDC)	2023
NBER Summer Institute, Gender in the Economy	2022
North East Universities Development Consortium (NEUDC)	2021

Service:

Harvard/MIT Application Assistance & Mentoring Program	2021-present
MIT Economics Mental Health & Peer Support Group	2021-2022
Organizer, MIT Development/Political Economy Lunch	2021-2022

PUBLICATIONS

"The Impact of Large-Scale Social Media Advertising Campaigns on Covid-19 Vaccination: Evidence From Two Randomized Controlled Trials" (with Emily Breza, Abhijit Banerjee, Arun G. Chandrasekhar, Fatima Cody Stanford, Renato Fior, Kelly Holland, Emily Hoppe, Louis-Maël Jean, Lucy Ogbu-Nwobodo, Benjamin A. Olken, Carlos Torres, Pierre-Luc Vautrey, Erica Warner, Esther Duflo and Marcella Alsan). *AEA Papers and Proceedings*, 113, pp. 653-658, May 2023.

RESEARCH PAPERS

"Bringing Work Home: Flexible Work Arrangements as Gateway Jobs for Women in West Bengal" (Job Market Paper)
(with Anahita Karandikar and Suhani Jalota)

There are hundreds of millions of women who want a job but are out of the labor force, often because available opportunities are incompatible with traditional norms about their household roles. In a field experiment with 1,670 households in West Bengal, we offer flexible, short-term data entry jobs which meet households where they are in terms of expectations on women's domestic responsibilities. We find three sets of results. First, flexibility more than triples job take up, from 15% for an office job to 48% for maximally flexible, work-from-home jobs, with larger effects for women with more traditional gender attitudes. Second, although flexible work arrangements have no adverse effects on total quality-adjusted output, fragmented work patterns reduce efficiency. Third, flexible jobs shift women and children's gender attitudes to become less traditional, and treated women are more likely to take up less flexible jobs after the intervention. Our results highlight that providing flexible work arrangements can both attract women to the labor force and provide a gateway to less flexible jobs.

"What Works for Her? Digital Jobs and Women's Labor Supply in Urban India" (with Suhani Jalota)

Through a six-armed randomized experiment in Mumbai with 3,300 married women, we show that wage levels have very small effects on job take-up rates for women. In contrast, working from home (rather than a nearby office) increases job take up rates by two-fold. Surprisingly, up to 500% increases in wages are ineffective at inducing women to work outside the home, even when these jobs are offered at offices within the same community (often in the same building), in women-only centers where children are permitted, and where there are minimal safety concerns. We test for the mechanisms behind the strong preference to work from home, including observability of the woman's work status, convenience, multi-tasking, and permissions to leave the house for work. In contrast, men exhibit expected increased labor supply responses to wage increases.

"Got Beef with Beef? Evidence from a Large-Scale Carbon Labelling Experiment" (with Lucy Page)

Food systems account for approximately one-third of total greenhouse gas emissions, and simple shifts across food choices can yield large cuts in emissions. In a randomized field experiment with over 200,000 meal kit customers in the US, we find that carbon footprint labels cause customers to choose lower-emission meals, and that the introduction of labels has positive effects on customer retention and company profits. Both the reduction in emissions and the increase in profits are driven by customers with high baseline beef consumption. We find evidence that the labels act through salience rather than knowledge, and that the effects on meal choices depend on whether customers' values are aligned with the mission to address climate change through behavioral change.

"The Impact of 3G Mobile Internet on Educational Outcomes in Brazil"
(with Pedro Bessone and Ricardo Dahis)

What is the impact of mobile broadband internet on children's test scores? We compare standardized test scores before and after the staggered entry of 3G into Brazil's 5,570 municipalities using a heterogeneity-robust event-study design. We find no effects of mobile internet on test scores for 5th or 9th grade students, and can reject effect sizes of 0.04 standard deviations in both math and Portuguese. Taken together, our results indicate that the arrival of high-speed mobile internet is not sufficient to improve educational outcomes either through direct take-up by individuals or through broader changes to the economy.

RESEARCH IN PROGRESS

"The Effects of Mandated Maternity Leave on Young Women's Labor Market Outcomes"
(with Garima Sharma, Shreya Tandon, Stephanie Hao, and Pulak Ghosh)

We study the effect of a maternity benefits law in India which extended the mandatory length of benefits that firms had to provide from 12 weeks to 26 weeks. Using data from the Employees Provident Fund Organization, a panel data set from which we infer salary information over time for the universe of formal workers in India with monthly pay of Rs 15k or less, we examine whether the new law affected firms' propensity to hire new female workers as well as the impacts on the career progression of incumbent workers.

MIT Economics

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DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
PhD, Economics, Expected completion June 2024
DISSERTATION: "Essays in International Economics and Macroeconomics"

DISSERTATION COMMITTEE AND REFERENCES

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PRIOR EDUCATION

Princeton University 2016
A.B., Mathematics, certificate in Applications of Computing
Summa Cum Laude

CITIZENSHIP South Korea **GENDER** Male (he/him)

LANGUAGES English, Korean

FIELDS Primary Fields: International Trade, Macroeconomics

Secondary Fields: Finance, Economic Theory

TEACHING EXPERIENCE

14.581 International Economics I (Graduate)	2022
Teaching Assistant to Profs. Arnaud Costinot & David Atkin	
14.54 International Trade (Undergraduate)	2022
Teaching Assistant to Prof. Arnaud Costinot	
14.19 Market Design (Undergraduate)	2021
Teaching Assistant to Prof. Parag Pathak	
14.454 Economics Crises (Graduate)	2021
Teaching Assistant to Prof. Ricardo Caballero	
14.42 Environmental Policy and Economics (Undergraduate)	2021
Teaching Assistant to Prof. Clare Balboni	
14.13 Psychology and Economics (Undergraduate)	2020
Teaching Assistant to Profs. Frank Schilbach & Dmitry Taubinsky	
MAT335 Complex Analysis (Undergraduate, Princeton)	2015
Teaching Assistant to Prof. Elias Stein	
MAT378 Game Theory (Undergraduate, Princeton)	2015
Teaching Assistant to Prof. Chun-Hung Liu	
MAT377 Combinatorial Mathematics (Undergraduate, Princeton)	2014
Teaching Assistant to Profs. Richard Ehrenborg & Margaret Readdy	

RELEVANT POSITIONS

Research Assistant to Prof. Alp Simsek	2020
Research Assistant to Prof. Arnaud Costinot	2019
Military Service (South Korea)	2016-18

FELLOWSHIPS, HONORS, AND AWARDS

Stanley Fischer (1969) Fellowship, MIT	2018-20
Fellow, William Lowell Putnam Mathematical Competition	2015
Peter A. Greenberg '77 Prize, Princeton	2015
Samsung Scholarship ($50,000 * 4 years)	2012-16
Gold Medal, International Mathematical Olympiad	2010

PROFESSIONAL ACTIVITIES

Referee: *American Economic Review*
Presentation: CEP-Warwick Junior Trade Workshop (2023)

PUBLICATIONS

"The Cross Number of Minimal Zero-sum Sequences in Finite Abelian Groups," *Journal of Number Theory* 157:99-122, 2015.

RESEARCH PAPERS

"Currency Pegs, Trade Deficits and Unemployment: A Reevaluation of the China Shock" (Job Market Paper) (with Marc de la Barrera and Masao Fukui)

We study how the interaction between China's productivity growth and exchange rate peg to the US dollar affected US manufacturing, trade deficit and overall welfare. Empirically, we document that in response to similar

surges in Chinese exports, countries pegging to the US dollar experienced larger declines in manufacturing and trade deficits compared to floating countries. Theoretically, we develop a dynamic model of trade featuring endogenous imbalances and nominal rigidity. Consistent with the previous evidence, we show that under an exchange rate peg, a permanent Foreign productivity growth creates trade deficits and unemployment at Home, and potentially generate welfare losses. Quantitatively, we compare the realized economy with a counterfactual economy in which an identically growing China floated its currency with respect to the US dollar, and find that China's exchange rate peg is responsible for 0.4 million manufacturing job losses in 2000-2012 and 1.4 percentage points of the US trade deficit (% GDP) over the same period. The China shock still increases US aggregate welfare, but the peg reduces the welfare gains from China's growth by 32%. We consider the dynamic effects of short-run safeguard tariffs and alternative monetary policies.

"Model (non-)disclosure in supervisory stress tests" (with Marc de la Barrera and Ying Gao)

We study the Federal Reserve's problem of disclosing the models it uses in supervisory stress tests of large banks. Banks argue that nondisclosure leads to inefficiencies stemming from uncertainty, but regulators are concerned that full disclosure can lead to banks gaming the system. We formalize the intuition behind this trade-off in a stylized model where both the regulator and banks have imperfect, private ``models'' about a risky asset, and the regulator uses its own model to `stress test' the investment. We show that if the regulator uses its model to test the banks' investment, full disclosure is suboptimal, and the regulator may benefit from hiding the model when the bank's model is more precise than the regulator's own model. The key idea is that hiding the regulator's model forces the bank to guess it using the bank's own models, effectively eliciting the bank's private information. We also show that if the regulator can fine-tune disclosure policies, the regulator can approximately enforce the first-best action of banks, as if the regulator fully knew all the private information held by banks. The intuition is closely related to the Cremer and McLean (1988) information rent extraction result.

RESEARCH IN PROGRESS

"Phillips Curve and Optimal Monetary Policy Targets under Imperfect Labor Reallocation" (with Marc de la Barrera and Masao Fukui)

"Quality-Variety Tradeoff and Endogenous Specialization of Cities"

"Exchange Rate Pegs, Foreign Exchange Reserves and Monetary Policy"

MIT Economics

JEREMY MAJEROVITZ

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CURRENT POSITION
Associate Economist (Postdoc), St. Louis Fed — 2022-present
Visiting Scholar (Postdoc), Washington University in St. Louis — 2022-pressent

DOCTORAL STUDIES
Massachusetts Institute of Technology (MIT)
PhD, Economics, May 2022
DISSERTATION: "Essays in Empirical Macroeconomics and Development"

DISSERTATION COMMITTEE AND REFERENCES

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PRIOR EDUCATION
Stanford University — 2015
B.A. with Honors in Economics, Secondary Major in Math

CITIZENSHIP USA and UK **GENDER:** Male

LANGUAGES Spanish (proficient)

FIELDS Primary Fields: Development and Macroeconomics

Secondary Fields: Applied Econometrics

TEACHING EXPERIENCE

14.76: Firms, Markets, Trade, and Growth (Undergrad/Master's)	2021
TA to Dave Donaldson and Lauren Bergquist	
14.772: Development Economics: Macroeconomic Issues (PhD)	2019
TA to Abhijit Banerjee, Ben Olken, and Rob Townsend	
14.771: Development Economics: Microeconomic Issues (PhD)	2018
TA to Abhijit Banerjee, Esther Duflo, and Ben Olken	
14.75: Political Economy and Development (Undergrad)	2018
TA to Abhijit Banerjee and Ben Olken	

RELEVANT POSITIONS

Research Assistant to Raj Chetty, Nathan Hendren, and John Friedman	2015-16
Research Assistant to Caroline Hoxby	2015
Research Assistant to Frederico Finan	2014
Research Assistant to Saki Bigio	2013-14

FELLOWSHIPS, HONORS, AND AWARDS

Weidenbaum Center Small Grant	2022
Bank of Mexico Summer Research Program	2019
Jerry A. Hausman Graduate Dissertation Fellowship	2019-20
George and Obie Shultz Fund	2017
NSF Graduate Research Fellowship	2016-20
Sterling Award for Scholastic Achievement	2015
Firestone Medal for Excellence in Undergraduate Research	2015
Kennedy Honors Thesis Prize for Social Sciences	2015

PROFESSIONAL ACTIVITIES

Presentations: NEUDC (2023, Scheduled), Yale Economic Growth Center Conference (2023, Scheduled), Society for Economic Dynamics Annual Meeting (2023), Barcelona Summer Forum (2023), KU Leuven Summer Event (2023), University of Kent Workshop on Firm Dynamics (2023), Bank of Mexico Conference on Financial Stability (2019)

Referee for Journal of Development Economics
Organizer of MIT Development Tea (2018–2022)
Co-Founder of EconREFs (Group devoted to improving graduate student mental health and well-being; 2018–2021)
Co-Organizer of MIT Application Assistance and Mentoring Program (Program for prospective PhD applicants from underrepresented backgrounds; 2020–2021)

PUBLICATIONS

"Childhood Environment and Gender Gaps in Adulthood" (with Raj Chetty, Nathan Hendren, Frina Lin, and Ben Scuderi). 2016. *American Economic Review Papers and Proceedings* 106(5): 282-88.

RESEARCH PAPERS

"Measuring Misallocation with Experiments" (Job Market Paper) (with David Hughes)

Misallocation of inputs across firms has been proposed as a reason for low levels

of development in some countries. However, existing work has largely relied on strong assumptions about production functions in order to estimate the cost of misallocation. We show that, for arbitrary production functions, the cost of misallocation can be expressed as a function of the variance of marginal products. Using an RCT that gave grants to microenterprises, we estimate heterogeneous returns to capital by baseline characteristics, and provide a lower bound on the total variance of returns to capital. This lower bound is a nonlinear function of the parameters from a linear IV model, and we show that standard methods (e.g. the delta method or projection) fail in this setting. We provide novel econometric tools that provide uniformly valid confidence intervals for nonlinear functions of parameters. We find evidence for sizable losses from misallocation of inputs across the firms we study, although the magnitude depends critically on which inputs we allow to be reallocated. We estimate that optimally reallocating capital would increase output by 22%, while optimally reallocating all inputs would increase output by 301%.

"Misallocation and the Selection Channel"

An important determinant of aggregate productivity is the selection channel: the process by which less efficient firms are driven out of the market by more efficient firms. Conventional wisdom suggests that markets in developing countries are more sclerotic, allowing inefficient firms to survive that would have exited in a developed country. I provide a tractable model to examine the importance of the selection channel, and show how to calibrate it to panel data on firms. I use this model to show that the effect of the selection channel on aggregate productivity is approximately equal to the average difference in log productivity between stayers and exiters, which can be measured easily in firm panel data. Results for Indonesia, Spain, Chile, and Colombia suggest that Indonesia could raise its aggregate productivity by roughly 30% if its firm exit process became as selective as Spain's. However, cross-country estimates suggest that the selection channel is not an important explanation for cross-country differences in output per capita.

"A Q-Theory of Banks" (with Juliane Begenau, Saki Bigio, and Matías Vieyra), Revise and Resubmit, *Review of Economic Studies*

We propose a dynamic bank theory with a delayed loss recognition mechanism and a regulatory capital constraint at its core. The estimated model matches four facts about banks' Tobin's Q that summarize bank leverage dynamics. (1) Book and market equity values diverge, especially during crises; (2) Tobin's Q predicts future bank profitability; (3) neither book nor market leverage constraints are binding for most banks; (4) bank leverage and Tobin's Q are mean reverting but highly persistent. We examine a counterfactual experiment where different accounting rules produce a novel policy tradeoff.

"How Much Should We Trust Regional-Exposure Designs?" (with Karthik Sastry)

Many studies use panel data to implement a regional-exposure design, interacting aggregate shocks with heterogeneous exposures. We show how unobserved aggregate shocks complicate inference in this setting and induce substantial under-coverage when clustering by region. We suggest two-way clustering, potentially with an autocorrelation correction, and randomization inference as solutions, and develop a feasible optimal instrument to improve efficiency. In an application to estimating regional fiscal multipliers, valid 95% confidence intervals cannot reject near-zero multipliers, although 90% intervals are informative. The feasible optimal instrument doubles power. Our results suggest that the precision promised by regional data may disappear with correct inference.

"Consolidation on Aisle Five: Effects of Mergers in Consumer Packaged Goods" (with Anthony Yu)

We study the effects of mergers in the consumer packaged goods industry, a sector that comprises approximately one-tenth of GDP in the United States. We match data on all recorded mergers between 2006 and 2017 with retail scanner data. In comparison to prior work, which focuses on case studies of large mergers, our approach allows us to estimate the effect of a typical merger. Most mergers we study are highly asymmetric (a large firm acquires a much smaller firm) and rarely challenged. By studying these mergers, we provide new evidence on the effects of mergers on prices, quantities, product availability, and exit. On average, mergers lead to a short-run price effect at the target of 1% and declines in total revenue of 7%. These average effects hide substantial heterogeneity across different groups of mergers. Our results highlight the importance of effects not captured in the canonical model, such as effects on consumer surplus through changes in product availability, and through inefficient firms' capital being repurposed by more productive acquirors.

"Financial Frictions with Risk, Irreversible Capital, and Default" (with Francisco Buera, Yongseok Shin, and Kuldeep Singh)

Risk is an important factor that affects investment decisions, especially for undiversified entrepreneurs in less developed economies. Yet standard macro models of financial frictions do not incorporate risk: short-term returns are known in advance, and investment is fully reversible. Thus, even if entrepreneurs are risk averse and credit constrained, they will invest all of their assets in the firm, until the marginal product of capital equals the interest rate. As a result, standard models often find that productive entrepreneurs quickly save their way out of credit constraints, limiting the effect of financial frictions on output and aggregate productivity. We incorporate risk into a model of financial frictions, by making investment partially irreversible. Productive

entrepreneurs accumulate capital substantially more slowly than in the first-best, leading to a reduction in aggregate productivity. Credit can play a role in undoing these frictions if firms have an option to default. Default creates a state-contingent contract, in which the entrepreneur repays if productivity stays high and defaults if productivity falls; this encourages investment and improves welfare through risk-sharing with the bank.

RESEARCH IN PROGRESS

"Estimating Trends in Intergenerational Mobility by Race Using Multiple Data Sources"

Both economists and the public are deeply interested in the degree to which a child's adult income is determined by her parent's income and race. Recent work (Chetty, Hendren, Jones, and Porter, 2020) has shown, for recent cohorts, that black boys have much lower incomes in adulthood than do white boys, even after controlling for parent income. Moreover, their estimates suggest that the black-white income gap is already at its steady state: the gap will remain at its current level unless upward mobility improves for black children. This begs the question: has the black-white mobility gap been improving or worsening over time? Estimating intergenerational mobility by race for earlier cohorts has been difficult to date because of data limitations: accurate estimates require large, high-quality data sets, and such linked data containing parent income, child income, and race are only currently available for recent cohorts. I provide a solution to this problem, using a GMM approach to combine panel data from the NLS and NLSY with cross-sectional data from the Census. The addition of the Census data imposes restrictions on the coefficients that allows for substantially more precise estimates over time.

MIT Economics

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DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
PhD, Economics, Expected completion June 2024
DISSERTATION: "Social Influence and News Consumption"

DISSERTATION COMMITTEE AND REFERENCES

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PRIOR EDUCATION

Universidad de Los Andes (Bogota, Colombia). M.A., Economics	2016
Universidad de Antioquia (Medellin, Colombia). B.A., Economics	2014

CITIZENSHIP Colombia **GENDER:** Male

LANGUAGES English, Spanish (native).

FIELDS
Primary Fields: Development Economics, Political Economy
Secondary Fields: Public Economics

TEACHING EXPERIENCE

Political Economy of Institutions and Development (graduate, MIT course 14.773).	2024
Teaching Assistant to Daron Acemoglu	

RELEVANT POSITIONS

Research assistant to Daron Acemoglu 2019-24

FELLOWSHIPS, HONORS, AND AWARDS

George and Obie Shultz Fund Grant (x3) 2020-23
Presidential Graduate Fellowship, MIT 2019-24
Cum laude, M.A. Economics, Universidad de Los Andes 2017
Best graduated, B.A. Economics, Universidad de Antioquia 2014
Jesus Antonio Bejarano National Prize 2013

PROFESSIONAL ACTIVITIES

Referee: Review of Economic Studies, American Economic Review: Insights.

PUBLICATIONS

"Converging to Converge: A Comment" (with Daron Acemoglu)*, NBER Macroeconomics Annual 2022, v.36. University of Chicago Press.*

We revisit recent evidence by Kremer, Willis, and You (2021) suggesting that the lack of economic convergence in early years has now been replaced by modest convergence. We show theoretically and empirically that failure to include country fixed effects will create a bias in convergence coefficients toward zero and this bias can be time varying, even when the underlying country-level parameters are stable. Our reanalysis finds no evidence of major changes in patterns of convergence and, more importantly, no flattening of the relationship between institutional variables and economic growth.

"The Weak State Trap" (with Leopoldo Fergusson and James Robinson)*, Economica 2021, v. 89 Issue 354*.

We revisit recent evidence by Kremer, Willis, and You (2021) suggesting that the lack of economic convergence in early years has now been replaced by modest convergence. We show theoretically and empirically that failure to include country fixed effects will create a bias in convergence coefficients toward zero and this bias can be time varying, even when the underlying country-level parameters are stable. Our reanalysis finds no evidence of major changes in patterns of convergence and, more importantly, no flattening of the relationship between institutional variables and economic growth.

RESEARCH PAPERS

"Social Influence and News Consumption" (Job Market Paper)
(with Alex Moehring)

Populations in many countries have become decidedly more polarized over the last decades. Many believe that social media, which creates echo chamber-like interactions, is partly to blame. We argue that these platforms wield considerable influence by amplifying the visibility of user interactions in at least two ways. First, individuals are more likely to be exposed to slanted consumption of their network. Second, individuals may purposefully slant their own news consumption and beliefs when their friends are watching them. Despite the importance of these questions, there is little evidence for either of these two

types of influences. This paper designs a unique field experiment on Twitter to separately identify both mechanisms by inducing variation on an individual's beliefs about the ideological position of their network and what an individual's social media followers see about her news diet. When providing information about their peers, we find that individuals substantially update their beliefs, but this hardly translates into a change on behavior. On the other hand, individuals exhibit a high degree of selectivity in their online consumption patterns, contingent upon the awareness of their actions being observed by member on their network. We find that while individuals seem to value both social proximity and a moderate diet when being observed by their peers, the latter tends to be more salient. As such, concerns about social image reduce polarization.

"Do Candidates Exert More Effort to Rule Over a Larger Budget? Evidence from Colombia"

Likely due to a lack of information, few studies have examined political candidates' behavior before elections. In this paper, I test whether political candidates (and citizens) find it profitable to overcome the costs of engaging in long-term clientelistic relationships before an election when the incentives to capture office increase. I collect information on the proportion of people in Colombia that illegally attempted to vote in a municipality that was not their residence, a practice known as electoral transhumance that constitutes a complex form of vote buying. I exploit a discontinuity in the allocation of transfers from central to local governments to show that this practice is more common in districts with larger budgets, which may give local politicians greater incentives to seek office. Consistent with a model in which open economies can "trade" voters, I find that a positive shock in a municipality's revenue makes transhumance more likely in three types of municipalities: (1) those with small populations, (2) those with well-functioning institutions, and (3) those with neighboring municipalities that have larger populations. I show that candidates are forward-looking: they engage in this behavior as early as two years prior to election day.

"(Successful) Democracies Breed Their Own Support" (with Daron Acemoglu, Nicolás Ajzenman, Cevat Giray Aksoy and Martin Fiszbein)

Using large-scale survey data covering more than 110 countries and exploiting within-country variation across cohorts and surveys, we show that individuals with longer exposure to democracy display stronger support for democratic institutions, and this effect is largely driven by individuals who have been exposed to democracies that have performed well in terms of fostering economic growth, avoiding political instability, and providing public goods. We bolster these baseline findings using an instrumental-variables strategy exploiting regional democratization waves and focusing on immigrants' exposure to democracy before migration. In all cases, the timing and nature of the effects are consistent with a causal interpretation. We also show that support for democratic

institutions matters: when there is greater support for democratic institutions, democratic political instability, and coups are less likely, and democracies perform better in the face of negative shocks.

"Facebook Causes Protests" (With Leopoldo Fergusson)

Using Facebook's release in a given language as an exogenous source of variation in access to social media where the language is spoken, we show that Facebook has had a significant and sizable positive impact on citizen protests. By exploiting variation in a large sample of countries during close to 15 years and combining both aggregate and individual-level data, we confirm the external validity of previous research documenting this effect for specific contexts along a number of dimensions: geographically, by regime type, temporally, and by the socioeconomic characteristics of both countries and social media users. We find that "coordination" effects that rest on the "social" nature of social media play an important role beyond one-way information transmission, including a "liberation effect" produced by having a direct outlet to voice opinions and share them with others. Finally, we explore the broader political consequences of increased Facebook access, helping assess the welfare consequences of the increase in protests. On the negative side, we find no effects on regime change, democratization or governance. To explain this result, we show there are no effects on other political engagements, especially during critical periods, and that social media access also helps mobilize citizens against opposition groups, especially in less democratic areas. On the positive side, we find that Facebook access decreases internal conflict, with evidence that this reflects increased visibility deterring violence and that social media and the resulting protests help voice discontents that might otherwise turn more violent.

"Political Incentives and Corruption: Evidence from Ghost Students" (With Leopoldo Fergusson, Arturo Harker and Juan Camilo Yamin)

We study the effect of links between politicians on corruption under prevailing clientelism. Connections between politicians increase fabricated "ghost" students to obtain more national transfers, without raising the quality or quantity of education. Bureaucratic turnover, temporary and discretionary hiring, electoral fraud, and complaints against functionaries also increase. Effects on ghosts are larger in municipalities with more clientelism, discretion over resource spending, and weaker oversight. The findings favor a venal view of corruption, where politicians divert resources for personal gain rather than to favor their constituencies. Nonetheless, they have better future career prospects, reflecting a failure of electoral control.

RESEARCH IN PROGRESS

"Voter Learning and Measuring Support for Democratic Institutions" (With Daron Acemoglu, Ceren Baysan and Cevat Giray Aksoy)

There is widespread concern about the reported global democratic decline and its implications for economic growth. A critical factor that may determine the future of democracy is the level of voter understanding and appreciation for the

quality of democratic institutions. However, it remains unclear how voters assess these institutions and if they have a shared understanding of which political parties and leaders uphold them. This study aims to evaluate the effect of credible information about democratic institutions on voter behaviour and beliefs in Turkey using a large- scale experimental information campaign, electoral data, and survey data. The information source is experimentally varied as non-partisan or aligned with either right or left-wing ideologies, allowing us to control for voter beliefs of the credibility of the information or reputation of the information source. Our research design also allows us to isolate the impact of information on voter beliefs and behaviour from any persuasive effects.

"The Return of Pachamama" (With James Robinson and Pablo Selaya)

We study the political and economic consequences of the violation of the "moral economy" of rural Bolivia, based on coca, caused by the escalation of coca eradication in the 1990s. We show that this policy is associated with the rise of the MAS political party - their vote share is significantly higher both in coca-suitable places and in the presence of traditional socio-political institutions notably the Aymara ayllu. We then study the consequences of controlling the state after 2005. We present evidence of an "empowerment effect" in the form of an increased use by indigenous people of indigenous first names for their children. Using survey data we show that indigenous people significantly increased their expectations of social mobility after 2005.

"Voting Behavior and Female Representation: Experimental Evidence from Turkey" (With Daron Acemoglu, Ceren Baysan, Antonia Paredes-Haz and Gamze Zeki)

This project explores whether policies promoting gender equality remain underrepresented in conservative countries because political elites misperceive voter demand for such policies. To estimate voter demand, we use experimental variation to evaluate voter response to campaign promises on "gender issues" compared to voters in a control group who are not exposed to any campaign. To disentangle party or canvasser persuasion effects (supply) on voter behavior from campaign content (demand), we estimate the differential effect of the gender-related campaign to a placebo, a second campaign treatment arm on "general issues." The outcomes for each campaign treatment arm include local election vote shares and civic engagement, as measured by participation in town hall meetings. The meetings are cross-randomized as "deliberative" or "top-down." This design also allows us to observe whether supply-side factors, like elite persuasion, affect specific policy preferences from demand-side factors like voter deliberation and democratic processes.

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DOCTORAL STUDIES

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PhD, Economics, Expected completion June 2024
DISSERTATION: "The determinants of climate action: Experiments on bipartisanship, political narratives, and consumer choices"

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PRIOR EDUCATION

Williams College 2016
B.A., Mathematics
Valedictorian, *Summa Cum Laude*, Phi Beta Kappa Society

CITIZENSHIP USA, Canada **GENDER:** Female

LANGUAGES English (native), French (intermediate), Mongolian (beginner)

FIELDS Primary Fields: Environmental and Behavioral

Secondary Field: Political Economy and Development

TEACHING EXPERIENCE

Principles of Microeconomics (undergraduate, MIT course 14.01) 2022
Head Teaching Assistant to Professor Jonathan Gruber

Development Economics: Macroeconomics (graduate, MIT course 14.772) 2021
Teaching Assistant to Professor Rob Townsend 2020

Principles of Microeconomics (undergraduate, MIT course 14.01)
Teaching Assistant to Professor Jonathan Gruber 2020

Foundations of Development Policy (undergraduate, MIT course 14.74)
Teaching Assistant to Professor David Atkin

RELEVANT POSITIONS

Research assistant to Professor Rohini Pande, Yale University 2016-18, 2020

Research assistant to Professor Ben Olken 2019

FELLOWSHIPS, HONORS, AND AWARDS

National Science Foundation Graduate Research Fellowship
Valedictorian, Williams College Class of 2016

Research Grants:
J-PAL King Climate Action Initiative (co-primary PI, 36K)
George and Obie Shultz Fund Grant (co-primary PI, 38K)
Strengthening American Democracy Program at Beyond Conflict (co-primary PI, 10K)

PROFESSIONAL ACTIVITIES

Referee: *American Economic Review-Insights, Journal of Public Economics*

Service: Harvard/MIT Application Assistance Mentoring Program; MIT Economics Mental Health & Peer Support

PUBLICATIONS

"Childhood Confidence, Schooling, and the Labor Market: Evidence from the PSID" (with Hannah Ruebeck) *Journal of Human Resources*, Forthcoming (accepted July 2022).

"Ending Global Poverty: Why Money Isn't Enough" (with Rohini Pande) *Journal of Economics Perspectives*, 2018.

RESEARCH PAPERS

"Frictions to Bipartisan Policymaking: Evidence from Climate Advocacy" (Job Market Paper)

Policy change often requires bipartisan support in Congress, and mobilizing bipartisan citizen movements may be a key step in building these bipartisan voting coalitions. At the same time, record-high affective polarization may impede cross-party citizen cooperation. We study constraints to building broader citizen coalitions in the context of the primarily liberal US climate movement. In a series of online experiments with 25,000 participants, we connect Democrats with Americans across the political spectrum (all of whom believe climate change is human-caused) to understand whether and how they

work to expand the political climate coalition. Democrats are motivated to engage others in climate action—they are 10 percent more likely to contact Congress when doing so can mobilize others' action. Even while Democrats broadly agree that liberals should try to engage conservatives in climate action, they are 27% more likely to invite other liberals than conservatives to join in emailing Congress. This gap does not seem to arise from Democrats' own negative feelings towards counter-partisans. Rather, it can be explained by Democrats' correct beliefs that their invitation will have only about half as much impact on conservatives' action. This belief gap arises in part from second-order affective polarization: Democrats expect that conservatives would respond more to invitations that do not identify them as liberal. These constraints suggest that achieving bipartisan legislative support for climate policy may require parallel liberal and conservative movements.

"The Narrative of Policy Change: Friction Builds Political Efficacy and Climate Action" (with Hannah Ruebeck and James Walsh) (submitted)

Can fictional narratives contribute to building political momentum? In an online experiment (N ≈ 6,000), learning about the Inflation Reduction Act (IRA) strengthens beliefs about government responsiveness to citizen action by only 0.07sd. Watching a short, fictional story about political climate advocacy as a loose backstory to the IRA yields much larger effects on beliefs (0.5sd). While IRA information alone does not affect climate advocacy, the story increases information-gathering about climate marches by 54 percent and donations to lobbying organizations by 19 percent. We show evidence that beliefs and emotions may drive this effect.

"**Got Beef with Beef? Evidence from a Large-Scale Carbon Labeling Experiment" (**with Lisa Ho)

Food systems account for approximately one-third of total greenhouse gas emissions, and simple shifts across food choices can yield large cuts in emissions. In a randomized field experiment with over 200,000 meal kit customers in the US, we find that carbon footprint labels cause customers to choose lower-emission meals, and that the introduction of labels has positive effects on customer retention and company profits. Both the reduction in emissions and the increase in profits are driven by customers with high baseline beef consumption. We find evidence that the labels act through salience rather than knowledge, and that the effects on meal choices depend on whether customers' values are aligned with the mission to address climate change through behavioral change.

RESEARCH IN PROGRESS

"Lease Splitting and Dirty Entrants: The Unintended Consequences of India's Environmental Clearance Process Reform" (with Anca Balietti, Rohini Pande, Kevin Rowe, and Anant Sudarshan)

Mining industries form a significant share of the industrial landscape of many

poor countries. At the same time, mining activities have well-documented negative environmental externalities. Using a comprehensive dataset on mining lease activities for India from 1998 through 2013, we assess a landmark change in India's environmental clearance process, intended to increase stringency and democratic participation. The reform induced strategic behavior by mining companies which, in turn, had perverse environmental impacts. First, the average mine size fell with significant bunching just below 5 hectares, a cutoff below which stringent regulatory requirements were waived. This rise in small mines was environmentally costly – after the 2006 reform, air quality worsened and barren land increased in villages close to new mining sites.

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DISSERTATION: Essays on the Economics of Strategy and Innovation

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PRIOR EDUCATION

Brigham Young University 2016
BS in Mathematics and Economics
Magna Cum Laude

CITIZENSHIP USA **GENDER:** Male

FIELDS

Primary Fields: Strategy, Innovation, Organizational Design, Organizational Economics

Secondary Fields: Industrial Organization, Economic Theory

TEACHING EXPERIENCE

Applied Economics for Managers (corporate strategy and organizational economics) Teaching Assistant to Professor Gibbons	2020-22
Competitive Strategy (Short Course) Teaching Assistant to Professor Azoulay	2022
Managing the Modern Organization (corporate strategy and organizational economics Teaching Assistant to Professor Gibbons and Angelucci	2020-21
Advanced Topics in Organizational Economics Teaching Assistant to Professor Gibbons	2021
Economics of Incentives (Organizational Economics) Teaching Assistant to Professor Gibbons and Ortner	2020, 22
Industrial Organization: Competitive Strategy and Public Policy Teaching Assistant to Professor Murray	2022

FELLOWSHIPS, HONORS, AND AWARDS

Wharton Innovation Doctoral Symposium: Runner-up for Best Paper 2023

PROFESSIONAL ACTIVITIES

2023: Wharton Innovation Doctoral Symposium, Theoretical Organizational Models (TOM) Society Annual Meetings, Academy of Management Annual Meetings, MIT Economic Sociology Working Group, MIT Technology, Innovation, Entrepreneurship, and Strategic Management (TIES) Seminar, MIT Organizational Economics Seminar

RESEARCH PAPERS

"Cognitive Diversity, Organizational Structure, and Exploration: Complementing Diversity with Design" (Job Market Paper)
-Runner-up for Best Paper, Wharton Innovation Doctoral Symposium, 2023

Cognitive diversity is thought to help organizations explore because employees with differing perspectives can collectively recognize more promising new ideas. However, cognitive diversity can also prevent an organization from reaching consensus about the quality of new ideas, leaving the organization in gridlock. In this paper, I develop a mathematical model to analyze how organizational structure moderates the effect of greater cognitive diversity on the organization's propensity to pursue exploratory ideas. I find that greater cognitive diversity leads flat organizations to pursue exploratory ideas more often, but it leads hierarchical organizations to pursue exploratory ideas less often. After presenting this model, I construct a unique data set that allows me to empirically validate the model's predictions in the context of product introductions in the consumer-packaged goods (CPG) sector. I find that greater cognitive diversity is positively correlated with exploration in flat organizations and negatively correlated with exploration in hierarchical organizations. Finally, I conclude with a discussion of managerial insights. My results speak to how organizational structure can play a valuable role in helping managers harness the benefits of cognitive diversity.

"Empowerment in Teams: When Delegation Prevents Collaboration" (with Roi Orzach)

Decentralization is often praised for its ability motivate employees. The thinking goes that centralization stifles motivation as powerful supervisors micromanage employees. However, many companies that empower employees are also reluctant to delegate many decision rights to them. For instance, former Apple CEO Steve Jobs was famous for both empowering his industrial designers and for holding them to a meticulously high standard. In this paper, we develop a mathematical model to analyze when delegation does, and does not, motivate employees. We show that delegation may be demotivational in collaborative team settings where team members have competing interests. Our results imply an additional managerial role in motivating a collaborative team with heterogeneous preferences.

RESEARCH IN PROGRESS

"Demand for Data: Organizational Structure and Incentives for Quantitative Evidence" (with Ryan Allen)

This study develops and empirically tests a formal model for how organizational hierarchy affects demand for data-driven decision-making. The model shows that although data can substitute for hierarchy by establishing a framework for consensus, hierarchy also increases demand for data because hierarchies require legible and commensurable results. We empirically validate the model using data from employee profiles on a career networking website. We use job titles to measure the span of control across levels of hierarchy in 61 consumer product organizations, and job descriptions to measure the prevalence of data-driven decision-making.

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PRIOR EDUCATION

Dartmouth College — 2016
A.B. mathematics, *summa cum laude*, with honors

CITIZENSHIP United States **GENDER:** Male

FIELDS Primary Fields: Public Economics, Behavioral Economics

RELEVANT POSITIONS

Research Assistant to Professors John Beshears, James Choi, David Laibson, and Brigitte Madrian — 2016–2018

FELLOWSHIPS, HONORS, AND AWARDS

NBER Pre-Doctoral Fellowship on Consumer Financial Management — 2023–2024
Jerry A. Hausman Dissertation Fellowship — 2021–2022
American Economic Review: Insights Excellence in Refereeing Award — 2020, 2021, 2022
Harvard Mind Brain Behavior Grant — 2021

Russell Sage Foundation, Computational Social Science Small Grant	2020
George and Obie Shultz Fund Grants	2018–2023
Harvard Foundations of Human Behavior Grant	2019
Harvard Warburg Fund	2019
National Science Foundation Graduate Research Fellowship	2018–2023
Phi Beta Kappa, Junior Induction	2015

PROFESSIONAL ACTIVITIES

Referee for *American Economic Journal: Applied Economics, American Economic Journal: Economic Policy, American Economic Review, American Economic Review: Insights, American Journal of Health Economics, Empirical Economics, European Journal of Law and Economics, Journal of Development Economics, Journal of Economic Surveys, Journal of Health Economics, Journal of Policy Analysis and Management, Journal of Political Economy, Journal of Public Economics, Oxford Bulletin of Economics and Statistics, Quarterly Journal of Economics, Review of Economic Studies, Review of Economics and Statistics, Southern Economic Journal*

Co-Founder and Mentor, MIT Application Assistance and Mentorship Program	2020–2023
Organizer, MIT Public Finance Lunch	2021–2022
Organizer, MIT Behavioral Lunch/Tea	2020–2021
Organizer, MIT Third-Year Lunch	2020–2021

PUBLICATIONS

"Intergenerational Mobility in India: New Measures and Estimates from Across Time and Social Groups" (with Sam Asher and Paul Novosad), September 2022. Forthcoming at *American Economic Journal: Applied Economics*.

- Innovative Policy Research Award (Asian Development Bank/International Economic Association), 2022.

We study intergenerational mobility in India. We propose a new measure of upward mobility: the expected education rank of a child born to parents in the bottom half of the education distribution. This measure works well under data constraints common in developing countries and historical contexts. Intergenerational mobility in India has been constant and low since before liberalization. Among sons, we observe rising mobility for Scheduled Castes and declining mobility among Muslims. Daughters' intergenerational mobility is lower than sons', with less cross-group variation over time. A natural experiment suggests that affirmative action for Scheduled Castes has substantially improved their mobility.

"Optimal Regulation of E-cigarettes: Theory and Evidence" (with Hunt Allcott), *American Economic Journal: Economic Policy,* November 2022.

We model optimal e-cigarette regulation and estimate key parameters. Using tax changes and scanner data, we estimate relatively elastic demand. A demographic shift-share identification strategy suggests limited substitution between e-

cigarettes and cigarettes. We field a new survey of public health experts who report that vaping is more harmful than previously believed. In our model's average Monte Carlo simulation, these results imply optimal e-cigarette taxes are higher than recent norms. However, e-cigarette subsidies may be optimal if vaping is a stronger substitute for smoking and is safer than our experts report, or if consumers overestimate the health harms from vaping.

"Mortality Change Among Less Educated Americans" (with Sam Asher and Paul Novosad), *American Economic Journal: Applied Economics,* October 2022.

Measurements of mortality change among less educated Americans can be biased because the least educated groups (e.g., dropouts) become smaller and more negatively selected over time. We show that mortality changes at constant education percentiles can be bounded with minimal assumptions. Middle-age mortality increases among non-Hispanic Whites from 1992 to 2018 are driven almost entirely by the bottom 10 percent of the education distribution. Drivers of mortality change differ substantially across groups. Deaths of despair explain most of the mortality change among young non-Hispanic Whites, but less among older Whites and non-Hispanic Blacks. Our bounds are applicable in many other contexts.

"When Guidance Changes: Government Stances and Public Beliefs" (with Advik Shreekumar and Pierre-Luc Vautrey), *Journal of Public Economics,* April 2021.

Governments often make early recommendations about issues that remain uncertain. Do governments' early positions affect how much people believe the latest recommendations? We investigate this question using an incentivized online experiment with 1900 US respondents in early April 2020. We present all participants with the latest CDC projection about coronavirus death counts. We randomize exposure to information that highlights how President Trump previously downplayed the coronavirus threat. When the President's inconsistency is salient, participants are less likely to revise their prior beliefs about death counts from the projection. They also report lower trust in the government. These results align with a simple model of signal extraction from government communication, and have implications for the design of changing guidelines in other settings.

RESEARCH PAPERS

"Eviction as Bargaining Failure: Hostility and Misperceptions in the Rental Housing Market" (with Evan Soltas) **(Job Market Paper)**

Formal eviction from rental housing is widespread and costly, spurring interest in anti-eviction policies. The desirability of policy intervention depends on whether evictions come from efficient non-bargaining or inefficient bargaining failures. We test for two causes of bargaining failure — hostile social preferences and misperceptions — by conducting lab-in-the-field experiments in Memphis, Tennessee with 1,808 tenants and 371 landlords facing eviction. We find that 24–39% of relationships engage in dominated hostile behaviors in real-stakes

Dictator Games. Both parties misperceive court or bargaining payoffs in ways that undermine bargaining. Motivated by the possibility of inefficient eviction, we evaluate an emergency rental assistance program in Memphis using administrative data. Event-study estimates suggest the program had small effects on eviction. Combining the event-study and lab-in-the-field results, we estimate a bargaining model and find that one in six evictions are inefficient, of which about 60% are caused by hostility. These forces affect eviction policy: Perverse selection on altruism partially explains the program's small treatment effects.

"The Welfare Effects of Eligibility Expansions: Theory and Evidence from SNAP" (with Jenna Anders), November 2022. Conditionally accepted at *American Economic Journal: Economic Policy*.

We study the U.S. rollout of eligibility expansions in the Supplemental Nutrition Assistance Program. Using administrative data from the U.S. Department of Agriculture, we show that expanding eligibility raises enrollment among the inframarginal (always-eligible) population. Using an online experiment and awn administrative survey, we find evidence that information frictions, rather than stigma, drive the new take-up. To interpret our findings, we develop a general model of the optimal eligibility threshold for welfare programs with incomplete take-up. Given our empirical results and certain modeling assumptions, the SNAP eligibility threshold is lower than optimal.

"Self-Targeting in U.S. Transfer Programs" (with Adam Solomon and Evan J. Soltas), June 2023.

- Honorable Mention: Best Student Paper (ITAX Award), 2023.

Transfer receipt is voluntary and costly, generating "self-targeting" through selective take-up among the eligible. How does self-targeting select on need, and what are its policy implications? We show self-targeting is advantageous in eight U.S. transfers: On average, recipients have lower consumption and lifetime incomes than eligible nonrecipients with similar current incomes. Due to self-targeting, these transfers provide 50 to 75 percent more to the consumption-poorest and lifetime-poorest than would automatic transfers that are distributionally equivalent by income. Self-targeting makes automatic transfers undesirable: We estimate the social benefits of self-targeting are approximately six cents per transfer dollar, generally exceeding the social costs of ordeals.

RESEARCH IN PROGRESS

"Legal Assistance for Evictions: Impacts and Demand" (with Aviv Caspi)

We randomize provision of lawyers to tenants facing eviction in Memphis, Tennessee, who are otherwise seldom represented in court (N = 265 treated and 753 control). Despite landlord-friendly eviction law, providing a lawyer reduces tenant eviction judgment rates within 60 days by 25 percentage points (49% of control). However, attorneys affect judgments only when they can connect tenants to other social services. Once a concurrent emergency rental program expires, effects on judgments are indistinguishable from zero. Attorneys have no distinguishable effects on informal outcomes and bargaining. Baseline surveys

suggest tenants value attorneys' effects on outcomes that are difficult to monetize. Consequently, the program's Marginal Value of Public Funds (MVPF) under a standard approach that monetizes attorneys' effects via calibration is almost an order of magnitude smaller than when we directly elicit participants' incentivized willingness to pay for attorneys (0.3 versus 2.6).

"Preferences for Rights" (with Aviv Caspi and Julia Gilman)

Many debates over provision of in-kind goods appeal to "preferences for rights," a form of non-welfarist preferences — for instance, "right to counsel" for indigent legal defense and "right to health care." We test for preferences for rights, and their relationship to redistributive choices, with incentivized online experiments ($N = 1{,}800$). Participants face choices to allocate health care and legal counsel to tenants facing eviction. Participants exhibit behaviors which preferences for rights rationalize, but which are dominated if preferences were entirely welfarist. The magnitude of non-welfarist behaviors with lawyers and health care exceeds that with comparison goods which are less related to rights (bus passes and YMCA memberships). Those with non-welfarist preferences exhibit "anti-targeting," in which they allocate lawyers and health care more universally than cash or comparison goods. At least 25% of participants are non-welfarist, compared to at most 30% who are welfarist.

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DOCTORAL STUDIES

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DISSERTATION: "The role of personal, social, and political identities in key decision-making and behavior"

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PRIOR EDUCATION

Wellesley College 2016
BA in Economics with Honors
Summa Cum Laude, Phi Beta Kappa Society

CITIZENSHIP USA

GENDER Female

FIELDS

Primary Fields: Behavioral and Labor

Secondary Fields: Education

TEACHING EXPERIENCE

Psychology and Economics (undergraduate, MIT course 14.13) Head Teaching Assistant to Professor Frank Schilbach	2023
Public Finance and Public Policy (undergraduate, MIT course 14.41) Teaching Assistant to Professor Jonathan Gruber	2022
Political Economy and Economic Development (undergraduate and masters, MIT course 14.75/0) Teaching Assistant to Professor Benjamin Olken	2021
Research and Communications in Economics (undergraduate, MIT course 14.33) Teaching Assistant to Ro'ee Levy (post-doc)	2020
The Challenge of World Poverty (undergraduate, MIT course 14.73) Teaching Assistant to Professor Frank Schilbach	2020

RELEVANT POSITIONS

Research Assistant to Professor Amy Finkelstein	2019
Pre-Doctoral Research Fellow with Professor Roland Fryer	2016-18

FELLOWSHIPS, HONORS, AND AWARDS

National Science Foundation Graduate Research Fellowship
Schiff Fellowship for undergraduate thesis in economics, Wellesley College

Research Grants:
J-PAL King Climate Action Initiative (36K, co-primary PI)
J-PAL Social Policy Research Initiative (43K, primary PI)
US HHS, ACF Behavioral Intervention Scholars Grant (25K, primary PI)
NSF Doctoral Dissertation Research Improvement Grant (25K, primary PI)
George and Obie Shultz Fund Grant (23K, primary and co-primary PI)
Strengthening American Democracy Program at Beyond Conflict (10K, co-primary PI)

PROFESSIONAL ACTIVITIES

Referee: *American Economic Review, American Economic Review-Insights*
Service: MIT Economics Application Assistance and Mentoring Program, MIT Economics Diversity, Equity, and Inclusion committee

PUBLICATIONS

"Childhood Confidence, Schooling, and the Labor Market: Evidence from the PSID" (with Lucy Page) *Journal of Human Resources, Forthcoming (Accepted Jul 2022).*
We link over- and under-confidence in math at ages 8-11 to education and employment outcomes 22 years later among the children of PSID households. About twenty percent of children have markedly biased beliefs about their math ability, and beliefs are strongly gendered. Conditional on measured ability, childhood over- and under-confidence predict adolescent test scores, high school and college graduation, majoring or working in STEM, earnings, and unemployment. Across all metrics, higher confidence predicts better outcomes. These biased beliefs persist into adulthood and could continue to affect outcomes as respondents age, since intermediate outcomes do not fully explain these long-run correlations.

"Crowd-out in School-based Health Interventions: Evidence from India's Midday Meals Program" (with Jim Berry, Saurabh Mehta, Priya Mukherjee, and Gauri Kartini Shastry) *Journal of Public Economics,* 2021

"Implementation and Effects of India's National School-based Iron Supplementation Program" (with Jim Berry, Saurabh Mehta, Priya Mukherjee, and Gauri Kartini Shastry) *Journal of Development Economics, 2020*

RESEARCH PAPERS

"Perceived Discrimination at Work" (Job Market Paper)

Minority-group workers in the US understand that discrimination is widespread, and when they experience rejection, observe hard-to-interpret information about the cause. Frequently, they perceive they have been discriminated against. Whether or not discrimination is present, this may exacerbate gaps caused by discrimination if it yields distrust, retaliation, or anticipated further discrimination. I conduct two experiments (N=5,000) in an online labor market to assess how workers form beliefs about experiencing discrimination and how those beliefs affect effort, performance, and future labor supply. I randomly vary the procedures used to make worker-selection decisions—with differential ability to discriminate—and the information workers have about past decisions. When job candidates see decisions that appear consistent with discrimination, many workers infer bias even when they are told that hiring managers (or algorithms) did not know their race and gender. These perceptions have consequences: learning that a manager knew workers' race and gender and previously promoted mostly white men increases perceived discrimination from 1 to 31 percent, lowers retention by 3-6 percent, and increases reservation wages by 9 percent. Thus, employers could shrink retention gaps and boost productivity by reducing perceptions of discrimination, but eliminating such perceptions will likely be unattainable if minority groups remain under-represented. Objectively neutral procedures cannot alone eradicate perceptions of discrimination when intuitive inference suggests otherwise.

"The Narrative of Policy Change: Fiction Builds Political Efficacy and Climate Action," (with Lucy Page and James Walsh) *(Submitted)*

Can fictional narratives contribute to building political momentum? In an online experiment (N≈6,000), learning about the Inflation Reduction Act (IRA) strengthens beliefs about government responsiveness to citizen action by only 0.07sd. Watching a short, fictional story about political climate advocacy as a loose backstory to the IRA yields much larger effects on beliefs (0.5sd). While IRA information alone does not affect climate advocacy, the story increases information-gathering about climate marches by 54 percent and donations to lobbying organizations by 19 percent. We show evidence that beliefs and emotions may drive this effect.

"Frictions to bipartisan policy-making: Evidence from citizen climate advocacy," (with Lucy Page)

Policy change often requires bipartisan support, but many grassroots movements skew heavily towards a single party. We study the constraints to building broader citizen coalitions in the context of the primarily liberal US climate movement. In a series of online experiments with 25,000 participants, we connect Democrats with Americans across the political spectrum (all of whom believe climate change is human-caused) to understand whether and how they work to expand the political climate coalition. Democrats are motivated to engage others in climate action—they are 10 percent more likely to contact Congress when doing so can mobilize others' action. Even while 87% of Democrats agree that liberals should try to engage conservatives in climate action, however, they are 27% more likely to invite other liberals than to reach across the political aisle. This gap does not seem to arise from Democrats' own negative feelings towards counter-partisans. Rather, it can be explained by Democrats' correct beliefs that their invitation will have only about half as much impact on conservatives' action. This belief gap arises in part from second-order affective polarization: Democrats expect that conservatives would respond more to invitations that did not identify them as liberal. These constraints suggest that achieving bipartisan legislative support for climate policy may require parallel liberal and conservative movements.

RESEARCH IN PROGRESS

"The peer effects of coming out: Effects of exposure to more LGBTQ-identifying students on identification as LGBTQ, victimization, attendance, and achievement"

In ongoing analysis, I use data from a large US school district linking students' self-reported identification as LGBTQ and reports of school victimization to administrative data from 2014-2019. Using a fixed-effects design common in the peer effects literature, I use variation across grades, within-schools in the fraction of high school students who identified as LGBTQ in middle school to identify the effects of having more LGBTQ-identifying peers.

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DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
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DISSERTATION: "Essays in Environmental and Healthcare Market Design"

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PRIOR EDUCATION

Yale University 2017
B.S., Applied Mathematics and Economics, *summa cum laude*

CITIZENSHIP USA, Canada, Germany **GENDER:** Female

FIELDS

Primary Fields: Environmental Economics, Public Economics, Industrial Organization

Secondary Fields: Market Design, Health Economics

RELEVANT POSITIONS

Research Assistant to Professor Amy Finkelstein 2017-2018
Research Assistant to Professor Aleh Tsyvinski 2016-2017

FELLOWSHIPS, HONORS, AND AWARDS

Martin Family Society of Fellows for Sustainability	2023-2024
Best Student Paper Award, Urban Economics Association	2023
NBER Pre-Doctoral Fellowship in Aging and Health Research	2021-2023
George and Obie Shultz Fund (3x)	2021-2023
MIT Center for Real Estate, Young Researcher Seed Award	2021
C. Lowell Harriss Dissertation Fellowship	2020
National Science Foundation Graduate Research Fellowship	2018-2023
MIT Department of Economics Fellowship	2018-2020
Russell Henry Chittenden Prize	2017
Wrexham-Heinz Award	2017
Dickerman Prize	2017
Bishop Berkeley Prize	2017
Tobin Scholar Award	2017
Phi Beta Kappa (elected Junior Year)	2016

PROFESSIONAL ACTIVITIES

Referee: *American Economic Review: Insights, American Economic Journal: Economic Policy*

RESEARCH PAPERS

"Additionality and Asymmetric Information in Environmental Markets: Evidence from Conservation Auctions" (Job Market Paper)
(with Karl M. Aspelund)

Market mechanisms aim to deliver environmental services at low cost. However, targeting incentives to participants whose conservation actions are marginal to the program, referred to as "additional" participants, is complicated by asymmetric information. We investigate this market design challenge in the world's largest auction mechanism for ecosystem services, the Conservation Reserve Program, with a dataset linking auction bids and satellite-derived land use. We use a regression discontinuity design to show that three of four marginal winners of the auction are not additional. Moreover, we find that the heterogeneity in counterfactual land use introduces adverse selection in the market. We then develop and estimate a joint model of bidding and land use to quantify the implications of this market failure for the performance and design of environmental procurement mechanisms and competitive offset markets. Both status quo and standard cost-minimizing mechanisms underperform implementable alternatives that treat landowners asymmetrically by the incentive's expected impact on conservation. Because they are less additional, the lowest cost providers of environmental services are not always the highest social value.

"Waiting or Paying for Healthcare: Evidence from the Veterans Health Administration"

Healthcare is often allocated without prices, sacrificing efficiency in the interest of equity. Wait times then typically serve as a substitute rationing mechanism, creating their own distinct efficiency and distributional consequences. I study these issues in the context of the Veterans Health

Administration (VA) healthcare system, which provides healthcare that is largely free but congested, and the Choice Act, a large-scale policy intervention that subsidized access to non-VA providers to reduce this congestion. Using variation in Choice Act eligibility in both patient-level and clinic-level difference-in-differences designs, I find that the price reduction for eligible veterans led to substitution away from the VA, an increase in overall healthcare utilization and spending, and reduced wait times at VA clinics in equilibrium. I then use the policy-induced price and wait time variation to estimate the joint distribution of patients' willingness-to-pay and willingness-to-wait. I find that rationing via wait times redistributes access to healthcare to lower socioeconomic status veterans, but at a large efficiency cost (-24%). This equity-efficiency trade-off is steep: rationing by wait times is an inefficient form of redistribution across a range of equity objectives. By contrast, I find that a coarsely targeted, modest increase in copayments increases consumer surplus by more than the Choice Act, at lower cost to the VA, while disproportionately benefitting low-income veterans.

"The Effects of Floodplain Regulation on Housing Markets"
(with Abigail Ostriker)

We investigate the effects of housing regulations designed to correct a wedge between privately- and socially-optimal construction in areas at risk of flooding in Florida. Using a spatial regression discontinuity around regulatory boundaries and an event study around the policy's introduction, we document that floodplain regulation reduces new construction in high-risk areas and increases the share of newly-built houses that are elevated. Embedding these effects in a model of residential choices with elastic housing supply, we find that the policy reduces expected flood damages by 60%. One- quarter of this reduction is driven by relocation of new construction to lower-risk areas, and three-quarters is driven by elevation of houses remaining in risky areas. However, this second-best policy achieves at best about 10% of possible welfare gains because of poor targeting. It overcorrects in many areas, inducing more consumers to elevate and relocate than is socially-optimal, while still allowing inefficiently-high construction in the riskiest places. By contrast, a flexible corrective tax on flood risk would achieve welfare gains of more than $2,700 per newly-developed house.

RESEARCH IN PROGRESS

"Ex-Ante Moral Hazard and Risk-Based Contracting in Wildfire Insurance"
(with Abigail Ostriker)

Thinning vegetation reduces wildfire risk, but contracting on this homeowner action has historically been difficult for insurers and regulators due to asymmetric information. In theory, this could lead to increased wildfire risk and inefficiency in insurance markets. We test for the presence of this form of ex-ante moral hazard with a unique dataset measuring vegetative cover (at 60cm

resolution) around nearly two million homes in California and an empirical strategy exploiting insurance pricing regulations. Over the time period of our data coverage (2014-2022), monitoring technology was developed and adopted differentially by insurers. In 2022, California mandated that wildfire safety actions be incorporated into the design of insurance contracts. Our research will analyze the extent to which a failure to price on risk-reducing actions can lead to inefficiencies that hinder adaptation to climate change, and the impacts of technology and regulation on wildfire risk, insurance prices and coverage, and consumer and social welfare.

"Consumer Direction or Consumer Protection: Evidence from California Home Care"
(with David Autor, Amy Finkelstein, and Matthew Notowidigdo)

Delivering cost-effective and convenient supportive services that allow the elderly and disabled to live safely at home is an important policy goal in the face of an aging population. However, the market for publicly-financed home care is characterized by a complex and varied set of regulations limiting what care can be provided and who can provide it. Are these regulations protecting consumers or simply limiting their choices? We investigate this question in the context of a large-scale deregulated consumer-directed home care program in California, which provides more than 500,000 beneficiaries complete freedom over who to hire and which tasks providers can perform. We leverage rich data on provider arrangements and performed tasks to estimate preferences for care when choices are unrestricted. We then will use an examiner design to test for the health effects of allowing this free choice. Together, our results will shed light on whether there are opportunities to (re)-design markets for supportive services that jointly improve consumer welfare and health outcomes.

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PRIOR EDUCATION

Seoul National University 2018
Bachelor in Economics, Mathematics, and Industrial Engineering
Summa Cum Laude

CITIZENSHIP Republic of Korea **GENDER:** Male

LANGUAGES English (fluent), Korean (native)

FIELDS Primary Fields: International Trade

Secondary Fields: Macroeconomics, Urban Economics

TEACHING EXPERIENCE

Introduction to Macroeconomics (undergraduate, MIT course 14.02) Teaching Assistant to Professors Martin Beraja, Ricardo Caballero, and James Poterba	2020-22
Microeconomic Theory and Public Policy (undergraduate, MIT course 14.03) Teaching Assistant to Professor Nicolas Lambert	2021
International Economics I (graduate, MIT course 14.581) Teaching Assistant to Professors David Atkin, Arnaud Costinot, and Dave Donaldson	2020

RELEVANT POSITIONS

MIT Trade Lunch organizer	2022-23

FELLOWSHIPS, HONORS, AND AWARDS

MIT Department of Economics Fellowship	2018-20
Doctoral Study Abroad Scholarship, Korea Foundation for Advanced Studies	2018-23
Presidential Award, Seoul National University	2018
National Merit Scholarship for Science and Engineering	2011-14

RESEARCH PAPERS

"Sectoral Shocks and Labor Market Dynamics: A Sufficient Statistics Approach" (Job Market Paper) (with Ryungha Oh)

In this paper, we develop a sufficient statistics approach to evaluate the impact of sectoral shocks on labor market dynamics and welfare. Within a broad class of dynamic discrete choice models that allows for arbitrary persistent heterogeneity across workers, we show that knowledge of steady-state sectoral worker flows over different time horizons is sufficient to evaluate the labor supply responses to shocks as well as their aggregate welfare consequences. We also establish analytically that assuming away persistent worker heterogeneity, a common practice in the existing literature, necessarily leads to overestimation of steady-state worker flows, resulting in systematic biases in counterfactual predictions. As an illustration of our sufficient statistics approach, we revisit the consequences of the rise of import competition from China. Using US panel data to measure steady-state worker flows, we conclude that labor reallocation away from manufacturing is significantly slower, and the negative welfare effects on manufacturing workers are much more severe than those predicted by earlier models without persistent worker heterogeneity.

"What Causes Agglomeration of Services? Theory and Evidence from Seoul" (with Ryungha Oh) *Awarded Best Student Paper Prize (2022), by the Urban Economics Association*

Why are economic activities concentrated in space? What are the policy implications of this concentration? And how do we expect it to change in the future? We revisit these classic questions in the context of non-tradable services, such as restaurants and retail, in Seoul. To understand the concentration of services, we first causally identify positive spillovers across services stores. We microfound these spillovers by incorporating the trip-chaining mechanism—whereby consumers make multiple purchases during their services travel—into a quantitative spatial model that endogenizes the spatial distribution of services. When calibrated to an original survey on trip chaining, this mechanism explains about one-third of the observed concentration. However, unlike standard agglomeration mechanisms, it does not lead to inefficiency nor it exacerbates welfare inequality. Finally, we show that spatial linkages of services consumption play a crucial role in shaping the impact of the rise of work from home and of delivery services on the distribution of services.

"Persistent Noise, Feedback, and Endogenous Optimism: A Rational Theory of Overextrapolation"

I propose a noisy rational expectations model with persistent noise. Firms learn about economic conditions from signals, and the noise in the signals is persistent rather than i.i.d. over time. Firms rationally account for the persistence of noise and update their interpretations of signals based on ex post observations of true economic conditions. I show that this process gives rise to a novel mechanism by which optimism arises endogenously, which in turn amplifies or dampens the effects of underlying shocks. In particular, this model can generate the delayed overreaction in firms' expectations documented in the literature, when firms are better informed about idiosyncratic shocks relative to aggregate shocks. Moreover, strategic complementarity between firms and the resulting higher-order optimism further strengthen my mechanism. Finally, I distinguish empirically my rational theory of optimism from behavioral theories by exploiting the difference in the degree of overextrapolation between consensus and individual forecasts.

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DOCTORAL STUDIES

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DISSERTATION: "Essays on the Public Finance of Housing Policy"

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PRIOR EDUCATION

University of Oxford — 2018
MPhil, Economics

Princeton University — 2016
AB, Economics, *summa cum laude*

CITIZENSHIP USA **GENDER** Male

FIELDS

Primary Field: Public Finance
Secondary Fields: Urban Economics, Labor Economics

TEACHING EXPERIENCE

Public Finance & Public Policy (UG, 6.5/7.0 average rating) — 2020
Teaching Assistant to Prof. Jonathan Gruber

RELEVANT POSITIONS

U.S. Council of Economic Advisers Staff Economist to Chair Cecilia Rouse	2021–22
Research Assistant for Prof. David Autor	2017–18

FELLOWSHIPS, HONORS, AND AWARDS

Jerry A. Hausman Graduate Dissertation Fellowship, MIT	2023–24
Honorable Mention for Best Student Paper, International Institute of Public Finance	2023
George and Obie Shultz Fund, MIT	2021–2022
NBER Center for Aging and Health Research Pilot Grant (with Gopi Shah Goda)	2022
C. Lowell Harriss Dissertation Fellowship, Lincoln Institute of Land Policy	2020–21
Best Student Paper, Urban Economics Association	2020
National Science Foundation Graduate Research Fellowship	2018–23
Rhodes Scholarship	2016–18
Burton G. Malkiel '64 Senior Thesis Prize in Finance, Princeton University	2016

PROFESSIONAL ACTIVITIES

Referee: *American Economic Journal: Applied Economics, American Economic Journal: Economic Policy, American Economic Review, American Economic Review: Insights, Industrial Relations, International Economic Review, Journal of Housing Economics, Journal of Public Economics, Journal of Politics, Journal of Urban Economics, Regional Science and Urban Economics, Quarterly Journal of Economics*

Service:

Mentor, Undergraduate Research Opportunity Program	2020–21
MIT Kaufman Teaching Certificate Program	2020
Organizer, MIT Third-Year Lunch (with Charlie Rafkin)	2020

External Presentations:

Freddie Mac	2024 (invited)
International Institute on Public Finance	2023
NBER Summer Institute	2022
Congressional Budget Office	2022
U.S. Department of Labor	2022
Stanford Institute for Economic Policy Research	2022
NYU Furman Center for Real Estate and Urban Policy	2020
Urban Economics Association	2020
Stanford Institute on Theoretical Economics	2019
Wallis Institute of Political Economy (co-author)	2019

PUBLICATIONS

"A Welfare Analysis of Occupational Licensing in U.S. States" (with Morris M. Kleiner), *Review of Economic Studies,* Vol. 90 (October 2023), 2481–2516.

We assess the welfare consequences of occupational licensing for workers and consumers. We estimate a model of labor market equilibrium in which licensing

restricts labor supply but also affects labor demand via worker quality and selection. On the margin of occupations licensed differently between U.S. states, we find that licensing raises wages and hours but reduces employment. We estimate an average welfare loss of 12 percent of occupational surplus. Workers and consumers respectively bear 70 and 30 percent of the incidence. Higher willingness to pay offsets 80 percent of higher prices for consumers, and higher wages compensate workers for 60 percent of the cost of mandated investment in occupation-specific human capital. Welfare effects appear more favorable in occupations in which licensing is more common.

"The Price of Inclusion: Evidence from Housing Developer Behavior," *Review of Economics and Statistics*, forthcoming. Awarded Best Student Paper, 2020 Urban Economics Association.

In many cities, incentives and regulations lead developers to integrate low-income housing into market-rate buildings. How cost-effective are these policies? I study take-up of a tax incentive in New York City using a model in which developers trade off between tax savings and pre-tax income. I estimate the model using policy variation and microdata on all development from 2003 to 2015. The citywide marginal fiscal cost is $1.6 million per low-income unit. Differences in neighborhoods, not developer incidence, explain the cost premium over other housing programs. Weighing costs against external estimates of neighborhood effects, I find middle-class neighborhoods offer "opportunity bargains."

"The Impacts of Covid-19 Absences on Workers" (with Gopi Shah Goda), *Journal of Public Economics*, Vol. 222 (June 2023): 104889.

We show that Covid-19 illnesses and related work absences persistently reduce labor supply. Using an event study, we estimate that workers with week-long Covid-19 absences are 7 percentage points less likely to be in the labor force one year later compared to otherwise-similar workers who do not miss a week of work for health reasons. Our estimates suggest Covid-19 absences have reduced the U.S. labor force by approximately 500,000 people (0.2 percent of adults) and imply an average labor supply loss per Covid-19 absence equivalent to $9,000 in earnings, about 90 percent of which reflects losses beyond the initial absence week.

"A Natural Experiment on Discrimination in Elections" (with David E. Broockman), *Journal of Public Economics*, Vol. 188 (August 2020): 104201.

We exploit a natural experiment to study discrimination in elections. In Illinois Republican presidential primaries, voters vote for delegates bound to presidential candidates, but delegates' names convey information about their race and gender. We identify discrimination from variation in vote totals among delegates bound to the same presidential candidate and who face the same voters. Examining delegate vote totals from 2000 to 2016, we estimate nonwhite delegates receive 9 percent fewer votes. We find essentially no gender discrimination. Negligible incentives for statistical discrimination, costs to preferred presidential candidates,

and heterogeneity are consistent with an interpretation of this behavior as taste-based.

RESEARCH PAPERS

"Tax Incentives and the Supply of Low-Income Housing" (Job Market Paper)

Subsidies to developers are a core instrument of housing policy. How do they affect housing markets, and who benefits? I assess their impacts and incidence with a dynamic model and new data on developers competing for Low-Income Housing Tax Credits. I estimate the model using three sources of variation: quasi-random assignment of subsidies, shocks to subsidy generosity, and nonlinear incentives to reduce rents. I find that, due to displacement of unsubsidized housing, subsidies add few net units to the housing stock and instead reallocate units progressively. Households benefit from developer competition for subsidies, but competition also results in high entry costs, and developers still capture nearly half of the welfare gains. In counterfactuals, a stylized voucher program generates the same household benefits as developer subsidies at less fiscal cost.

"Eviction as Bargaining Failure: Hostility and Misperceptions in the Rental Housing Market" (with Charlie Rafkin)

Formal eviction from rental housing is widespread and costly, spurring interest in anti-eviction policies. The desirability of policy intervention depends on whether evictions come from efficient non-bargaining or inefficient bargaining failures. We test for two causes of bargaining failure—hostile social preferences and misperceptions—by conducting lab-in-the-field experiments in Memphis, Tennessee with 1,808 tenants and 373 landlords facing eviction. We find that 25–39% of relationships engage in dominated hostile behaviors in real-stakes Dictator Games. Both parties misperceive court or bargaining payoffs in ways that undermine bargaining. Motivated by the possibility of inefficient eviction, we evaluate an emergency rental assistance program in Memphis using administrative data. Event-study estimates suggest the program had small effects on eviction. Combining the event-study and lab-in-the-field results, we estimate a bargaining model and find that one in six evictions are inefficient, of which about 60% are caused by hostility. These forces affect eviction policy: Perverse selection on altruism partially explains the program's small treatment effects.

"Self-Targeting in U.S. Transfer Programs" (with Charlie Rafkin and Adam Solomon). Runner-Up for Best Student Paper (ITAX Award) at the 2023 International Institute of Public Finance.

Transfer receipt is voluntary and costly, generating "self-targeting" through selective take-up among the eligible. How does self-targeting select on need, and what are its policy implications? We show self-targeting is advantageous in eight U.S. transfers: On average, recipients have lower consumption and lifetime incomes than eligible nonrecipients with similar current incomes. Due to self-targeting, these transfers provide 50 to 75 percent more to the consumption-

poorest and lifetime-poorest than would automatic transfers that are distributionally equivalent by income. Self-targeting makes automatic transfers undesirable: We estimate the social benefits of self-targeting are approximately six cents per transfer dollar, generally exceeding the social costs of ordeals.

RESEARCH IN PROGRESS

"Integration Versus Supply: Inclusionary Zoning in Greater Boston" (with Paul S. Willen and Lauren Lambie-Hanson)

This project studies the trade-off between social integration and housing supply in inclusionary-zoning (IZ) mandates for low-income units in new housing. We exploit notches in IZ regulations across Boston-area municipalities to estimate housing supply. We will also leverage city-census data on IZ-unit demographics to estimate the integration benefits. We intend to combine our results with a model of housing demand to conduct a welfare and distributional analysis of IZ.

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DOCTORAL STUDIES

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PRIOR EDUCATION

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Master of Advanced Studies in Pure Mathematics and Mathematical Statistics (first class)

Massachusetts Institute of Technology — 2016
B.S. in Theoretical Mathematics

CITIZENSHIP United States **GENDER:** Male (he/him)

LANGUAGES English, Tamil, French (limited)

FIELDS Primary Fields: Econometrics

Secondary Fields: Statistics, Machine Learning

TEACHING EXPERIENCE

Graduate of MIT's Kauffman Teaching Certificate Program	2019
14.380 Statistical Methods in Economics *(median rating: 6.0/7)* Teaching Assistant to Prof. Tetsuya Kaji	2022
14.32 Econometrics (*median rating: 6.0/7)* Teaching Assistant to Prof. Tetsuya Kaji	2022
14.387 Machine Learning and Econometrics Curriculum Consultant to Prof. Victor Chernozhukov	2020
14.385 Nonlinear Econometrics Teaching Assistant to Profs. Whitney Newey and Alberto Abadie	2020
14.15 Networks (joint w/ Computer Science) Teaching Assistant to Prof. Alexander Wolitzky	2019-20
6.042 Introduction to Mathematics for Computer Science Teaching Assistant to Prof. Albert Meyer (as undergraduate)	2015

RELEVANT POSITIONS

Amazon Science Post-Doc (with Profs. Guido Imbens and Thomas Richardson). Topic: Experimental Design in Marketplaces	2022-23
Graduate Research Assistant for Blueprint Labs (with Profs. Joshua Angrist and Parag Pathak). Topic: School Evaluation in Centralized Matching Markets	2019-21
Amazon Applied Science Intern (with Prof. Victor Chernozhukov). Topic: Neural Networks for Hedonic Demand Modeling	2019-20
Pre-Doctoral Research Assistant to Profs. Joshua Angrist, Pierre Azoulay, and Glenn Ellison	2016-17
Pre-Doctoral Research Assistant to Prof. Frank Schilbach	2016
Software Engineer Intern, Applied Predictive Technologies	2015

FELLOWSHIPS, HONORS, AND AWARDS

MIT Jerry A. Hausman Graduate Dissertation Fellowship

PROFESSIONAL ACTIVITIES

Invited Talks/Presentations: Topics in Neural Information Processing Systems Conference (2x), MIT Conference on Digital Experimentation (2x), Symposium on the Foundations of Responsible Computing.

Invited participant: University of Chicago Center for Applied AI, Machine Learning in Economics Summer Institute, University of Bocconi High-Dimensional Statistics Summer School (Topic: Random Graphs and Statistical Inference in Networks)

Reviewer, 23rd International Conference on Artificial Intelligence and Statistics

Co-coordinator, High Dimensional Probability & Statistics Reading Group, MIT

PUBLICATIONS

"Synthetic Combinations: A Causal Inference Framework for Combinatorial Interventions," ***To appear in Proceedings of the 37th Conference on Neural Information Processing Systems*** **(NeurIPS, 2023).** (with Abhineet Agarwal and Anish Agarwal)

"Can Calibration and Equal Error Rates be Reconciled?" ***Proceedings of the 2nd Symposium on Foundations of Responsible Computing*** **(FORC 2021).** (with Claire Lazar-Reich)

"Localization, Convexity and Star Aggregation," ***Proceedings of the 35th Conference on Neural Information Processing Systems*** **(NeurIPS, 2021).**

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"Higher Bruhat Orders in Type B." ***Electronic Journal of Combinatorics, 23(3), 13th ser.,*** **2017. (**with Seth Shelley-Abrahamson)

RESEARCH PAPERS

"Kernel Ridge Regression Inference, with Applications to Preference Data" (Job Market Paper) (with Rahul Singh)

We provide finite-sample uniform inference and confidence bands for kernel ridge regression (KRR), a widely-used non-parametric regression estimator for general data including rankings, images, and graphs. Despite the prevalence of these data—e.g., ranked preference lists in school assignment—the inferential theory of KRR was not fully known, limiting use in economics and other scientific domains. We provide sharp, uniform confidence sets for KRR, which shrink at nearly the minimax rate, for general regressors. To conduct inference, we develop an efficient bootstrap procedure that uses symmetrization to cancel bias and limit computational overhead. To justify the procedure, we derive new, finite-sample, uniform Gaussian and bootstrap couplings for partial sums in a reproducing kernel Hilbert space (RKHS), implying strong approximation for empirical processes indexed by the RKHS unit ball with logarithmic dependence on the covering number. Simulations verify coverage. We use our procedure to construct a novel test for match effects in school assignment, a significant question in education economics with implications for school choice.

"Hedonic Prices and Quality-Adjusted Price Indices Powered by AI" (with Pat Bajari, Victor Chernozhukov, Ramon Huerta, Manoj Manukonda, and Jin Wang) *arxiv:2305.00044,* 2023. *Submitted.*

We develop empirical models that can process large amounts of unstructured product data (text, images, prices, quantities) and output accurate hedonic price estimates and derived indices. To accomplish this, we generate abstract product attributes (a.k.a. embeddings) from text descriptions and images using deep neural networks. We then use these attributes to estimate the hedonic price function. To demonstrate the performance of this method, we apply the models

to Amazon's data for first-party apparel sales, and estimate hedonic prices. The resulting models have a very high out-of-sample predictive accuracy, with R^2 ranging from 80-90%. Finally, we construct the AI-based hedonic Fisher price index, chained at the year-over-year frequency, and contrast the it with the CPI and other indices.

"Frank Wolfe Meets Metric Entropy: Domain-specific and Average Case Lower Bounds for Conditional Gradient Algorithms" *arXiv:2205.08634,* 2022. *Submitted.*

The Frank-Wolfe algorithm has seen a resurgence in popularity due to its ability to efficiently solve constrained optimization problems in machine learning and high-dimensional statistics. We provide a general technique to establish domain specific and easy-to-estimate lower bounds for Frank-Wolfe and its variants using the metric entropy of the domain. Notably, we show that a dimension-free linear upper bound must fail not only in the worst case, but in the average case: for Gaussian or spherical random polytopes in $\mathbf{R}^d$ with poly(d) vertices, Frank-Wolfe requires up to $\Omega(d)$ iterations to achieve a $O(1/d)$ error bound, with high probability. We also establish this phenomenon for the nuclear norm ball.

RESEARCH IN PROGRESS

"Correlated Randomization Designs" (with Guido Imbens, Thomas Richardson, Lorenzo Masoero, and James McQueen)

We study randomized experimentation under linear, local network interference, and characterize the MSE of the least-squares estimator for the main effect as a function of the randomization design. This motivates us to study correlated designs, which relax clustered randomized experiments to allow for arbitrary correlation between treatment variables. We aim to characterize when the gains from these designs are significant, then study algorithms to estimate the optimal correlated design and sample from the resulting distribution over treatment variables.

"Stability and Efficiency of Random Serial Dictatorship" *arXiv:2110.07024,* 2021.

Parsimonious "cutoff" representations of matching markets are widely used in market design theory and in empirical work on school effectiveness. However, many real-world school choice markets have a number of schools that is roughly the square root of the number of students, which is not captured by existing theory. In this paper, I prove that the "cutoff representation" of the random serial dictatorship (RSD) mechanism remains valid in markets where the number of schools is rapidly growing and student preferences are arbitrary, with quantitative bounds. Unlike prior work on the subject, which considers replica economies or stable preference distributions, I derive results for arbitrary, even adversarial sets of preferences, using tools from randomized algorithms and discrete probability. In ongoing work, I study implications for the asymptotic efficiency of RSD.

"Discrete Choice, Sparse Recovery, and Latent Nested Logit" (with Francesca Molinari and Devavrat Shah)

Random utility models are a cornerstone of applied econometrics and industrial organization, and find use across many fields including marketing, civil engineering, and the design of recommender systems. Simultaneously, in settings with many choices and many individuals, it is common to use algorithms such as graph-based collaborative filtering and low-rank matrix estimation, which—although extensively studied in computer science and statistics—are not grounded in utility theory. By studying these modern algorithms in the context of the random utility model, this project aims to (1) show that these methods can be used to rigorously answer new questions with discrete choice data and (2) refine existing statistical theory that characterizes how these algorithms perform. As a prominent example, we design a graph-based collaborative filtering algorithm to recover latent nests in the popular nested logit model.

"Plug-in Empirical Welfare Maximization" (with Liyang Sun)

We study two related but separate problems in econometrics and policy analysis: designing welfare-maximizing targeted treatment policies, and estimation of the conditional average effect function (CATE). Extending results on binary classification, we note that predicting treatment effects under a convex loss may be viewed as a convex relaxation of the welfare maximization problem, and we work to characterize predictors with a desirable plug-in property: they yield approximately optimal policies, while consistently estimating the CATE. This perspective gives an efficient way of computing the empirical welfare maximizing policy, which is a practical challenge, as well as important guidance on how one should model the CATE, since different convex losses imply different bounds on a policy's optimality.

"Combining Models by Alternating Estimation" (with Victor Chernozhukov)

In applied economic research, it is often desirable to combine a principled, "small" model based upon economic theory, with a flexible "large" model which can improve model fit (e.g., a machine learning model). We design a general procedure based upon classical backfitting and model selection to efficiently combine two models in an additive manner. We study its convergence properties and statistical efficiency. Finally, we illustrate applications to double machine-learning and to discrete choice modeling.

MIT Economics

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DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
PhD in Economics, June 2024
DISSERTATION: "Essays on Inequality in Cities"

DISSERTATION COMMITTEE AND REFERENCES

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PRIOR EDUCATION

Stanford University 2018
BA in Economics, *with Honors and Distinction*
BS in Applied Mathematics, *with Distinction*

CITIZENSHIP USA **GENDER:** Female

LANGUAGES English (Native), Mandarin, Arabic (Intermediate), French (Advanced)

FIELDS

Primary Fields: Labor, Trade
Secondary Fields: Urban, Economic History

TEACHING EXPERIENCE

14.04 Intermediate Microeconomics (MIT)	2020
Teaching Assistant to Professor Robert Townsend	
14.03 Microeconomics for Public Policy (MIT)	2020
Teaching Assistant to Professor Nicolas Lambert	
Econ 50 Intermediate Microeconomics (Stanford)	2016
Teaching Assistant to Professor Chris Makler	

RELEVANT POSITIONS

Economist at U.S. Census Bureau	2020-24
Research Assistant to David Autor	2019
Research Assistant to Rebecca Diamond and Petra Persson	2016-17
Research Assistant at the Council of Economic Advisers	2016
Research Assistant to Matthew Gentzkow	2015-16

FELLOWSHIPS, HONORS, AND AWARDS

Institute for Humane Studies Fellowship	2023
C. Lowell Harriss Dissertation Fellowship, Lincoln Institute	2023
Graduate Women of Excellence, MIT	2023
George and Obie Shultz Fund Grant (x3), MIT	2020, 2023
Graduate Student Council Teaching Award in the School of Humanities, Arts and Social Sciences (SHASS), MIT	2021
National Science Foundation Graduate Research Fellowship	2018-23
Department of Economics Graduate Fellowship, MIT	2018-20
David M. Kennedy Thesis Prize, Stanford (Best Thesis in the Social Sciences)	2018
Firestone Medal, Stanford (Best Thesis in Economics)	2018
Phi Beta Kappa, Stanford (Elected Junior Year)	2017
R. Richard Hodge Undergraduate Scholarship, Stanford	2015-17

PROFESSIONAL ACTIVITIES

Referee: *American Economic Journal: Applied Economics, Econometrica, Journal of Public Economics*

Conferences & Presentations

2023: RUSH (Regional/Urban/Spatial/Housing) Brownbag, NBER Economics of Transportation Spring Meeting, Urban Economics Association Summer School, NBER Summer Institute (Urban), Census Bureau, Harvard/Boston University Economic History Workshop, North American Urban Economics Association Meetings

2022: European Urban Economics Association Meetings, Jerusalem Advanced School in Economic Theory for International Economics, Rising Scholars Chicago Booth, Census Bureau

2020: Boston University Women in Economics Workshop

Organizer, Applied Micro/Labor Lunch at MIT	2020-21
Organizer, RUSH (Regional/Urban/Spatial/Housing) Brownbag	2022-23

RESEARCH PAPERS

Unequal Access: Racial Segregation and the Distributional Impacts of Interstate Highways in Cities (Job Market Paper)

This paper investigates the impact of the largest infrastructure project in American history—the Interstate highway system—on racial inequality and the role of institutional segregation in its disparate incidence. To evaluate the distributional impacts, I develop a general equilibrium spatial framework that incorporates empirical estimates using novel dissaggregated commute flows from Census microdata in 1960 and 1970 for 25 cities. I show that highways generated substantial costs from environmental harms on adjacent areas as well as benefits from reductions in commute times. In the urban core, costs outweigh benefits as proximity to highways is greater and commute time reductions are lower since connectivity improves predominantly in remote suburbs. I find that the initial concentration of the Black population in central areas and their low mobility away are key contributors to their welfare losses from the interstate highway system. Exclusionary institutions, delineated using redlining maps, account for most of their concentration rather than sorting on housing prices or preferences for racial composition. These institutional barriers further limit their spatial mobility outwards. When barriers are removed and Black households are provided access beyond central neighborhoods, the welfare gap by race closes by more than half and the Black population experiences welfare gains of 1% rather than losses of -1% from interstate highways.

Transportation as Place-Based Policy and Intergenerational Mobility by Race

Place-based policies are often promoted to improve local economic opportunity but, at large scale, can trigger general equilibrium (GE) responses of household migration that alters the peer composition of neighborhoods (1) directly targeted by policy and (2) indirectly impacted through migration. I study these equilibrium effects in the context of the interstate highway system, a transformative infrastructure project for U.S. cities. I use novel measures of intergenerational mobility covering the universe of 57 million children born between 1964-1979 for the period after interstate construction. With detailed location and income spanning 1974 to 2018 from administrative data, I implement an extension of the movers design to measure the relationship between neighborhood characteristics affected by highways and causal impacts of neighborhoods on children's outcomes. Areas with improvements in commuting access from highway construction experienced increases in average income and inflows of higher-educated, higher-occupational status, and White households. Related to these neighborhood changes, both Black and White children who grow up in areas with higher average income and higher status peers fare better in adulthood. I incorporate these GE forces into a spatial equilibrium framework to quantify the aggregate consequences of interstate highways on intergenerational mobility.

The Long Run Consequences of Manufacturing Decline on Migration and Children's Outcomes (with Martha Stinson and Sean Wang)

We study the channels through which changes in local economic conditions during early childhood affect long run outcomes for children from differing economic backgrounds. We exploit geographic variation across counties in the decline of manufacturing employment during the 1979-1984 period with microdata from the Longitudinal Business Database. To assess the exogeneity of local labor market shocks, we construct additional shocks by combining industry-level energy intensity with spikes in oil prices as a result of the 1979 energy crisis. With detailed administrative and survey data that trace the full trajectory of the children's lives, we measure how these local changes impact educational attainment, income, and the quality of the firm of employment in the modern day. We explore how migration of parents away from counties experiencing declines and changes in parental income during childhood are central mediators for our findings.

Intergenerational Linkages between Historical IRS 1040 Data and the Numident: 1964-1979 Cohorts (with Martha Stinson)
Census Bureau Center for Economic Studies (CES) Technical Note

We construct novel parent-child linkages between the universe of parent tax filers in IRS 1040 forms in 1974 and 1979 and the universe of children from the Census Numident in the cohorts of 1964 to 1979. Variables used for matching are parent names of children and names of parent tax filers, which are obtained from a restricted name file provided by the Social Security Administration. Applying name-matching techniques that incorporate supervised learning methods, we flexibly compare parent names and disambiguate parent-to-parent matches. To feasibly conduct the matching for a large set of comparisons, we employ parallel computing on Amazon Web services. This report documents the iterative process for identifying matches and the algorithm that is used for assessing the likelihood of a match. We provide match rates for different demographic groups and validate the accuracy of the linkages.

Intergenerational Linkages between the 1940 Full Count Census and the Numident: 1930-1940 Cohorts (with Martha Stinson)
Census Bureau Center for Economic Studies (CES) Technical Note

We expand the coverage of Protected Identification Keys (PIKs) for the universe of children in the cohorts of 1930-1940 in the 1940 Full Count Census. Parents and children are recorded together in the 1940 Census, so we assign three sets of names to link children in the 1940 Census to children in the Census Numident: father's name, mother's name, and child's name. Location of birth and year of birth are additional matching variables. We document the iterative process for matching children and our approach to addressing name changes for women. The matching is conducted with parallel computing on Amazon Web services for men and women separately. With these linkages, we measure intergenerational mobility using IRS 1040 forms in 1974 and 1979

that report income at mid-life for these cohorts. Finally, we compare our linkages to previously constructed PIK linkages to compute how many additional matches are recovered using our machine learning algorithm and verify the accuracy of the links. Match rates are reported by gender and race.

RESEARCH IN PROGRESS

Municipal Coordination, Zoning, and Inequality in Public Goods
(with Vincent Rollet)

We study the political economy of local zoning decisions and its impact on public goods provision by integrating voting models of public goods determination into quantitative urban models of residential choice. In the United States, public goods are provided locally and financed through property taxation. This arrangement incentivizes municipalities to attract more affluent residents (or rather to exclude poorer ones) which they often achieve through zoning. Because restrictive zoning exerts a negative externality on other municipalities in the same metropolitan area, zoning decisions at the municipality level can generate inefficiencies. Estimation for our dynamic general equilibrium framework uses historical series of Censuses of Governments on municipal revenue and expenditures, individual-level migration history, and a new panel dataset on zoning changes. With our framework, we examine if a counterfactual with inter-municipal coordination in zoning can reduce inefficiencies and inequality in public goods.

SERVICE

Mental Health & Peer Support Grad Group, MIT Economics (Peer Counselor and Co-Founder)	2019-23
Graduate Student Council, Diversity Equity & Inclusion (DEI), MIT (Coordinator in 2019-2020, Dept. Representative in 2019-2021)	2019-21
Antiracism Committee, MIT Economics	2020-21
Search Committee for the SHASS Assistant Dean of DEI	2021
Harvard/MIT Application Assistance Mentoring Program mentor	2020-22