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**DOCTORAL STUDIES**

Massachusetts Institute of Technology (MIT)  
PhD in Economics, expected completion June 2022  
DISSERTATION: "Essays on the Employment Relationship: Job Assignment, Collective Bargaining, and Delegation"

**DISSERTATION COMMITTEE AND REFERENCES**

Professor Daron Acemoglu  
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**PRIOR EDUCATION**

Washington University in St. Louis  
B.A. in Economics, Physics, and Math (minor), *summa cum laude* 2014

**CITIZENSHIP**

United States (naturalized)

**GENDER:** Male

**LANGUAGES**

Chinese (fluent), French (elementary)

**FIELDS**

Primary Fields: Labor Economics, Personnel Economics  
Secondary Fields: Organizational Economics, Industrial Organization

**TEACHING EXPERIENCE**

15.S57: Platform Strategy mini-course (Sloan Fellows MBA) 2021  
Teaching Assistant to Professor Pierre Azoulay  
Calculus I, II, and III; Introductory Physics 2011-12  
Resident Peer Mentor, Park/Mudd Residential College

<b>RELEVANT POSITIONS</b>	Special Sworn Status, U.S. Census Bureau	2018-
	Research Assistant to Profs. Daron Acemoglu and John Van Reenen (MIT)	2017-
	Research Assistant to Prof. Parag Pathak (MIT)	2017-18
	Research Assistant to Profs. John Beshears, James Choi, David Laibson, and Brigitte Madrian (NBER)	2014-16
	Intern, Supervisory Policy and Risk Analysis (St. Louis Fed)	2013
	Intern, Sales Forecasting and Price Analysis (AB InBev)	2012-13
<b>FELLOWSHIPS, HONORS, AND AWARDS</b>	Washington Center for Equitable Growth Doctoral Grant (with Samuel Young)	
	NSF Graduate Research Fellowship	
	Urban Institute Finance & Society Project (with John Beshears, James Choi, David Laibson, and Brigitte Madrian)	
	Phi Beta Kappa	
	Lock and Chain Honorary Burton M. Wheeler Book Award	
<b>PROFESSIONAL ACTIVITIES</b>	<b>Referee:</b> AER: Insights	
	<b>Presentations:</b> U.S. Census Bureau (2019)	
	<b>Service:</b> MIT Labor Lunch co-organizer (2018-19), MIT Summer Applied Lunch co-organizer (2018-19), MIT Application Assistance and Mentorship Program (2020-), MIT Mental Health Peer Support (2021-)	
<b>PUBLICATIONS</b>	<b>“T-Mobile in 2013: The Un-Carrier”</b> (with John Beshears, Francesca Gino, and Jonathan Lee). <i>Harvard Business School Case</i> , 916-043, February 2016.	
<b>RESEARCH PAPERS</b>	<b>“What Is the Price for Opportunity? The Effects of Employer Learning on Worker Promotions and Turnover” (Job Market Paper)</b> This paper identifies the effects of firms on the career advancement of blue-collar workers and interprets these effects through the mechanism of employer learning. I use administrative data on the universe of Brazilian formal employment to study vertical promotions from production jobs to supervisory jobs, which are an important source of wage growth for most young workers. By comparing workers around job-to-job transitions, I show that differences in average firm promotion rates reflect persistent differences in the effects of firms on workers. Workers who move to a high promotion firm become substantially more likely than other job movers to be promoted, but they are even more likely to leave formal employment altogether. Correspondingly, their average long-term wage gains are negligible. I explain these effects using a model where firms differ in the rate they learn about the abilities of employed workers. High learning firms improve the efficiency of matching between workers and jobs, but these firms also exacerbate the adverse	

selection of unemployed workers and increase occupational wage inequality. By quantifying the parameters of the model using my estimated effects, I show that skill misallocation remains high and ex-post market power for employers can be large.

**“Unionization, Employer Opposition, and Establishment Closure”** (with Samuel Young)

We study the effect of private-sector unionization on establishment employment and survival. Specifically, we analyze National Labor Relations Board (NLRB) union elections from 1981 to 2005 using administrative Census data on the universe of establishments in the U.S. Our research design combines difference-in-differences and regression discontinuity extrapolation methods to estimate treatment effects including elections that win by larger margins of support. We show that unionization decreases an establishment's employment and likelihood of survival. We hypothesize that two reasons for these effects are firms' ability to avoid dealing with new unions and managers' opposition to unions. We test this hypothesis for unionization in manufacturing, the largest sector where we find substantial negative effects. There, the negative effects are significantly larger for elections at multi-establishment firms, especially those with no other unionized establishments. We provide direct evidence suggesting that some of these differences are driven by multi-establishment firms shifting employment from newly unionized establishments to other establishments. Finally, we use the length of delays during the election process as a proxy for managers' opposition to the union and find substantially larger effects of successful elections with longer delays. Taken together, our results are consistent with firms' union avoidance tactics playing a role in explaining the overall negative effects of unionization.

**RESEARCH IN  
PROGRESS**

**“Firm Decentralization and Long-Run Growth”** (with Daron Acemoglu, Scott Ohlmacher, and John Van Reenen)

The economic consequences of changing the power distribution within firms is a fundamental question in social science, yet little is known of its longer-run effects. We estimate the effect of delegating decision-rights from central headquarters to local plant managers on plant growth across a variety of countries by combining survey data on decentralization with administrative data on plant outcomes from the U.S. Census and Bureau van Dijk. To address causality, we develop a new “donor firm” methodology, exploiting the fact that there is long-run organizational persistence. (Results pending disclosure review by the U.S. Census).

**“A Quasi-Experimental Approach to Identifying Labor Market Boundaries: Evidence from Brazilian Workers”** (with Mayara Felix)

What constitutes a local labor market? We develop a general framework that allows the matching of workers to jobs to be frictional and depend arbitrarily on their geography, industry, occupation, and other firm characteristics. Furthermore, we consider the possibility that workers' job transitions reflect both movements within labor markets as well as reallocation across labor markets. Within this framework, mobility patterns of workers based on all realized job

transitions would overstate the size of the local labor market for workers. We empirically test for workers' local labor market boundaries in Brazil using linked employer-employee data by following workers' realized mobility choices after idiosyncratic firm layoffs. Preliminary evidence highlights that a substantial portion of workers' job transitions reflects reallocation across local labor markets. Exogenously separated workers are half as likely to change occupations as opposed to changing municipalities or industries, whereas estimates based on all job transitions would have concluded the opposite. Our results highlight occupations as distinct from geography or firm characteristics, and particularly important for defining workers' relevant outside options.

### **“Does Competition Matter for Public Schools?”**

Academics and policymakers often emphasize the importance of competition between schools for improving student outcomes, but evidence on this channel has generally been mixed. I revisit the magnitude and effects of competition in public schools using data on centralized assignment, student outcomes, and school expenditures from a large urban school district. First, I directly estimate the intensity of competition between traditional public schools, magnet schools, and charter schools. I find that the estimated competitive incentives for enrollment within the district are generally low, but can be substantial at some schools, especially in the charter and magnet sectors. I then use the rollout of centralized assignment to test for the effects of competition on school outcomes. I find that intra-district competition alone is unlikely to lead to substantial increases in school effectiveness, but it does shift schools' discretionary spending towards instruction