MIT Economics

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DOCTORAL STUDIES

Massachusetts Institute of Technology (MIT)
PhD, Economics and Statistics, Completed February 2024
DISSERTATION: "Essays in Empirical Matching Systems"

DISSERTATION COMMITTEE AND REFERENCES

Professor Esther Duflo
University of Zurich
Department of Economics
Schonberggasse 1, 8001 Zurich
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Professor Parag Pathak
MIT Department of Economics
77 Massachusetts Avenue, E52-426
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Professor Benjamin Olken
MIT Department of Economics
77 Massachusetts Avenue, E52-542
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Professor Paul E. Peterson
Harvard Kennedy School
79 JFK St, Littauer 104
Cambridge, MA 02138
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ppeterso@gov.harvard.edu

PRIOR EDUCATION

Universidad de Chile — 2017
MSc. in Economics, Ranked 1st/7

Universidad de Chile — 2015
Business Engineering, BSc. in Economics, Ranked 1st/52

CITIZENSHIP Chile **GENDER:** Male

LANGUAGES English, Spanish (native)

FIELDS Primary Fields: Development Economics, Empirical Market Design
Secondary Fields: Economics of Education, Applied Econometrics

TEACHING EXPERIENCE

The Political Economy of the School (Harvard Kennedy School) Teaching Fellow to Professor Paul Peterson	2026
The Politics of American Education (Harvard College) Teaching Fellow to Professor Paul Peterson	2024
Principles of Microeconomics Head Teaching Assistant to Professor Sara Fisher Ellison	2022
Market Design Teaching Assistant to Professor Parag Pathak	2021
Principles of Microeconomics Head Teaching Assistant to Professor Sara Fisher Ellison	2021
Introductory Economics, Macroeconomics and Mathematics Lecturer in 10 Undergraduate courses at Universidad de Chile	2016-17
Various Graduate and Undergraduate courses on Economic Development, Microeconomics, Public Private Partnerships, Labor Economics, Econometrics, Statistics and Mathematics Teaching Assistant (26 times) at Universidad de Chile	2013-17

RELEVANT POSITIONS

Postdoctoral Researcher at Harvard University (Taubman Fellow)	2024-27
Research Consultant at Interamerican Development Bank	2023
Research Assistant for Prof. Esther Duflo at MIT	2020
Research Intern at Facebook Research	2019
Research Associate for Prof. Christopher Neilson at the National Bureau of Economic Research (NBER) and Microsoft Research	2018
Instructor, Department of Economics, Universidad de Chile (Teaching and Research, Full-Time Academic Appointment)	2016-18
Research Intern at the Chilean National Economic Prosecutor's Office (Chilean "FTC") Anti-Cartels Unit	2015
Research Assistant for Professors Eduardo Engel, Manuel Agosin, José De Gregorio, all at Universidad de Chile; Andrea Repetto at Universidad Adolfo Ibáñez; and Christian Belmar at the Inter-American Development Bank (IDB)	2014-18

FELLOWSHIPS AND GRANTS

Research Grant, Bloomberg Center for Cities, Harvard University	2026
AI Experimentation Grant, Cosmos Institute	2026
IHS Fund for Scholars, George Mason University	2022-26
RIS Data Grant, MDSF, Government of Chile	2025-27
MIT-Pillar AI Collective, MIT School of Engineering	2023
IHS Junior Fellow, George Mason University	2023
Jerry A. Hausman Dissertation Fellowship, MIT Economics	2022-23
Global Priorities Fellowship, University of Oxford	2022-23
George and Obie Schultz Fund, MIT Economics	2019-23
Castle Krob International Fellowship, MIT Economics	2018-20
National Masters Scholarship, CONICYT, Government of Chile	2016
Academic Excellence Scholarship, Universidad de Chile	2016

Merit Scholarship, Universidad de Chile	2012-15
National Score Scholarship, MINEDUC, Government of Chile	2012-15

PROFESSIONAL ACTIVITIES

Referee: American Economic Journal: Economic Policy, American Economic Review, AEFP, CLADEA, Econometrica, Estudios Nueva Economia, Journal of Applied Econometrics, Journal of Behavioral and Experimental Finance, Journal of Econometric Methods, Journal of International Money and Finance, Journal of Labor Economics, Review of Economics and Statistics, YES

External Presentations:
ISCRC (Scheduled - St. Pete Beach, FL, 2027)
PUC-Chile (Scheduled - Santiago, 2026)
NEUDC (Scheduled - Ithaca, NY, 2026)
Hoover Institution at Stanford University (Stanford, CA, 2026)
Harvard Graduate School of Education (Cambridge, MA, 2025)
AEFP (Washington, DC, 2025)
Columbia Economics of Education Guest Lecture ×3 (New York, NY, 2024, 2025, & 2026)
Baker Institute at Rice University (Houston, TX, 2024)
APSA ×2 (Boston, MA, 2026 & Los Angeles, CA, 2023)
IHS ×2 (Raleigh, NC, 2023, 2 presentations)
EAGxLatAm ×2 (Mexico City, 2023 & 2024)
ChileConf (PUC Santiago and UDEC-Concepción, 2023)
GPI ×2 (Oxford, 2022 & 2023)
SDSCon (Cambridge, MA, 2022)
Jane Street (virtual-NYC, 2022)
WEAI ×3 (virtual-Hawaii, 2021, 3 presentations)
ConsiliumBots (virtual, 2021)
ASSA (San Diego, CA, 2020)
U. Chile (Santiago, 2018)
LACEA & LAMES ×2 (Puebla, 2019 & Buenos Aires, 2017)
FLAUC (Bogotá, 2017)
CLADEA (Riverside, CA, 2017)
LAWEBESS (Cali, 2017)
SECHI ×2 (Santa Cruz, 2017, 2 presentations) – Best Paper Award
SINERGIA & 3ie (virtual-Bogotá, 2016) – Best Paper Award
RIDGE (Buenos Aires, 2016)

Service at Harvard: Postdoctoral Association Board (2024-); Founding Organizer of the Empirical Methods in Education Reading Group (2024-)

Service at MIT: Treasurer for: (i) Institute for Data Systems and Society (2022-2024), (ii) LatinX Graduate Students Association (2021-2022), (iii) Graduate Economic Association (2019-2021), (iv) Ashdown House (2019-2020); Development Lunch Co-Organizer (2020-2021); Presidential Task-force: Beyond MIT (2020); Residential Scholar Coordinator (2019-2022); and several Graduate Student Council's committees.

PUBLICATIONS

"Aftermarket Frictions and the Cost of Off-Platform Options in Centralized Assignment Mechanisms" (with A. Kapor and C. Neilson)
***Journal of Political Economy,* 2024.**

We study the welfare and human capital impacts of colleges' (non)participation in Chile's centralized higher-education platform, leveraging administrative data and two policy changes: the introduction of a large scholarship program and the inclusion of additional institutions, which raised the number of on-platform slots by approximately 40%. We first show that the expansion of the platform raised on-time graduation rates. We then develop and estimate a model of college applications, offers, wait lists, matriculation, and graduation. When the platform expands, welfare increases, and welfare, enrollment, and graduation rates are less sensitive to off-platform frictions. Gains are larger for students from lower-socioeconomic-status backgrounds.

"Effects of a Large-Scale Social Media Advertising Campaign on Holiday Travel and COVID-19 Infections: A Cluster Randomized Controlled Trial" (with E. Breza, F. C. Stanford, M. Alsan, B. Alsan, A. Banerjee, A. G. Chandrasekhar, S. Eichmeyer, T. Glushko, P. Goldsmith-Pinkham, K. Holland, E. Hoppe, S. Liegel, T. Loisel, L. Ogbu-Nwobodo, B. Olken, C. Torres, P. Vautrey, E. Warner, S. Wootton, and E. Duflo)
***Nature Medicine,* 2021.**

"Effect of Physician-Delivered COVID-19 Public Health Messages and Messages Acknowledging Racial Inequity on Black and White Adults' Knowledge, Beliefs, and Practices Related to COVID-19: A Randomized Clinical Trial" (with C. Torres, L. Ogbu-Nwobodo, M. Alsan, F. C. Stanford, A. Banerjee, E. Breza, A. G. Chandrasekhar, S. Eichmeyer, T. Loisel, P. Goldsmith-Pinkham, B. Olken, P. Vautrey, E. Warner and E. Duflo)
***JAMA Network Open,* 2021.**

"Sudden Stops of Capital Flows: Do Foreign Assets Behave Differently from Foreign Liabilities?" (with M. Agosin and J. Díaz)
***Journal of International Money and Finance,* 2019.**

RESEARCH PAPERS

"Market Power and the Supply-Side of Cash Transfers: Experimental Evidence from Chile" - Job Market Paper (with C. Martínez and J. Tessada)

This paper studies the impacts of a cash transfer program on local businesses. We conducted a two-stage RCT in a Chilean municipality, transferring funds to the poorest 1/3 of households. We transferred these funds through a novel digital wallet with restricted redemption, so that households could use the proceeds only at participating local retailers. We randomly encouraged local businesses to join the digital wallet platform, so they could sell to households using this new payment method. We also randomized the fraction of firms treated at the local-market level to measure the supply-side responses to these cash transfers under different levels of market saturation. Firms respond to local cash transfers,

increasing prices by about 9% and reducing competitive monitoring. However, retailers facing more competitive markets attenuated their price increases: a 10pp increase in the fraction of substitute retailers reduces prices by 3.4%. These results suggest that limiting local market power may avoid unintended price effects in the context of cash transfer programs. Finally, we estimate a structural model describing the use of and competition for cash transfers, identified using the experimental variation and transaction-level microdata. We use these estimates to run counterfactual exercises that evaluate the impact of different program designs on prices and welfare. Our estimates suggest markups average about 13% and most of the benefits of competition are achieved with a 60% participation rate within the wallet ecosystem.

"Peer Effects in Matching Systems and the Effects of Immigrant Classmates on Native Students"

This paper studies the estimation of peer effects in centralized school choice systems. These centralized assignment mechanisms often ration seats by lottery, and thus classroom composition and the presence of certain types of peers in a cohort can be the result of a random assignment process. We show how this random variation can be exploited to identify peer effects. The estimator relies on two different propensity scores that can be extracted from a general class of centralized matching mechanisms, and it emulates the setting of a stratified clustered randomized experiment. We use this approach to study the impact of immigrant classmates on native children in Chile's public school system. Our findings suggest that the presence of immigrant classmates has no significant impact on native children's academic achievement, but it does reduce reported victimization by classmates and boosts reports of other prosocial attitudes. Additionally, we find that students already enrolled in a school whose grade receives a migrant entrant are more likely to remain enrolled in that school. These results provide insights into the dynamics of peer effects in educational settings and have implications for policy design in school assignment systems.

"RCTs with Interference in Matching Systems"

This paper studies the estimation of treatment effects using data from randomized controlled trials (RCTs) in the context of matching systems, such as centralized school choice systems. If treated units change their inputs (e.g. reported preferences), they can affect the allocation outcomes determined by the matching system in equilibrium. When the outcome of interest is determined in equilibrium (e.g. being matched to a target school), conventional estimators that compare a treatment group against a control group fail to account for violations of the stable unit treatment value assumption (SUTVA) induced by the matching system. Therefore, they yield biased and inconsistent estimates of the average treatment effect on the treated (ATT), even under perfect randomization designs. I propose an estimator that decomposes the observed average difference between the outcomes of the treatment and control units, and consistently estimates the ATT, along with the residual spillover effect. This nonparametric

estimator relies on the matching mechanism satisfying a version of the equal treatment of equals (ETE) property. Moreover, the ATT is identified for any counterfactual fraction of treated units, which allows for the estimation of treatment effects under scaled interventions. I illustrate the applicability of this estimator using data on the Chilean centralized school choice system and the Ecuadorian teacher labor market.

"Screening and Recruiting Talent at Teacher Colleges Using Pre-College Academic Achievement" (with F. Calle, S. Gallegos and C. Neilson)

This paper studies screening and recruiting policies that restrict or incentivize entry to teacher-colleges. Using historical records of college entrance exam scores since 1967 and linking them to administrative data on the population of teachers in Chile, we first document a robust positive and concave relationship between precollege academic achievement and several short and long run measures of teacher productivity. We use an RD design to evaluate two recent policies that increased the share of high-scoring students studying to become teachers. We then show how data-driven algorithms and administrative data can enhance similar teacher screening and recruiting policies.

"Charter School Expansion and Achievement: Evidence from Harlem" (with P. Peterson)

We estimate community-wide effects on student achievement, as measured by performance on New York State proficiency tests, of charter school expansions in Harlem. Synthetic difference-in-differences (SDID) models estimate trends before and after enactment of the 2007 New York Charter Schools Act amendment, an exogenous supply shock that doubled the limit on the number of charter schools throughout the state, including an additional 50 in New York City. Approximately 400 weighted control schools with near identical pre-treatment trends in test scores are selected from 50 large urban districts in the state. Harlem's charter enrollment share increased from 11% in 2007 to 47% in 2019, as compared to minimal change in the comparison districts. Post-enactment, Harlem's ELA and Math proficiency rates, relative to those at the synthetic counterfactual, each rose by 13.8 percentage points. Both charter and district sectors contributed to these gains, though the largest gains came from the charter sector.

RESEARCH IN PROGRESS

"Effects of Housing Improvements on Labor, Education and Health Outcomes of Families: Evidence from a Nationwide Field Experiment in Chile" (with D. Contreras, R. Cooper and N. Valdés)