

EDUCATION

University of Michigan

Ph.D. Candidate in Economics, Expected April 2022

M.A. in Economics, December 2017

B.S. with Highest Honors in Economics, April 2011

FIELDS

Primary: Labor Economics

Secondary: Macroeconomics

Research interests: Economics of networks, large-scale data analysis, machine learning

DISSERTATION

Chapter 1: What is a Labor Market? Classifying Workers and Jobs Using Network Theory (Job Market Paper, with Bernardo Modenesi)

This paper develops a new data-driven approach to characterizing latent worker skill and job task heterogeneity by applying an empirical tool from network theory to large-scale Brazilian administrative data on worker–job matching. We microfound this tool using a standard equilibrium model of workers matching with jobs according to comparative advantage. Our classifications identify important dimensions of worker and job heterogeneity that standard classifications based on occupations and sectors miss. The equilibrium model based on our classifications more accurately predicts wage changes in response to the 2016 Olympics than a model based on occupations and sectors. Additionally, for a large simulated shock to demand for workers, we show that reduced form estimates of the effects of labor market shock exposure on workers' earnings are nearly 4 times larger when workers and jobs are classified using our classifications as opposed to occupations and sectors.

Chapter 2: Detailed Wage Gap Decompositions: Controlling for Unobserved Worker Heterogeneity using Network Theory (with Bernardo Modenesi)

Recent advances in the literature of decomposition methods in economics have allowed for the identification and estimation of detailed wage gap decompositions. Differences in wages are decomposed into a component explained by skills and a residual component that may reflect factors such as discrimination. In the context of such detailed decompositions, building reliable counterfactuals requires using tighter controls to ensure that similar workers are correctly identified by making sure that important unobserved variables such as skills are controlled for, as well as comparing only workers with similar observable characteristics. This paper contributes to the wage decomposition literature in two main ways: (i) developing an economic principled network based approach to control for unobserved worker skills and job task heterogeneity; and (ii) extending existing generic decomposition tools to accommodate for potential lack of overlapping supports in covariates between groups being compared, which is likely to be the norm in more detailed decompositions. We illustrate the methodology by decomposing the gender wage gap in Brazil. We find that better controlling for unobserved worker and job heterogeneity reduces the portion of the gender wage gap that cannot be explained by covariates and thus plausibly reflects discrimination. However, even with detailed controls, male workers still outearn female workers by 14%.

Chapter 3: American Cities: Valuing the Entire Bundle

This paper estimates the indirect utility, or *value*, of living in each city in the United States using a revealed preference argument. The paper uses a tool from network theory to compute the central tendency of city-to-city flows and integrates it with a discrete choice model of city choice in order to translate flows into a value with economic meaning. The measure of value is persistent and correlated with a number of city characteristics. I then use a Bartik-style instrument to estimate the effects of local labor demand shocks on city value and find no effect.

WORKS IN PROGRESS

A Network Theory Approach to Imputing Occupation on the LEHD
Computing Labor Market Power using Markets Defined by Network Theory

EXPERIENCE

University of Michigan Institute for Social Research Ann Arbor, MI
Research Assistant to Prof. Matthew Shapiro July 2015 – Present

Harvard University – Opportunity Insights (formerly LEAP) Cambridge, MA
Pre-Doctoral Fellow (Working with Profs. Raj Chetty and Nathan Hendren) June 2014 – July 2015

Federal Reserve Bank of Boston – Research Department Boston, MA
Senior Research Assistant to VP and Economist Robert Triest June 2011 – May 2014

University of Michigan – Learning Analytics Task Force Ann Arbor, MI
Volunteer Researcher September 2013 – August 2016

TEACHING

University of Michigan – Economics Department Ann Arbor, MI
Graduate Student Instructor

- Economics 251 (Introduction to Statistics and Econometrics II), Fall 2017 and Winter 2018
- Economics 492 (Capitalisms), Winter 2021

University of Michigan – LSA Honors Program Ann Arbor, MI
Instructor August 2010 – November 2010

- Designed and taught a one-credit course, “The Financial Crisis for Dummies” for Honors freshmen

OTHER PUBLICATIONS

- “Opinion: Restrictive zoning laws perpetuate neighborhood segregation” with Zachary Ackerman. *The Detroit News*. July 16, 2020.

PRESENTATIONS

- Virtual Meeting of the Urban Economics Association (Student Paper Prize Runner-Up), October 2020
- 10th European Meeting of the Urban Economics Association, April 2021
- Complex Networks in Economics and Innovation, June 2021
- Networks 2021, July 2021

APPROVED CENSUS RDC PROJECTS

- “Does Firm Corporate Governance Affect Worker Outcomes?” with Dylan Nelson, Mark Mizruchi, and Fabian Pfeffer. Access to Census data sets including LEHD, ACS, Decennial Census, Business Register, Longitudinal Business Database. 2020–2024.

SERVICE

- Reviewer, *Journal of Econometrics*, 2020
- Ad Hoc Reviewer, *Science Advances*, 2020
- Organizer, University of Michigan Economics Dept. Climate Survey, 2019–present
- Social chair, University of Michigan Economics Dept. 2016–2017

HONORS, AWARDS, AND GRANTS

- NSF Graduate Research Fellowship
- Outstanding Third Year Paper Prize, University of Michigan
- Phi Beta Kappa
- Rackham One Term Fellowship, University of Michigan, Fall 2020
- Michigan Institute for Teaching and Research in Economics (MITRE) research grant (\$4970)
- Musgrave Fellowship — Awarded to outstanding graduate students interested in pursuing public finance as a field at the University of Michigan
- Sims Honor Scholarship in Economics — Most outstanding junior in economics, University of Michigan, 2010
- LSA Dean's Merit Scholarship; Regents' Merit Scholarship, University of Michigan, 2007
- Federal Reserve Bank of Boston, Service Quality Award: Nov 2011, May 2013; Excellence Award: Dec 2011, Dec 2012

SKILLS

- Programming: Stata, SAS, Python, R, L^AT_EX; Experience using C++, MATLAB, HTML, ArcGIS
- Language: English (native)

CITIZENSHIP

- Citizenship: USA

SECURITY CLEARANCE

- Special Sworn Status for restricted data use at US Census

OTHER EDUCATION

Harvard University

Non-Degree Student, Spring 2012

Massachusetts Institute of Technology

Non-Degree Student, Fall 2012

DISSERTATION COMMITTEE

Matthew Shapiro (Chair)
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TEACHING REFERENCE

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