ABDOLLAH FARHOODI

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EDUCATION

University of Illinois at Urbana-Champaign   *2014— May 2020 (Expected)*
Ph.D. Economics
Committee: Dan Bernhardt (Chair), David Albouy, Jorge Lemus,
             George Deltas, Guillermo Marshall

Sharif University of Technology, Iran   *2012*
M.Sc. Economics
University of Tehran, Iran   *2009*
B.Sc. Electrical Engineering (Control)

RESEARCH INTERESTS

Industrial Organization, Urban Economics, Causal Machine Learning

JOB MARKET PAPER

Welfare Estimation in Peer-to-Peer Markets with Heterogeneous Agents: The Case of Airbnb
Advisor: Dan Bernhardt

- Introduce a framework for welfare analysis in peer-to-peer markets

- Extend the state-of-the-art IO models to account for heterogeneities in the Airbnb market

- Estimate agent-level consumer and producer surpluses with daily variations

- Conclude that surplus is concentrated in high-income neighborhoods

WORKING PAPERS

Introducing a Micro-founded Index of Consumption Welfare: A Big Data Approach

- Applied machine learning to introduce a novel index of consumption welfare

- Estimation by using Living Standard Measurement Survey

Evaluating Regulations in Peer-to-Peer Markets: A Synthetic Control Approach to Study Santa Monica Ban on Airbnb (with Peter Christensen)

- Applied "Elastic Net Synthetic Control Method" to study multiple outcomes

- Event study on the effect of a ban on Airbnb

RELEVANT EXPERIENCE

International Monetary Fund

- Fund Internship Program   *Summer–2018*

- Leading a project on application of big-data and machine learning for poverty analysis

University of Illinois

- Research Assistant to Dan Bernhardt, Yufeng Wu, and Jorge Lemus   *2015–2018*
    - Data analysis and visualization with R and Python
    - Model assessment and estimation (reduced-form and structural estimations)
    - Web-scraping
- Big-Data in Environmental Economics and Policy Research Group   *2018–current*
    - Studying the effect of Airbnb on housing market
    - Collaborating with the National Center for Super-computing Applications
    - Weekly meetings with a group of microeconomists and computer scientists

TEACHING AND LEADERSHIP EXPERIENCE

Instructor: University of Illinois
Applied Machine Learning in Economics   *Spring 2019 – current*

Topics: Statistical Learning with R, Shrinkage Methods, Random Forest, Bagging, Boosting, SVM, Neural Networks, Causal Inference with ML
Outstanding rating (top 5 percent) in the "List of Teachers Ranked as Excellent by their Students"

Teaching Assistant: (Undergraduate-Level)   University of Illinois
Introduction to Microeconomics   2016–2018
Intermediate Microeconomics   2014–2015

Teaching Assistant: (Graduate-Level)   Sharif University of Technology, Iran
Game Theory   2012
Econometrics I   2010, 2011
Microeconomics II   2010

SOFTWARE AND SKILLS

R, Python, MATLAB, STATA, SQL, Mathematica, HTML, GitHub, Microsoft Office, Excel, LaTeX
Causal ML: Double ML, Elastic Net Synthetic Control, Generalized Random Forest, Deep-IV

FELLOWSHIP AND AWARDS

Robert Willis Harbeson Memorial Dissertation Award   May 2019
University of Illinois Summer Research Fellowship   Summer 2018
University of Illinois Summer Research Fellowship   Summer 2015
University of Illinois Economics Department Fellowship   Fall, Spring 2014
Awarded in the "List of Teachers Ranked as Excellent by their Students"   2016–2019 (6 Semesters)
University of Illinois Graduate Teaching Certificate   May 2019
Ranked 3rd in the nationwide entrance exam to Economics graduate schools   Iran, 2009

REFERENCES

Dan Bernhardt   **David Albouy**   **Jorge Lemus**
University of Illinois   University of Illinois   University of Illinois
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WORKING PAPERS

Welfare Estimation in Peer-to-Peer Markets with Heterogeneous Agents: The Case of Airbnb

Abstract: Peer-to-peer (P2P) markets allow small suppliers with limited capital to enter markets that were traditionally occupied by large firms. This feature provides a potential decentralized distribution of opportunities. To investigate the distribution of welfare and opportunities among agents, I study the Airbnb short-term rental market, as a successful P2P marketplace. I use daily panel data of Airbnb rentals in Chicago from August 2014 through April 2017 and apply an individual-level multinomial logit model to estimate the distribution of consumer and producer surpluses across differentiated agents and over time. I show that properties in less advantaged neighborhoods benefit the least from having access to the Airbnb market, even though these properties feature weaker competitive pressure and lower opportunity costs of renting. My results show a disproportionate concentration of welfare in neighborhoods with higher incomes and house prices. I also show evidence of a higher surplus for low-income property owners, especially for those who live in high-demand areas.

Introducing a Micro-Founded Index of Consumption Welfare: A Big Data Approach

In this paper, I explore the heterogeneity in welfare from consumption based on a novel micro-founded index of welfare. I use Albania's 2012 Living Standard Measurement Survey to estimate the index in two steps. In the first step, I apply machine learning to find a non-parametric relation between households' consumption, and a large set of living conditions and characteristics indicators. In the second step, using the first step estimations, I find the distribution of households' marginal willingness to pay for each living condition's indicator, and estimate an index of welfare based on the model by Bajari and Benkard (2005). I show that the index is highly correlated with households' consumption expenditures, but unlike consumption as a naive measure of welfare, it accounts for the existing heterogeneity among their living conditions and preferences. Finally, this paper studies the geographical, cross gender and age distributions of the welfare index and compares the estimations with the consumption expenditure as a naive measure of welfare.

Evaluating Regulations in Peer-to-Peer Markets: A Synthetic Control Approach to Study Santa Monica Ban on Airbnb (with Peter Christensen)

Together with Peter Christensen, I focus on the effect of a ban on Airbnb in Santa Monica as a natural experiment. I apply "elastic net synthetic control" as a recently developed causal machine learning method. Synthetic control method provides a framework to generate a treatment group for each potential outcome using a pool of control groups, and study multiple outcomes in the market. I study the effect of the ban that targets entire-home, Airbnb rentals on incumbent listings' revenue, pricing behavior, and local competition in the market. I show that the ban significantly dropped the number of entry and increases the market power of those who remained in the market. Studying welfare effect of the ban is the next step in this paper.