FANGNING YAN
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EDUCATION

Ph.D., Economics, Boston University, Boston MA, May 2022 (expected)
Dissertation Title: *Empirics of Firms' Strategies in New Industries*
Dissertation Committee: Marc Rysman, Jihye Jeon, Jordi Jaumandreu, Andrey Fradkin

B.S., Mathematics (with Honors) and Second Major in Economics, *Cum Laude*, Davidson College
Honors Thesis Title: *Expected Peak Sidelobe Level of Random Sequences*
Thesis Advisor: Michael J. Mossinghoff
Davidson, NC, 2015

FIELDS OF INTEREST

Empirical Industrial Organization, Applied Econometrics, Economics of Digitization

WORKING PAPERS

"Freewheeling: A Spatial Structural Analysis of the Bike-Sharing Industry," (Job Market Paper), October 2021.
"Financing and Investment by a Platform Start-up: An Analysis of ofo," September 2021.

WORK IN PROGRESS

"A Dynamic Model of Industry Shakeouts: US Automobile Industry from 1900 to 1950," August 2021

PRESENTATIONS

Boston University Applied Microeconomics Dissertation Workshop, Boston MA 2018, 2019, 2020, 2021
Boston University Applied Microeconomics Reading Group, Boston MA 2018, 2019, 2020
Boston University Empirical Industrial Organization Reading Group, Boston MA 2018, 2019, 2020, 2021
Eastern Economics Association (discussant), Boston MA 2020
Zhengzhou University Business School, Zhengzhou CHINA 2019

FELLOWSHIPS AND AWARDS

Teaching Fellowship, Boston University, 2017-2021
Teaching Fellowship, Questrom School of Business Dean's Office, Boston University, 2021
Summer Research Grant, Boston University, 2019-2021
Dean's Fellowship, Boston University, 2016-2021
Meritorious Winner (Top 5%), Mathematical Contest in Modeling, the Consortium for Mathematics and Its Applications (COMAP), 2014
Avinger Entrepreneur Scholarship, Davidson College, 2013-2015
William D. Vinson Mathematics Award, Davidson College, 2013

PROFESSIONAL EXPERIENCE

Basketball Analytics Intern, Charlotte Bobcats, Charlotte NC, Season 2013-2014
Summer Data Analyst, Technekes LLC, Charlotte NC, 2013
Summer Data Analyst, Shanghai Stock Exchange, Shanghai CHINA, 2012

RESEARCH ASSISTANT EXPERIENCE

Research Assistant to Professor Fred H. Smith, Davidson College, Davidson NC, 2015-2016
Research Assistant to Professor Carl R. Yerger, Davidson College, Davidson NC, 2015

TEACHING EXPERIENCE

Teaching Assistant, Questrom School of Business, Boston University
- BA830 Business Experimentation and Causal Methods (Graduate Level), Fall 2021
- BA472 Business Experimentation and Causal Methods, Fall 2021

Teaching Assistant, Department of Economics, Boston University
- EC507 Statistics For Economists (Graduate Level), Fall 2019, Fall 2020
- EC508 Econometrics (Graduate Level), Spring 2020, Spring 2021
- EC203 Empirical Economics I, Spring 2018, Spring 2019
- EC204 Empirical Economics II, Fall 2017, Fall 2018

Teaching Assistant, Department of Mathematics, Davidson College
- MAT113 Calculus II, Fall 2013
- MAT150 Linear Algebra, Spring 2014, Spring 2015
- MAT235 Differential Equations, Fall 2014

LANGUAGES

English (fluent), Chinese (native); German (beginner), Korean (beginner)

COMPUTER SKILLS

Proficient in R, SQL, STATA, MATLAB, LaTeX and Basics in Python, Linux, SAS

CITIZENSHIP/VISA STATUS: China/F1

REFERENCES

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Professor Jordi Jaumandreu
Department of Economics
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Phone: (617) 358-5925
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Questrom School of Business
Boston University
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Freewheeling: A Spatial Structural Analysis of the Bike-Sharing Industry (Job Market Paper)

This paper studies the spatial mismatch between consumers and bikes in the dockless bike-sharing industry and an externality exacerbating the problem: when a consumer uses a bike, she displaces another consumer's usage and does not consider the potential higher value. With a trip-level dataset of a bike-sharing company in Beijing, China, I observe that the demand for bikes depends on the time of day, the duration of trips, and the characteristics of the origin and destination locations. To estimate the demand for bikes, I develop a spatial structural model subject to search frictions and local matchings, so that the total usage of bikes depends on the quantities and spatial distributions of consumers and bikes. Counterfactual analyses show that (1) doubling the number of bikes increases the trip volume by 28.46% while halving the number of bikes decreases the trip volume by 46.40%; (2) price-discriminating against short trips by 2% increases the total trip time by 0.22%; and (3) alternating periods of bike reshuffling does not have a significant impact on the total usage of bikes.

Financing and Investment by a Platform Start-up: An Analysis of ofo

This paper studies the business performance of a bike-sharing start-up company in China and shows how its financial conditions affect investment decisions. I fit a dataset of daily active users and trips in several cities with different specifications of time functions and analyze the effects of funding rounds from venture capitalists on the investment and business of the company with an event study framework. My estimates find that the firm increases its users and bikes by about 40% two weeks before receiving funds, suggesting that it invests extensively in expectation of deep pockets. The boost in business performance from capital influx will decrease as the market expands, suggesting decreasing returns in scale on capital. I also show that such boosts in business performance are short-lived: the number of trips and users often return to normal levels two weeks after the funding day.

A Dynamic Model of Industry Shakeouts: US Automobile Industry from 1900 - 1950

This paper studies the shakeout in the U.S. automobile industry with data retrieved from old annals of the automobile industry. I test a dynamic model with a Markov Perfect Equilibrium (MPE) setting and see if the Pakes-McGuire Algorithm could successfully trigger a shakeout. I find that only the cost reduction from technology advancements is not enough to trigger an industry shakeout and propose that better micro-level data is need for further studies.