Xiaoxi Zhao

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EDUCATION

Ph.D. in Economics, Boston University, May 2021 (expected)
Dissertation Title: *Public Policy and Vertical Relationship in Healthcare Market*
Main advisors: Randall P. Ellis, Marc Rysman

M.A. in Economics, Boston University, 2015

M.Sc. in Applied Mathematics and Industrial Science, Ecole Centrale de Lyon, 2014

M.Eng. in Control Science and Engineering, Beihang University, 2014

B.Sc. in Information and Computational Science, Beihang University, 2011

FIELDS OF INTEREST

Health Economics, Industrial Organization

WORKING PAPERS

"The Effect of Medical Loss Ratio Regulation on Insurer Pricing," (Job Market Paper), October 2020.

"The Impact of Organizational Boundaries on Healthcare Coordination and Utilization," with Leila Agha and Keith Ericson (under review) (NBER WP version), December 2020.

"Higher Medicare Spending on Imaging and Lab Services After Physician Practice Vertical Integration," with Michael Richards, Cheryl Damberg, Christopher M. Whaley (R&R – Health Affairs), June 2020.

"The Extent of Externalities from Medicare Payment Policy," with Alice Chen, Michael R. Richards, Christopher M. Whaley (under review) (RAND WP version), August 2020.

"Raising the Stakes: Physician Facility Investments and Provider Agency," with Elizabeth L. Munnich, Michael R. Richards, Christopher M. Whaley (RAND WP version), August 2020.

"Health Care Demand Elasticity by Types of Cost Sharing," with Chenlu Song, November 2019

"Delay in Mental Health Treatment for Children with Medical Complexity," with Christopher J. Louis, Sara S. Bachman, Meg Comeau, Allyson Baughman, Sean Lynch, Yiyang Yuan, Randall P. Ellis (under review), May 2020

WORK IN PROGRESS

"The Effects of Physician Vertical Integration on Referral Patterns, Patient Welfare, and Market Dynamics," with Christopher M. Whaley

"Participation in Health Insurance Exchange Marketplaces"

"Heterogeneity of Income Effect on Benefit Distribution of Social Health Insurance: Evidence from China"

PUBLICATIONS

Min, Bonan, and Xiaoxi Zhao, "Measure Country-Level Socio-Economic Indicators with Streaming News: An Empirical Study." *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and the 9th International Joint Conference on Natural Language Processing (EMNLP-IJCNLP).* 2019, pp. 1249-1254.

Global Hospital Management Survey - China, Management in Healthcare Report, 2015

Leng, Biao, Xiaoxi Zhao, and Zhang Xiong, "Evaluating the Evolution of Subway Networks: Evidence from Beijing Subway Network." *EPL (Europhysics Letters)* 2014, *105(5)*.

Leng, Biao, Jianyuan Wang, Xiaoxi Zhao, Jun Fang, and Zhang Xiong, "Out Flow in A Virtual MTR Station Using A Local View Floor Field Model," *International Journal of Modern Physics C* 2013, *24(06)*: 1350037.

Zhao, Xiaoxi. "Analysis of The Major Factors Affecting Macao's Economy," *2012 International Conference on Management Science Engineering 19th Annual Conference Proceedings*, 2012, pp.970-976

PRESENTATIONS

2020: Lecznar Memorial Lecture, Empirical Micro Workshop, Empirical IO Reading Group
2019: Empirical Micro Workshop, Health Economics Reading Group, Empirical IO Reading Group
2018: Empirical Micro Workshop, Health Economics Reading Group

RESEARCH EXPERIENCE

Adjunct Researcher, Economics, Sociology and Stats, RAND Corporation, Jan 2020 - present
Summer Associate, Economics, Sociology and Stats, RAND Corporation, Summer 2019
Research Assistant to Leila Agha and Keith Ericson, NBER, Jan 2019 - June 2020
Research Assistant to Sara S. Bachman, Boston University, 2017-2018
Research Assistant to Jordi Jaumandreu, Boston University, Spring 2015
Research Fellow, China Center for Health Economics Research, Peking University, 2013-2014
Trainee Analyst, Creativ-Ceutical Consulting Company, 2012

TEACHING EXPERIENCE

Teaching Assistant, Statistics for Economists (graduate-level), Department of Economics, Boston University, Fall 2016, Fall 2017
Teaching Assistant, Market Structure and Industrial Organization (graduate-level), Department of Economics, Boston University, Spring 2017

FELLOWSHIPS AND AWARDS

Special Summer Stipend, Boston University	2016
Dean's Fellowship, Boston University	2015 - 2016
Young Health Economist Fellowship, Peking University	2013 - 2014
China National Scholarship for Graduate Student	2012

LANGUAGES

Mandarin (native), English (fluent), French (professional working proficiency)

COMPUTER SKILLS

Python, MATLAB, SAS, STATA, R

PROFESSIONAL MEMBERSHIPS

American Economic Association, American Society of Health Economists

VISA STATUS/CITIZENSHIP: U.S. Permanent Resident/China

REFERENCES

Professor Randall P. Ellis
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Updated: December 2020

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The Effect of Medical Loss Ratio Regulation on Insurer Pricing (Job Market Paper)

The Affordable Care Act Medical Loss Ratio (MLR) regulation limits each insurers' profit by setting a minimum requirement on the ratio of medical spending to premium revenue. This regulation may undermine the incentives for insurers to bargain for lower prices when negotiating with health care providers. I build a bargaining model of how MLR constraint affects price negotiation between insurers and providers. This model illustrates the insurer trade-off between lower premiums and higher service prices and reveals how bargaining for lower prices is reduced. Predictions from the model are tested in a structural model of MLR regulation on negotiated prices and insurers' costs using data from the individual Health Insurance Exchange Marketplace. Welfare calculations using estimated demand, cost, and bargaining parameters suggest that the MLR regulation led to higher health service prices and higher out-of-pocket payments.

The Impact of Organizational Boundaries on Healthcare Coordination and Utilization
(with Leila Agha and Keith Marzilli Ericson)

Patients often receive healthcare from providers spread across different firms. Transaction costs, imperfect information, and other frictions can make it difficult to coordinate production across firm boundaries, but we do not know how these challenges affect healthcare. We define and measure *organizational concentration*: the distribution across organizations of a patient's healthcare. Medicare claims show that organizational concentration varies substantially across physicians and regions, and that patients who move to more concentrated regions have lower healthcare utilization. Further, we show that when primary care physicians (PCPs) with higher organizational concentration exit the local market, their patients switch to more typical PCPs with lower organizational concentration and then have higher healthcare utilization. Patients who switch to a PCP with 1 SD higher organizational concentration have 10% lower healthcare utilization. This finding is robust to controlling for the spread of patient care across providers. Increases in organizational concentration have no detectable effect on emergency department utilization or hospitalization rates, but do predict improvements in diabetes care.

The Effects of Physician Vertical Integration on Referral Patterns, Patient Welfare, and Market Dynamics
(with Christopher M. Whaley)

Vertical integration between physicians and hospitals is an increasingly common feature in the health care provider market. It raises concerns about distorted referral patterns, higher spending, and market foreclosure. In this paper, we use 100% Medicare fee-for-service data to assess how physician-hospital integration affects patients' choices for outpatient surgical procedures. We combine reduced-form analysis with a nested-logit discrete choice model to estimate the effect of primary care physician groups' vertical integration on patients' provider choices and welfare. Our estimates suggest that physician-hospital integration results in a 2.5 to 7 percentage points increase, depending on procedures, in the probability of referring patients to hospitals. Our welfare results imply that, if all the PCPs become integrated, patients will pay $38 million more out-of-pocket payment, and the total spending will increase by $191 million for the two procedures. Vertical integration does not have a significant effect on the quality of procedures. Our analysis of the market structure shows that ten percentage points increase in the integration rate translate into 16 to 19 points increase in the HHI measure of PCP market concentration.

Updated: December 2020