Yu Ding

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Economics PhD Candidate
U Wisconsin, Madison

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Education

University of Wisconsin - Madison, *Ph.d. Student*	08/2015-present
University of Wisconsin - Madison, *M.S., Economics*	08/2015-08/2017
Wuhan University, *B. A., Economics*	08/2011-07/2015
Wuhan University, *B.S., Mathematics*	08/2011-07/2015

Research Interest: Health Economics, Industrial Organization

Research in Progress

- Hospital Consolidation and Service Reposition with Chenyuan Liu
- Hospital Consolidations and Technology Adoption: the case of U.S.
- Vertical Integration between Hospitals and Insurance: the case of provider-sponsored health plan with Chenyuan Liu

Working Papers

- Private Label: a price-discrimination device or an evaluation-manipulation tool? the case of Dominick's in oatmeal cereal

Presentations

- UW-Madison Student Research Seminar, Fall, 2018
- 2018 International Conference on Economic Theory and Applications, China, July 18-20, 2018
- UW-Madison Industrial Lunch Workshop, Spring, 2018
- National Doctoral Conference of Mathematical Economics, China, Oct. 17-19, 2014.

Academic Employment

- Teaching Assistant for Applied Econometrics *University of Wisconsin-Madison*,Sep. 2018- present
- Research Assistant for Prof. Lydia Ashton, *University of Wisconsin-Madison* , Jun. 2017- May. 2018
- Teaching Assistant for Introduction to Microeconomics, *University of Wisconsin-Madison*, Jan 2018-May. 2018
- Teaching Assistant for International Finance *University of Wisconsin-Madison*, Jan. 2017- May. 2017
- Research Assistant for Prof. Lijia Wei, *Wuhan University*, Oct. 2013- Jun. 2015
- Teaching Assistant for Intermediate Econometrics 1&2, *Wuhan University* Mar. 2014-Feb. 2015

Skills & Languages

- Programming Matlab, R, Stata
- Languages Mandarin Chinese (native) , English (professional working profiency)

Courses Completed

Recent advance topica in Industrial Organizations,
Emprical analysis of Industrial Organization,
Topics in Health Economics,
Topicas in Computational Economics,
Topics in Applied Econemetrics,
Theory of Microeconoimcs sequence (1&2),
Mathematical Economics
Industrial Organization theory,
Seminar in Behavioral Economics,
Topics in Public Economics,
Econometric Methods (1 &2),
Econ Stat & Econometrics (1& 2),
Theory of Macroeconomics sequence (1&2),

WISCONSIN
UNIVERSITY OF WISCONSIN–MADISON

Alan Sorensen
Professor of Economics

19 September 2018

To Whom It May Concern:

I am writing to recommend Yu Ding for the Health Economics Research Boot Camp. Yu is beginning her 4th year of the PhD program in Economics at the University of Wisconsin in Madison. She is a bright and energetic student, and she has begun two promising research projects in health care. One examines the degree to which services are re-organized across hospitals following a merger; the other looks at what happens to costs and premiums when insurance companies and medical clinics vertically integrate. Although she has already started work on these projects, I think she is still at a stage where she would benefit a great deal from a program that discusses broader topics and strategies for doing health care economics research. We have some health researchers at UW-Madison who are well-informed about the institutions and idiosyncracies of health care markets, but it would be great for Yu to learn from a group of leaders in this area.

I'm making this letter short, but please don't hesitate to contact me if you need any additional information about Yu or her work.

Sincerely,



Alan Sorensen

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Dear Sir or Madam,

With enthusiasm I write to apply for the Health Economics Research Boot Camp. My research interest, coupled with my education background, makes me an ideal candidate to the research camp.

As a fourth year PhD. Student, I started my research on consolidations in the healthcare industry after I finish all the courses. My research recently focuses on understanding how hospitals reorganize their services after horizontal mergers and whether they potentially generate cost saving by the efficiency of scale. Additionally, I am also interested in evaluating the impact of vertical integration between health providers and insurance company.

My recommender is Professor Alan Sorensen (sorensen@ssc.wisc.edu) .

The opportunity to participate in the Research Camp and communicate with the leading researchers in the field is an excitement to me. I highly appreciate your time and consideration and look forward to hearing back from you soon.

Sincerely,

Yu Ding

Motivation Letter

Yu Ding

My research focuses on understanding how hospitals and insurance companies organize and design their services after horizontal or vertical mergers. I am interested in testing whether horizontal and vertical consolidation would bring efficiency of scale or cost savings. I believe the participation of the NBER Health Economics Research Boot Camp will benefit and inspire my future research

Hospital horizontal merger and service reposition

I am currently working with my colleague on examining the horizontal merger effect on hospitals services. Specifically, we study whether hospitals reposition their service spectrum and remove duplicative services to gain efficiency of scale. When confronting the anti-trust challenges for horizontal mergers, hospitals often defend themselves by claiming that they would gain an efficiency of scale when forming a large system. Even though many adverse aspects of hospital consolidation have been well-studied, (for instance, higher prices charged to insurers and consumers), there lack solid evidence to assert if mergers bring efficiency gain for health systems or not. To fill the blank, we are exploring whether hospitals attempting to seek efficiency of scale by reorganizing services and removing the duplicative service. By removing duplicative services for the hospitals in the same system, hospitals can gain cost savings on physical investment on medical devices and labor expenditures. Meanwhile, concentrating services into certain hospitals means a hospital is serving a larger patient base per service and reach an economy of scale. Therefore, to examine the change of hospital services after mergers, we use the American Hospital Annual Survey data and the New York discharge dataset and run Difference-in-Difference analysis. Preliminary results indicate that there exists a significant increase in service dropping for merged hospitals.

However, we concern that hospitals, different from those fully private-operated firms, do not possess full liberty in product decision and are required to keep many services regardless of profitable or not. Therefore, instead of entire removal of unprofitable services, hospitals can adjust service distribution in a subtler way, patient relocation. In other words, healthcare system redirected patients seeking certain treatments who were widely spread out around the whole system into just few hospitals. The hospitals received more patients will have an efficiency of scale, and the hospitals who have fewer patients for that treatment could shrink the physical and human investment, like decrease the bed number and nurses assigned to treat that disease. In this sense, hospitals within the system differentiate in their patient flows, and the healthcare system as a whole enjoy a higher concentration of patient flow. To test this pattern, we explore New York discharge data further. we use the method similar to Sweeting (2010) by pairing every two hospitals in the same market together and generating a metric of their service-offering difference. We test whether the hospitals come into the same system differentiate and increase their service-offering difference. Interestingly, we observe that hospitals' service-offering difference decreases after they get into the same ownership. In other words, the pair of hospitals get similar in service spectrum if they merge together, which is opposite to what they claim. Next, we examine the patient concentration by service and system, and show that most systems experience more concentrated patient flow after merger for more than 10% services. This suggests that the null result we found in previous analyses might be driven by the fact that hospitals only relocate a small fraction of services, so averaging across all services will show limited effects.

The next step of the project is to test how does the new technology adoption. Comparing with adjusting

existing services, change on future service installation usually receive less complaints and easier to implement. Therefore, the health systems enjoy higher control over the future tech installation. Meanwhile, the health system absorbing new hospitals may be reluctant to invest on some expensive new technology (for instance, robotic surgery) of some hospitals if other hospitals already possessing the new devices and leads to waste of duplicative services. Therefore, we plan to stick to AHA data and examine whether this scenario exists in the technology adoption of health systems experiencing consolidations.

Vertical integration between health insurance and providers

I also hold strong interest in studying the vertical integration (VI) of health insurance companies and providers. My coauthor and I are currently working on the NAIC schedule Y data to build the vertical integration map between insurers and providers. The NAIC schedule Y offers detailed information on the firms that hold the ownership of insurance companies, we are able to identify the interaction of ownership between insurance companies and health providers. Once finishing establishing of this data, I plan to examine the effect of vertical integration from three perspectives: (i) whether there exists foreclosure for both the vertically integrated health provider and insurers. When it comes to the foreclosure in the healthcare market, the VI insurers may tend to have narrower network, or the VI health providers may participate fewer network of plans compared with their non-VI counterparts. Meanwhile, the foreclosure may also appear in the form of higher prices charged to non-VI insurers by health providers. By employing a Diff-in-Diff method, I will test whether the vertical integration changes the insurance and health providers'network breadth after the vertical integration decision. (ii) whether vertical integration would bring administrative cost saving. For instance, taking advantage of the CCIIO Transparency in Coverage Data which includes claim denials information of ACA plans, I am able to check whether integration would decrease the rate of claim denial and thus potentially decrease the administrative cost. (iii) whether the plan design of VI plans and non-VI plans are different. From my preliminary analysis of the CCIIO data, the average claim cost per enrollee of VI insurers have no significant difference with non-Vis, but their drug claim cost per enrollee is significantly lower. This might due to the different objective of VI insurers and non-VI entities. The VI insurers may take the claim cost of medical services and drug differently, because the former is largely paid to the VI providers and remained in the VI system but the drug cost goes out of the system. Therefore, VI insures may attempt to steer patients from using drugs to using the services of VI providers by manipulating the plan design. I plan to check if this pattern exists in the ACA plans.

I sincerely wish I am honored to have the opportunity to participate in the Health Economics Research Camp, and communicate with the leading or emerging scholars in the field.