Carol Hengheng Lu

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Education

Stanford University, Department of Economics, CA, USA

Ph.D., Economics, 2017 - present

Research Interests

Field: Industrial Organization, Quantitative Marketing and Applied Econometrics
Topics: I am interested in empirical questions on online platforms such as consumer learning, search and matching, information design and pricing strategy, etc.

Selected Phd coursework

Course	Instructors
Core Microeconomics 1	B. Bernheim, Ilya Segal
Core Microeconomics 2	Paul Milgrom
Core Microeconomics 3	Matthew Jackson, Fuhito Kojima
Core Econometrics 1	Han Hong
Core Econometrics 2	Thomas MaCurdy, Frank Wolak
Core Econometrics 3	Guido Imbens
Industrial Organization 1	Brad Larsen, Paulo Somaini
Industrial Organization 2	Liran Einav, Matt Gentzkow, Ali Yurukoglu
Industrial Organization 3	Liran Einav
Game Theory and Economic Applications	Gabriel Carroll
Theory and Practice of Auction Market Design	Paul Milgrom, Michael Ostrovsky
Behavioral and Experimental Economics 1 & 2	B. Bernheim, Muriel Niederle, Alvin Roth
Quantitative Methods for Empirical Research	Guido Imbens
Machine Learning and Causal Inference	Susan Athey, Stefan Wager
Advanced Empirical Methods	Wesley Hartmann
Empirical Analysis of Dynamic Decision Contexts	Harikesh Nair
Bayesian Inference: Methods and Applications	Sridhar Narayanan

Research and Other work experience

Research intern at Microsoft Research Chief Economist Office, Redmond, June - Sept, 2019
Research Assistant for Prof. Brad Larsen, Stanford, 2018 - 2019
Research Assistant for Prof. Han Hong, Stanford, 2018
Research Assistant for Profs. John Riley and Rodrigo Pinto, UCLA, 2015 - 2016

Work in Progress

Optimal Design of Subscription for Digital Goods and its Welfare Implication: the Case of Video Games (with Jacob LaRiviere)

Abstract: In digital entertainment goods industries, nonlinear pricing schemes are often used and subscription business model is becoming a prevalent one. It grants consumers access to a bundle of constantly changing products for a fixed monthly price, different from

the traditional à la carte selling mechanism. In this paper, we utilize the introduction of subscription service on Xbox platform to analyze the optimal design and welfare effects of offering subscription service. Empirical results cannot be shown yet due to the confidentiality of the propriety data we use.

Consumer search, market thickness and competition

Abstract: I study the effects of consumer search and market thickness on competition among sellers on a food ordering platform. As sellers on this platform are freelancers instead of restaurants that constantly provide services, there is a big variation in the amount of supply from day to day. Using this variation, I find that sellers' positive externality among each other dominates competition (i.e., interact as complementaries) when the market is thin, while have the opposite result (i.e., interact as substitutes) when the market is thick. I provide a micro-founded framework of consumer search to rationalize this pattern. Using a dynamic structural model where consumers first decide whether to start searching on this platform and then choose between products after search, I estimate the effect of choice set size on consumers' purchasing decision and the related search cost. The counterfactual analysis could provide suggestions on how much platform can benefit from maintaining a stable and properly sized supply pool.

An Empirical Analysis of Intermediaries in Bargaining
(with Brad Larsen and Anthony Lee Zhang)

Abstract: Real world bargaining is often mediated in some fashion. The main objective of intermediaries is to facilitate trade or resolve disputes, but we don't know much about how important their role is in practice. Our paper is a first look at field data to study this question. We analyze bargainings over wholesale used car and find significant differences across intermediaries in outcomes for similar cars. Good intermediaries are able to make both buyer and seller concede more and they try to seal deals as quickly as possible. We discuss the mechanisms driving heterogeneous performance and find gender and working experience can partially explain this heterogeneity.

Social Learning versus Experience based Learning: Evidence from a Ride Sharing Platform (with Shengmao Cao)

Abstract: In this project, we try to disentangle and compare the effect of social learning and experience based learning on consumers' decision making process, using proprietary data from the biggest riding sharing platform in China. The platform uses queuing to allocate orders and thus consumers decide whether to wait for the ride basing on estimated waiting time. The estimated waiting time given by the platform is mainly based on the ranking of consumers in the queue instead of the attractiveness of orders. This makes the estimation inaccurate because drivers can select orders they prefer regardless of the rank. By comparing repeated order decisions of new and returned consumers, we are able to study how consumers update their belief about the estimated waiting time provided by the platform, and whether this is mainly driven by social leaning or by their own experience.

PUBLICATION **Unbounded Risk and the Possibility of Credit Rationing in the Stiglitz-Weiss**

Model
(with Kang Rong), *Journal of Mathematical Economics* 75, 2018

Abstract: Arnold and Riley (2009) find that in the credit rationing model of Stiglitz and Weiss (1981), the expected revenue of a lender as a function of the loan rate cannot be globally hump-shaped, and thus credit rationing is hard to explain using the Stiglitz-Weiss model. However, Arnold and Riley base their analysis on the assumption that there is an upper bound of the returns of borrowers' projects. We find that if unbounded returns of borrowers' projects are allowed, then a lender's expected revenue in the Stiglitz-Weiss model can in fact be globally hump-shaped. This also implies that credit rationing (with one equilibrium loan rate) can only arise in markets where the returns from investment are highly volatile.