

# Chenyang Li

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## References

### **Kaushik Basu (Chair)**

Professor of Economics and Carl Marks  
Professor of International Studies  
Cornell Department of Economics  
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### **Michael Waldman (Co-Chair)**

Charles H. Dyson Professor of Management and  
Professor of Economics  
Cornell SC Johnson College of Business  
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### **Lawrence Blume**

Distinguished Professor of Arts  
and Sciences in Economics  
Cornell Department of Economics  
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### **Tommaso Denti**

Assistant Professor; Salvatore  
Faculty Fellow  
Cornell Department of Economics  
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## Education

### **Cornell University**, Ithaca, NY

PhD in Economics, Economics Department,  
Aug. 2017 - Present

### **University of Wisconsin Madison**, Madison, WI

Economics & Mathematics, Bachelor of Science, Honor Degree, GPA: 3.98/4  
Aug. 2013 - May.2017

## Research Interest

Microeconomics Theory, Game Theory, Mechanism Design, Industrial Organization

## Working Papers and Works in Progress

### 1. **How to Make People Work without Direct Supervision**, JMP

Abstract: When a principal cannot punish or reward the agents, is it still possible to make them work without supervision? The answer is yes if the principal can construct an equilibrium in which the agents supervise one another and

punish lack of effort. However, a complication arises when the agents can collude and jointly deviate to a new equilibrium with no effort and no peer supervision. This paper models a voting mechanism for collusion formation and characterizes the conditions under which the collusion may or may not occur. The central insight is: if the principal can limit the communication network among the agents, it is much harder for the collusion to occur. Furthermore, I develop an algorithm that calculates the bargaining power of any agent in any communication network. The bargaining power is measured by the maximum size of coalition that the agent can organize. The result can be interpreted as a new centrality measure. This paper gives us new insights into anti-corruption, anti-trust, firm management, political bargaining, social movements, revolutions, or any other cases in which the principals have difficulty contracting punishment after a coalition forms.

2. [Price Signaling and Reputation Building: Evidence from a Consulting Platform](#), with Yangguang Huang (HKUST) and Si Zuo (Cornell). Under review

Covered by [South China Morning Post](#). Presented in IIOC (2022, Boston), North America Summer Meeting (2022, Miami), Jinan University (Guangzhou, China), Asia-Pacific Industrial Organization Conference (2021, NUS).

Abstract: To build a reputation on online platforms, new firms need to accumulate reviews through sales and consider the corresponding pricing strategy. We construct a dynamic model with both price signaling and a review-based reputation system. A high-quality firm can signal its unobserved quality by setting a lower introductory price than that of a low-quality firm because the high-quality firm benefits more from accumulating reviews in early periods. Using data from Zaihang, a service platform, we find empirical evidence that experts with high unobserved ability indeed adopt low introductory prices. We use an expert's performance on another platform as an instrument for the expert's ability to provide evidence for the causal relationship. The price and sales dynamics in the data are also consistent with the model predictions. The platform can accelerate quality revelation by facilitating price signaling. To do so, platforms could make price comparison easier and provide training to new firms about signaling.

3. **Stores Going Online: Market Expansion or Self Cannibalization?**, with Yangguang Huang and Si Zuo.

Abstract: With the rise of e-commerce, more and more chain stores have opened online sales channels. For one chain, there are usually one online store and many offline stores. Online stores may cannibalize the sales of the existing physical stores because of their advantage in lower shopping costs. On the other hand, the online sales channel is usually a tool for advertisement, which may expand the offline store's market. From our novel daily revenue data of 380 offline stores from 2016 to 2020, we identify the countervailing cannibalization effect and the informative effect of opening up online branches on offline stores. We first use exogenous demand shocks (weather, Covid-19, and online shopping festivals) to provide solid evidence of these two effects. We then separately estimate these two effects by a structural model. We find that the cannibalization effect dominates the informative effect in most cases. The electronics category has the largest cannibalization effect, while the cosmetics and jewelry category has the smallest.

4. **Belief Formation Function: A Method to Model Equilibrium Selection in Games**

Abstract: In many game-theoretic models, it is common to see multiple equilibria. There are extensive literature on identifying which equilibrium is more likely to occur, arguments like the focal points, evolutionary convergence, learning and Et cetera. But all of them have certain limitations. In this paper, I propose a new setup that enables us to model the equilibrium selection process. Instead of players best responding to each other's actual strategies, I assume that players best respond to their beliefs about the opponents' strategy. On the other hand, the belief is generated from a belief formation function that may take any observables and map that into a specific belief about the opponent's strategy. This way, we may construct models describing how payoff irrelevant signals and off equilibrium play may shape future outcomes and choosing equilibrium. Then I introduce the outer games to model how exogenous shocks to an inner game are generated. I allow players in the outer game to affect the game structure and belief formation signals of the inner game and thus control equilibrium outcome exogenously. I use several examples to illustrate this new setup and how it is different from more conventional sequential games. I finish this paper by discussing further regulatory assumptions on the belief formation functions.

5. **A Behavioral Approach to Durability Choice, New-Product Introductions, and Planned Obsolescence**, with Michael Waldman and Haimeng Hester Zhang Abstract: Observation of real-world markets suggests that many products are produced at below efficient durability levels, and/or new products are introduced quickly which inefficiently reduces the useful life of durable products. Most of the prior literature on this subject explains these observations employing monopoly/market power models, but a number of the markets that exhibit these behaviors are competitive. We consider models in which consumers have time-inconsistent/present-biased preferences, as first put forth in the seminal analysis of Strotz (1955), and show that present-biased consumer preferences can lead to equilibrium durability below efficient levels and inefficiently quick new-product introductions, even in competitive markets. We also investigate circumstances in which market power aggravates these distortions. In addition to deriving these theoretical results, we also relate our findings to behavior in various real-world markets, including that of the well-known Phoebus light bulb cartel of the 1920s and 1930s.

## Teaching Assistant Experience

- Intermediate Microeconomics** , with Sessions Fall 2020  
 with Prof. Doug Mckee, Economics Department , Cornell University  
 The Louis Walinsky Fund in Economics Outstanding Teaching Award
- Introductory Macroeconomics** , with Sessions Spring 2021, Spring 2020 and Spring 2019  
 with Prof. Arnab Basu and Prof. Terry Alexander, Economics Department , Cornell University
- Introductory Microeconomics** , with Sessions Fall 2019 and Fall 2018  
 with Prof. Nicholas J. Sanders and Prof. Stephanie Thomas, Economics Department , Cornell University

## Research Assistant Experience

- Research Assistant for Prof. Evan Riehl, ILR School, Cornell University Dec 2018- June 2020  
 Intergenerational Mobility Team for Prof. Steven Durlauf, University of Wisconsin Madison 2015 - 2017

## Industry Work Experience

- June 2015 - August 2015, Analyst Intern, CITIC Securities, Hangzhou, China

## Conference

2023: ASSA Poster section.

2022: 100 Years of Economic Development Conference (Cornell University); 33rd Stony Brook International Conference on Game Theory (New York); INFORMS annual meeting (Indianapolis)\*; Econometric Society Summer Meeting (Miami); International Industrial Organization Conference (Boston) \*; Jinan University (Guangzhou, China)\*; Emerging Markets Research Day (Cornell)\*

2021: Asia-Pacific Industrial Organization Conference (NUS, Virtual)

\* paper presented by coauthors.

## **Fellowships, Honors and Grants**

Invitation to Lindau Nobel Laureate Meeting (Germany)	2022
The Louis Walinsky Fund in Economics Outstanding Teaching Award , Cornell University	2021
Sage Fellowship, Cornell University	2017-2022
Dean's List, University of Wisconsin, Madison	2013 - 2015
Meek Bishop Scholarship in Economics Application, University of Wisconsin, Madison	Fall 2014

## **Language**

Chinese (Native)  
English (Proficient)  
Japanese (Intermediate)

## **Skills**

Stata, R, Matlab, Mathematica

**October 24, 2022**