

Shunto Jerry Kobayashi

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Education

Ph.D. Social Science (Economics), Caltech	2024 (expected)
<i>Committee:</i> Matthew Shum, Thomas Palfrey, Yi Xin, Gabriel Lopez-Moctezuma	
M.S. Social Science (Economics), Caltech	2019
B.S. Economics and Mathematics, <i>Valedictorian</i> , California State Polytechnic University, Pomona	2018

Research & Teaching Interests

Research: Industrial Organization, Applied Microeconomics, Digital Markets, Econometrics

Teaching: Industrial Organization, Econometrics, Microeconomics, Game Theory, Statistics

Job-Market Paper

“Dynamic Auctions with Budget-Constrained Bidders: Evidence from the Online Advertising Market”
with Miguel Alcobendas (Yahoo)

Abstract: When price discovery is necessary for time-sensitive goods, a common practice is to conduct an auction for each item sequentially, but dynamic incentives can lead to behavior distinct from static settings. In this paper, we provide a novel empirical analysis of a large-scale sequential market that employs auctions to allocate objects to firms with budget constraints, leveraging a unique proprietary dataset of the online advertising market. In this market, because of their short-run budget constraints, participants face a tradeoff between winning auctions immediately or holding out for later opportunities. This dynamic incentive prompts them to adjust their entry rates and bidding strategies accordingly. We develop and estimate a finite-horizon dynamic game between bidders with heterogeneous budgets facing a sequence of simultaneous auctions to quantify this incentive and analyze its implication in competition and auction design. We find that a substantial markdown occurs due to the dynamic incentives arising from budget constraints, and this markdown varies significantly among bidders with different budgets. Using the estimated structural model, we provide a counterfactual simulation comparing the first-price and second-price formats. Unlike the standard environment, we find that dynamics and heterogeneous budgets lead to a significant disparity in the welfare distributions under them. This highlights that even a seemingly simple mechanism choice can have competitive implications in such a dynamic environment.

Working Papers

1. **“The Impact of Privacy Protection on Online Advertising Markets”** with Miguel Alcobendas (Yahoo), Ke Shi (Caltech), and Matthew Shum (Caltech)
Accepted for presentation/extended-abstract at EC’23

2. “Robust Estimation of Risk Preferences” with Aldo Lucia (Caltech)

Conference Presentations

- 2023 North American Summer Meeting of the Econometric Society (Los Angeles, presenter)
 2022 International Industrial Organization Conference (Boston, presenter and discussant)

Fellowships & Awards

Linde Institute Graduate Research Grant (\$5000 award) with Aldo Lucia (Caltech)	2022-2023
Linde Institute Graduate Fellowship	2020-2021
Linde Institute Graduate Research Grant (\$5000 award)	2020-2021

Teaching Experience (Caltech)

Introduction to Finance , TA for Jean-Laurent Rosenthal	Winter 2023
Investment , TA for Richard Roll	Spring 2022
Introduction to Probability and Statistics , TA for Jaksa Cvitanic	Winter 2022
Graduate Mentor for Caltech’s Summer Undergraduate Research Fellowship (SURF)	Summer 2021
TA Representative for first-year Ph.D. core courses	2020-2021
Microeconomic Theory, Game Theory, Econometrics, Political Theory	
Introduction to Accounting , TA for Michael Ewens	Spring 2020
Options , TA for Jaksa Cvitanic	Fall 2019

Additional Information

Languages: English (fluent), Japanese (fluent)
Programming: Julia, R, Python, Matlab, \LaTeX
Citizenship: US, Japan

References

Matthew Shum (mshum@caltech.edu)	William D. Hacker Professor of Economics
Thomas Palfrey (trp@hss.caltech.edu)	Flintridge Foundation Prof. of Economics and Political Science
Yi Xin (yixin@caltech.edu)	Assistant Professor of Economics
Gabriel Lopez-Moctezuma (glmoctezuma@caltech.edu)	Assistant Professor of Political Science