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REFERENCES

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Graduate Administrator: Laura Hedden; lhedden@princeton.edu; +1 (609) 258-4006.

EDUCATION

Princeton University

Ph.D. Candidate in Economics

Exp. 2023

Princeton, NJ

Princeton University

M.A. Economics

2019

Princeton, NJ

University of Chicago

M.A. Social Sciences (Economics)

2017

Chicago, IL

Washington University in St. Louis

B.A. in Mathematics and Economics, summa cum laude

2016

St. Louis, MO

RESEARCH AND TEACHING INTERESTS

Primary: Industrial Organization, Urban Economics

Secondary: Economics of Digitization

JOB MARKET PAPER

- "The dynamic allocation of public housing: Policy and spillovers"
 - Joint work with Andrew Ferdowsian and Luther Yap.

We consider the design of a large-scale public housing program where consumers face dynamic tradeoffs over apartments rationed via lotteries and prices. We show, theoretically and empirically, that changing rules complements increasing supply. First, we present a motivating example in which supplying more housing leads households to strategically delay their applications, resulting in more vacancies. Turning to the data from the mechanism, we formulate a dynamic choice model over housing lotteries and estimate it. Under the existing mechanism, we find that increasing supply fails to lower wait times. However, when a strategyproof mechanism is implemented, vacancies and wait times fall, but prices on the secondary market rise. Under the new mechanism, building more apartments lowers wait times and reduces the upward pricing pressure on the secondary market.

OTHER PAPERS

- "Entry into two-sided markets shaped by platform-guided search"
 - Joint work with Leon Musolff.
 - Awarded the Rising Star Paper Prize at the 20th International Industrial Organization Conference (2022)

We evaluate the problem of firms that operate platforms matching buyers and sellers, while also selling goods on these same platforms. By being able to guide consumer search through algorithmic recommendations, these firms can influence market outcomes, a finding that has worried regulators. To analyze this phenomenon, we combine rich novel data about sales and recommendations on Amazon Marketplace with a structural model of intermediation power. In contrast to prior literature, we explicitly model seller entry. This feature enables us to assess the most plausible theory of harm from self-preferencing, i.e. that it is a barrier to entry. We find that recommendations are highly price elastic but favor Amazon. A substantial fraction of customers only consider recommended offers, and recommendations hence noticeably raise the price elasticity of demand. By preferring Amazon's offer, the recommendation algorithm raises consumer welfare by approximately US\$4.5 billion (since consumers also prefer these offers). However, consumers are made worse off if self-preferencing makes the company raise prices by more than 7.8%. Furthermore, we find no evidence of consumer harm from self-preferencing through the entry channel. Nevertheless, entry matters. The algorithm raises consumer welfare in the short and medium run by increasing the purchase rate and intensifying price competition. However, these gains are mostly offset by reduced entry in the long run.

- "Urban transit infrastructure and inequality: The role of access to non-tradable goods and services"
 - Joint work with Brandon Joel Tan.

We develop an urban spatial model with heterogeneous workers, incorporating travel to consume non-tradable goods and services. Since low-income workers are overwhelmingly employed in non-tradable sectors, changes in consumption travel induce a spatial re-organization of low-income jobs in the city, with important distributional implications. Using farecard data from Singapore, we find that the Downtown Line resulted in large welfare gains for high-income workers, but near zero for low-income workers. All workers benefited from improved access to consumption opportunities, but low-income jobs in the non-tradable sector moved to less attractive workplaces. Abstracting away from consumption travel underestimates the inequality effects five-fold.

- "Principal responsiveness in centralized mechanisms: Build to order"
 - Joint work with Andrew Ferdowsian and Luther Yap.

How should the supply of public housing be optimally curated? Queuing mechanisms in the literature treat the supply of goods as exogenous. However, in practice, designers can often control the inflow of goods as well. We study a dynamic matching model based on the Singaporean housing allocation process. We show that endogenous supply radically changes the nature of the optimal mechanism. In this mechanism, a key feature is that under-demanded housing is overproduced relative to the static benchmark. Though competition leads to a decrease in efficiency when supply is exogenous, competition instead improves matching when supply is endogenous. Competition can be artificially generated through increasing the thickness of the market by batching applications. We show that doing so is a key feature of the optimal mechanism when the planner places a high weight on match quality.

WORK IN PROGRESS

- "Discovering lottery odds: Implications for public housing market design" (with Andrew Ferdowsian and Yiyang Tan)
- "Where should a government locate public housing?" (with Brandon Joel Tan)

RESEARCH EXPERIENCE

<i>Research Assistant to Chris Blattman</i>	2016-2017
Harris School of Public Policy, University of Chicago	Chicago, IL
<i>ARTU Research Scholar supervised by Rachel Roberts</i>	2015-2016
Department of Mathematics, Washington University in St. Louis	St. Louis, MO
<i>Research Assistant to Guido Weiss and Victor Wickerhauser</i>	2014-2015
Department of Mathematics, Washington University in St. Louis	St. Louis, MO

TEACHING EXPERIENCE

<i>Assistant Instructor</i>	2019-2021
Policy Research Seminar; Microeconomic Theory: A Mathematical Approach	Princeton, NJ
Department of Economics, Princeton University	
<i>Residential Peer Mentor (Calculus)</i>	2014-2016
Cornerstone, Washington University in St. Louis	St. Louis, MO
<i>Teaching Assistant</i>	2014-2015
Elementary Geometry from an Advanced Point of View; Matrix Algebra	St. Louis, MO
Department of Mathematics, Washington University in St. Louis	

PROFESSIONAL ACTIVITIES

<i>Econometric Society Dynamic Structural Econometrics Summer School</i>	Summer 2022
	Boston, MA
<i>NBER Digitization Workshop</i>	Spring 2022
	Washington, DC
<i>UEA PhD Student Workshop</i>	Summer 2021
	Online
<i>'math+econ+code' Masterclass</i>	Summer 2021
	Online
<i>NBER Digitization Workshop</i>	Spring 2020
	Palo Alto, CA

AWARDS AND FELLOWSHIPS

National University of Singapore Development Grant	2022-Present
Princeton Institute for International and Regional Studies Graduate Fellowship	2022-Present
Griswold Center for Economic Policy Studies Fellowship	2021-2022
University Fellowship, Princeton University	2017-2021
Phi Beta Kappa	2016
Advanced Research Training For Undergraduates Fellowship	2015-2016
Gold Medal, Singapore Chemistry Olympiad	2010

PRESENTATIONS

- 2022: 50th American Real Estate and Urban Economics Association (AREUEA) National Conference; 17th CIREQ PhD Students' Conference; Department of Strategy and Policy, National University of Singapore; Land Transport Authority of Singapore
- 2021: 9th Warwick Economics PhD Conference; Young Economist Symposium; Summer School in Urban Economics, Urban Economics Association; 15th North American Meeting, Urban Economics Association

OTHER WORK EXPERIENCE

<i>Consultant</i> sentient.io	2019-2021 <i>Singapore</i>
<i>Photojournalist</i> Naval Operations Department, Republic of Singapore Navy	2011-2013 <i>Singapore</i>

SKILLS

Computer (Fluent) Julia, Python, T_EX; (Proficient) R, Stata, UNIX
Languages (Native) English, Chinese; (Proficient) French; (Elementary) Malay

ADDITIONAL INFORMATION

Citizenship Singapore; US F-1 Visa

Last updated: September 27, 2022