Mitchell Watt

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Education

2018 - present Doctor of Philosophy in Economics
Stanford University
Primary Advisor: Professor Paul Milgrom
Committee: Professors Alvin Roth, Andrzej Skrzypacz, Ravi Jagadeesan, Shoshana Vasserman

2016-2018 Master in Public Policy
Harvard University, John F. Kennedy School of Government
Concentration: Business and Government Policy
Thesis: *Trust mechanisms and online platforms: A regulatory response*
Advisor: Professor Jason Furman

2008-2012 Bachelor of Science (Hons.) and Graduate Diploma of Economics
The University of Queensland
Major: Mathematics
Honours Thesis: *Morse Theory: Smooth and Discrete*
Advisor: Professor Stephan Tillmann

Research Interests

Market design, microeconomic theory, industrial organization.

Working Papers

Optimal In-Kind Subsidy Design with Zi Yang Kang (Toronto) Draft TBC

Job Market Paper

We characterize the optimal in-kind subsidy mechanism for redistribution towards lower-income consumers in settings where recipients can "top up" their subsidized consumption with private market purchases. For normal goods, subsidies are optimal only if lump-sum transfers are unavailable and the planner values redistribution more than the cost of public funds, leading her to subsidize consumption *up to* her preferred level. For inferior goods, the planner may prefer in-kind subsidies to lump-sum transfers, providing discounts for consumption *above* her preferred level. We use our explicit construction of the optimal subsidy program to evaluate the comparative statics of subsidies and analyze the value of eligibility rules for subsidy programs: they are more important for normal goods than for inferior goods.

Linear Pricing in Nonconvex Economies with Paul Milgrom (Stanford) Link

Revise and Resubmit at the *Review of Economic Studies*

We introduce two extensions of the Walrasian mechanism for quasilinear economies to allow agents to report non-concave values and non-convex costs. The extended mechanisms, which always deliver feasible, near-efficient allocations with no budget deficit, are computationally undemanding and nearly incentive-compatible. We also introduce an extension of the First Welfare Theorem allowing us to upper bound the welfare losses from these mechanisms.

Strong monotonicity and perturbation-proofness of Walrasian equilibrium Link

Best Paper by Young Researcher, Econometric Society Australasian Meeting (2023)

I study the price impact of small perturbations to Walrasian equilibrium, as might be caused by changes in the supply vector, changes in the set of participants, or misreports by an agent. A (nested) sequence of markets is perturbation-proof if, given any supply vector, the price impact of any bounded perturbation is inversely proportional to the number of agents. Perturbation-proofness implies good incentive properties of Walrasian equilibrium in large markets and robustness of prices to small misspecifications. Replica economies are perturbation-proof if and only if the base economy's demand correspondence is strongly monotone. When buyers' preferences are drawn identically and independently from a type distribution with a strongly monotone expected demand correspondence, the resulting sequence of economies is perturbation-proof with high probability.

Congestion in Labor Markets: Evidence from an Online Platform Draft TBC

with Shoshana Vasserman (Stanford GSB) and John J. Horton (MIT Sloan)

We report the results of a field experiment on an online labor market platform that introduced a "soft" cap on the number of applications that could be received for a job opening and the number of days applications were accepted. Despite reducing the number of applications per opening, the intervention did not reduce the hiring probability or reported match quality. We interpret this as evidence of *inefficient congestion*: before the intervention, applicants submitted too many applications to popular jobs and too few to less popular ones. We show that inefficient congestion can arise due to a "missing market" for job applications and the associated failure of applicants to internalize their effects on the hiring probability of competing applicants. We find that application fees introduced by the platform reduced hire rates and competition among candidates, suggesting that these fees may have been miscalibrated or higher than socially efficient.

Who Gets What and When: Dynamic Incentives in Repeated Matching Draft TBC

A principal is endowed with a stream of items to be allocated to a fixed population of agents. Items arrive in each period with random quality—some items are 'goods', desired by all agents, while others are 'bads', conferring negative flow payoffs to agents—and no transfers are allowed. The principal seeks to allocate as many items as possible, while respecting an ex-post participation constraint for each agent, which is enforced each period. I characterize the optimal allocation, which involves incentivizing undesirable allocations today using promises of improved future allocations. Schur-concavity of the principal's value function implies that the principal is optimally 'loyal' to agents with worse historical allocations, assigning them priority for the best arriving goods. I discuss implications of these results for the design of markets for ridesharing and the centralized allocation of teachers to schools.

Concavity and Convexity of Order Statistics in Sample Size Link

We show that the expectation of the k^{th}-order statistic of an i.i.d. sample of size n from a monotone reverse hazard rate (MRHR) distribution is convex in n and that the expectation of the $(n-k+1)^{\text{th}}$-order statistic from a monotone hazard rate (MHR) distribution is concave in n for $n \geq k$. We apply this result to the analysis of independent private value auctions in which the auctioneer faces a convex cost of attracting bidders. In this setting, MHR valuation distributions lead to concavity of the auctioneer's objective. We extend this analysis to auctions with reserve values, in which concavity is assured for sufficiently small reserves or for a sufficiently large number of bidders.

Academic Publications

Vasserman, S., & Watt, M. (2021). Risk aversion and auction design: Theoretical and empirical evidence. *International Journal of Industrial Organization*, 79:102758.

Other Publications

- Commentary on Effective Allocation of Affordable Housing by Nick Arnosti and Peng Shi with Paul Milgrom, Management Science Blog, 2020.
- Trust mechanisms and online platforms: A regulatory response with Hubert Wu, Harvard Mossavar-Rahmani Center for Business and Governance, Associate Working Paper Series, No. 97, 2018.
- Labor should fight for economic mobility with Jim Chalmers, Chifley Research Centre Blog, 2013

Honors and Awards

- Gale and Steve Kohlhagen Fellowship in Economics, Stanford University (2024-2025)
- Best Paper by Young Researcher, Econometric Society Australasian Meeting (2023) for *Strong monotonicity and perturbation-proofness of Walrasian equilibrium*
- The Koret Fellowship, Stanford University (2021-2023)
- Ric Weiland Graduate Fellowship, Stanford University (2021-2023)
- Centennial Teaching Award, Stanford University (2021)
- Department of Economics Outstanding TA Award, Stanford University (2021)
- Dean's Award for Excellence in Student Teaching, Harvard Kennedy School (2018)
- John F. Kennedy Fellowship, Harvard Kennedy School (2016-2018)
- Graduate of the Year, University of Queensland (2012)
- University Medal, University of Queensland (2011)
- Harriet Marks Bursary, University of Queensland (2011)
- Madalen Kitty Ravenhill Hulbert Memorial Prize, University of Queensland (2009)
- John Black Prize, University of Queensland (2009)
- Dean's Excellence and Equity Scholarship, University of Queensland (2008-2010)
- UQ Excellence Scholarship, University of Queensland (2008-2010)

Conference Presentations

- Econometric Society Australasian Meeting (2023)
- 34th Stony Brook International Conference on Game Theory (2023)
- American Economics Association CSQIEP Mentoring Conference (2023)
- NBER Market Design Working Group, Fall Meeting (2021)

Teaching Experience

Stanford University

ECON 202 Graduate Microeconomics I (TA, 2020)
ECON 136 Market Design (TA, 2021)
Public Policy Masters Math Camp (Instructor, 2021)
Economics PhD Math Camp (Instructor, 2022-23)

Harvard Kennedy School	API-303 Game Theory & Strategic Behavior (TA, 2017) API-101D Markets & Market Failure (TA, 2017) API-102I Economic Analysis of Public Policy (TA, 2018)
University of Queensland	MATH1051 Calculus & Linear Algebra I (TA, 2009) MATH1052 Multivariable Calculus & ODEs (TA, 2009-2013) MATH2000 Calculus & Linear Algebra II (TA, 2011-2013) MATH3402 Functional Analysis (TA, 2013) MATH3500 Problems & Applications in Modern Mathematics (TA, 2012-13)

Academic Service

- Member of the Economics Graduate Student Committee (2021-2023)
- Volunteer, WE RISE: Women's Empowerment and Rational Inclusion at Stanford Economics (2018-19)
- Volunteer for Graduate Student Admissions, Department of Economics, Stanford University (2018-2023)
- Social Chair, Department of Economics, Stanford University (2019)

Other Experience

Auctionomics - Consultant March 2023 - present

Analysis of auction design and auction strategy, including original research, empirical analysis, analysis of documentary evidence, report writing and presentation to non-expert audiences.

AlphaBeta Advisors - Consultant May-August 2017

Strategic economic analysis and advice for a number of public sector clients on policy design, including labour market economics and industry policy.

Parliament of Australia, Office of Dr Jim Chalmers MP - Adviser October 2013-July 2016

Advised on policy issues for the (then) Shadow Minister for Financial Services and Superannuation, Shadow Minister for Sport, Shadow Assistant Minister for Trade, Resources and Productivity. Policy and legislative advice, speech-writing, support for parliamentary duties.

Australian Labor Party

Secretary, Australian Young Labor April 2014-September 2015
President, Queensland Young Labor May 2013 - May 2014

Campaign organizing, event management and administrative management of youth wing of party.

The Pyjama Foundation - Volunteer and IT Assistant April-November 2013

Assisted the charity (which provides tutoring and support for foster children) with database development and maintenance, training for new volunteers, and general office administration.