Rachel C. Shafer

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Research Areas Auctions · Decision Theory · Mechanism Design

Fields Microeconomic Theory · Industrial Organization · Political Economy

Education

University of Illinois Urbana-Champaign

Ph.D. Candidate in Economics
Anticipated Graduation Date: May 2016
Dissertation *Robustness of Information Revelation Under Knightian Uncertainty*
Advisor Steven R. Williams
Committee In-Koo Cho, George Deltas, Martin Perry

Doctoral School in Experimental Economics
Society for Economic Design and Bilgi Economics Lab of Istanbul (BELIS)
June 30–July 1, 2015

University of Tulsa

B.S. in Economics and Mathematics, May 2009
TU Presidential Scholar · Honors Program

Presentations & Conferences

Convergence to Price-Taking by Regret-Minimizers in k-Double Auctions, Conference on Auctions, Market Mechanisms & their Applications, Chicago, August 9, 2015

The Axiom of Symmetry and Failure of Convergence under Knightian Uncertainty Conference on Economic Design, Istanbul, Turkey, July 4, 2015

Robustness of Convergence to Price-Taking Behavior in Simple Markets under Knightian Uncertainty, Calvin College Economics Seminar, Grand Rapids, March 6, 2015

Decision Rules for Double Auctions Under Ambiguity, Illinois Economics Association Meeting, Chicago, October 17, 2014

Jump Bidding in FCC Auctions, Southwestern Economics Association Meeting, Denver, April 10, 2009

Broadband PCS License Pricing, Economics Scholars Program, Dallas, March 28, 2008

Economics Scholars Program (undergraduate research conference held at the Dallas Federal Reserve) discussant 2007, 2008, & 2009; Peer Review Board member 2009.

Teaching Experience

AUCTIONS (Econ 490) — Spring, Fall 2014 & 2015
Full Course Responsibility. Created a topics course related to research area of interest. Chose the scope and sequence of topics, wrote lecture notes, assignments, and exams. Class time incorporated lecture, discussion, auction simulations and experiments.

INDUSTRIAL ORGANIZATION (Econ 480) — Spring, Summer, Fall 2012; Spring, Fall 2013
Full Course Responsibility. Created syllabus, prepared and delivered lectures, wrote exams, designed a series of in-class and at-home exercises.

MICROECONOMICS (Econ 102) — Summer 2011
Teaching Assistant for an online course. Graded and responded to group projects.

BUSINESS STATISTICS I (Econ 202) — Fall 2010; Spring, Fall 2011
Teaching Assistant. Led three discussion sections weekly. Assisted individual student work in large lecture. Programmed online homework and quizzes on Lon-Capa.

Teaching Awards

Robert E. Demarest Memorial Teaching Award	2012, 2013
Listed among Teachers Ranked as Excellent by Students	2011–2012, 2014

Fellowships & Honors

Paul W. Boltz Fellowship	2015
Summer Student Fellow, AIER	2009, 2010
Prize for Student Paper, Southwestern Econ. Association	2009
University of Tulsa Outstanding Senior in Economics	2008

Phi Beta Kappa · Omicron Delta Epsilon · Phi Kappa Phi

Papers

Regret-Minimizers and Convergence to Price-Taking (Job Market Paper)
This paper studies three types of regret minimizers in the private value sealed bid double auction. Regret minimizers, unlike the expected utility maximizers that populate typical market models, do not determine their actions using a single prior. The regret minimizer's reduced dependence on information about the other trader's behavior makes them useful benchmarks for testing the robustness of double auctions in markets in which

the equilibrium is not common knowledge.
The analysis proves that minimax regret traders will not converge to price-taking as the number of traders in the market increases, contrary to standard economic intuition. However, not all regret-based decision rules fail to respond to market size. In fact, traders who minimize maximum expected regret (a type of regret minimization that uses multiple priors) may converge to price-taking as the market grows, if they rule out beliefs that would eliminate their incentive to compete with other traders.
The results clarify the kind of information and beliefs that affect trader's convergence to price taking and the efficiency of the double auction. Traders need to know that their influence lessens as the market grows. But this knowledge need not be precise. The robustness of the sealed bid double auction is limited by the need to avoid priors that eliminate traders' incentive to truthfully reveal their redemption values.

The Symmetry Axiom and Strategies Invariant to the Number of Rivals
This paper considers whether the size of a market affects agents' incentive to truthfully report their private information under Knightian uncertainty. Traders face Knightian uncertainty (also known as ambiguity) if they know the possible outcomes of each available action, but do not know each outcome's probability. Such uncertainty may motivate use of a decision rule other than expected utility maximization. Two such alternative decision rules are maxmin and minimax regret. Stoye's (2011) axiomatic characterization of these decision rules reveals that there is one axiom that maxmin and minimax regret share, and that distinguishes them from Bayes rule: the axiom of symmetry. We find that if agents use decision rules that accord with the symmetry axiom, then their strategies will be invariant to the number of other players in the game. Consequently, a market populated by traders that follow the symmetry axiom will not converge to efficiency as the market grows. On the other hand, in a voluntary contribution game, outcomes do not become less efficient in larger markets.

Robustness of Information Aggregation in Common Value Auctions under Knightian Uncertainty (In progress)

References

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Martin Perry · 217 - 333 - 0120 · mkperry@illinois.edu