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Personal Information: Born 1990, US Citizen

Education

The University of Chicago, Sept 2014 to present
Ph.D. Candidate in Economics
Thesis Title: *Consumer information and uncertainty*
Expected Completion Date: May 2020

Brigham Young University, Sept 2008-May 2009 and Sept 2011-May 2014
B.A. Economics and B.S. Mathematics

References:

Professor Philip Reny (Chair)
University of Chicago
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Professor Ben Brooks
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Booth School of Business
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Teaching and Research Fields:

Primary field: Microeconomic Theory
Subfields: Information Design, Search Theory, Industrial Organization, Business Economics

Teaching Experience:

Spring, 2018	Price Theory III (Grad core), TA for Myerson and Reny
Winter, 2018	Price Theory II (Grad core), TA for Myerson and Reny
Winter, 2017	Econ 201 (Micro II), UChicago, Lecturer
Fall, 2017	Intro to Comp. Finance, UChicago Financial Math, TA
Summer, 2017	Applied Math, Open Source Macro. Lab., Lecturer

Winter, 2016 Portfolio Theory, UChicago Financial Math, TA
Fall, 2016 Econ 203 (Macro II), UChicago, Lecturer

Research Experience:

August 2018- UChicago, RA for Philip Reny
present

Language and Computer Skills:

Computer Skills:

Python, Mathematica, MatLab, R, Stata

Languages:

English (Native), German (Working proficiency), Korean (Limited proficiency)

Publications:

Skill, complexity and strategic interaction (with Val Lambson), **Journal of Economic Theory**, 159, September 2015, 516-530

Abstract: We present a win-loss game between players with explicitly-modeled cognitive limitations. Differences in the players' abilities to analyze the available moves induce preferences over the complexity of the environment and hence incentives to manipulate that complexity. Other things equal, higher-skill players are more likely to win. In a class of long-horizon games with constant complexity, greater complexity reduces the advantage of the higher-skill player when the higher-skill player is the last mover. When the lower-skill player moves last, increasing complexity induces countervailing effects, either of which may dominate. Finally, when complexity can be manipulated over the course of the game, the benefits of strategic manipulation of complexity can override objective considerations about best move choice, resulting in purposeful departures from subgame perfect Nash equilibrium behavior.

Research Papers:

Competitive information degradation (Job Market Paper)

Abstract: Firms respond to competition by offering consumers lower prices, but will they also offer better information? The opposite occurs in a simple model where increased competition results in worse information provision, lowering welfare for firms and sometimes consumers. Lower prices and a diminished ability to internalize the value of consumer information caused by more search result in firms increasingly diluting signals to sale to larger groups of lower-value consumers. These additional sales are made by consumers who value the product below production cost, implying more competition decreases the efficiency of the market by inducing inefficient consumption. The competitive limits of these markets are especially inefficient with either no useful information provision (i.e., no provision of information that could sway a consumer's purchase decision) or all gains from trade vanishing. An extension confirms the limit result but produces a surprising non-monotonicity in comparative statics: market prices may increase with search cost due to threat of search resulting in better information and fewer sales at low priced firms.

Is asymmetric price adjustment caused by information rents?

Abstract: It is well documented empirically that prices in most consumer and producer markets adjust asymmetrically with costs, increasing quickly as costs increase, but only decreasing slowly when costs decrease. A model shows how these asymmetries may be caused by consumer uncertainty. When consumers are very uncertain about the distribution of prices in the market, they learn a large amount about this distribution from observing the price at a single firm. In a setting where search is costly, this learning increasing firm's

information rents by allowing them to offer higher prices that take advantage of an uncertain prior. In a market where costs affect prices, the strength of consumer uncertainty is correlated with cost volatility. This correlation implies higher prices during periods of cost adjustment, accelerating upward price movement during cost increases and dampening downward price movement during cost decreases. This causes the asymmetric price adjustments like they are observed in the data.

Work in Progress:

Information in financial market prices

Abstract: A toy model demonstrated that information from prices can cause certain traders to be relatively more profitable, even when they are relatively less informed than their peers. A single period market for an inelastic asset with random payoff contains noise traders who buy or sell a fixed, random amount of the asset. The other market participants consist of two distinct shares of informed traders who only aim to profit from the market. They are relying on independent, external signals and as well as information from equilibrium price. A demand curve auction allocated assets and distributes payments. In a model where all randomness is binary and the group of traders with the weaker signal is relatively small, it is possible for them to use information in the price to become better informed than the stronger signal traders and thus have higher expected profits. However, in a more complex model where all randomness is normal, the strong-signal traders are ultimately always more informed and more profitable than the weak-signal traders.

Information design across correlated products

Abstract: My job market paper fills a gap in the literature by considering homogeneous product markets with information design and endogenous pricing. Models similar in assumption except with i.i.d. differentiable products have been studied going back to Anderson and Renault (2009) which surprisingly yield very different outcomes. A general model would demonstrate the robustness of both outcomes by describing markets where product values were correlated to an arbitrary degree. By expanding the Varian framework in my paper and altering the binary cutoff strategy, I create candidate equilibria in the i.i.d. case and--for certain functional form assumptions--in the case of arbitrary correlation. Preliminary results indicate a monotonic result along the as correlation from i.i.d. to homogenous products. When products are closer to i.i.d., competition facilitates better information, when they are closer to homogeneous, the competition encourages weaker information provision. More work must be done to address possible profitable deviation and show existence in these equilibria, and to try and generalize the equilibria to a wider class of value distributions.

Consumer search in large networks

Abstract: I consider a continuum of consumers searching for products who are only informed about price through communication over a network. While unclustered networks like Erdős–Rényi random graphs share a large amount of information very effectively, clustering hampers the effectiveness of information sharing. By likely obtaining information from a common source, most clustered nodes are not provided with a diverse array of offerings and competition is hampered. In heavily clustered network, slowing the rate of communication helps to diffuse herding and leads to a more competitive market.