Quantitative Marketing and Economics
2011 Conference Schedule

September 23 – 34, 2011
University of Rochester, William E. Simon Graduate School of Business

Sponsored by
James M. Kilts Center for Marketing, University of Chicago Booth School of Business
Springer Science+Business Media

Friday, September 23rd - Gleason Hall

12:00 p.m. – 12:45 p.m.  LUNCH

12:45 p.m. – 1:00 p.m.  WELCOME

1:00 p.m. – 2:00 p.m.  SESSION 1

Targeting Political Advertising on Television
Mitch Lovett (Rochester) and Michael Peress (Rochester)

We study the targeting of political advertising by congressional candidates on television. Targeting strategies for television differ from targeting strategies for direct mail advertising or get out the vote efforts because candidates cannot target voters individually. Instead, candidates must target television programs with viewers most similar to the desired target voters. Thus, for targeted advertising to have value the audiences for television programs must differ in meaningful ways and advertising must be effective. In this project, we develop and estimate a model of targeted advertising for U.S. congressional races. We study whether television shows segment potential voters sufficiently to allow for effective targeting and we consider the effect of television advertising- whether it persuades individuals to vote for a particular candidate or mobilizes them to vote in general. Our results suggest the function of television advertising is primarily to persuade. Moreover, we find that there is sufficient variation in the distribution of viewer characteristics across television programs to allow for effective targeting. The most effective targeting strategies therefore involve both parties adopting similar strategies of advertising primarily on programs with audiences containing many swing voters that are likely to vote. While we uncover specific ways in which actual candidate strategies differ from this benchmark, actual candidate behavior is largely consistent with this strategy indicating that candidates seem to accurately believe that the function of television advertising is to persuade voters.

Discussant: Eric Bradlow (Wharton)
2:00 p.m. – 3:00 p.m.   SESSION 2

*Insurer Pricing and Consumer Welfare: Evidence from Medigap*
*Amanda Starc (Wharton)*

While adverse selection is often blamed for inefficiently high insurance premiums, imperfect competition is also a pervasive feature of many health insurance markets. In Medicare Supplement insurance (Medigap), two firms control nearly three-fourths of the market and premiums exceed claims by thirty percent. Motivated by these facts, I model the demand and supply side of the market. Rather than harming consumers, adverse selection actually restrains markups, resulting in a seven percent increase of total surplus. However, a low price elasticity and consumers’ brand preferences incentivize firms to engage in substantial marketing of their products and price above cost. Policies limiting marketing by insurers could reduce premiums significantly. I conclude that the strategic behavior of insurers facing relatively inelastic demand is far more important than adverse selection in explaining poor market performance and loss of consumer surplus.

Discussant: Ahmed Khwaja (Yale)

3:00 p.m. – 3:30 p.m.   BREAK

3:30 p.m. – 4:30 p.m.   SESSION 3

*Bayesian Estimation of Discrete Games of Complete Information*
*Sridhar Narayanan (Stanford)*

Discrete games of complete information have been used to analyze a variety of contexts such as market entry, technology adoption and peer effects. They are extensions of discrete choice models, where payoffs of each player are dependent on actions of other players, and each outcome is modeled as Nash equilibria of a game, where the players share common knowledge about the payoffs of all the players in the game. An issue with such games is that they typically have multiple equilibria, leading to the absence of a one-to-one mapping between parameters and outcomes. Theory typically has little to say about equilibrium selection in these games. Researchers have therefore had to make simplifying assumptions, either analyzing outcomes that do not have multiplicity, or making ad-hoc assumptions about equilibrium selection. Another approach has been to use a bounds approach to set identify rather than point identify the parameters. A third approach has been to empirically estimate the equilibrium selection rule.

In this paper, we take a Bayesian MCMC approach to estimate the parameters of the payoff functions in such games. Instead of making ad-hoc assumptions on equilibrium selection, we specify a prior over the possible equilibria, reflecting the analyst’s uncertainty about equilibrium selection and find posterior estimates for the parameters that accounts for this uncertainty. We develop a sampler using the reversible jump algorithm to navigate the parameter space corresponding to multiple equilibria and obtain posterior draws whose marginal distributions are potentially multi-modal. When the equilibria are not identified, it goes beyond the bounds approach by providing posterior distributions of parameters, which may be important given that there are likely regions of low density for the parameters within the bounds. When data allow us to identify the equilibrium, our approach generates posterior estimates of the probability of specific equilibria, jointly with the estimates for the parameters. Our approach can also be cast in a hierarchical framework, allowing not just for
heterogeneity in parameters, but also in equilibrium selection. Thus, it complements and extends the existing literature on dealing with multiplicity in discrete games.

We first demonstrate the methodology using simulated data, exploring the methodology in depth. We then present two empirical applications, one in the context of joint consumption, using a dataset of casino visit decisions by married couples, and the second in the context of market entry by competing chains in the retail stationery market. We show the importance of accounting for multiple equilibria in these applications, and demonstrate how inferences can be distorted by making the typically used equilibrium selection assumptions. Our applications show that it is important for empirical researchers to take the issue of multiplicity of equilibria seriously, and that taking an empirical approach to the issue, such as the one we have demonstrated, can be very useful.

Discussant: Jean-Francois Houde (Wisconsin)

4:30 p.m. – 5:30 p.m.  SESSION 4

*Competition and Product Innovation in a Dynamic Oligopoly*
*Ronald Goettler (Chicago) and Brett Gordon (Columbia)*

We investigate the relationship between competition and innovation using a dynamic oligopoly model that endogenizes both the long-run innovation rate and market structure. Determinants of competition, such as product substitutability, entry costs, and innovation spillovers, affect firms’ equilibrium strategies for entry, exit, and R&D. We find an inverted-U relationship between product substitutability and innovation: as quality differences increasingly drive consumer choice, the returns to innovation initially rise for all firms but eventually the winner-take-all nature of the market insulates the leader from competition and reduces its incentives to innovate further. We also find competitive forces interact with each other: innovation exhibits a positive relationship with spillovers when product substitutability is strong but is unaffected by the spillover when substitutability is low. Lowering entry costs has little effect on innovation, despite the increased entry.

Discussant: Ron Borkovsky (Toronto)

6:00 p.m.  **GALA RECEPTION AND DINNER – GENESEE VALLEY CLUB**

7:00 p.m.  **DICK WITTINK AWARD – GENESEE VALLEY CLUB**
SATURDAY, SEPTEMBER 24TH – GLEASON HALL

8:00 a.m. – 9:00 a.m.  BREAKFAST

9:00 a.m. – 10:00 a.m.  SESSION 1

**Competition in a Status Goods Market**
*Dmitri Kuksov (Washington) and Ying Xie (Washington)*

One of the special properties of a status goods market is that when the penetration of a status good changes, not only the consumer utility of owning the status good changes, but also the consumer utility of not owning the status good changes as well. Explicitly modeling the consumer value of status goods as coming from the subsequent social interaction (a matching game), we show that a manufacturer of a status good can benefit from a competitor’s cost reduction and the price reduction associated with it. In other words, we show how two status goods which are imperfect substitutes in the consumer utility function can be complements in the profit functions. Another implication of this result is that competition could lead to higher prices than what they would be under monopoly ownership of both products. We find empirical support for the positive effect of the price of one product on the demand for the other product from a laboratory experiment with a setting similar to the model setup.

Discussant: Nanda Kumar (UT Dallas)

10:00 a.m. – 11:00 a.m.  SESSION 2

**A Dynamic Equilibrium Model of User Generated Content**
*Dae-Yong Ahn (Chung-Ang University), Jason Duan (Texas at Austin), and Carl Mela (Duke)*

User content websites involve two behaviors; consuming content (e.g., reading reviews or viewing videos) and generating content (e.g., writing reviews or uploading videos). Users generate free information content for the reputational effect of being influential or popular. The consumption of content can generate utility via the pleasure of reading or the utility of information. Hence, user engagement involves the joint creation and consumption of content where each respective action can generate utility to a participant. We develop a dynamic general equilibrium model of joint consumption and generation of information content based on rational expectations. We estimate this model and conduct policy simulations using a proprietary data from a web site where users generate and consume content in the form of reviews and forum postings. Our approach is general and applies to contexts ranging from chat rooms to journal publications to video sharing sites. Our model has managerial implications relevant to web sites that seek to maximize site traffic and participation; these outcomes being relevant to the advertisers and users alike.

Discussant: Vineet Kumar (Harvard)
11:00 a.m. – 11:30 a.m. BREAK

11:30 a.m. – 12:30 p.m. SESSION 3

Advertising and Competition in Privatized Social Security: The Case of Mexico
Justine Hastings (Brown), Ali Hortaçsu (Chicago), and Chad Syverson (Chicago)

We study the privatized social security system of Mexico, in which firms offering account management services compete based on prices and advertising. Using detailed administrative data on individual retirement accounts, we estimate Mexican workers’ demand for account management services. We find very low price elasticities, and that advertising increases demand for the advertised product, while reducing price sensitivity. We also find considerable heterogeneity across system participants’ sensitivity to both price and advertising. In particular, we find that higher income participants are typically more responsive to prices and less responsive to advertising. We then combine the estimated supply-side parameters with the demand estimates to run counterfactual policy experiments. In particular, we investigate what market outcomes would be if the Mexican government forbade advertising, forcing more competition through the price channel.

Discussant: Catherine Tucker (MIT)

12:30 p.m. – 1:30 p.m. LUNCH

1:30 p.m. – 2:30 p.m. SESSION 4

Social Ties and User-Generated Content: Evidence from an Online Social Network
Reto Hofstetter (St. Gallen), Scott Shriver (Columbia), and Harikesh Nair (Stanford)

We use variation in wind speeds at surfng locations in Switzerland as exogenous shifters of users’ propensity to post content about their surfng activity onto an online social network. We exploit this variation to test whether users’ social ties on the network have a causal effect on their content generation, and whether content generation in turn has a causal effect on the users’ ability to form social ties. Economically significant causal effects of this kind can produce positive feedback that generates multiplier effects to interventions that subsidize tie formation. We argue these interventions can therefore be the basis of a strategy by the firm to indirectly facilitate content generation on the site. The exogenous variation provided by wind speeds enables us to measure this feedback empirically and to assess the return on investment from such policies. We use a detailed dataset from an online social network that comprises the complete history of social tie formation and content generation on the site. The richness of the data enable us to control for several spurious confounds that have typically plagued empirical analysis of social interactions. Our results show evidence of significant positive feedback in user content generation. We discuss the implications of the estimates for the management of the content and the growth of the network.

Discussant: Song Yao (Kellogg)
2:30 p.m. – 3:30 p.m.  **SESSION 5**

**Robust Firm Pricing with Panel Data**  
*Benjamin Handel (Berkeley), Kanishka Misra (London), and James Roberts (Duke)*

Firms often have imperfect information about demand for their products. We develop an integrated econometric and theoretical framework to model firm demand assessment and subsequent pricing decisions with limited information. We introduce a panel data discrete choice model whose realistic assumptions about consumer behavior deliver partially identified preferences and thus generates ambiguity in the firm pricing problem. We use the minimax regret criterion as a decision-making rule for firms facing this ambiguity. We illustrate the frameworks benefits relative to the most common discrete choice analysis approach through two empirical examples whose contexts differ according to market structure.

Discussant: Przemyslaw Jeziorski (UC Berkeley)

3:30 p.m. – 4:00 p.m.  **BREAK**

4:00 p.m. – 5:00 p.m.  **SESSION 6**

**The Advertising Agency Selection Contest: A Competitive Auction with an Incumbent, Differential Qualities, and Partially Reimbursed Participation Costs**  
*Dan Horsky (Rochester), Sharon Horsky (Bar-Ilan), and Robert Zeithammer (UCLA)*

We model an advertiser who conducts a contest among full-service advertising agencies to select the one that offers the best combination of creative quality and media cost. This contest is different from the traditional auction, in which the bidder that offers to perform the required tasks for the least money wins the contract. Instead, each participating agency can have a different creative quality and face a different cost of media buying. We handle this bi-dimensionality of bidders with a score auction. Moreover, the bidders, except the incumbent agency currently servicing the account, bear an upfront contest participation cost arising mostly from the development of a customized creative. Only the winning agency bears the subsequent cost of servicing the account, mainly related to media buying. We show that reimbursing the contest’s losing agencies by a certain fraction of their upfront expenses is optimal for the advertiser. Such partial reimbursement policy attracts new outside agencies into participation, and the advertiser gains from the incumbent facing more competition. We also show that reimbursements in full are never profitable for the advertiser, and even partial reimbursements are not profitable without an incumbent. We present evidence that about half the current advertising contests offer reimbursements.

Discussant: Mengze Shi (Toronto)