Joon H. Ro

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Education

Ph.D. Marketing, May (2014)
McCombs School of Business, University of Texas at Austin

M.S. Economics, May 2009
University of Texas at Austin

M.A. Economics, 2007
B.A. English Language and Literature, 2005
B.E. Economics, 2005 (Cum Laude)
Sogang University, Seoul, Korea

Research Interests

- Durable goods, entertainment consumption, resale, word of mouth
- Modeling consumer choice and learning, pricing, and imperfect competition
- Structural models, computational methods, bayesian analysis, big data

Working Papers

Pricing and Resale Market Strategy for Durable Goods: A Dynamic Equilibrium Model of Video Games

(with Jason Duan)
I develop a dynamic structural model of how the used goods market for video games impacts firms' pricing and profits. I simulate profit changes when resale is prohibited, e.g., through digital distribution of the product. Without used goods sales data, I incorporate the supply side equilibrium in the estimation, and infer sales volume from observed prices and equilibrium conditions. Using data collected from an online retailer, I find that the effects of prohibiting resale depend on the video game's demand function: the prohibition significantly increases the profit for a video game which has high valuation consumers, whereas it only generates small gain in profit for a video game which has only low valuation consumers. In some extreme cases, the existence of the used game market can, interestingly enough, make a video game more profitable by increasing consumers' willingness to pay. The findings have implications for managerial practice on pricing and on how a firm manages the resale market.

Variety Seeking in Experiential Consumption: Evidence from the Movie Industry

(with Romana Khan)
Many experiential products are characterized by single consumption episodes and hedonic nature. In this context, consumers' uncertainty about product quality may mitigate their tendency to seek variety for hedonic consumption. We examine (a) the extent to which consumers seek variety and (b) the impact of online consumer ratings on their choices. I use large movie ticket sales data (5 million observations) to estimate a choice model which incorporates state dependence, genre preferences of consumers, and the impact of online consumer ratings. I find that consumers show time-dependent variety seeking behavior; consumers seek variety in genre choice in short time interval, while in general displaying inertia. Quality signals can overcome the inertia, as the impact of online ratings are higher when the genre of the subsequent movie differs from that of the previously viewed one.

Working Projects

A Model of Downloadable Contents: Add-ons and the Used Goods Market

This paper studies how post-release online add-ons, or downloadable contents (DLC) of video games affect used goods supply by (a) quantifying how much profit can be gained with this online marketing strategy and (b) identifying the optimal timing of DLC release.

Measuring the Benefits of Free Trade Agreements: A Dynamic Structural Approach

This paper quantifies the impact of free trade agreements (FTAs) on consumer welfare and firm profits in the context of the international automotive market. Consumers form expectations about future price decline due to an FTA which makes it important to model dynamics. Specifically, I use a unique dataset collected from the web to estimate new automotive demands and quantify the welfare and profit changes due to an agreement.

Performance and Accuracy of the Radial Basis Function Approximation in Dynamic Programming

Approximation is an essential component in dynamic programming with continuous state variables, which are frequent in marketing applications. Unlike traditional approximation methods which require data from a regular grid, the radial basis function (RBF) approximation method can accommodate data. Thus, it has wider applicability and also can potentially alleviate the *curse of dimensionality*. I investigate the performance and accuracy of the RBF approximation compared to other approximation methods.

Teaching Interests

- Principles of Marketing, Marketing Research, Social Media and Internet Marketing
- Marketing Analytics, Data Mining, Pricing

Teaching Experiences

- (Instructor) 2012, Principles of Marketing, University of Texas at Austin (Average Rating: 4.0/5.0)
    - Nominated for *Fred Moore Assistant Instructor Awards for Teaching Excellence*
- (Teaching Assistantship) University of Texas at Austin
    - (Undergraduate) Principles of Marketing, Marketing Information and Analysis
    - (Graduate) Marketing Analytics, Bayesian Econometrics

Selected Professional Experiences

- Research Analyst, Samsung Economic Research Institute, Korea, 2007
- Military Service, 2nd Infantry Division in the U.S. Army, Korea, 2000-2003

Colloquia/Presentations

"Pricing and Resale Market Strategy for Durable Goods: A Dynamic Equilibrium Model of the Video Game Market," UT Dallas Frontiers of Research in Marketing Science Conference, Dallas, TX, 2014.

"A Dynamic Equilibrium Model of Durable Goods Market: Intertemporal Pricing and Durability Extension for Video Games," INFORMS Marketing Science Conference, Boston, MA, 2012.

"A Dynamic Equilibrium Model of Durable Goods Market: Intertemporal Pricing and Durability Extension for Video Games," University of Houston Doctoral Symposium, 2012.

"Quality Uncertainty and Variety Seeking Behavior: the Role of Ratings in the Movie Industry," INFORMS Marketing Science Conference, Houston, TX, 2011.

Invited Talks

- Tulane University, New Orleans, LA, 2014
- Yale University, New Haven, CT, 2013
- Erasmus University, Rotterdam, Netherlands, 2013
- University of Rochester, Rochester, NY, 2013
- University of Delaware, Newark, DE, 2013
- Özyegin University, Istanbul, Turkey, 2013
- Koç University, Istanbul, Turkey, 2013
- University of Arizona, Tucson, AZ, 2013

Honors & Awards

- Student Sponsorship, SciPy (Scientific Python) Conference, 2011, 2013
- Bonham Funds, Department of Marketing, UT-Austin, 2010, 2013
- Funding, Columbia-Duke-UCLA Workshop on Quantitative Marketing and Structural Econometrics, 2010
- Brain Korea 21 Scholarship, Ministry of Education and Human Resources Development, Korea, 2006
- Graduate School Department Scholarship, Sogang University, Korea, 2005
- Undergraduate Distinguished Student Scholarship, Sogang University, Korea, 2003-04
- KT&G Marketing League, Selection for Final Contest (Tourism Marketing Strategy Proposal), 2003
- ON Korea Internet Marketing Awards, Bronze Award (Online Marketing Strategy Proposal), 2003

Computational Skills

- Programming Languages: C, Python, MATLAB, R
- Others: Git, GNU/Linux, HTML, JavaScript, LaTeX, PowerShell, RegEx, SQL, VBA

Software Packages Authored

- BLP-Python: Random coefficients logit model of Berry, Levinsohn and Pakes (1995)
- Fast Cubic Spline Python: Fast spline interpolation of Habermann and Kindermann (2007)

Service

- Reviewer: Journal of Open Research Software
- Instructor, *Numerical Computation with Numpy*, 2012 Software Carpentry bootcamp, UT-Austin

References

Jason Duan (Co-Chair)
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