HWIKOOK CHOE

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Visa status: STEM-eligible OPT EAD (start date: 10/09/2023)

EDUCATION

University of Chicago *Sep. 2017 - Jun. 2024*
Ph.D in Econometrics
Master's in Econometrics

Korea University *Mar. 2016 - Feb. 2017*
Master's Program in Economics

Korea University *Mar. 2010 - Feb. 2016*
Bachelor of Economics and Bachelor Science in Mathematics (Double major)

PROFESSIONAL EXPERIENCE

Datacrunch Global: Associate Data Scientist Feb. 2023 - Present

· Technical stack in use: Python (Pandas, Polars, NumPy, PyTorch), MySQL, AWS
· Experience in building data pipeline from API to final report
· Data integration of daily order / warehouse / payment data within online retail company
· Forecasting and optimization on order / inventory
· Extracting concise reports from raw data to facilitate business decision-making

RESEARCH EXPERIENCE

University of Chicago: Ph.D in Econometrics Sep. 2017 - Jun. 2024

· Transferable Skills
- Econometric / statistical modeling
- Machine learning
- Data processing
- Data visualization

· Working Paper
- Quantity Surcharge (with Giovanni Compiani, Jean-Pierre Dube and Joonhwi Joo)

Abstract: We explored the prevalence and the reason of quantity surcharge (QS), a counterintuitive pricing phenomenon where larger quantities of a product are sold at a higher unit price than smaller quantities. By using retail scanner data from NielsenIQ, we documented the prevalence of QS over 9 product categories. Also, by combining retail scanner data with consumer panel data, we found indirect evidence that consumer inattention could be one of the sources of QS. We applied a novel approach, so called flexible logit, to structurally capture consumer inattention and estimate underlying demand parameters robust to consumer search model. We also conducted counterfactual simulations to assess the impact of quantity surcharges on consumer surplus and firm revenue, suggesting that eliminating quantity surcharges or more attentive consumer behavior towards pricing could lead to a small increase in consumer surplus but big decrease in firm's revenue. The findings have implications for decomposition for the different rationales of quantity surcharges.

- Understanding Forward-Looking Behavior using Dynamic Discrete Choice and Rational Addiction Model: Application to California Cigarette Tax Increase

Abstract: Consumers forward-looking behavior can create change in current purchase and consumption in response to the change in expectation on future price. Using cigarette tax increase in California as exogenous variation and Nielsen IQ consumer panel survey data as the sampled data, I found peak in purchase right before the actual price increase and plunge after the increase. Using dynamic discrete choice model with rational addiction and stockpiling, I performed several counterfactual analyses that changes consumer behavior and tax revenue, which affects the goal of tax policy.

· Work in Progress
- Competition between First-party and Third-party Sellers on Online Platforms

U.Chicago Booth School of Business: Graduate Research Assistant Sep. 2018 - Jun. 2019

· Topic of Quantitative marketing.
· Data engineering, including scrapping raw data and connecting scrapped data to different relational data

Korea University: Graduate Research Assistant Mar. 2016 - Feb. 2017

· Topic of Industrial organization.
· Modeling for merger analysis and simulation of hypothetical merger
· Research grant by Brain Korea 21 Plus, Government of Republic of Korea

TECHNICAL STRENGTHS

Statistical Modeling and Data Processing

· Econometrics (Advanced)
- regression based analysis (OLS, GLS, IV, A/B test, etc.)
- structural equation modeling (softmax model, mixed logit, BLP, etc.)
· Machine Learning (Advanced)
- decision tree, random forest, boosting
· Data processing (Advanced)
- experience in various types of data (consumer panel survey data, online platform transaction data, product-level characteristics and UPC barcode data, US patent data, credit card fraud detection data, etc.)
· Data Engineering (Advanced)
- experience building data pipeline from API to final report

Programming

· Python (Advanced)
- PyTorch, numpy, pandas, scipy, scikit-learn, statsmodels, seaborn, matplotlib
- able to create custom statistical tools (Synthetic Control, Mixed logit with repeated choices)
· SQL (Advanced)
· Tableau (Intermediate)
· R (intermediate)

Language

· English (Fluent)
· Korean (Native)

GRANTS AND SCHOLARSHIPS

Frank H. Knight Fellowship and the J. Lawrence Laughlin Fellowship *2022 - 2023*
Department Dissertation Fellowship Award

Doctoral Study Abroad Scholarship *2017 - 2022*
Korea Foundation for Advanced Studies

Brain Korea 21 Plus *2016 - 2017*
Korea University