

Jiarui (Lydia) Cao

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EDUCATION

Boston College, Morrissey College of Arts and Sciences Chestnut Hill, MA
Bachelor of Science, Mathematics and Economics, *Magna cum Laude*, Phi Beta Kappa May 2019
GPA: 3.82/4.00
Major GPA: 3.93/4.00 for Mathematics, 3.88/4.00 for Economics
GRE: Verbal 168/170, Math 170/170

HONORS AND AWARDS

Dean's List First Honors
Fall 2015, Fall 2016, Spring & Fall 2017, Spring 2018 & Fall 2018, Spring 2019
Dean's Scholars Award (awarded to 56 out of 1461 students) May 2018

RESEARCH EXPERIENCE

Kellogg School of Management, Northwestern University, Evanston, IL Aug 2019 - Present
Empirical Research Fellow

- Provide research assistance to Professor Sara Moreira, Elena Prager, Benjamin Friedrich, Nicola Bianchi, and Kieu-Trang Nguyen for multiple research projects on firm dynamics, productivity, innovation, industrial organization, and personnel economics
- Work closely with a wide range of datasets for the purposes of preprocessing raw data, assessing data quality, and combining multiple data sources
- Perform data mining, data visualization, and various regression tasks with Stata on high performance computing system
- Improve empirical strategies by identifying potential problems and developing solutions to them
- Construct web scraping programs with Python to collect data for projects that utilize historical information
- Review literature and proofread academic papers

Boston College Department of Economics, Chestnut Hill, MA May 2018 - March 2019
Undergraduate Research Assistant to Prof. Julie Mortimer

- Investigated major television advertisers' strategies and outcomes across various media conglomerates and industries through creating a series of descriptive statistics and graphs with Stata
- Gathered, compiled, and cleaned up advertising expenditure data of top 100 advertisers from 1960 to 1995 with Excel, VBA, and Python in collaboration with other RAs
- Matched company names over the past 30 years by looking into their merger and acquisition records in order to align the data of different years on the parent company's level

Boston College Department of Economics, Chestnut Hill, MA September 2017 - May 2018
Undergraduate Research Assistant to Prof. Susanto Basu

- Collected relevant data from multiple economic databases and prepared them for analysis
- Contributed to the empirical evidence update of a paper on complementarity between consumption and labor by estimating the model in the paper and checking its robustness
- Organized and formatted the final outputs with Stata programs; compared the results with those obtained in the past, and explored why the differences existed

RESEARCH PROJECTS

Demand Elasticity and Product Substitutability of U.S. TV Advertising September 2018 - May 2019

Television advertising is an important component of the U.S. advertising industry. While empirical studies usually put emphasis on the effectiveness of TV advertising in the downstream market consisting of consumers and product producers, few have examined the upstream market consisting of TV networks as the suppliers and advertisers as the consumers. Relying on the nested logit model of demand, we utilize an extensive dataset on the U.S. prime time TV advertising market to estimate the price elasticity of demand and uncover the substitution pattern of products in this market. Our baseline specification suggests that the demand elasticity parameter is -0.42 for the 2011-2012 season, and -0.88 for the 2012-2013 season. For the advertisers, telecasts provided by the same conglomerate are highly substitutable to each other relative to out-of-conglomerate telecasts. This implies that increasing the variety of telecasts will not attract many new advertisers, which could discourage the conglomerates from increasing their product diversity.

Impact of Retirement on Healthcare Utilization and Health Outcomes

January 2019 - May 2019

As aging is becoming a worldwide concern, the impact of retirement has drawn more attention. The lifestyle transition to retirement may incur changes in health outcome, and more generous medical plans included in retirement benefits might encourage people to expand their healthcare expenditure. In this paper, we explore the aggregate effects of retirement on health outcomes and healthcare expenditure through both channels. Our empirical challenge is to account for adverse selection in retirement decision - those who are less healthy are more inclined to retire. Exploiting the discontinuity in percentage of Irish who retire at age 66, we use an instrumental variable approach to implement a fuzzy regression discontinuity design on aging data in Ireland. We find no conclusive evidence of significant effects of retirement on various health outcomes and healthcare utilization measures.

SOFTWARE SKILLS

Stata, Python, Java, Ocaml, LaTeX, Excel, MATLAB

NON-ACADEMIC ACTIVITIES

Boston College Madrigal Singers, *Member*

February 2017 - May 2019

- Performed two concerts featuring Renaissance music each semester with 15 other members
- Performed at other events such as A Cappella Day in downtown Boston and Morning Show at NBC Boston

Boston College International Assistant Program, *International Assistant*

August 2016 - May 2017

- Facilitated the International Student Orientation and coordinated weekly events
- Mentored 4 international students by keeping in touch with them and reaching out to them frequently