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Research Interests

Industrial Organization, Quantitative Marketing, Digital Economy, Chinese Economy

Competing for Time: A Study of Mobile Applications (Job Market Paper)

A smartphone user allocates her time to multiple mobile applications. To study the competitive relationship among apps, I develop a discrete-continuous model of time allocation with a binding time constraint and estimate it with a weekly panel of app usage in China. If two apps are often used together, it is because either they are complements or the preferences of the two apps are positively correlated. To disentangle complementarity (substitutability) from correlation in preferences, I use the exclusion restriction that updates of an app should affect the utility of this app but not those of other apps. I estimate the model on three pairs of apps (substitutes, complements, and independent apps). I recover a reasonable competition pattern and simulate mergers of the three pairs of apps. I find that a seemingly innocuous merger of independent apps can hurt consumers due to the binding time constraint. My results confirm that users and firms can both benefit from a merger of complements. I also find that usage-based pricing leads to higher profits and total surplus compared with subscription pricing because it enables price discrimination based on usage.

Education

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- 2016–2021 **Doctor of Philosophy in Economics** (Candidate), *The University of Arizona*
2014–2016 **Master of Philosophy in Economics**, *The Chinese University of Hong Kong*
2010–2014 **Bachelor of Economics**, *Zhejiang University*

Publication

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1. Yuan, H. (2016). Measuring Media Bias in China. *China Economic Review*, 38, pp. 49-59
Media mention: Financial Times

Research in Progress

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1. Marketing before Tipping: A Dynamic Model of Mobile Applications
 2. Editorial Recommendations and Product Discovery: Evidence from Apple App Store (with Keran Duan, Yong Liu, Zhang Xi)
 3. Policy-Driven Innovation: The Case of China
 4. Power and Anti-Corruption inside Standing Committees (with Chang Xue)

Conference & Seminar Presentations

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- 2020 *Young Economists Symposium, ShanghaiTech SEM, Arizona Marketing, ISMS Marketing Science, International Conference of WEAI.*
2019 *Asian Meeting of the Econometric Society, Machine Learning Group at Arizona*
2016 *NTU-CUHK Economics Graduate Students Workshop*

Scholarship & Honors

- 2019 Ed Zajac Prize for the Best Third Year Paper (honorable mention)
2018 Eller Small Research Grant
2015 Lee Hysan Scholarship
2010–2014 Excellent Student (2011); Scholarship for Outstanding Merits (2011, 2012)

Referee Service

Journal of the Royal Statistical Society (Statistics in Society)

Teaching Experience

Instructor, The University of Arizona

ECON 300: Microeconomic Analysis for Business Decisions

Teaching Assistant, The University of Arizona (Selected)

ECON 200: Basic Economic Issues

ECON 300: Microeconomic Analysis for Business Decisions

ECON 453: Data Analytics and Modeling

ECON 481: Economics of Wage Determination

Skills

Computer Python, C/C++, R, Matlab, Stata.

Languages Chinese, English.

References

Mo Xiao (Chair)

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Yong Liu

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Gautam Gowrisankaran

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