

YEJIA XU

University of Southern California
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EDUCATION

- 2016 – present University of Southern California, USA
 Ph.D. in Economics (expected)
- 2016 – 2018 University of Southern California, USA
 M.A. in Economics
- 2012 – 2016 Tsinghua University, China
 B.A. in Economics and Finance (Graduation with Honors)
 B.S. in Pure and Applied Mathematics (Second Bachelor Degree)

RESEARCH INTERESTS

Microeconomic Theory, Industrial Organization, Antitrust Economics.

JOB MARKET PAPER

1. Xu, Y. (2021). Delegated Bundling.

Abstract: Many inter-firm bundles are operated independently by a third-party firm. We refer to this phenomenon as “Delegated Bundling” and propose a general framework for studying it. We find that delegated bundling arises in equilibrium under certain regularity conditions. Compared to the no-bundling case, delegated bundling is always social and consumer welfare enhancing, but product firms are better off if and only if products are less differentiated and the third-party firm pays a high royalty rate. We discuss several extensions including royalty rate determination, price discrimination, early subscription, and flat-rate payment.

WORKING PAPERS

2. Li, J., Pisano, G., Zhu, F., & Xu, Y. (2021). Marketplace Scalability and Strategic Use of Platform Investment. Revision for *Management Science*.

Abstract: The scalability of a marketplace depends on the operations of the marketplace platform as well as its sellers' cost structures and capacities. In this study, we explore one strategy that a marketplace platform can use to enhance its scalability: providing an ancillary service to sellers. In our model, a platform can choose whether to provide this service to sellers and, if so, what prices to charge and which types of sellers to serve. While such a service helps small sellers, we highlight that the provision of such a service can diminish large sellers' incentives to make their own investment, thus reducing their potential

output. When the output reduction by large sellers is substantial, the platform may not want to provide the ancillary service and, even if it does, it may choose to set a price higher than its marginal cost to motivate large sellers to scale.

3. Tan, G., & Xu, Y. (2021). Competition in Freemium Services and the Impact of Ad-Avoidance Technologies.

(Previously circulated under the title “The Impact of Ad-Avoidance Technologies in the Market for Video Streaming”)

Abstract: “Freemium” refers to the business model where a firm provides both an ad-sponsored free service and a paid premium service. Consumers may use Ad-Avoidance Technologies (AATs) to skip the ads in the free services, which jeopardizes the profitability of such a freemium strategy. We propose a framework to study competition in service provisions as well as the impact of AATs to the equilibrium outcomes. We provide conditions under which the freemium arises in equilibrium. We find that, an increase in the penetration rate of AATs leads to a lower advertising fee and a lower equilibrium price for the premium services, which harms the firms that may eventually drop the free service and provide only the premium service. AATs benefit consumer welfare in the short run but may hurt consumer and social welfare in the long run if the firms respond by reducing investment in service qualities. By calibrating our model with data from the video streaming market, we provide counterfactual simulations which support our findings.

4. Chen, Z., Tan, G., & Xu, Y. (2021). Quality Competition among Zero-Pricing Digital Platforms.

Abstract: We build a model of a three-stage game to analyze the quality competition among zero-pricing digital platforms. In the first stage, platforms invest in the quality of their basic services. In the second stage, observing the quality levels of the platforms, users make participation decisions. In the last stage, users choose their tipping amounts, and the platforms use a fraction of the tips to provide club goods and lotteries with a fixed prize. We explore users’ tipping and participation strategies and derive conditions under which the equilibrium quality level is insufficient, optimal, or excessive, relative to the socially optimal quality level. We also analyze other revenue-generating mechanisms. We show that if platforms adopt an all-pay auction mechanism, the equilibrium quality level is always insufficient. If platforms use an advertisement mechanism, the equilibrium quality level is insufficient when the marginal revenue from an additional user is low. Policy implications are also discussed.

5. Xu, Y. (2020). Distortion-Proof for the Nash-in-Nash Solution.

Abstract: The Nash-in-Nash solution has been widely used in empirical studies and yet received certain criticisms along the way. One particular problem is that firms rely on individual delegates on each front of negotiation who cannot communicate with each other and thus may not be able to maximize the aggregate profit. In this paper we allow delegates of the same firm to collaboratively change their negotiation results provided that their opponents are still willing to participate, and show that under certain conditions, the delegates would stick to the local Nash-in-Nash solution even if such distortion is allowed, which means Nash-in-Nash solutions are distortion-proof. Our results provide further justification to the use of Nash-in-Nash solutions in empirical works and “secrecy assumption” in related literatures.

6. Xu, Y. & Zhu, Z. (2020). Linear Contracts with Valuable Correlated Information

Abstract: We examine the optimal linear contracts in a principal-agent model in which both the principal and the agent have private information that is correlated and determines the outcome. We show that an increase in the commission rate specified in linear contracts has several effects: Profit sharing, risk sharing, effort inducement, and entry deterrence. The principal always prefers a lower rate if its own private information is more valuable to avoid sharing profits with the agent. When the uncertainty is one-side and only the agent’s information is private, if the information is almost perfectly correlated, the principal offers a higher rate to induce effort, while if the information is less correlated, the principal

offers a lower rate to avoid sharing the risk from the agent's private information. When the uncertainty is both-side, the principal offers a lower rate to mimic the one with more valuable information and induce the entry of the agent.

REFeree FOR

Management Science

CONFERENCES AND SEMINARS

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|------|---|
| 2021 | 2021 Asia Pacific Industrial Organization Conference (APIOC) (Virtual) |
| | 2021 Asia-Pacific Conference on Economics and Finance (APEF) (Virtual) |
| | CSULB Economics Department Seminar (Virtual) |
| | GAMES 2020 - the 6th World Congress of the Game Theory Society (Virtual) |
| | WEAI Virtual 96th Annual Conference (Virtual) |
| 2020 | Econometric Society/Bocconi University Virtual World Congress 2020 (Virtual) |
| | WEAI Virtual 95th Annual Conference (Virtual) |
| 2019 | 2019 International Industrial Organization Conference (IIOC) (Boston) |
| | 2019 Asian Meeting of the Econometrics Society (AMES) (Xiamen University) |
| | HKU-Lingnan-Florida Platform Competition Conference (The University of Hong Kong) |

TEACHING ASSISTANT EXPERIENCE

University of Southern California

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|-------------|---|
| 2022 Spring | Econ 395 Economic Policy Issues (Prof. Michael Sproul) |
| | Econ 580 Antitrust Economics and Competition Policy (Prof. Guofu Tan) |
| 2021 Fall | Econ 203 Principles of Microeconomics (Prof. Brijesh Pinto) |
| 2021 Summer | Department of Economics Micro Core Camp (instructor) |
| 2021 Spring | Econ 504 Game Theory with Econ and Financial Applications (Prof. Jonathan Libgober) |
| | Econ 580 Antitrust Economics and Competition Policy (Prof. Guofu Tan) |
| 2019 Spring | Econ 203 Principles of Microeconomics (Prof. Brijesh Pinto) |
| 2018 Fall | Econ 601 Microeconomic Theory I (Prof. Simon Wilkie) |
| 2018 Spring | Econ 603 Microeconomic Theory II (Prof. Simon Wilkie) |
| 2017 Fall | Econ 404 Games and Economics (Prof. Juan Carrillo) |
| | Econ 401 Mathematical Methods in Economics (Prof. Mark Moore) |

Tsinghua University

2016 Spring Principles of Economics II (Prof. Xiaohan Zhong)
2015 Fall Principles of Economics I (Prof. Xiaohan Zhong)

RESEARCH ASSISTANT EXPERIENCE

2019 – 2021 Prof. Guofu Tan (University of Southern California)
2018 – 2019 Prof. Feng Zhu (Harvard Business School)

HONORS

2017 USC Dornsife Dean's List (2017 Spring, 2017 Fall), University of Southern California
2016 USC Dornsife Dean's List (2016 Fall), University of Southern California
Graduates with Honor, Tsinghua University
2015 Friends of Tsinghua - Liu Tianhong Scholarship, Tsinghua University
2014 Friends of Tsinghua - Hongqian Electronic Scholarship, Tsinghua University
2013 Friends of Tsinghua - Chen Xiaoyue Scholarship, Tsinghua University
2012 Freshman Scholarship, Second Prize, Tsinghua University

MISCELLANEOUS

Language Chinese (Native), English (Fluent)
Programming Python, R, Mathematica

REFERENCES

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