

产业经济重大问题研究

Advanced Topics in Industrial Economics

中国人民大学应用经济学院

2022 年秋季学期

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课程网页：<https://yingzheng-econ.github.io/Empirical-IO-Course/>

课程时间：周一 18:00-20:30

上课地点：立德 0504

课程学分：3/51

课程简介

本课程是产业组织理论研究生系列课程中的一门实证课程。课程重点是将数据、经济模型、适当的识别策略和计量经济学进行结合。课程目标是使学生具备对定价竞争、市场进入和退出、投资、创新、产品设计等 IO 问题进行原创性研究所需的经济理论和定量技能。课程主要由讲师讲课、学生报告和课堂讨论三部分组成。

本课程主要关注使用结构化模型来研究企业战略行为和市场结果的相关论文。首先，课程将（从理论上）研究市场结构和设计以及企业信息和信念如何影响他们的战略互动和最终的市场表现；然后，课程将讨论如何使用微观层面的数据识别和估计市场参与者的偏好和技术参数，对他们的行为进行合理解释，并对市场效率进行评估。

预备知识

要求研究生水平的微观经济学和计量经济学背景，最好具备一些博弈论知识。

课程教材

本课程以阅读研究论文为主。为了理解实证产业组织理论的研究论文，我们需要产业组织理论和计量经济学相关知识。有用的资料包括：

产业组织（博弈）理论

- **Handbook of Industrial Organization, Vol. 1 – 5.**
- **Tirole, J. (1988):** The Theory of Industrial Organization. MIT Press.
- **Belleflamme, P., Peitz, M. (2016):** Industrial Organization Markets and Strategies. Cambridge University Press.
- **Vives, X. (2009):** Oligopoly Pricing: Old Ideas and New Tools. MIT Press.
- **Mas-Colell, Whinston, and Green (1997),** Microeconomic Theory, Oxford University Press.
- **Krishna.V (2010):** Auction Theory, 2nd ed. Academic Press

计量经济学

- **Handbook of Industrial Organization, Vol. 1 – 5.**
- **Aguirregabiria, V. (2021):** Empirical Industrial Organization: Models, Methods, and Applications.
- Paarsch, H.J., Hong, H. (2006). An Introduction to the Structural Econometrics of Auction Data. MIT Press.
- Train, K. (2009): Discrete Choice Methods with Simulation, 2nd ed. Cambridge University Press.
- Cameron, A. C., and P. K. Trivedi. (2005): Microeconometrics: Methods and Applications, Cambridge University Press.

考核与成绩

本课程的最终考核与成绩将基于：(1) 课堂参与情况，包括课堂讨论（20%）和课堂汇报（30%）；(2) 经典论文复刻（50%）。

课堂汇报

根据最终报名人数和课程安排，每个学生 (或一组学生) 将被要求汇报 1 至 2 篇研究论文。每次汇报应持续 60 分钟，包括提问和回答环节。汇报应包括以下内容：

- 总结研究论文；
- 在文献中找到论文的贡献；
- 讨论论文的不足之处；
- 为进一步研究提出建议。

经典论文复刻

每个学生 (或一组学生) 将被分配一篇经典论文，学生需使用 R 语言或 Python 对论文进行复刻。学生可以选择其他编程语言，也可以自行寻找感兴趣的论文进行复刻，但所选论文必须涉及结构化估计，并应与授课教师就所选论文进行讨论。最终，学生需提交一个包含内容总结和相关代码的 **Jupyter notebook 文件**。¹

- 代码和生成的结果（图表）占 30%：完整性和清晰度
- 内容总结占 20%

¹<https://jupyter.org>

课程内容与相关阅读

课程主题及相关阅读资料如下。每堂课前一周将公布必读文献。由于时间限制和班级兴趣，课程主题可能会有调整。

第一周：（新）实证产业组织理论介绍

必读文献： [Bresnahan \(1989\)](#); [Reiss and Wolak \(2007\)](#), Chapter 1 of [Aguirregabiria \(2021\)](#)

- Economic questions and data in EIO;
- Examples of structural models in EIO;
- Skills required to conduct EIO researches

第二周：需求预测

必读文献： Chapter 2 of [Aguirregabiria \(2021\)](#)

第三周：生产预测

必读文献： Chapter 3 of [Aguirregabiria \(2021\)](#)

第四周：寡头垄断理论 I——竞争与博弈

必读文献： Part II in MWG (Game Theory, Chapters 7, 8 and 9)

- Dominant strategies and rationalizable strategies;
- Nash Equilibrium (NE) in static games of complete information;
- Bayesian Nash Equilibrium (BNE) in static games of incomplete information;
- Subgame Perfect Nash Equilibrium (SPNE) in dynamic games of complete information
- **(Optional)** Perfect Bayesian Equilibrium (PBE) in dynamic games of incomplete information

第五周：寡头垄断理论 II——经典寡头垄断模型

必读书目： Chapter 5 of [Tirole \(1988\)](#) and Chapters 4, 5 and 7 of [Vives \(2009\)](#)

推荐阅读： [Kreps and Scheinkman \(1983\)](#); [Klemperer and Meyer \(1989\)](#)

- Bertrand competition and its variants with asymmetric costs, capacity constraint, uncertain costs; DRS (IRS) technology;
- Capacity-then-Bertrand Competition;
- Commitment and Stackelberg Model;
- **(Optional)** Supply Function Equilibrium (SFE)

第六、七周：具有完全信息的实证静态寡头垄断模型

Read Chapter 4 of [Aguirregabiria \(2021\)](#) and [Bresnahan \(1982\)](#) to understand the identification of static oligopoly models with complete information. Then read [Genesove and Mullin \(1998\)](#) for testing conducts in U.S. sugar industry, and [Wolfram \(1999\)](#); [Sweeting \(2007\)](#) for measuring market power in British electricity market.

- Identification of marginal cost and/or market conduct (or structure or ownership) for markets with
- Estimation using IV and GMM

实证研究

- [Genesove and Mullin \(1998\)](#)
- [Wolfram \(1999\)](#); [Sweeting \(2007\)](#)

第七、八周：具有不完全信息的实证静态寡头垄断模型

Read Chapter 8 of [Vives \(2009\)](#) for game-theoretic treatment of competition with incomplete information; then read Chapters 2 and 3 of [Krishna \(2010\)](#) for some basic knowledge of auction theory. [Laffont and Vuong \(1996\)](#); [Guerre, Perrigne, and Vuong \(2000\)](#) are seminal for identification of auction models. [Wolak \(2003\)](#) provides results for identification and estimation of cost functions using bidding data from electricity market, and [Hortaçsu and Puller \(2008\)](#) aims for identification of forward positions using bidding data and observed costs.

- Standard auctions and bidding strategies;
- Revenue Equivalence Theorem and optimal auction;
- Identification of standard auctions in symmetric IPV paradigm

实证研究

- [Wolak \(2003\)](#)
- [Hortaçsu and Puller \(2008\)](#)

第九周：具有市场进入的实证寡头垄断模型

Read [Bresnahan and Reiss \(1991\)](#)

第十周：两阶段实证寡头垄断模型

Read [Allaz and Vila \(1993\)](#); [Bushnell \(2007\)](#) for theoretical models of two-stage oligopoly models.

实证研究

- [Wolak \(2007\)](#)

第十一周：实证拍卖 I——直接估计

Read [Athey and Haile \(2002, 2007\)](#) for the state-of-art identification of auction models.

实证研究

- [Li, Perrigne, and Vuong \(2000\)](#)

第十二周：实证拍卖 II——基于模拟的方法

Read Chapters 9 and 10 of [Train \(2009\)](#) and Chapters 12 and 13 of [Cameron and Trivedi \(2005\)](#) for background knowledge of simulation methods.

实证研究

- [Laffont, Ossard, and Vuong \(1995\)](#)

第十三周：非均衡信念下的博弈理论

Read [Camerer, Ho, and Chong \(2004\)](#) for the theoretical model of non-equilibrium beliefs.

第十四周：非均衡信念下的博弈应用

- [Hortaçsu, Luco, Puller, and Zhu \(2019\)](#)

学生课堂汇报的推荐主题

学生可以选择以下推荐的主题在 **15-17 周** 进行汇报。请以推荐的论文为出发点，并在汇报中补充制度和理论背景。

主题一：中国汽车摇号与拍卖

[Li \(2018\)](#)

主题二：远期合约与纵向整合

[Bushnell, Mansur, and Saravia \(2008\)](#) and [Puller \(2007\)](#)

主题三：电动汽车与充电站补贴

[Springel \(2021\)](#) and [Li, Tong, Xing, and Zhou \(2017\)](#)

主题四：中国土地市场拍卖

[Cai, Henderson, and Zhang \(2013\)](#) and [Fang, Gu, and Zhou \(2019\)](#)

主题五：中国交通拥堵的边际成本

[Yang, Purevjav, and Li \(2020\)](#)

主题六：不完善的监督和执法的监管成本

[Kang and Silveira \(2021\)](#)

References

- AGUIRREGABIRIA, V. (2021): "Empirical Industrial Organization: Models, Methods, and Applications," .
- ALLAZ, B., AND J.-L. VILA (1993): "Cournot Competition, Forward Markets and Efficiency," *Journal of Economic Theory*, 59(1), 1–16.
- ATHEY, S., AND P. A. HAILE (2002): "Identification of Standard Auction Models," *Econometrica*, 70(6), 2107–2140.
- (2007): "Chapter 60 Nonparametric Approaches to Auctions," in *Handbook of Econometrics*, vol. 6, pp. 3847–3965. Elsevier.
- BRESNAHAN, T. F. (1982): "The Oligopoly Solution Concept Is Identified," *Economics Letters*, 10(1-2), 87–92.
- (1989): "Chapter 17 Empirical Studies of Industries with Market Power," in *Handbook of Industrial Organization*, vol. 2, pp. 1011–1057. Elsevier.
- BRESNAHAN, T. F., AND P. C. REISS (1991): "Entry and Competition in Concentrated Markets," *Journal of Political Economy*, 99(5), 977–1009.
- BUSHNELL, J. (2007): "Oligopoly Equilibria in Electricity Contract Markets," *Journal of Regulatory Economics*, 32(3), 225–245.
- BUSHNELL, J. B., E. T. MANSUR, AND C. SARAVIA (2008): "Vertical Arrangements, Market Structure, and Competition: An Analysis of Restructured US Electricity Markets," *American Economic Review*, 98(1), 237–266.
- CAI, H., J. V. HENDERSON, AND Q. ZHANG (2013): "China's Land Market Auctions: Evidence of Corruption?," *The RAND Journal of Economics*, 44(3), 488–521.
- CAMERER, C. F., T.-H. HO, AND J.-K. CHONG (2004): "A Cognitive Hierarchy Model of Games," *The Quarterly Journal of Economics*, 119(3), 861–898.
- CAMERON, A. C., AND P. K. TRIVEDI (2005): *Microeconometrics: Methods and Applications*. Cambridge University Press, Cambridge ; New York.
- FANG, H., Q. GU, AND L.-A. ZHOU (2019): "The Gradients of Power: Evidence from the Chinese Housing Market," *Journal of Public Economics*, 176, 32–52.
- GENESOVE, D., AND W. P. MULLIN (1998): "Testing Static Oligopoly Models: Conduct and Cost in the Sugar Industry, 1890-1914," *The RAND Journal of Economics*, 29(2), 355–377.
- GUERRE, E., I. PERRIGNE, AND Q. VUONG (2000): "Optimal Nonparametric Estimation of First-price Auctions," *Econometrica*, 68(3), 525–574.
- HORTAÇSU, A., F. LUCO, S. L. PULLER, AND D. ZHU (2019): "Does Strategic Ability Affect Efficiency? Evidence from Electricity Markets," *American Economic Review*, 109(12), 4302–4342.
- HORTAÇSU, A., AND S. L. PULLER (2008): "Understanding Strategic Bidding in Multi-Unit Auctions: A Case Study of the Texas Electricity Spot Market," *The RAND Journal of Economics*, 39(1), 86–114.
- KANG, K., AND B. S. SILVEIRA (2021): "Understanding Disparities in Punishment: Regulator Preferences and Expertise," *Journal of Political Economy*, 129(10), 2947–2992.

- KLEMPERER, P. D., AND M. A. MEYER (1989): "Supply Function Equilibria in Oligopoly under Uncertainty," *Econometrica*, 57(6), 1243.
- KREPS, D. M., AND J. A. SCHEINKMAN (1983): "Quantity Precommitment and Bertrand Competition Yield Cournot Outcomes," *The Bell Journal of Economics*, 14(2), 326.
- KRISHNA, V. (2010): *Auction Theory*. Academic Press/Elsevier, Burlington, MA, 2nd ed edn.
- LAFFONT, J.-J., H. OSSARD, AND Q. VUONG (1995): "Econometrics of First-Price Auctions," *Econometrica*, 63(4), 953.
- LAFFONT, J.-J., AND Q. VUONG (1996): "Structural Analysis of Auction Data," *The American Economic Review*, 86(2), 414–420.
- LI, S. (2018): "Better Lucky Than Rich? Welfare Analysis of Automobile Licence Allocations in Beijing and Shanghai," *The Review of Economic Studies*, 85(4), 2389–2428.
- LI, S., L. TONG, J. XING, AND Y. ZHOU (2017): "The Market for Electric Vehicles: Indirect Network Effects and Policy Design," *Journal of the Association of Environmental and Resource Economists*, 4(1), 89–133.
- LI, T., I. PERRIGNE, AND Q. VUONG (2000): "Conditionally Independent Private Information in OCS Wildcat Auctions," *Journal of Econometrics*, 98(1), 129–161.
- PULLER, S. L. (2007): "Pricing and Firm Conduct in California's Deregulated Electricity Market," *Review of Economics and Statistics*, 89(1), 75–87.
- REISS, P. C., AND F. A. WOLAK (2007): "Chapter 64 Structural Econometric Modeling: Rationales and Examples from Industrial Organization," in *Handbook of Econometrics*, vol. 6, pp. 4277–4415. Elsevier.
- SPRINGEL, K. (2021): "Network Externality and Subsidy Structure in Two-Sided Markets: Evidence from Electric Vehicle Incentives," *American Economic Journal: Economic Policy*, 13(4), 393–432.
- SWEETING, A. (2007): "Market Power in the England and Wales Wholesale Electricity Market 1995–2000," *The Economic Journal*, 117(520), 654–685.
- TIOLE, J. (1988): *The Theory of Industrial Organization*. MIT Press, Cambridge, Mass.
- TRAIN, K. (2009): *Discrete Choice Methods with Simulation*. Cambridge University Press, Cambridge ; New York, 2nd ed edn.
- VIVES, X. (ed.) (2009): *Competition Policy in the EU: Fifty Years on from the Treaty of Rome*. Oxford University Press, Oxford ; New York.
- WOLAK, F. A. (2003): "Measuring Unilateral Market Power in Wholesale Electricity Markets: The California Market, 1998–2000," *American Economic Review*, 93(2), 425–430.
- WOLAK, F. A. (2007): "Quantifying the Supply-Side Benefits from Forward Contracting in Wholesale Electricity Markets," *Journal of Applied Econometrics*, 22(7), 1179–1209.
- WOLFRAM, C. D. (1999): "Measuring Duopoly Power in the British Electricity Spot Market," *American Economic Review*, 89(4), 805–826.
- YANG, J., A.-O. PUREVJAV, AND S. LI (2020): "The Marginal Cost of Traffic Congestion and Road Pricing: Evidence from a Natural Experiment in Beijing," *American Economic Journal: Economic Policy*, 12(1), 418–453.