

# Deconstructing + Reconstructing Markets

- Meeting Time & Location
  - Mondays and Wednesdays, 4:30-5:45pm Eastern time
  - Zoom
- Contact Information
  - Ron Yang: [myang@g.harvard.edu](mailto:myang@g.harvard.edu)
  - Erica Moszkowski: [emoszkowski@g.harvard.edu](mailto:emoszkowski@g.harvard.edu)
- Office Hours
  - Tuesday: Littauer M-42, 5:15 p.m. - 6:15 p.m.
  - Thursday: Harvard Hall 103, 5:15 p.m. - 6:15 p.m.

## One-Paragraph Course Description

What is a market? Where do the rules for the participants come from? How could we make markets work better? What does it even mean for a market to work “better”? This course will investigate these questions in a variety of settings ranging from intellectual property to kidneys. We will emphasize the design decisions behind markets we see “in the wild” and explore how these decisions connect with ethics, public policy, and individual incentives. Finally, we will apply our skills to the digital economy, where firms compete to design platform marketplaces (e.g. video game consoles, app marketplaces, music streaming).

## Course Description

Tech platforms compete by building and operating markets for everything from advertisements to dating. Patent trolls exploit the structure of intellectual property rights to extract rents and stifle innovation. Financial exchanges subsidize trading, and make their money back selling speed and data. This course will use these varied contexts to study how markets are constructed - and various ways in which they could be re-constructed.

In the first part of the course, we will study markets which operate without a central planner. After building basic skills by looking at classic industries like automobiles and railroad, we move to intellectual property, where we investigate how market structure can be a consequence of “design” decisions by the government. Next, we explore how market power appears in labor contexts ranging from labor union collective bargaining to the gig economy.

The market for medical residents introduces the second part of the course, where we will shift our focus to centrally planned markets. We will then consider the market for organs from empirical and ethical

perspectives, before thinking more generally about the role of ease-of-use and trust when designing markets. This section of the course will conclude with an exploration of applications in finance, including the design of stock exchanges (e.g. the New York Stock Exchange) and financial benchmarks (e.g. LIBOR).

We conclude the course by applying our tools to competition between platforms in the digital economy. We will cover topics such as app stores, ratings, and crowdfunding. This will bring together skills and themes from the entire class, speak to ongoing policy discussions, and bring students to the frontier of research.

Finally, this course will also cover the statistical software skills (Stata or R) needed to implement empirical research in economics. Greg Bruich will teach the live lecture portion at the statistical software tutorial at TBD on TBD. The live lectures will be supplemented by online modules and Stata/R office hours (the department offers more support in Stata than in R).

## Course Prerequisites

1. ECON 1010A: Intermediate Microeconomics *or* ECON 1011A: Intermediate Microeconomics: Advanced
2. ECON 1124: Introduction to Econometrics *or* ECON 1126: Quantitative Methods in Economics

## Course Requirements

- **Class participation (15%)**
  - Attendance at each class is mandatory
  - Complete all readings
  - Participate actively in class discussion
  - NOTE: no student (except the presenter) may speak twice before all students have spoken once.
- **Presentations (15%)**
  - 1-2 presentations (depending on final enrollment).
- **Referee Presentations (10%)**
  - 3-4 referee presentations (depending on final enrollment).
- **Debate Essays (5%, 4-5 pages)**
  - 2 debate essays
- **Mini-Research Paper (5%, 4-5 pages)**
  - This paper is a “test run” for developing a question and sketching a plan to answer that research question. This paper is not a “pre-write” for your final research paper; it is meant to be an opportunity to practice coming up with research ideas and will focus on theory. *You must schedule a meeting with one of the instructors to discuss your idea before turning in your paper.*

- This paper is a roadmap for your final research paper. It should present your research question and discuss how you might answer that question. *You must schedule a meeting with one of the instructors to discuss your idea before turning in your prospectus.*
- **Research Paper (40%, 15-20 pages excluding tables & figures)**
  - You will write a complete research paper with a well-formed hypothesis, references to the literature, theoretical model, empirical investigation, and presentation of findings.
  - We will assign the paper in the following stages:
    - **Prospectus (1-2 pages)**
    - **Complete Rough Draft**
    - **Final Draft**
- **Stata/R Programming Assignments (10%)**
  - You will complete four problem sets which will teach you how to implement empirical research in economics. These assignments may be completed using Stata or R. You will attend the Stata tutorials held by XXX at YYY, and complete and turn in the problem sets assigned.

## Course Policies

### Correspondence

The instructors will be available by email and will aim to respond within 36 hours during the week (M-F). Please include “[Ec970]” in the subject title.

### Extensions

To request an extension, send an email to both course instructors in advance. Note: no extensions can be given for the presentations, the referee reports, or the final research paper. If you cannot complete a presentation by class time, consider trading time slots with one of your classmates.

### Academic Honesty

All written assignments must use appropriate citation practices. **If you plagiarize in this class, you will fail the course.** For questions about Harvard’s stance on academic honesty, consult the Academic Information section in the Harvard College Handbook for Students.

### Working with Others

Collaboration and sharing ideas is an important skill in economics research. We invite you to discuss your ideas and share your papers with other students in the class. However, you must hand in your own written work for all assignments.

### Expectations for Readings

Many of the readings we have assigned are *challenging* - they were published in top economics journals in recent years and make use of highly technical machinery from economic theory, industrial organization, and econometrics. We will learn to read these papers together. You are not expected to reproduce all the mathematical and statistical arguments alone.

When reading, focus on the intuition behind the models and empirical strategy. Try to capture the core story or argument behind a paper and be able to summarize it in a few sentences. We expect you to spend time with the readings at home and come to class ready to ask questions about the material and discuss your take-aways.

## Schedule

[p] denotes the paper which will be presented and discussed in this class. Spend the most time on this reading.

[r] denotes *required* readings. These will be discussed in class alongside the presentation paper.

[o] denotes *optional* readings. These provide background for presentation and required readings. If you are presenting on a given day, you should make sure to read the introductions to these optional readings.

Monday, Jan 27; 1:30pm -- Course-wide meeting extravaganza

Monday, 2/3 - class begins - *Class 1: What are Markets?*

Lecture: Solution Concepts

Reading:

[r] Hayek, F A. 1945. "The Use of Knowledge in Society." *The American Economic Review* 35 (4): 519–30.

[r] Roth, Alvin. 2015. "Who Gets What and Why: Matching Markets and Market Design." *Eamon Dolan/Houghton Mifflin Harcourt*, no. November: 275. [Chapter 1]

[r] Neugeboren, Robert H., and Mireille Jacobson. "Writing Economics."

[The Economic Approach]

Wednesday, 2/5 - *Class 2: Commodity Markets*

Lecture: Demand / Intermediate Micro Review

Reading:

[r] Neugeboren, Robert H., and Mireille Jacobson. "Writing Economics." [Writing Economically]

[r] McFadden, Daniel. 1974. "The Measurement of Urban Travel Demand." *Journal of Public Economics* 3 (4): 303–28.

[r] Roth, Alvin. 2015. "Who Gets What and Why: Matching Markets and Market Design." *Eamon Dolan/Houghton Mifflin Harcourt*, no. November: 275 [Chapter 2]

Monday, 2/10 - *Class 3: Identification*

Lecture: Identification

Reading:

[r] Neugeboren, Robert H., and Mireille Jacobson. "Writing Economics. [The Language of Economic Analysis]"

[o] Angrist, Joshua D., Kathryn Graddy, and Guido W. Imbens. 2000. "The Interpretation of Instrumental Variables Estimators in Simultaneous Equations Models with an Application to the Demand for Fish." *Review of Economic Studies* 67 (3): 499–527.

<https://doi.org/10.1111/1467-937X.00141>.

[r] Working, E. J. 1927. "What Do Statistical 'Demand Curves' Show?" *The Quarterly Journal of Economics* 41 (2): 212. <https://doi.org/10.2307/1883501>.

[o] Wright, Sewall. 1925. "Corn and Hog Correlations." *United States Department of Agriculture Department Agriculture*.

[o] Wright, Philip. 1928. *The Tariff on Animal and Vegetable Oils*. New York: The MacMillan Company.

[Appendix B]

Wednesday, 2/12 - *Class 4: Oligopoly*

Reading:

[p] Bresnahan, Timothy F. 1987. "Competition and Collusion in the American Automobile Industry: The 1955 Price War." *The Journal of Industrial Economics* 35 (4): 457–82. <http://pages.stern.nyu.edu/~acollard/Bresnahan1955.pdf>.

[r] Bresnahan, Timothy F. 1982. "The Oligopoly Solution Concept Is Identified." *Economics Letters* 10 (1–2): 87–92. [https://doi.org/10.1016/0165-1765\(82\)90121-5](https://doi.org/10.1016/0165-1765(82)90121-5).

[o] Porter, Robert H. 1983. "A Study of Cartel Stability : The Joint Executive Committee , 1880-1886." *The Bell Journal of Economics* 14 (2): 301–14.

Monday, 2/17 -- No class (Presidents' Day)

Wednesday, 2/19 - *Class 5: The Problem of Bigness [Debate]*

Reading:

[r] Shapiro, Carl. 2019. "Protecting Competition in the American Economy: Merger Control, Tech Titans, Labor Markets." *Journal of Economic Perspectives*. <https://doi.org/10.1257/jep.33.3.69>.

[r] Lamoreaux, Naomi R. 2019. "The Problem of Bigness: From Standard Oil to Google." *Journal of Economic Perspectives* 33 (3): 94–117. <https://doi.org/10.1257/jep.33.3.94>.

[Friday, 2/21: Stata/R Problem Set #1 Due]

Monday, 2/24 - *Class 6: Intellectual Property*

Assign:

Mini Research Paper

## Reading:

[p] Budish, Eric, Benjamin N Roin, and Heidi Williams. 2015. "Do Firms Underinvest in Long-Term Research? Evidence from Cancer Clinical Trials." *American Economic Review*.  
<https://doi.org/10.1257/aer.20131176>.

[o] Williams, Heidi. 2017. "How Do Patents Affect Research Investments?" *Annual Review of Economics*. <https://doi.org/10.1146/annurev-economics>.

[r] Williams, Heidi. 2012. "Innovation Inducement Prizes: Connecting Research to Policy." *Journal of Policy Analysis and Management*, 31 (3): 752–76.  
<https://doi.org/10.1002/pam>.

[r] Neugeboren, Robert H., and Mireille Jacobson. "Writing Economics." [Finding and Researching Your Topic]

Wednesday, 2/26 - *Class 7: Patent Trolls*

## Reading:

[p] Cohen, Lauren, Umit G. Gurun, and Scott Duke Kominers. 2019. "Patent Trolls: Evidence from Targeted Firms." *Management Science*. <https://doi.org/10.1287/mnsc.2018.3147>.

[r] Cohen, Lauren, Umit G Gurun, and Scott Duke Kominers. 2016. "The Growing Problem of Patent Trolling." *Science*. <https://doi.org/10.1126/science.aad2686>.

Monday, 3/2 - *Class 8: Bargaining*

## Assign:

Prospectus

Final Research Paper

## Reading:

[p] Brown, James N, and Orley Ashenfelter. 1986. "Testing the Efficiency of Employment Contracts." *Journal of Political Economy* 94 (3, Part 2): S40–87.  
<https://doi.org/10.1086/261399>.

Wednesday, 3/4/20 - *Class 9: Monopsony*

## Reading:

[r] Sullivan, Daniel. 2019. "Monopsony Power in the Market for Nurses." *The Journal of Law & Economics* 32 (2).

[p] Staiger, Douglas O., Joanne Spetz, and Ciaran S. Phibbs. 2010. "Is There Monopsony in the Labor Market? Evidence from a Natural Experiment." *Journal of Labor Economics* 28 (2): 211–36.  
<https://doi.org/10.1086/652734>.

[Friday, 3/6: Stata/R Problem Set #2 Due]

Monday, 3/9 - *Class 10: Mini-Research Paper Updates*Wednesday, 3/11 - *Class 11: Stable Matchings and the Deferred Acceptance Algorithm*

[p] Gale, David, and L.S. Lloyd Shapley. 1962. "College Admissions and the Stability of Marriage." *The American Mathematical Monthly* 69 (1): 9–15. <https://doi.org/10.2307/2312726>.

[r] Roth, Alvin E. 1984. “The Evolution of the Labor Market for Medical Interns and Residents: A Case Study in Game Theory.” *Journal of Political Economy* 92 (6): 991–1016. <https://doi.org/10.1086/261272>.

**Friday, 3/20: Mini research paper due**

Monday, 3/16 -- No class (spring break)

Wednesday, 3/18 -- No class (spring break)

Monday, 3/23 - *Class 12: The Medical Match*

Reading:

[p] Agarwal, Nikhil. 2015. “An Empirical Model of the Medical Match.” *American Economic Review* 105 (7): 1939–78. <https://doi.org/10.1257/aer.20131006>.

Wednesday, 3/25 -- *Class 13: Organ Matching*

Reading:

[r] Roth, Alvin E., Tayfun Sönmez, and M. Utku Ünver. 2004. “Kidney Exchange.” *Quarterly Journal of Economics* 119 (2): 457–88. <https://doi.org/10.1162/0033553041382157>.

[o] Roth, Alvin E., Tayfun Sönmez, and M. Utku Ünver. 2007. “Efficient Kidney Exchange: Coincidence of Wants in Markets with Compatibility-Based Preferences.” *American Economic Review* 97 (3): 828–51. <https://doi.org/10.1257/aer.97.3.828>.

[p] Agarwal, Nikhil, Itai Ashlagi, Eduardo Azevedo, Clayton R Featherstone, and Ömer Karaduman. 2019. “Market Failure in Kidney Exchange.” *NBER Working Paper Series*. Vol. 53. <https://doi.org/10.1017/CBO9781107415324.004>.

**Friday, 3/27: Stata/R Problem Set #3 Due**

Monday, 3/30 - *Class 14: Designing for Ease of Use*

**Due:**

**Prospectus**

Reading:

[r] Neugeboren, Robert H., and Mireille Jacobson. “Writing Economics.” [The Term Paper]

[p] Li, Shengwu. 2017. “Obviously Strategy-Proof Mechanisms.” *American Economic Review* 107 (11): 3257–87.

[o] Ashlagi, Itai, and Yannai A. Gonczarowski. 2018. “Stable Matching Mechanisms Are Not Obviously Strategy-Proof.” *Journal of Economic Theory* 177 (249159): 405–25. <https://doi.org/10.1016/j.jet.2018.07.001>.

Wednesday, 4/1 - *Class 15: Designing for Credibility*

## Reading:

[p] Akbarpour, Mohammad, and Shengwu Li. 2019. "Credible Auctions: A Trilemma." *SSRN Electronic Journal*. Elsevier BV. <https://doi.org/10.2139/ssrn.3033208>.

Monday, 4/6 - *Class 16: Financial Exchanges*

## Reading:

[p] Budish, Eric, Peter Cramton, and John Shim. 2015. "The High-Frequency Trading Arms Race: Frequent Batch Auctions as a Market Design Response." *Quarterly Journal of Economics* 130 (4): 1547–1621. <https://doi.org/10.1093/qje/qjv027>.

[o] Budish, Eric B., Robin S Lee, and John J Shim. 2019. "Will the Market Fix the Market? A Theory of Stock Exchange Competition and Innovation." *NBER Working Paper Series*. Vol. 25855. <https://doi.org/10.1017/CBO9781107415324.004>.

Wednesday, 4/8 - *Class 17: Financial Benchmarks*

## Reading:

[p] Duffie, Darrell, Piotr Dworczak, and Haoxiang Zhu. 2017. "Benchmarks in Search Markets." *Journal of Finance* 72 (5): 1983–2044. <https://doi.org/10.1111/jofi.12525>.

[o] Duffie, Darrell, and Piotr Dworczak. 2018. "Robust Benchmark Design." *NBER Working Paper*. <http://www.nber.org/papers/w20540>.

**Friday, 4/10: Stata/R Problem Set #4 Due**Monday, 4/13 - *Class 18: Morals and Markets [Debate]*

## Reading:

[r] Roth, Alvin E. 2007. "Repugnance as a Constraint on Markets." In *Journal of Economic Perspectives*, 21:37–58. <https://doi.org/10.1257/jep.21.3.37>.

[r] Sandel, Michael J. 2013. "Market Reasoning as Moral Reasoning: Why Economists Should Re-Engage with Political Philosophy." *Journal of Economic Perspectives* 27 (4): 121–40. <https://doi.org/10.1257/jep.27.4.121>.

[r] Li, Shengwu. 2017. "Ethics and Market Design." *Oxford Review of Economic Policy* 33 (4): 705–20. <https://doi.org/10.1093/oxrep/grx047>.

Wednesday, 4/15 - *Class 19: Two-Sided Markets*

## Reading:

[o] Manski, Charles F. 1993. "Identification of Endogenous Social Effects: The Reflection Problem." *The Review of Economic Studies* 60 (3): 531. <https://doi.org/10.2307/2298123>.

[o] Armstrong, Mark. 2006. "Competition in Two-Sided Markets." *RAND Journal of Economics* 37 (3): 668–91.

[o] Rysman, Marc. 2009. "The Economics of Two-Sided Markets." *Journal of Economic Perspectives* 23: 125–43.

<https://pubs-aeaweb-org.ezp-prod1.hul.harvard.edu/doi/pdfplus/10.1257/jep.23.3.125>.



[r] Rochet, Jean-Charles, and Jean Tirole. 2006. “Two-Sided Markets: A Progress Report.” *RAND Journal of Economics*. Vol. 37.

[p] Lee, Robin S. 2013. “Vertical Integration and Exclusivity in Platform and Two-Sided Markets.” *American Economic Review* 103 (7): 2960–3000.  
<https://doi.org/10.1257/aer.103.7.2960>.

Monday, 4/20 - *Class 20: Online Search Frictions and Monopoly Power*

Reading:

[p] Dinerstein, Michael, Liran Einav, Jonathan Levin, and Neel Sundareshan. 2018. “Consumer Price Search and Platform Design in Internet Commerce.” *American Economic Review* 108 (7): 1820–59. <https://doi.org/10.1257/aer.20171218>.

[r] Barach, Moshe A, Joseph M Golden, and John J Horton. 2019. “Steering in Online Markets: The Role of Platform Incentives and Credibility.” <http://www.john-joseph-horton.com/>.

Wednesday, 4/22 - *Class 21: Elective Topic*

Reading: TBD

Monday, 4/27 (topics) - *Class 22: Student Presentations*

**Due:**

**Research Paper Rough Draft**

Wednesday, 4/29 -- *Class 23: Student Presentations*

Last day of classes. Submit Q Eval.

Thursday, 4/30 -- Reading period begins

**Monday, 5/11; 5pm -- Students’ final research papers due (firm deadline)**

**Potential topics for last 4 sessions:**

- **Ratings in Online Platforms**
  - [o] Luca, Michael. 2017. “Designing Online Marketplaces: Trust and Reputation Mechanisms.” *Innovation Policy and the Economy* 17 (1): 77–93.  
<https://doi.org/10.1086/688845>.
  - [o] Nosko, Chris, and Steven Tadelis. 2015. “The Limits of Reputation in Platform Markets: An Empirical Analysis and Field Experiment.” *NBER Working Paper Series*, 20830. <https://doi.org/10.3386/w20830>.
  - [p] Filippas, Apostolos, John J Horton, and Joseph M Golden. 2019. “Reputation Inflation.” 25857. NBER Working Paper Series. <http://www.nber.org/papers/w25857>.
  
- **Streaming as Platform**

- [p] Aguiar, Luis, and Joel Waldfogel. 2018. “Platforms, Promotion, and Product Discovery: Evidence from Spotify Playlists.” *NBER Working Paper Series*. Vol. No. 24713. <https://doi.org/10.3386/w24713>.
- [o] Aguiar, Luis, and Joel Waldfogel. 2018. “As Streaming Reaches Flood Stage, Does It Stimulate or Depress Music Sales?” *International Journal of Industrial Organization* 57: 278–307. <https://doi.org/10.1016/j.ijindorg.2017.06.004>.
- **News Aggregator (Google News) as Platform**
  - [o] Chiou, Lesley, and Catherine Tucker. 2017. “Content Aggregation by Platforms: The Case of the News Media.” *Journal of Economics and Management Strategy* 26 (4): 782–805. <https://doi.org/10.1111/jems.12207>.
  - [o] Athey, Susan, and Markus Mobius. 2017. “The Impact of Aggregators on Internet News Consumption.”
  - [p] Jeon, Doh Shin, and Nikrooz Nasr. 2016. “News Aggregators and Competition among Newspapers on the Internet.” *American Economic Journal: Microeconomics* 8 (4): 91–114. <https://doi.org/10.1257/mic.20140151>.
- **App Store as Platform**
  - [p] Boudreau, Kevin. 2019. “‘Crowds’ of Amateurs & Professional Entrepreneurs in Marketplaces.”
  - [o] Boudreau, Kevin. 2010. “Open Platform Strategies and Innovation: Granting Access vs. Devolving Control.” *Management Science* 56 (10): 1849–72. <https://doi.org/10.1287/mnsc.1100.1215>.
- **Crowdfunding as Platform**
  - [o] Agrawal, Ajay, Christian Catalini, and Avi Goldfarb. 2015. “Crowdfunding: Geography, Social Networks, and the Timing of Investment Decisions.” *Journal of Economics and Management Strategy* 24 (2): 253–74. <https://doi.org/10.1111/jems.12093>.
  - [p] Deb, Joyee, Aniko Oery, and Kevin R Williams. 2019. “Aiming for the Goal: Contribution Dynamics of Crowdfunding.” *NBER Working Paper Series*. <http://www.nber.org/papers/w25881>.

## References

Abraham, Katharine G, John C Haltiwanger, Kristin Sandusky, and James R Spletzer. 2018. “Measuring the ‘Gig’ Economy: Current Knowledge and Open Issues.” *NBER Working Paper Series*. <https://doi.org/10.1023/A>.

Agarwal, Nikhil. 2015. “An Empirical Model of the Medical Match.” *American Economic Review* 105 (7): 1939–78. <https://doi.org/10.1257/aer.20131006>.

- Agarwal, Nikhil, Itai Ashlagi, Eduardo Azevedo, Clayton R Featherstone, and Ömer Karaduman. 2019. "Market Failure in Kidney Exchange." *NBER Working Paper Series*. Vol. 53. <https://doi.org/10.1017/CBO9781107415324.004>.
- Agrawal, Ajay, Christian Catalini, and Avi Goldfarb. 2015. "Crowdfunding: Geography, Social Networks, and the Timing of Investment Decisions." *Journal of Economics and Management Strategy* 24 (2): 253–74. <https://doi.org/10.1111/jems.12093>.
- Aguiar, Luis, and Joel Waldfogel. 2018. "As Streaming Reaches Flood Stage, Does It Stimulate or Depress Music Sales?" *International Journal of Industrial Organization* 57: 278–307. <https://doi.org/10.1016/j.ijindorg.2017.06.004>.
- Aguiar, Luis, and Joel Waldfogel. 2018. "Platforms, Promotion, and Product Discovery: Evidence from Spotify Playlists." *NBER Working Paper Series*. Vol. No. 24713. <https://doi.org/10.3386/w24713>.
- Akbarpour, Mohammad, and Shengwu Li. 2019. "Credible Auctions: A Trilemma." *SSRN Electronic Journal*. Elsevier BV. <https://doi.org/10.2139/ssrn.3033208>.
- Angrist, Joshua D., Kathryn Graddy, and Guido W. Imbens. 2000. "The Interpretation of Instrumental Variables Estimators in Simultaneous Equations Models with an Application to the Demand for Fish." *Review of Economic Studies* 67 (3): 499–527. <https://doi.org/10.1111/1467-937X.00141>.
- Armstrong, Mark. 2006. "Competition in Two-Sided Markets." *RAND Journal of Economics* 37 (3): 668–91.
- Ashlagi, Itai, and Yannai A. Gonczarowski. 2018. "Stable Matching Mechanisms Are Not Obviously Strategy-Proof." *Journal of Economic Theory* 177 (249159): 405–25. <https://doi.org/10.1016/j.jet.2018.07.001>.
- Athey, Susan, and Markus Mobius. 2017. "The Impact of Aggregators on Internet News Consumption."
- Barach, Moshe A, Joseph M Golden, and John J Horton. 2019. "Steering in Online Markets: The Role of Platform Incentives and Credibility." <http://www.john-joseph-horton.com/>.
- Boudreau, Kevin. 2010. "Open Platform Strategies and Innovation: Granting Access vs. Devolving Control." *Management Science* 56 (10): 1849–72. <https://doi.org/10.1287/mnsc.1100.1215>.
- Boudreau, Kevin. 2019. "'Crowds' of Amateurs & Professional Entrepreneurs in Marketplaces."
- Bresnahan, Timothy F. 1987. "Competition and Collusion in the American Automobile Industry: The 1955 Price War." *The Journal of Industrial Economics* 35 (4): 457–82. <http://pages.stern.nyu.edu/~acollard/Bresnahan1955.pdf>.

- Bresnahan, Timothy F. 1982. "The Oligopoly Solution Concept Is Identified." *Economics Letters* 10 (1–2): 87–92. [https://doi.org/10.1016/0165-1765\(82\)90121-5](https://doi.org/10.1016/0165-1765(82)90121-5).
- Brown, James N, and Orley Ashenfelter. 1986. "Testing the Efficiency of Employment Contracts." *Journal of Political Economy* 94 (3, Part 2): S40–87. <https://doi.org/10.1086/261399>.
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- Budish, Eric, Peter Cramton, and John Shim. 2015. "The High-Frequency Trading Arms Race: Frequent Batch Auctions as a Market Design Response." *Quarterly Journal of Economics* 130 (4): 1547–1621. <https://doi.org/10.1093/qje/qjv027>.
- Budish, Eric, Benjamin N Roin, and Heidi Williams. 2015. "Do Firms Underinvest in Long-Term Research? Evidence from Cancer Clinical Trials." *American Economic Review*. <https://doi.org/10.1257/aer.20131176>.
- Card, David, Ana Rute Cardoso, Joerg Heining, and Patrick Kline. 2018. "Firms and Labor Market Inequality: Evidence and Some Theory." *Journal of Labor Economics* 36 (S1): S13–70. <https://doi.org/10.1086/694153>.
- Chiou, Lesley, and Catherine Tucker. 2017. "Content Aggregation by Platforms: The Case of the News Media." *Journal of Economics and Management Strategy* 26 (4): 782–805. <https://doi.org/10.1111/jems.12207>.
- Cohen, Lauren, Umit G Gurun, and Scott Duke Kominers. 2016. "The Growing Problem of Patent Trolling." *Science*. <https://doi.org/10.1126/science.aad2686>.
- Cohen, Lauren, Umit G. Gurun, and Scott Duke Kominers. 2019. "Patent Trolls: Evidence from Targeted Firms." *Management Science*. <https://doi.org/10.1287/mnsc.2018.3147>.
- Deb, Joyee, Aniko Oery, and Kevin R Williams. 2019. "Aiming for the Goal: Contribution Dynamics of Crowdfunding." *NBER Working Paper Series*. <http://www.nber.org/papers/w25881>.
- Dinerstein, Michael, Liran Einav, Jonathan Levin, and Neel Sundaresan. 2018. "Consumer Price Search and Platform Design in Internet Commerce." *American Economic Review* 108 (7): 1820–59. <https://doi.org/10.1257/aer.20171218>.
- Dube, Arindrajit, Jeff Jacobs, Suresh Naidu, and Siddharth Suri. 2018. "Monopsony in Online Labor Markets Arindrajit," 1–34. <http://www.nber.org/papers/w24416>.
- Duffie, Darrell, and Piotr Dworzak. 2018. "Robust Benchmark Design." *NBER Working Paper*. <http://www.nber.org/papers/w20540>.
- Duffie, Darrell, Piotr Dworzak, and Haoxiang Zhu. 2017. "Benchmarks in Search Markets." *Journal of Finance* 72 (5): 1983–2044. <https://doi.org/10.1111/jofi.12525>.

- Einav, Liran, Amy Finkelstein, Stephen P Ryan, Paul Schrimpf, Mark R Cullen, Felicia Bayer, Brenda Barlek, et al. 2013. "Selection on Moral Hazard in Health Insurance." *American Economic Review* 103 (1): 178–219. <https://doi.org/10.1257/aer.103.1.178>.
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