Econ 244: Market Failures and Public Policy

Liran Einav and Heidi Williams

Winter 2021
Mondays and Wednesdays, 11:30 AM–1:20 PM

Course overview. This course will cover selected topics in applied microeconomics, namely insurance and credit markets (aka "selection markets"), markets for innovation, and healthcare markets. The common theme (as the course name suggests) is that in all three contexts there are good a priori reasons to be concerned about potential market failures, suggesting that some type of government intervention or regulation may be critical for achieving efficient market outcomes. These three markets are also particularly useful in illustrating the connection and interplay between economic research and public policy.

The focus of the course will be on topics, not methods, and will therefore cater to a broad set of students – especially those with interests in applied microeconomics, broadly defined. While, formally, this class is not attached to any of the second-year sequences, it should be particularly complementary to the second-year sequences in IO and public economics.

In addition to discussing existing work and bringing students closer to the research frontier, the course will emphasize areas of inquiry where additional research is feasible and warranted, thus hopefully generating possible leads for second-year research papers.

Course logistics. The class meets regularly on Mondays and Wednesdays, 11:30am–1:20pm. There is no class on January 18 (MLK Jr. Day) nor February 15 (Presidents' Day). We will be using Canvas to post material and send announcements. A tentative list of lectures is below. Starred papers on the reading list are those we expect to discuss in detail in class. In the first part of the course (markets for innovation) Heidi will share some pre-recorded lectures, and roughly half of the in-class time will be devoted to guest speakers. The rest of the class will consist of regular synchronous classes.

Course requirements. Student requirements will include three components (weight in the final grade in parentheses):

- Problem sets that will mostly include reviews of papers, concepts, and research ideas (30%)
- Class attendance, preparation, and participation (35%)
- Research paper proposal (35%)

Class topics and schedule.

Markets for innovation (Heidi)

1. Mon, Jan 11: Introduction to markets for innovation.
    - Guest speaker: Ben Jones (Northwestern Kellogg)
2. Wed, Jan 13: Market size and market design.
    - Guest speaker: Susan Athey (Stanford GSB)
3. Wed, Jan 20: Economics of science
    - Guest speakers: Carolyn Stein (MIT) and Paula Stephan (Georgia State)
4. Mon, Jan 25: Taxes and innovation
    - Guest speaker: Enrico Moretti (UC-Berkeley)
5. Wed, Jan 27: Public funding of research
    - Guest speaker: Pierre Azoulay (MIT Sloan)
6. Mon, Feb 1: Intellectual property rights
    - Guest speaker: Lisa Larrimore Ouellette (Stanford Law)
7. Wed, Feb 3: Immigration and innovation
    - Guest speaker: Bill Kerr (Harvard Business School)
8. Mon, Feb 8: Innovation and Inequality
    - Guest speaker: Xavier Jaravel (London School of Economics)

Selection markets (Liran)

9. Wed, Feb 10: Intro to selection markets
10. Wed, Feb 17: Testing for asymmetric information
11. Mon, Feb 22: Empirical models of insurance demand
12. Wed, Feb 24: Empirical models of insurance demand
13. Mon, Mar 1: Estimating welfare in insurance markets
14. Wed, Mar 3: Credit markets
15. Mon, Mar 8: Credit markets
16. Wed, Mar 10: Reclassification risk vs. adverse selection

Final week

17. Mon, Mar 15: AI and inequality (Neale Mahoney)
18. Wed, Mar 17: Wrap-up lecture (Heidi and Liran)

1 Markets for innovation

1.1 Introduction to markets for innovation

Key references

1. Kenneth J. Arrow. "Economic Welfare and the Allocation of Resources for Invention". In: *The Rate and Direction of Inventive Activity: Economic and Social Factors*. Princeton, NJ: Princeton University Press, 1962, pp. 609–626.
2. Kenneth J Arrow. "The Economics of Inventive Activity over Fifty Years". In: *The Rate and Direction of Inventive Activity Revisited*. Ed. by Josh Lerner and Scott Stern. University of Chicago Press, 2012.
3. (*) Nicholas Bloom, John Van Reenen, and Heidi L. Williams. "A Toolkit of Policies to Promote Innovation". In: *Journal of Economic Perspectives* 33.3 (Aug. 2019), pp. 163–184.
4. Richard R. Nelson. "The Simple Economics of Basic Scientific Research". In: *Journal of Political Economy* 67.3 (1959), pp. 297–306.
5. Suzanne Scotchmer. *Innovation and Incentives*. MIT Press, Aug. 2006.

Market failures

1. Nicholas Bloom, Mark Schankerman, and John Van Reenen. "Identifying Technology Spillovers and Product Market Rivalry". In: *Econometrica* 81.4 (2013), pp. 1347–1393.
2. Adam B. Jaffe. "Technological Opportunity and Spillovers of R & D: Evidence from Firms' Patents, Profits, and Market Value". In: *American Economic Review* 76.5 (1986), pp. 984–1001.
3. Adam B. Jaffe, Manuel Trajtenberg, and Rebecca Henderson. "Geographic Localization of Knowledge Spillovers as Evidenced by Patent Citations". In: *Quarterly Journal of Economics* 108.3 (Aug. 1993), pp. 577–598.
4. (*) Benjamin F. Jones and Lawrence H. Summers. *A Calculation of the Social Returns to Innovation*. Working Paper 27863. National Bureau of Economic Research, Sept. 2020.

1.2 Market size and market design

Market size and innovation

1. (*) Daron Acemoglu and Joshua Linn. "Market Size in Innovation: Theory and Evidence from the Pharmaceutical Industry". In: *Quarterly Journal of Economics* 119.3 (2004), pp. 1049–1090.
2. Amy Finkelstein. "Static and Dynamic Effects of Health Policy: Evidence from the Vaccine Industry". In: *Quarterly Journal of Economics* 119.2 (2004), pp. 527–564.
3. Michael Kremer and Christopher M. Snyder. "Preventives Versus Treatments*". In: *Quarterly Journal of Economics* 130.3 (Aug. 2015), pp. 1167–1239.

Market design: Advanced Market Commitments

1. (*) Susan Athey et al. "Opinion — In the Race for a Coronavirus Vaccine, We Must Go Big. Really, Really Big." In: *The New York Times* (May 2020).
2. Michael Kremer. "Creating Markets for New Vaccines: Part I: Rationale". In: *Innovation Policy and the Economy*. Ed. by Adam B. Jaffe, Josh Lerner, and Scott Stern. Vol. 1. MIT Press, 2001, pp. 35–72.

3. Michael Kremer. "Creating Markets for New Vaccines: Part II: Design Issues". In: *Innovation Policy and the Economy*. Ed. by Adam B. Jaffe, Josh Lerner, and Scott Stern. Vol. 1. MIT Press, 2001, pp. 73–118.

4. Michael Kremer and Rachel Glennerster. *Strong Medicine*. Princeton University Press, 2004.

5. Michael Kremer and Heidi Williams. "Incentivizing Innovation: Adding to the Tool Kit". In: *Innovation Policy and the Economy*. Ed. by Josh Lerner and Scott Stern. Vol. 10. University of Chicago Press, 2010, pp. 1–17.

1.3 Economics of science

Key references

1. (*) Paula E. Stephan. "The Economics of Science". In: *Handbook of the Economics of Innovation*. Ed. by Bronwyn H. Hall and Nathan Rosenberg. Vol. 1. Elsevier, 2010, pp. 217–273.

2. Paula Stephan. *How Economics Shapes Science*. Cambridge, MA: Harvard University Press, Sept. 2015.

Priority as a rewards system in science

1. Ryan Hill and Carolyn Stein. *Scooped! Estimating Rewards for Priority in Science*. MIT Working Paper. MIT, 2020.

2. (*) Ryan Hill and Carolyn Stein. *Race to the Bottom: Competition and Quality in Science*. Working Paper. 2020.

3. Robert K. Merton. *The Sociology of Science: Theoretical and Empirical Investigations*. Ed. by Norman W. Storer. Chicago, IL: University of Chicago Press, 1973.

Compensating differentials

1. Philippe Aghion, Mathias Dewatripont, and Jeremy C. Stein. "Academic Freedom, Private-Sector Focus, and the Process of Innovation". In: *RAND Journal of Economics* 39.3 (2008), pp. 617–635.

2. Fiona Murray et al. "Of Mice and Academics: Examining the Effect of Openness on Innovation". In: *American Economic Journal: Economic Policy* 8.1 (Feb. 2016), pp. 212–252.

3. Scott Stern. "Do Scientists Pay to Be Scientists?" In: *Management Science* 50.6 (2004), pp. 835–853.

Burden of knowledge hypothesis

1. Benjamin F. Jones. "The Burden of Knowledge and the "Death of the Renaissance Man": Is Innovation Getting Harder?" In: *Review of Economic Studies* 76 (Jan. 2009), pp. 283–317.

2. Benjamin F. Jones. "Age and Great Invention". In: *Review of Economics and Statistics* 92 (Jan. 2010), pp. 1–14.

3. Benjamin F. Jones. "As Science Evolves, How Can Science Policy?" In: *Innovation Policy and the Economy*. Ed. by Josh Lerner and Scott Stern. Vol. 11. University of Chicago Press, Mar. 2011, pp. 103–131.

4. Benjamin F. Jones and Bruce A. Weinberg. "Age Dynamics in Scientific Creativity". In: *Proceedings of the National Academy of Sciences of the United States of America* 108.47 (2011), pp. 18910–18914.

5. Stefan Wuchty, Benjamin F. Jones, and Brian Uzzi. "The Increasing Dominance of Teams in Production of Knowledge". In: *Science* 316.5827 (May 2007), pp. 1036–1039.

1.4 Taxes and innovation

1. Ajay Agrawal, Carlos Rosell, and Timothy Simcoe. "Tax Credits and Small Firm R&D Spending". In: *American Economic Journal: Economic Policy* 12.2 (2020), pp. 1–21

2. Ufuk Akcigit, Salomé Baslandze, and Stefanie Stantcheva. "Taxation and the International Mobility of Inventors". In: *American Economic Review* 106.10 (2016), pp. 2930–2981.

3. Ufuk Akcigit, John Grigsby, Tom Nicholas, and Stefanie Stantcheva. *Taxation and Innovation in the 20th Century*. Working Paper 24982. National Bureau of Economic Research, Sept. 2018.

4. Nick Bloom, Rachel Griffith, and John Van Reenen. "Do R&D Tax Credits Work? Evidence from a Panel of Countries 1979-1997". In: *Journal of Public Economics* 85 (2002), pp. 1–31.

5. Antoine Dechezleprêtre et al. *Do Tax Incentives for Research Increase Firm Innovation? An RD Design for R&D*. Working Paper 22405. National Bureau of Economic Research, 2016.

6. Bronwyn H. Hall and John Van Reenen. "How Effective Are Fiscal Incentives for R&D? A Review of the Evidence". In: *Research Policy* 29.4 (2000), pp. 449–469.

7. Enrico Moretti and Daniel J. Wilson. "State Incentives for Innovation, Star Scientists and Jobs: Evidence from Biotech". In: *Journal of Urban Economics* 79 (2014), pp. 20–38.

8. (*) Enrico Moretti and Daniel J. Wilson. "The Effect of State Taxes on the Geographical Location of Top Earners: Evidence from Star Scientists". In: *American Economic Review* 107.7 (July 2017), pp. 1858–1903.

1.5 Public funding of research

Key references

1. Paul A. David, Bronwyn H. Hall, and Andrew A. Toole. "Is Public R&D a Complement or Substitute for Private R&D? A Review of the Econometric Evidence". In: *Research Policy* 29.4 (Apr. 2000), pp. 497–529.

2. Richard Freeman and John Van Reenen. "What If Congress Doubled R&D Spending on the Physical Sciences?" In: *Innovation Policy and the Economy* 9 (Jan. 2009), pp. 1–38.

3. Austan Goolsbee. "Does Government R&D Policy Mainly Benefit Scientists and Engineers?" In: *The American Economic Review* 88.2 (1998), pp. 298–302.

Impacts of publicly funded research investments

1. (*) Pierre Azoulay, Joshua S. Graff Zivin, Danielle Li, et al. "Public R&D Investments and Private-Sector Patenting: Evidence from NIH Funding Rules". In: *Review of Economic Studies* 86 (Jan. 2019), pp. 117–152.

2. Brian A. Jacob and Lars Lefgren. "The Impact of Research Grant Funding on Scientific Productivity". In: *Journal of Public Economics* 95.9 (2011), pp. 1168–1177.

3. Danielle Li, Pierre Azoulay, and Bhaven N. Sampat. "The Applied Value of Public Investments in Biomedical Research". In: *Science* 356.6333 (Apr. 2017), pp. 78–81.

4. Enrico Moretti, Claudia Steinwender, and John Van Reenen. *The Intellectual Spoils of War? Defense R&D, Productivity and International Spillovers*. Working Paper 26483. National Bureau of Economic Research, Nov. 2019.

5. Bhaven N. Sampat and Frank R. Lichtenberg. "What Are The Respective Roles Of The Public And Private Sectors In Pharmaceutical Innovation?" In: *Health Affairs* 30.2 (Feb. 2011), pp. 332–339.

Designing publicly funded research grants

1. Pierre Azoulay, Joshua S. Graff Zivin, and Gustavo Manso. "Incentives and Creativity: Evidence from the Academic Life Sciences". In: *RAND Journal of Economics* 42.3 (2011), pp. 527–554.

2. Gustavo Manso. "Motivating Innovation". In: *Journal of Finance* 66.5 (2011), pp. 1823–1860.

Universities

1. Hans K. Hvide and Benjamin F. Jones. "University Innovation and the Professor's Privilege". In: *American Economic Review* 108.7 (July 2018), pp. 1860–1898.

2. Saul Lach and Mark Schankerman. "Incentives and Invention in Universities". In: *RAND Journal of Economics* 39.2 (2008), pp. 403–433.

3. Lisa Larrimore Ouellette and Andrew Tutt. "How Do Patent Incentives Affect University Researchers?" In: *International Review of Law and Economics* 61 (Mar. 2020), Article 105883.

Public funding for private firms

1. Raffaello Bronzini and Eleonora Iachini. "Are Incentives for R&D Effective? Evidence from a Regression Discontinuity Approach". In: *American Economic Journal: Economic Policy* 6.4 (2014), pp. 100–134.

2. Elias Einiö. "R&D Subsidies and Company Performance: Evidence from Geographic Variation in Government Funding Based on the ERDF Population-Density Rule". In: *The Review of Economics and Statistics* 96.4 (2014), pp. 710–728.

3. Josh Lerner. "The Government as Venture Capitalist: The Long-Run Impact of the SBIR Program". In: *Journal of Business* 72.3 (July 1999), pp. 285–318.

4. Sabrina T. Howell. "Financing Innovation: Evidence from R&D Grants". In: *American Economic Review* 107.4 (Apr. 2017), pp. 1136–1164.

1.6 Intellectual property rights

Key references

1. Michele Boldrin and David K. Levine. "The Case Against Patents". In: *Journal of Economic Perspectives* 27.1 (Feb. 2013), pp. 3–22.

2. Eric Budish, Benjamin N. Roin, and Heidi Williams. "Patents and Research Investments: Assessing the Empirical Evidence". In: *American Economic Review* 106.5 (May 2016), pp. 183–187.

3. Petra Moser. "Patents and Innovation: Evidence from Economic History". In: *Journal of Economic Perspectives* 27.1 (Feb. 2013), pp. 23–44.

4. Heidi L. Williams. "How Do Patents Affect Research Investments?" In: *Annual Review of Economics* 9 (2017), pp. 441–469.

Optimal patent design

1. Tom Lee and Louis L. Wilde. "Market Structure and Innovation: A Reformulation". In: *Quarterly Journal of Economics* 94.2 (Mar. 1980), pp. 429–436.

2. Mark A. Lemley and Carl Shapiro. "Probabilistic Patents". In: *Journal of Economic Perspectives* 19.2 (June 2005), pp. 75–98.

3. Glenn C. Loury. "Market Structure and Innovation". In: *Quarterly Journal of Economics* 93.3 (1979), pp. 395–410.

4. William D. Nordhaus. *Invention, Growth, and Welfare: A Theoretical Treatment of Technological Change*. Cambridge, MA: MIT Press, Aug. 1969.

Empirics: Patents and innovation

1. Eric Budish, Benjamin N. Roin, and Heidi L. Williams. "Do Firms Underinvest in Long-Term Research? Evidence from Cancer Clinical Trials". In: *American Economic Review* 105.7 (July 2015), pp. 2044–2085.

2. Wesley M. Cohen, Richard R. Nelson, and John P. Walsh. *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not)*. Working Paper 7552. National Bureau of Economic Research, Feb. 2000.

3. Josh Lerner. "150 Years of Patent Protection". In: *American Economic Review* 92.2 (2002), pp. 221–225.

4. Josh Lerner. "The Empirical Impact of Intellectual Property Rights on Innovation: Puzzles and Clues". In: *American Economic Review* 99.2 (2009), pp. 343–348.

5. Richard C. Levin et al. "Appropriating the Returns from Industrial Research and Development". In: *Brookings Papers on Economic Activity* 3.1 (1987), pp. 783–831.

6. Petra Moser. "How Do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World's Fairs". In: *American Economic Review* 95.4 (2005), pp. 1214–1236.

Patent scope

1. Richard Gilbert and Carl Shapiro. "Optimal Patent Length and Breadth". In: *RAND Journal of Economics* 21 (1990), pp. 106–112.

2. Paul Klemperer. "How Broad Should the Scope of Patent Protection Be?" In: *RAND Journal of Economics* 21 (1990), pp. 113–130.

3. Josh Lerner. "The Importance of Patent Scope: An Empirical Analysis". In: *RAND Journal of Economics* 25.2 (1994), pp. 319–333.

Sequential innovation

1. Alberto Galasso and Mark Schankerman. "Patents and Cumulative Innovation: Causal Evidence from the Courts". In: *Quarterly Journal of Economics* 130 (Feb. 2015), pp. 317–369.

2. Jerry R. Green and Suzanne Scotchmer. "On the Division of Profit in Sequential Innovation". In: *RAND Journal of Economics* 26 (1995), pp. 20–33.

3. Edmund W. Kitch. "The Nature and Function of the Patent System". In: *Journal of Law and Economics* 20.2 (1977), pp. 265–290.

4. Bhaven N. Sampat and Heidi L. Williams. "How Do Patents Affect Follow-On Innovation? Evidence from the Human Genome". In: *American Economic Review* 109.1 (Jan. 2019), pp. 203–236.

5. Suzanne Scotchmer. "Standing on the Shoulders of Giants: Cumulative Research and the Patent Law". In: *Journal of Economic Perspectives* 5.1 (Mar. 1991), pp. 29–41.

Disclosure

1. Jeffrey Furman, Markus Nagler, and Martin Watzinger. *Disclosure and Subsequent Innovation: Evidence from the Patent Depository Library Program.* Working Paper 24660. National Bureau of Economic Research, May 2018.

2. (*) Lisa Larrimore Ouellette. "Do Patents Disclose Useful Information?" In: *Harvard Journal of Law & Technology* 25.2 (2012), pp. 531–593.

3. Benjamin N. Roin. "The Disclosure Function of the Patent System (Or Lack Thereof)". In: *Harvard Law Review* 118.6 (2005), pp. 2007–2028.

Prizes, patents, and patent buyouts

1. Nancy Gallini and Suzanne Scotchmer. "Intellectual Property: When Is It the Best Incentive System?" In: *Innovation Policy and the Economy.* Ed. by Adam B. Jaffe, Josh Lerner, and Scott Stern. Vol. 2. Cambridge, MA: MIT Press, 2002, pp. 51–78.

2. Michael Kremer. "Patent Buyouts: A Mechanism for Encouraging Innovation". In: *The Quarterly Journal of Economics* 113.4 (Nov. 1998), pp. 1137–1167.

3. Brian D. Wright. "The Economics of Invention Incentives: Patents, Prizes, and Research Contracts". In: *American Economic Review* 73.4 (1983), pp. 691–707.

Excludability

1. Kevin A. Bryan and Yasin Ozcan. "The Impact of Open Access Mandates on Invention (Forthcoming)". In: *Review of Economics and Statistics* (2020).

2. Wesley M. Cohen and John P. Walsh. "Real Impediments to Academic Biomedical Research". In: *Innovation Policy and the Economy* 8.1 (Jan. 2007), pp. 1–30.

3. Jeffrey L. Furman and Scott Stern. "Climbing atop the Shoulders of Giants: The Impact of Institutions on Cumulative Research". In: *American Economic Review* 101.5 (Aug. 2011), pp. 1933–1963.

4. Fiona Murray et al. "Of Mice and Academics: Examining the Effect of Openness on Innovation". In: *American Economic Journal: Economic Policy* 8.1 (Feb. 2016), pp. 212–252.

5. John P. Walsh, Charlene Cho, and Wesley M. Cohen. "View from the Bench: Patents and Material Transfers". In: *Science* 309.5743 (Sept. 2005), pp. 2002–2003.

6. John P. Walsh, Wesley M. Cohen, and Charlene Cho. "Where Excludability Matters: Material versus Intellectual Property in Academic Biomedical Research". In: *Research Policy* 36.8 (Oct. 2007), pp. 1184–1203.

7. Heidi L. Williams. "Intellectual Property Rights and Innovation: Evidence from the Human Genome". In: *Journal of Political Economy* 121.1 (Feb. 2013), pp. 1–27.

1.7 Immigration and innovation

Key references

1. Shai Bernstein et al. *The Contribution of High-Skilled Immigrants to Innovation in the United States.* Working Paper. 2019.

2. Jennifer Hunt and Marjolaine Gauthier-Loiselle. "How Much Does Immigration Boost Innovation?" In: *American Economic Journal: Macroeconomics* 2.2 (Apr. 2010), pp. 31–56.

H-1B visas and innovation

1. Kirk Doran, Alexander Gelber, and Adam Isen. *The Effects of High-Skilled Immigration Policy on Firms: Evidence from H-1B Visa Lotteries*. Working Paper 20668. National Bureau of Economic Research, Nov. 2014.

2. (*) William R. Kerr and William F. Lincoln. "The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention". In: *Journal of Labor Economics* 28.3 (2010), pp. 473–508.

Historical evidence

1. Ufuk Akcigit, John Grigsby, and Tom Nicholas. *The Rise of American Ingenuity: Innovation and Inventors of the Golden Age*. Working Paper 23047. National Bureau of Economic Research, June 2017.

2. George J. Borjas and Kirk B. Doran. "The Collapse of the Soviet Union and the Productivity of American Mathematicians". In: *Quarterly Journal of Economics* 127.3 (2012), pp. 1143–1203.

3. Kirk Doran and Chungeun Yoon. *Immigration and Invention: Evidence from the Quota Acts*. Working Paper. Jan. 2020.

4. Petra Moser, Alessandra Voena, and Fabian Waldinger. "German Jewish Émigrés and US Invention". In: *American Economic Review* 104.10 (Oct. 2014), pp. 3222–3255.

5. Petra Moser and Samuel San. *Immigration, Science, and Invention: Evidence from the Quota Acts*. Working Paper. 2019.

1.8 Innovation and inequality

Who becomes a scientist/inventor?

1. Ruchir Agarwal and Patrick Gaule. "Invisible Geniuses: Could the Knowledge Frontier Advance Faster?" In: *American Economic Review: Insights* (2020).

2. Philippe Aghion, Ufuk Akcigit, et al. *The Social Origins and IQ of Inventors*. Working Paper 24110. National Bureau of Economic Research, 2018.

3. Ufuk Akcigit, John Grigsby, and Tom Nicholas. *The Rise of American Ingenuity: Innovation and Inventors of the Golden Age*. Working Paper 23047. National Bureau of Economic Research, June 2017.

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5. Glenn Ellison and Ashley Swanson. "Do Schools Matter for High Math Achievement? Evidence from the American Mathematics Competitions". In: *The American Economic Review* 106.6 (2016), pp. 1244–1277.

Who benefits from product innovation?

1. David M. Cutler, Ellen Meara, and Seth Richards-Shubik. "Induced Innovation and Social Inequality: Evidence from Infant Medical Care". In: *Journal of Human Resources* 47.2 (2012), pp. 456–492.

2. (*) Xavier Jaravel. "The Unequal Gains from Product Innovations: Evidence from the U.S. Retail Sector". In: *Quarterly Journal of Economics* 134.2 (May 2019), pp. 715–783.

Who benefits from patents?

1. Patrick Kline et al. "Who Profits from Patents? Rent-Sharing at Innovative Firms". In: *Quarterly Journal of Economics* 134.3 (Aug. 2019), pp. 1343–1404.
2. John Van Reenen. "The Creation and Capture of Rents: Wages and Innovation in a Panel of U.K. Companies". In: *Quarterly Journal of Economics* 111.1 (1996), pp. 195–226.

2 Selection markets

2.1 Theoretical background

1. George A. Akerlof. "The Market for "Lemons": Quality Uncertainty and the Market Mechanism". In: *The Quarterly Journal of Economics* 84.3 (1970), pp. 488–500.
2. Kenneth J. Arrow. "Uncertainty and the Welfare Economics of Medical Care". In: *The American Economic Review* 53.5 (1963), pp. 941–973.
3. Kenneth Joseph Arrow. *Essays in the Theory of Risk-Bearing*. North-Holland, 1971.
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2.2 Testing for asymmetric information in insurance markets

1. (*) Pierre-Andre Chiappori and Bernard Salanie. "Testing for Asymmetric Information in Insurance Markets". In: *Journal of Political Economy* 108.1 (2000), pp. 56–78.
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2. (*) Alma Cohen and Liran Einav. "Estimating Risk Preferences from Deductible Choice". In: *The American Economic Review* 97.3 (2007), pp. 745–788.

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2.4 Welfare in insurance markets

1. (*) M Kate Bundorf, Jonathan Levin, and Neale Mahoney. "Pricing and Welfare in Health Plan Choice". In: *The American Economic Review* 102.7 (2012), pp. 3214–3248.

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2.5 Credit markets

1. (*) William Adams, Liran Einav, and Jonathan Levin. "Liquidity Constraints and Imperfect Information in Subprime Lending". In: *The American Economic Review* 99.1 (2009), pp. 49–84.

2. Lawrence M. Ausubel. "The Failure of Competition in the Credit Card Market". In: *The American Economic Review* 81.1 (1991), pp. 50–81.

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