

Topics in Applied Microeconomics

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Class Schedule: Tuesdays and Thursdays, 10:15am-11:45am

Class Location: In Person, Williams Hall 321

Office Hours: Mondays 4-5pm and By email appointment.

Course Objectives:

In this course, we will cover the following topics that are part of my own current research interests:

1. An overview of the recent theoretical and empirical developments related to the economics of discrimination and affirmative action.
2. A comprehensive review of theory, empirical methods and evidence related to asymmetric information in insurance markets.
3. Health Care, Health Insurance and Long Term Care Insurance Market: Interactions of health care/insurance and LTC insurance market with the labor market.

The main goal of the course is to get the students familiarized with the topics and be able to develop independent but related research ideas.

Class Format: It will be a combination of lectures and student presentations. I encourage discussions and explorations of ideas during the class. Each class, I will reserve 10 minutes for students to talk about some ideas/questions that they have thought about in the week.

Covid Precautions: Please wear masks all the time during the class. Please sit apart from each other with proper social distancing. If you do not feel well, please do not come to class, and I will direct you to the videos of last year's relevant lecture to make up the lecture materials. Please do everything possible to make yourself healthy.

Requirement and Grading:

The course will be a combination of lectures and student presentations. Students who are enrolled in the course for credit are required to sign up for presentations.

The main goal of the course is to get the students familiarized with the topics and be able to develop independent but related research ideas.

1. **(40%)** Class participation and presentations. Please choose a paper from the papers on the reading list that do not have an asterisk. You will also be asked to give a short presentation of the preliminary proposal in class toward the end of the semester.
2. **(60%)** Term paper: research proposal. You are expected to pursue some topics covered in class. If you write on a topic that is not related to the topics covered in class, you must get my approval. The paper may consist of an empirical and/or theoretical analysis, but should contain some original aspects. You are to complete a two-page research proposal by the end of October, and you have until January 31, 2022 to complete the proposal. Please speak to me if you have difficulty developing a topic, and we will work on it together. Each enrolled student is required to give a short presentation of the preliminary proposal in class toward the end of the semester.

The goal is to get you started on your first research project that can potentially be turned into the third-year paper later.

Reading List

Topic I: Economics of Discrimination and Affirmative Action: Theory, Empirical Methods and Evidence

A. Theory:

- [*] Survey: Hanming Fang and Andrea Moro (2010). “Theories of Statistical Discrimination and Affirmative Action: A Survey.” Chapter 5 in Handbook of Social Economics, Vol IA, edited by Jess Benhabib, Alberto Bisin, and Matthew Jackson, North-Holland, 2010, pp. 133-200.
- [*] Edmund Phelps (1972). “The Statistical Theory of Racism and Sexism,” American Economic Review, Vol. 62, 659–661.
- [*] Stephen Coate and Glenn Loury (1993). “Will Affirmative Action Eliminate Negative Stereotypes?” The American Economic Review, Vol. 83, No. 5, 1220-40.
- [*] Fang, H. (2001), “Social Culture and Economic Performance”, American Economic Review, Vol. 91, No. 4, 924-937.
- [*] Mailath, G., L. Samuelson and A. Shaked (2000), “Endogenous Inequality in Integrated Labor Markets with Two-Sided Search.” American Economic Review, Vol. 90, No. 1, 46-72.
- Fang H. and P. Norman (2006), “Government-mandated discriminatory policies”, International Economic Review, Vol. 47, No. 2, 361-189.
- [*] Chan, J. and E. Eyster (2003), “Does Banning Affirmative Action Lower College Student Quality?” American Economic Review, Vol. 93, No. 3, 858-872.
- [*] Moro, A. and P. Norman (2004), “A General Equilibrium Model of Statistical Discrimination.” Journal of Economic Theory, 114 (1), 1-30.
- Mailath, George J. and Andrew Postlewaite (2006): “Social Assets,” International Economic Review, 47, 1057—1091.
- Lang, Kevin and Michael Manove and W.T. Dickens (2005). “Racial Discrimination in Labor Markets with Posted Wage Offers,” American Economic Review, 95(4), 1327—1340.
- [*] Eeckhout, Jan (2006): “Minorities and Endogenous Segregation,” Review of Economic Studies, 254, 31-53.
- Peski, Marcin, and Balázs Szentes (2013). ”Spontaneous Discrimination.” American Economic Review, 103(6): 2412-36.
- Fryer, Roland and Glenn Loury (2013). “Valuing Diversity” Journal of Political Economy 121, no. 4, (2013): 747-774.

B. Empirical Methods to Distinguish Prejudice from Statistical Discrimination:

- [*] Becker, Gary S. (1957). The Economics of Discrimination. Chicago: University of Chicago Press.

- [*] Becker, Gary S. (1993b). “Nobel Lecture: The Economic Way of Looking at Behavior.” *Journal of Political Economy*, Vol. 101, 385-409.
- [*] Knowles, John, Nicola Persico and Petra Todd (2001). “Racial Bias in Motor Vehicle Searches: Theory and Evidence.” *Journal of Political Economy*, Vol. 109, 203-228.
- [*] Anwar, Shamena and Hanming Fang (2006). “An Alternative Test of Racial Profiling in Motor Vehicle Searches: Theory and Evidence.” *American Economic Review*, Vol. 96, No. 1, 127-151.
- [*] Anwar, Shamena and Hanming Fang (2012). “Testing for the Role of Racial Prejudice Using Bounceback Rates in Emergency Departments.” *The B.E. Journal of Economic Analysis & Policy*, Vol. 13: Issue 3 (Advances), Article 4.
- [*] Anwar, Shamena and Hanming Fang (2015). “Testing for Racial Prejudice in the Parole Board Release Process: Theory and Evidence”. *Journal of Legal Studies*, vol. 44.
- [*] Fang, Hanming and Nicola Persico (2010). “Difference-in-Difference Estimators of Prejudice: An Examination of the Existing Test and An Alternative.” Working Paper.
- Goldin, Claudia and Cecilia Rouse (2000) “Orchestrating Impartiality: The Impact of “Blind” Auditions on Female Musicians” *The American Economic Review*, Vol. 90, No. 4 (Sep., 2000), pp. 715-741.
- Charles, K. K., and J. Guryan (2008): “Prejudice and Wages: An Empirical Assessment of Becker’s *The Economics of Discrimination*,” *Journal of Political Economy*, 116(5), 773–809.
- Bowlus, A. J., and Z. Eckstein (2002): “Discrimination and Skill Differences in an Equilibrium Search Model,” *International Economic Review*, 43(4), 1309–1345.
- [*] Arcidiacono, Peter, Esteban M. Aucejo, Hanming Fang and Kenneth I. Spenner (2011). “Does Affirmative Action Lead to Mismatch? A New Test and Evidence.” *Quantitative Economics*, No. 2, 303–333.
- Doleac, Jennifer L., and Benjamin Hansen (2016). “Does “Ban the Box” Help or Hurt Low-Skilled Workers? Statistical Discrimination and Employment Outcomes When Criminal Histories Are Hidden,” NBER Working Paper 22469, 2016.
- Amanda Agan and Sonja Starr (2017). “Ban the Box, Criminal Records, and Racial Discrimination: A Field Experiment.” *The Quarterly Journal of Economics*.

C. Digital Discrimination: Will Big Data and Algorithms Help or Hurt?

- Cathy O’Neil (2016). *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*. Broadway Books.
- Barocas, Solon and Selbst, Andrew D., *Big Data’s Disparate Impact* (2016). 104 *California Law Review* 671 (2016). Available at SSRN: <https://ssrn.com/abstract=2477899> or <http://dx.doi.org/10.2139/ssrn.2477899>

- Edelman, Benjamin G., Michael Luca, and Daniel Svirsky. “Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment,” *American Economic Journal: Applied Economic* Vol. 9, no. 2 (April 2017): 1-22.
- Edelman, Benjamin, and Michael Luca. “Digital Discrimination: The Case of Airbnb.com.” Harvard Business School Working Paper, 2014.
- Dwork, Cynthia; Roth, Aaron (2014). *The Algorithmic Foundations of Differential Privacy* (PDF available online). Foundations and Trends in Theoretical Computer Science. Now Publishers. ISBN 978-1601988188.
- Moritz Hardt, Eric Price and Nathan Srebro (2016) Equality of Opportunity in Supervised Learning. *30th Conference on Neural Information Processing Systems (NIPS 2016)*, Barcelona, Spain.
- Jon M. Kleinberg, Sendhil Mullainathan, and Manish Raghavan. Inherent trade-offs in the fair determination of risk scores. CoRR, abs/1609.05807, 2016.
- Alexandra Chouldechova (2016). “Fair prediction with disparate impact: A study of bias in recidivism prediction instruments.” <https://arxiv.org/pdf/1610.07524.pdf>

D. Some Recent Papers for Possible Presentation

- Gu Jiadong and Peter Norman (2020). “A Search Model of Statistical Discrimination”, [Slides]
- J. Aislinn Bohren, Kareem Haggag, Alex Imas, & Devin G. Pope (2020). “Inaccurate Statistical Discrimination: An Identification Problem”, [Slides]
- Arjada Bardhi, Yingni Guo and Bruno Strulovici (2020). “Early-Career Discrimination: Spiraling or Self-Correcting?” [Slides]
- Yeon-Koo Che, Teddy Kim and Weijie Zhong (2020). “Statistical Discrimination in Ratings-Guided Markets.” [Slides]

Topic II: Asymmetric Information and Insurance Markets: Theory, Tests and Welfare Analysis

The key reason for the government to be involved in providing insurance is the potential market failure as a result of asymmetric information. Here we review the basic theory of how asymmetric information may lead to market failure; and the tests for asymmetric information that are derived from the theory; and finally some recent empirical methods to examine the welfare effects of asymmetric information.

A. Theory:

The classical readings on the market failure due to asymmetric information is Akerlof’s (1970) lemon’s paper and Rothschild & Stiglitz’s analysis of competitive insurance market (1976). Arrow’s (1963) classical paper makes uncertainty and asymmetric information central focus of the economic analysis of health economics. All these papers assume one dimensional private information in the risk type of the agents.

- [*] George Akerlof (1970). “The Market for ‘Lemons’: Quality Uncertainty and the Market Mechanism,” *Quarterly Journal of Economics* (August 1970).
- [*] Michael Rothschild and Joseph Stiglitz (1976). “Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information”, *Quarterly Journal of Economics*, 90 (4), 629-650.
- Kenneth Arrow (1963). “Uncertainty and the Welfare Economics of Medical Care,” *American Economic Review* Vol. 53, No. 5, 941-973.
- Charles Wilson (1977). “A Model of Insurance Markets With Imperfect Information,” *Journal of Economic Theory*, 16, 167–207.
- Hajime Miyazaki (1977). “The Rat Race and Internal Labor Markets,” *Bell Journal of Economics*, Vol. 8, No. 2, Autumn 1977, pp. 394-418.
- Gerald David Jaynes (1978). “Equilibria in Monopolistically Competitive Insurance Markets.” *Journal of Economic Theory*, Volume 19, Issue 2, December 1978, Pages 394–422.

Recently there have been some work emphasizing potential private information in other dimensions, such as risk aversion.

- [*] Hemenway, David (1990). “Propitious Selection.” *Quarterly Journal of Economics*, Vol. 105, 1063-1069.
- de Meza, David and David C. Webb (2001). “Advantageous Selection in Insurance Markets.” *Rand Journal of Economics*, Vol. 32, No. 2, 249-262.

B. Empirical Tests of Asymmetric Information:

The most well-known empirical tests of asymmetric information is known as the “positive association property” test, first applied in Chiappori and Salanie (2000) for automobile and Chiappori, Jullien, Salanie and Salanie (2005) showed the robustness of this test. Other applications include Cawley & Philipson (1999) for life insurance market, Finkelstein & McGarry (2006) for Long Term Care insurance market, Fang, Keane & Silverman (2008) for Medigap insurance market.

- [*] Chiappori, Pierre-André and Bernard Salanié (2000). “Testing for Asymmetric Information in Insurance Markets.” *Journal of Political Economy*, Vol. 108, No. 1, 56-78.
- Chiappori, Pierre-André, Bruno Jullien, Benard Salanié and Francois Salanié (2006). “Asymmetric Information in Insurance: General Testable Implications.” *Rand Journal of Economics*, Vol. 37, No. 4.
- [*] Einav, Liran and Amy Finkelstein (2011). “Selection in Insurance Markets: Theory and Empirics in Pictures.” *Journal of Economics Perspectives*, 25(1), 115-138
- [*] Cawley, John, and Thomas Philipson (1999). “An Empirical Examination of Information Barriers to Trade in Insurance.” *American Economic Review*, 89(4): 827-846.

- [*] Finkelstein, Amy and Kathleen McGarry (2006). “Multiple Dimensions of Private Information: Evidence from the Long-Term Care Insurance Market.” *American Economic Review*, Vol. 96, No. 4, 938-958.
- [*] Fang, Hanming, Michael P. Keane and Dan Silverman (2008). “Sources of Advantageous Selection: Evidence from the Medigap Insurance Market.” *Journal of Political Economy*, Vol. 116, No. 2, 303-350.

A recent critique of the positive association test for asymmetric information:

- David de Meza and David C. Webb (2016). “False Diagnoses: Pitfalls of Testing for Asymmetric Information in Insurance Markets.” Forthcoming, *Economic Journal*.
- [*] Fang, Hanming and Zenan Wu (2016). “Multidimensional Private Information, Market Structure and Insurance Markets.” Working Paper.

However, “positive correlation property” is not the unique implication from the presence of asymmetric information. The following papers use different angles to examine the presence of asymmetric information.

- Finkelstein, Amy and James Poterba (2004). “Adverse Selection in Insurance Markets: Policyholder Evidence from the U.K. Annuity Market.” *Journal of Political Economy*, Vol. 112, 183-208.
- [*] Cohen, Alma and Liran Einav (2007). “Estimating Risk Preferences from Deductible Choice.” *American Economic Review*, Vol. 97, No. 3, 745-788.

C. Welfare Effects of Asymmetric Information:

The frontier of this research area lies in welfare analysis of asymmetric information in insurance context. The following list is almost exhaustive about the existing literature.

- [*] Einav, Liran, Amy Finkelstein and Jonathan Levin (2010). “Beyond Testing: Empirical Models of Insurance Markets,” *Annual Review of Economics*, 2, September 2010, 311-336
- [*] Finkelstein, Amy, Liran Einav and Paul Schrimpf (2010). “Optimal Mandates and The Welfare Cost of Asymmetric Information: Evidence from The U.K. Annuity Market.” *Econometrica*, 78(3), May 2010, 1031-1092.
- Josh Lustig (2007). “The Welfare Effects of Adverse Selection in Privatized Medicare.” mimeo, Boston University.
- [*] Einav, Liran, Amy Finkelstein and Mark R. Cullen (2010). “Estimating Welfare in Insurance Markets Using Variation in Prices.” *Quarterly Journal of Economics*, 125(3), August 2010, 877-921.
- Cutler, David and Sarah Reber (1998). “Paying for Health Insurance: The Trade-off between Competition and Adverse Selection,” *Quarterly Journal of Economics*, 113(2), 433-466.

Topic III: Health Care, Health Insurance & Long Term Care Market

A. Why Do American Spend So Much More on Health Care?

- Hagist, C. and L. Kotlikoff (2009). “Who’s Going Broke? Comparing Growth in Public Healthcare Expenditure in Ten OECD Countries,” unpublished mimeo.
- [*] Hall, Robert E. and Charles I. Jones (2007). “The Value of Life and the Rise in Health Spending,” *Quarterly Journal of Economics*, 122, 39-72.
- He, Hui and Kevin X.D. Huang (2012). “Why Do Americans Spend So Much More in Medical Care than Europeans?” Vanderbilt University.

B. Demand for Medical Care

- [*] W. Manning et al. (1987). “Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment”, *American Economic Review*, 77(3), 251-177.
- [*] Amanda Kowalski (2016). “Censored Quantile Instrumental Variable Estimates of the Price Elasticity of Expenditure on Medical Care”. *Journal of Business and Economic Statistics*, Vol. 34, No. 1: 107-117.
- [*] Finkelstein, Amy et al. (2012). The Oregon Health Insurance Experiment: Evidence from the First Year. *Quarterly Journal of Economics*.
- Amanda Kowalski (2016). ”Doing More When You’re Running LATE: Applying Marginal Treatment Effect Methods to Examine Treatment Effect Heterogeneity in Experiments.” NBER Working Paper 22363.

C. Health as a Form of General Human Capital and Implications

- Grossman, Michael (1972). “On the Concept of Health Capital and the Demand for Health.” *Journal of Political Economy*, Vol. 80, No. 2, 223-255.
- [*] Fang, Hanming and Alessandro Gavazza (2011). “Dynamic Inefficiencies in an Employment-Based Health-Insurance System: Theory and Evidence,” *American Economic Review*, 101(7), 3047-3077.

D. Reclassification Risk

Reclassification risk is the risk that consumers face in future insurance premiums. There is no long-term health insurance currently in the U.S. This could lead to significant welfare loss.

- Peter Diamond (1992). “Organizing the Health Insurance Market,” *Econometrica*, 60, 1233-1254.
- [*] John Cochrane (1995). “Time Consistent Health Insurance”, *Journal of Political Economy*, 103 (3), 445-473.
- Pauly, M., H. Kunreuther and R. Hirth (1995), “Guaranteed Renewability in Insurance,” *Journal of Risk and Uncertainty*, 10: 143-56.

- [*] Benjamin Handel, Igal Hendel and Michael D. Whinston (2015). “Equilibria in Health Exchanges: Adverse Selection vs. Reclassification Risk.” *Econometrica*, vol 83(4), 1261-1313.
- [*] Ghili, Soheil, Benjamin Handel, Igal Hendel and Michael D. Whinston (2020). “The Welfare Effects of Long-term Health Insurance Contracts.” MIT Sloan Working Paper.
- Juan Pablo Atal, Hanming Fang, Martin Karlsson and Nicolas R. Ziebarth (2020). “Exit, Voice or Loyalty? An Investigation into Mandated Portability of Front-Loaded Private Health Plans.” *Journal of Risk and Insurance*.
- Juan Pablo Atal, Hanming Fang, Martin Karlsson and Nicolas R. Ziebarth (2021). “Long-Term Health Insurance: Theory Meets Evidence.” Working Paper.
- Pashchenko, Svetlana and Ponpoje Porapakarm (2011). Welfare Costs of Reclassification Risk in the Health Insurance Market, Uppsala University Working Paper.

E. Interaction between Health Insurance and Labor Market

- Madrian, Brigitte C. (1994). “Employment-Based Health Insurance and Job Mobility: Is There Evidence of Job Lock?” *Quarterly Journal of Economics*, Vol. 109, No. 1, 27-54.
- Currie, J. and B. Madrian (1999). “Health, Health Insurance, and the Labor Market,” in *Handbook of Labor Economics*, Volume 3C: 3309-3416. Amsterdam: North Holland.
- [*] Dey, M. and C. Flinn (2005). “An Equilibrium Model of Health Insurance Provision and Wage Determination.” *Econometrica* 73, 571-627.
- Dey, M. and C. Flinn (2008). “Household Search and Health Insurance Coverage.” *Journal of Econometrics*, 145 July, 43-63.
- Bruegemann, Bjoern and Iourii Manovskii (2010). “Fragility: A Quantitative Analysis of the US Health Insurance System.” University of Pennsylvania Working Paper.

We will digress on a discussion about a variety of labor market models that differ in the nature of the friction, and how wages are determined. Such models are ingredients to study the interaction between social insurance programs and the labor market.

- [*] Rogerson, Richard, Robert Shimer and Randall Wright. “Search-Theoretic Models Of The Labor Market: A Survey,” *Journal of Economic Literature*, 2005, 959-988.
- [*] Burdett, Kenneth and Dale T. Mortensen (1998). “Wage Differentials, Employer Size, and Unemployment,” *International Economic Review*, 1998, 39, 257-273.
- Hwang, Hae-shin, Mortensen, Dale; Reed, W. Robert (1998). “Hedonic Wages and Labor Market Search.” *Journal of Labor Economics*. 815-847.
- [*] Mortensen, Dale T. and Christopher A. Pissarides, “Job Creation and Job Destruction in the Theory of Unemployment,” *Review of Economic Studies*, 1994, 61, 397-415.

- [*] Menzio, Guido and Shouyong Shi (2011). “Efficient Search on the Job and the Business Cycle.” *Journal of Political Economy*, Vol. 119(3), pages 468 - 510.

F. Evaluating the Effect of Affordable Care Act

Health care reform is one of the most important policy issues in the US. There are numerous angles from which one can examine the issues related to the health care system.

- [*] Summers, Larry (1989). Some Simple Economics of Mandated Benefits. *American Economic Review Papers and Proceedings*, May, 177-184.
- [*] Kolstad, J. T., Martin Hackmann and A. E. Kowalski (2012): ”Adverse Selection and an Individual Mandate: When Theory Meets Practice.” *American Economic Review*, Vol. 105, No. 3: 1030-66.
- Kolstad, J. T., and A. E. Kowalski (2012). “Health Reform, Health Insurance, and Selection: Estimating Selection into Health Insurance Using the Massachusetts Health Reform,” *American Economic Review Papers and Proceedings*.
- [*] Aizawa, Naoki and Hanming Fang (2020). “Equilibrium Labor Market Search and Health Insurance Reform.” *Journal of Political Economy*, November 2020.
- Cole, Harold, Soojin Kim and Dirk Krueger (2019). “Analyzing the Effects of Insuring Health Risks: On the Tradeoff between Short Run Insurance Benefits vs. Long Run Incentive Costs”, *Review of Economic Studies*, Vol 86, 1123-1169.
- Fang, Hanming and Andrew Shephard (2019). “Joint Labor Search, Spousal Insurance, and Health Care Reform.” R&R at Econometrica.
- Makoto Nakajima and Didem Tüzemen (2016). ”Health-Care Reform or Labor Market Reform? A Qualitative Analysis of the Affordable Care Act,” Working Paper 15-34/R, February 2016.
- Pashchenko, Svetlana and Ponpoje Porapakkarm (2012). “Quantitative Analysis of Health Insurance Reform: Separating Community Rating from Income Redistribution.” Uppsala University.
- Fang, Hanming and Dirk Krueger (2021). “The Affordable Care Act After a Decade: Impacts on the Labor Market, Public Finances and the Macro Economy.” for *Annual Review of Economics*.
- Handel, Ben and Jonathan Kolstad (2021). “The Affordable Care Act After a Decade: Industrial Organization of Health Insurance Market.” for *Annual Review of Economics*

G. Long Term Care Insurance

- [*] Brown, Jeff and Amy Finkelstein (2008). “The Interaction of Public and Private Insurance: Medicaid and the Long-Term Insurance Market.” *American Economic Review* 98(3): 1083-1102.

- Brown, Jeff and Amy Finkelstein (2007). Why Is the Market for Long Term Care Insurance So Small. *Journal of Public Economics* 91(10): 1967-1991.
- Finkelstein, Amy and Kathleen McGarry (2006). “Multiple Dimensions of Private Information: Evidence from the Long-Term Care Insurance Market.” *American Economic Review*, Vol. 96, No. 4, 938-958.
- Brown, Jeff and Amy Finkelstein (2011). “Insuring long-term care in the U.S. 2011.” *Journal of Economic Perspectives* 25(4): 119-142.
- Ko, Ami (2021). “An Equilibrium Analysis of the Long-Term Care Insurance Market.” Georgetown University, forthcoming, *Review of Economic Studies*.
- Mommarts, Corina (2018). “Long-Term Care Insurance and the Family (November 2016). University of Wisconsin-Madison.