

Ec 684: Graduate Public Economics

Instructors: Ashley C. Craig, ashcraig@umich.edu

Logistics: Two lectures per week (Monday/Wednesday) from 1:00 to 2:30 in 171 Lorch Hall

Office Hours:

10 minutes: <https://ashcraig.appointlet.com/s/10m>

20 minutes: <https://ashcraig.appointlet.com/s/20m>

(Please email me if you need a longer meeting.)

Ongoing Feedback and Suggestions: I would greatly value feedback on the course, and will do my best to incorporate it as we go. Please constructively criticize, just as I will try to do for your research!

Description: This is the third quarter of the Public Economics sequence of the University of Michigan graduate program in economics. The course asks what role governments should play in the economy, with the aim of developing students' understanding of the basic theoretical models and tools used in the field. We will cover the philosophical foundations of Public Economics, key empirical facts, labor income and consumption taxation, externalities, and human capital.

Seminars: Students are strongly encouraged to attend the Public Economics Free Lunch Seminar (PFFLS, pronounced "puffles"), the Monday PF seminar, and all job talks related to your fields or interests. If you are not subscribed to the PF mailing list, please email Mary Ceccanese (ceccanes@umich.edu).

Electronics Policy: You are welcome to use a computer to take notes or pull up relevant course materials. However, please do your online shopping elsewhere or at other times.

Auditing: Individuals who are not taking the course for credit will **not automatically** be allowed to attend. If there is space, I will allow senior PF students to attend, providing that they agree to meet occasionally with students who are taking the course for credit.

Grading: The grade for the **whole course** (Craig + Hines) is based on two of my problem sets (10% each), a replication exercise (30%), a mid-term exam (15%), and assessments to be assigned later by Jim (35%). Since you will have plenty of time to complete each of the course requirements, I will **not grant extensions** for any aspect of the assignments, except under truly exceptional circumstances.

Problem Set Guidelines: These will be comprised of analytical questions + some programming. Questions will be distributed at least 2 weeks before the due dates. You are encouraged to discuss these questions with each other, but must write up solutions **on your own**. Attempt questions on your own first. Otherwise, you will not develop the skills you will need on the final and field exams (and in your research). Your solutions, including working, are to be submitted **on Canvas**. I suggest using LyX. These problem sets will be hard and time-consuming. Do not attempt to do them at the last minute.

Replication Exercise Guidelines: The goal of this exercise is to replicate and extend an empirical paper of your choice that is related to public economics. Your replication exercise should consist of three parts. First, review the paper as if you were asked to write a referee report. Second, replicate the results and discuss potential differences between your own results and what is reported in the paper. Finally, extend the paper. This is really an opportunity. Pick a topic that you find exciting and want to explore. This will give you a chance to get involved with the literature and get your hands dirty in the relevant data. Your extension could be a starting point for your third year paper, or perhaps something more!

Choose a working paper or a paper published within the last five years, which is not extensively covered in class, and which has a significant empirical component. Good sources for potential papers include the

NBER Public Economics Working Papers or the American Economic Review, which requires authors to make (non-proprietary) datasets available online. **Email me** with your choice by **Feb 5**. The final product is then due by email on **Apr 20**. Include your code, your log files, and the original paper. Ideally, the final results should be replicable by running a single file.

Referee Report: What is the research question? Is that an important contribution? What does the paper claim to show? Do they convince you? In answering these questions, you might think about the ideal experiment you would like to run to answer the authors' question, whether the dataset they use is appropriate, the sources of identification in the paper, assumptions needed to justify the empirical strategy, alternative explanations for the findings, and the literature the paper extends.

Replication: Gather the data used in the paper from public information or by emailing the authors. If you email the authors, let them know that you are seeking to replicate and extend their results for a graduate course at the University of Michigan. Replicate the main tables and figures. (Note: it is crucial that you write up your own code for the replication and do not rely on the code provided by the authors.) Discuss your findings and compare them to those of the paper. Discuss any differences.

Extension: Extend the paper in an interesting way. For instance, you could test whether the findings can be replicated in another setting where one would expect the hypothesis/mechanism/empirical relationship to be applicable. You could also extend the paper by running additional specifications on the dataset used in the paper, e.g., to test a different mechanism.

Electronic Submission: All assignments, **including problem sets** are due electronically. While you can scan handwritten answers if you insist, I very strongly recommend that you learn how to use LyX, LaTeX, or a similar tool. This will be essential in your research.

Midterm Exam Guidelines: The midterm will cover the entire quarter. It will feature analytical questions, loosely in the style of the problem sets. They will span a range of difficulty levels, and many will require you to think on your feet. At least one question is likely to be extremely challenging, and may even ask you to attempt to solve an open question in Public Economics. Good luck!

Assignment	Part	Points	Due Date/Time	Where
Problem Set 1		10 pts	Feb 10	Canvas
Problem Set 2		10 pts	Feb 19	Canvas
Replication	Topic	-	Feb 5	Email
	Writeup/Code	30 pts	Apr 20	Email
Midterm Exam		15 pts	Feb 24	Class
Other Hines Assessments		35 pts	From Feb 26	TBA

Academic Integrity: The assignments in this class are **not** group projects. Although discussion of problem set questions is encouraged, each submitted assignment must reflect your **own** work. Plagiarism will not be tolerated. If you are uncertain about what constitutes plagiarism, you must contact me prior to submitting an assignment to review these concerns. The Department's policy on academic integrity is posted at: <https://lsa.umich.edu/content/dam/econ-assets/Econdocs/Academic%20Misconduct.pdf>.

Mental Health: If you or someone you know is overwhelmed, depressed, and/or in need of support, do not hesitate to talk to me or others. For immediate help, contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and <https://caps.umich.edu/> during and after hours, on weekends and holidays, or through its counselors in schools on North and Central Campus. You may also consult the University Health Service (UHS) at (734) 764-8320 and <https://www.uhs.umich.edu/mentalhealthsvcs>,

or for alcohol or drug concerns, see www.uhs.umich.edu/aodresources. For a listing of other mental health resources available on and off campus, visit: <http://umich.edu/~mhealth/>.

Acknowledgements: This course and the associated materials build on the work of Stefanie Stantcheva, Raj Chetty, Emmanuel Saez, Nathan Hendren, Casey Rothschild, Josh Abel, Anthony Yu, Andrew Garin and many others indirectly. Hopefully you will build on my work as future PF teachers.

Readings: The course calendar is below. Double-starred readings (**) are **required**. Other readings are supplemental and optional. There is no textbook. The reading list is subject to change over the semester. The most current draft of the syllabus will be posted to Canvas.

Reading List

- Jan 8 (Wed) 1. Introduction to Public Economics
- **Craig, A. (2019), Econ 684 Syllabus.
 - **Explore this tool: <https://graphics.wsj.com/what-percent/>
 - Alvarado, F., Atkinson, A., Piketty, T., & Saez, E. (2013) "The Top 1 Percent in International and Historical Perspective", *Journal of Economic Perspectives*, 27(3), 3–20.
 - Piketty, T. & Saez E. (2003), "Income inequality in the United States, 1913-1998", *Quarterly Journal of Economics*, 118, 1-41.
 - Atkinson, A., Piketty, T. & Saez E. (2011), "Top Incomes in the Long Run of History", *Journal of Economic Literature*, 49, 3-71.
- Jan 13 (Mon) 2. Tax Incidence
- **Kotlikoff, L. and Summers, L. (1987) "Tax Incidence", in A. Auerbach and M. Feldstein, *Handbook of Public Economics*, Vol. 2, 1043-1092. Amsterdam: North Holland. Sections 0, 1, 2.2.1-2.2.3, 2.3, 3.1 and 4.4.
 - **Chetty, R., Looney A. & Kroft, K. (2009) "Salience and Taxation: Theory and Evidence", *American Economic Review*, 99(4), 1145–1177.
 - Evans, W., Ringel, J. & Stech, D. (1999) "Tobacco Taxes and Public Policy to Discourage Smoking", in *Tax Policy and the Economy*, Vol. 13, 1–56.
- Jan 15 (Wed) 3. Efficiency Costs of Taxation
- **Auerbach, A. (1985) "The Theory of Excess Burden and Optimal Taxation", in A. Auerbach and M. Feldstein, *Handbook of Public Economics*, Vol. 1, 61-127. Amsterdam: North Holland. Sections 1, 2, 3.1 and 4.
 - **Chetty R. (2009), "Sufficient Statistics for Welfare Analysis: A Bridge Between Structural and Reduced-Form Methods", *Annual Rev. of Econ.* 1, 451-488, Sec. 2 & 6.
 - **MWG Chapter 3 (if you need a refresher on the basics)
 - Chetty, R. (2009), "Is the Taxable Income Elasticity Sufficient to Calculate Deadweight Loss? The Implications of Evasion and Avoidance", *American Economic Journal: Economic Policy*, 1(2), 31-52.
 - Feldstein, M. (1999) "Tax Avoidance and the Deadweight Loss of the Income Tax", *Review of Economics and Statistics*, 81, 674-681.
- Jan 20 (Mon) Vacation: No Class
- Jan 22 (Wed) 4. Welfare Functions, Equality of Opportunity

- **Chetty, R., Hendren, N., & Saez, E. (2014), "Where is The Land of Opportunity? Intergenerational Mobility In The US", *Quarterly Journal of Econ.*, 129(4), 1553–1623.
- **Chetty, R. & Hendren, N. (2018), "The Impacts of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects", *Q. J. of Econ.*, 133(3), 1107–1162.
- Bell, A., Chetty, R., Jaravel, X., Petkova, N. & Van Reenen, J. (2019), "Who Becomes an Inventor in America? The Importance of Exposure to Innovation", *Quarterly Journal of Economics*, 134(2), 547–713.
- Chetty, R., Hendren, N., & Katz, L. (2016), "The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment", *American Economic Review*, 106(4), 855–902.
- Chetty, R., Hendren, N., Kline, P., Saez, E., & Turner, N. (2014), "Is The United States Still a Land of Opportunity? Recent Trends in Intergenerational Mobility?", *American Economic Review*, 104(5), 141–147.
- Kuziemko, I., Norton, M., Saez, E. & Stantcheva S. (2015), "How Elastic are Preferences for Redistribution? Evidence from Randomized Survey Experiments", *American Economic Review*, 105(4), 1478–1508.
- Saez, E. & Stantcheva S. (2016), "Generalized Social Marginal Welfare Weights for Optimal Tax Theory", *American Economic Review*, 106(1), 24–45.

Jan 27 (Mon) 5. Optimal Income Taxation (Linear)

- **Saez, E. (2001), "Using Elasticities to Derive Optimal Income Tax Rates", *Review of Economic Studies*, 68, 205-229.
- Diamond, P. and Saez E. (2011), "From Basic Research to Policy Recommendations: The Case for a Progressive Tax", *Journal of Economic Perspectives*, 25, 165–190.
- Mankiw, G., Weinzierl, M. & Yagan, D. (2009), "Optimal Taxation in Theory and Practice", *Journal of Economic Perspectives*, 23(4), 147–74.
- Piketty, T & Saez, E. (2013) "Optimal Labor Income Taxation", *Handbook of Public Economics*, Vol. 5, Amsterdam: Elsevier-North Holland.

Jan 29 (Wed) 6. Optimal Income Taxation (Non-linear)

- **Mirrlees, J. (1971). "An Exploration in the Theory of Optimum Income Taxation. *Review of Economic Studies*", 38(2), 175-208.
- **Diamond, P. (1998) "Optimal Income Taxation: An Example with a U-Shaped Pattern of Optimal Marginal Tax Rates", *American Economic Review*, 88, 83-95.

Feb 3 (Mon) 7. Optimal Income Taxation (Extensions)

- **Hendren, N. (2019), "Efficient Welfare Weights", Harvard Manuscript.
- **Kaplow, L. (2006), "Public Goods and the Distribution of Income", *European Economic Review*, 50(7), 1627–1908.
- Akerloff, G. (1978) "The Economics of Tagging as Applied to the Optimal Income Tax", *American Economic Review*, 68, 8-19.
- Kaplow, L. (2007). "Optimal Income Transfers", *International Tax and Public Finance*, 14(3), 295-325.
- Mankiw, N. G., & Weinzierl, M. (2010), "The Optimal Taxation of Height: A Case Study of Utilitarian Income Redistribution". *A EJ: Economic Policy*, 2(1), 155-176.
- Mirrlees, J. (1982). "Migration and Optimal Income Taxes", *Journal of Public Economics*, 18(3), 319-325.

- Saez, E. (2002) "Optimal Income Transfer Programs: Intensive versus Extensive Labor Supply Responses", *Quarterly Journal of Economics*, 117(3): 1039-1073.
- Slemrod, J. (1990), "Optimal Taxation and Optimal Tax Systems", *Journal of Economic Perspectives*, 4, 157-178.
- Werning, I. (2007), "Pareto Efficient Taxation", MIT Manuscript.

Feb 5 (Wed)

8. Taxes, Labor Supply and Reported Income (**Paper Choice for Replication Due**)

- **Saez, E. (2010) "Do Taxpayers Bunch at Kink Points?", *American Economic Journal: Economic Policy*, 2, 180–212.
- **Saez, E., Slemrod J., & Giertz S. (2012), "The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review", *Journal of Econ. Lit.*, 50(1), 3–50.
- Chetty, R. (2012), "Bounds on Elasticities With Optimization Frictions: A Synthesis of Micro and Macro Estimates On Labor Supply", *Econometrica*, 80(3), 969–1018.
- Chetty, R., Friedman J. & Saez E. (2013), "Using Differences in Knowledge Across Neighborhoods to Uncover the Impacts of the EITC on Earnings", *American Economic Review*, 103(7), 2683–2721.
- Eissa, N. & Liebman J. (1996), "Labor Supply Response to the Earned Income Tax Credit", *Quarterly Journal of Economics*, 111, 605–637.
- Feldstein, M. (1995), "The Effects of Marginal Tax Rates on Taxable Income: A Panel Study of the 1986 Tax Reform", *Journal of Political Economy*, 103, 551-571.
- Gruber, J. and Saez, E. (2002), "The Elasticity of Taxable Income: Evidence and Implications", *Journal of Public Economics*, 84, 1-32.
- Goolsbee, A. (2000), "What Happens When You Tax the Rich? Evidence from Executive Compensation", *Journal of Political Economy*, 108, 352–378.
- Heckman, J. and Killingsworth M. (1986), "Female Labor Supply: A Survey", *Handbook of Labor Economics*, Vol. I, Chapter 2.
- Pencavel, J. (1986) "Labor Supply of Men: A Survey", *Handbook of Labor Economics*, Vol. 1, Chapter 1.
- Slemrod, J. (1998), "Methodological Issues in Measuring and Interpreting Taxable Income Elasticities", *National Tax Journal*, 51, 773-788.

Feb 10 (Mon)

9. Commodity Taxation (**PSET 1 Due**)

- **Diamond, P. (1975). "A Many Person Ramsey Rule", *Journal of Public Economics*, 4, 335-342
- **Kaplow, L. (2006), "On the undesirability of commodity taxation even when income taxation is not optimal", *Journal of Public Economics*, 90(6), 1235–1250.
- Atkinson, A., & Stiglitz, J. (1976). The Design of Tax Structure: Direct versus Indirect Taxation, *Journal of Public Economics*, 6(1-2), 5-75.
- Diamond, P. and J. Mirrlees (1971), "Optimal Taxation and Public Production I: Production Efficiency", *American Economic Review*, 61(1).
- Diamond, P. and J. Mirrlees (1971), "Optimal Taxation and Public Production II: Tax Rules", *American Economic Review*, 61(1).
- Hines, J. (2007), *Journal of Economic Perspectives*, 21(1), 49–68.
- Saez, E. (2002), "The desirability of commodity taxation under non-linear income taxation and heterogeneous tastes", *Journal of Public Economics* 83(2), 217–230.
- Scheuer, F. and I. Werning (2016), "Mirrlees Meets Diamond-Mirrlees", Working Paper.

- Feb 12 (Wed) 10. Externalities & Other Spillovers
- ****Kopczuk, W. (2003) "A Note on Optimal Taxation in the Presence of Externalities", Economics Letters, 80, 81-86.**
 - Bergstrom, T., Blume, L. & Varian, H. (1986), "On The Private Provision of Public Goods", *Journal of Public Economics*, 29, 25-49.
 - Kaplow, L. (2012), "Optimal Control of Externalities in the Presence of Income Taxation", *International Economic Review*, 53(2), 487-509.
 - Lockwood, B., Nathanson, C., and Weyl, G. (2017) "Taxation and the Allocation of Talent", *Journal of Political Economy*, 125(5), 1635-1682.
 - Piketty, T., Saez E., & Stantcheva S. (2014), "Optimal Taxation of Top Labor Incomes: A Tale of Three Elasticities", *American Economic Journal: Economic Policy*, 6(1).
 - Rothschild, C. & Scheuer, F. (2013), "Redistributive Taxation in the Roy Model", *Quarterly Journal of Economics*, 128(2), 623-668.
 - Rothschild, C. and Scheuer, F. (2016). "Optimal Taxation with Rent-Seeking", *Review of Economic Studies*, to appear.
 - Stiglitz, J. (1982) "Self-selection and Pareto Efficient taxation", *Journal of Public Economics*, 17, 213-240.
- Feb 17 (Mon) 11. Human Capital
- ****Bovenberg, A., & Jacobs, B. (2005), "Redistribution and Education Subsidies are Siamese Twins", *Journal of Public Economics*, 89(11-12), 2005-2035.**
 - Best, M. & Kleven, H. (2013), "Optimal Income Taxation with Career Effects of Work", Working Paper.
 - Craig, A. (2019), "Optimal Taxation with Spillovers from Employer Learning", WP.
 - da Costa, C. & Maestri, L. (2007) "The Risk Properties of Human Capital and the Design of Government Policies", *European Economic Review*, 51 (3), 695-713.
 - Findeisen, S. & Sachs, D. (2016), "Education and Optimal Dynamic Taxation: The Role of Income-Contingent Student Loans", *Journal of Public Economics*, 138, 1-21.
 - Krueger, D. & Ludwig, A. (2016) "On the Optimal Provision of Social Insurance: Progressive Taxation versus Education Subsidies in General Equilibrium", *Journal of Monetary Economics*, 77, 72-98.
 - Lange, F. & Topel, R. (2006), "The Social Value of Education and Human Capital", *Handbook of the Economics of Education*, Vol. 1, Chapter 8.
 - Makris, M. & Pavan, A. (2017), "Taxation under Learning-by-Doing", WP.
 - Moretti, E. (2004), "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-sectional Data", *J. of Metrics*, 121, 175-212.
 - Spence, M. (1973), "Job Market Signaling", *Quarterly J. of Econ.*, 87(3), 355-374.
 - Stantcheva, S. (2017). "Optimal Taxation and Human Capital Policies over the Life Cycle". *Journal of Political Economy*, 125(6), 1931-1990.
- Feb 19 (Wed) First Hines Lecture (PSET 2 Due)
- Feb 24 (Mon) **MIDTERM EXAM**
- Feb 26 (Wed) 12. Insurance
- ****Akerlof, G. (1970) "The Market For 'Lemons': Quality, Uncertainty and the Market Mechanism." *Quarterly Journal of Economics*, 84(3), 488-500.**

- **Chetty, R. (2006) "A General Formula for the Optimal Level of Social Insurance", *Journal of Public Economics*, 90(10), 1879–1901.
- **Rothschild, M. & Stiglitz, J. (1976). "Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information", *Quarterly Journal of Economics* 90(4), 629–649.
- Baily, M. (1978), "Some Aspects of Optimal Unemployment Insurance", *Journal of Public Economics*, 10(3), 379–402.
- Chetty, Raj. (2008), "Moral Hazard vs. Liquidity and Optimal Unemployment Insurance", *Journal of Political Economy*.
- Einav, L., Finkelstein, A. and Levin, J. (2010), "Beyond Testing: Empirical Models of Insurance Markets", *Annual Review of Economics*, 2, 311–336.
- Finkelstein, A. & McGarry, K. (2006), "Multiple Dimensions of Private Information: Evidence from the Long-term Care Insurance Market", *American Economic Review*, 96(4), 938–958.
- Hendren, N. (2013), "Private Information and Insurance Rejections", *Econometrica* 81(5), 1713–1762.
- Hendren, N. (2014), "Unraveling versus Unraveling: A Memo on Competitive Equilibriums and Trade in Insurance Markets", *Geneva Risk and Insurance Review*, 39(2), 184–221.
- Miyazaki, H. (1977) "The Rat Race and Internal Labor Markets", *Bell Journal of Economics*, 394–418.
- Riley, J. (1979), "Informational Equilibrium", *Econometrica*, 331–359.
- Spence, A. (1978), "Product Differentiation and Performance in Insurance Markets", *Journal of Public Economics*, 10, 427–447.
- Wilson, C. (1977), "A Model of Insurance Markets with Incomplete Information", *Journal of Economic Theory*, 16(2), 167–207.

Mar 9 (Mon) Second Hines Lecture

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Apr 20 (Mon) Last Hines Lecture (Replication Exercise Due)