

**Lectures on Empirical Public Finance**  
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**Preliminary Course Syllabus**

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Course particulars

Place: Parsberg, Germany  
Dates: August 3-7, 2009  
Organizer: Bavarian Graduate Program in Economics  
Instructor: Prof. Kevin Milligan  
Course website: <http://www.econ.ubc.ca/kevinmil/teaching/empirical-public.htm>

Overview

This course consists of lectures on empirical public finance. The course will focus both on empirical methods of program evaluation and applications to questions in public finance. Methods to be covered include social experiments, linear differencing, and regression discontinuity. Topics to be covered include tax incidence, taxes and labour supply, welfare and work, and federalism.

The morning classes will feature lectures, with practical exercises and discussions in the afternoons. Problem sets, data sets, and other material will be posted on the course website.

Below is a tentative schedule, with readings. A CD containing a complete set of all the readings will be distributed on the first day of the course.

The most important readings are indicated with a star (\*).

Please note that this schedule is subject to change. Check the course website for updates.

Schedule in brief

Monday: Program evaluation and social experiments.  
Tuesday: Taxes and labour supply; differencing methods.  
Wednesday: Welfare and labour supply; regression discontinuity  
Thursday: Federalism and intergovernmental grants  
Friday: Tax incidence

## **Monday August 3<sup>rd</sup>: Program Evaluation and Social Experiments**

This lecture will cover some basic econometrics of program evaluation, which is used extensively in empirical public finance. We will cover the evaluation problem, treatment parameters, and the selection problem. We then proceed to social experiments, which are often held up as the ideal for empirical evaluation.

The afternoon session will feature a discussion and critique of recent experimental research papers.

*Readings on program evaluation:*

Angrist, Joshua D. and Alan B. Krueger (1999), "Empirical Strategies in Labor Economics" in Orley Ashenfelter and David Card (eds.) *Handbook of Labor Economics*, Vol. 3A, pp. 1865-2097, pp. 1277-1366. [[Available online](#)]

Angrist, Joshua D. and Alan B. Krueger (2001), "Instrumental Variables and the Search for Identification: From Supply and Demand to Natural Experiments," *Journal of Economic Perspectives*, Vol. 15, No. 4, pp. 69-85. [[available online](#)]

Angrist, Joshua D. (1995), "Introduction to the JBES Symposium on Program and Policy Evaluation," *Journal of Business and Economics Statistics*. Vol. 13, No. 2, pp. 133-136. [[available online](#)]

Heckman, James J., Hidehiko Ichimura, Jeffrey Smith, and Petra Todd (1996), "Sources of Selection Bias in Evaluating Social Programs: An Interpretation of Conventional Measures and Evidence on the Effectiveness of Matching as a Program Evaluation Method," *Proceedings of the National Academy of Sciences*, Vol. 93, No. 23, pp. 13416-13420. [[available online](#)]

Heckman, James J., Robert J. LaLonde, and Jeffrey A. Smith (1999), "The Economics and Econometrics of Active Labor Market Programs," in Orley Ashenfelter and David Card (eds.) *Handbook of Labor Economics*, Vol. 3A, pp. 1865-2097. [[available online](#)]

Heckman, James J. and Edward J. Vytlacil (2007a), "Econometric evaluation of social programs Part 1: Causal models, structural models, and econometric policy evaluation." Chapter 70 in James J. Heckman and Edward Leamer (eds.) *Handbook of Econometrics*, Volume 6B, pp. 4779-4874. [[Available online](#) SFU only]

\* Imbens, Guido M. and Jeffrey M. Wooldridge (2008), "Recent Developments in the Econometrics of Program Evaluation," NBER Working Paper No. 14251. [[Available online](#)] (\*Sections 2 and 3 are most relevant for this lecture.)

Rosenzweig, Mark R. and Kenneth I. Wolpin (2000), "Natural 'Natural Experiments' in Economics," *Journal of Economic Literature*, Vol. 38, No. 4, pp. 827-874. [[available online](#)]

Rubin, Donald B. (1978), "Bayesian inference for causal effects: The role of randomization," *The Annals of Statistics*, Vol. 6, No. 1, pp. 34-58. [[available online](#)]

*Readings on social experiments:*

Angrist, Joshua, Daniel Lang, and Philip Oreopoulos (2009), "Incentives and Services for College Achievement: Evidence from a Randomized Trial," *American Economic Journal: Applied Economics*, Vol. 1, No. 1, pp. 136-163. [[Available online.](#)]

Belfield, Clive R., Milagros Nores, Steve Barnett, and Lawrence Schweinhart (2006), "The High/Scope Perry Preschool Program: Cost-Benefit Analysis Using Data from the Age-40 Followup," *Journal of Human Resources*, Vol. 41, No. 1, pp. 162-190. [[Available online.](#)]

Burtless, Gary (1995), "The Case for Randomized Field Trials in Economic and Policy Research," *Journal of Economic Perspectives*, Vol. 9, No. 2, pp. 63-84. [[available online](#)]

\* Deaton, Angus (2009), "Instruments of Development: Randomization in the tropics, and the search for the elusive keys to economic development," manuscript, Princeton University. [[Available online.](#)]

\* Duflo, Esther and Abhijit V. Banerjee (2008), "The Experimental Approach to Development Economics," NBER Working Paper No. 14467. [[Available online.](#)]

Duflo, Esther, Rachel Glennerster, and Michael Kremer (2008), "Using Randomization in Development Economics: A Toolkit," in T. Schultz and John Strauss (eds.) *Handbook of Development Economics*, Vol. 4, pp. 3895-3962. [[Available online.](#)]

Heckman, James J. (1992), "Randomization and Social Policy Evaluation," in *Evaluating Welfare and Training Programs* Charles Manski and I. Garfinkel (eds.). Cambridge, MA: Harvard University Press. (also available as NBER Technical Working Paper No.107, 1991). [[Available online.](#)]

Heckman, James J. and Jeffrey A. Smith (1995), "Assessing the Case for Social Experiments," *Journal of Economic Perspectives*, Vol. 9, No. 2, pp. 85-110. [[available online](#)]

Lise, Jeremy, Shannon Seitz, and Jeffrey Smith (2005), "Equilibrium Policy Experiments and the Evaluation of Social Programs," working paper. [[Available online.](#)]

Miguel, Edward and Michael Kremer (2004), "Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities," *Econometrica*, Vol. 72, No. 1, pp. 159-217. [[Available online.](#)]

## **Tuesday August 4<sup>th</sup>: Taxes and Labour Supply; Differencing Estimators**

The lecture will begin with the study of how taxation affects labour supply. We will cover theory and the history of the empirical literature for context. The lecture will lead to a discussion of differencing methods as a program evaluation tool.

The afternoon session will feature a hands-on exercise featuring the use of difference-in-differences estimation.

### *Readings on labour supply*

\* Blundell, Richard, Alan Duncan and Costas Meghir (1998), "Estimating Labor Supply Responses Using Tax Reforms," *Econometrica*, Vol. 66, No. 4, pp. 827-861. [Available online.](#)

Eissa, Nada (1995), "Taxation and labor supply of married women: The Tax Reform Act of 1996 as a Natural Experiment," NBER Working Paper No. 5023. [Available online.](#)

Eissa, Nada, Henrik Jacobsen Kleven, and Claus Thustrup Kreiner (2008), "Evaluation of four tax reforms in the United States: Labor supply effects for single mothers," *Journal of Public Economics*, Vol. 92, No. 3-4, pp. 795-816. [Available online.](#)

Eklöf, Matias and Hans Sacklen (2000), "The Hausman-MaCurdy Controversy: Why do the results differ across studies?" *Journal of Human Resources*, Vol. 35, No. 1, pp. 204-215. [Available online.](#)

Gelber, Alex (2008), "Taxation and family labor supply," Manuscript. [Available online.](#)

Hausman, J. A. (1981), "Labor Supply" in *How Taxes Affect Economic Behavior*, (eds. Aaron, H. & Pechman, J.), Washington D.C: Brookings Institution.

Hausman, Jerry A. (1985) "Taxes and Labor Supply," in Auerbach, Alan J. and Martin Feldstein (eds.) *Handbook of Public Economics*, Vol. 1. Amsterdam: Elsevier Science.

MaCurdy, Thomas, David Green, and Harry Paarsch (1990), "Assessing Empirical Approaches for Analyzing Taxes and Labor Supply," *Journal of Human Resources*, Vol. 25, No. 3, pp. 415-490. [Available online.](#)

Meyer, B. D. and D. T. Rosenbaum (2001), "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers," *The Quarterly Journal of Economics*, Vol. 116, No. 3, pp. 1063-1114. [Available online.](#)

*Readings on differencing methods*

Baker, Michael and Kevin Milligan (2008), "How does job protected maternity leave affect mothers' employment?" *Journal of Labor Economics*, Vol. 26, No. 4, pp. 655-692. [[Available online.](#)]

Bertrand, Marianne, Esther Duflo, and Sendhil Mullainathan (2004), "How Much Should We Trust Difference in Difference Estimates?" *Quarterly Journal of Economics*, Vol. 119, No. 1, pp. 249-275. [[Available online](#)]

Besley, Timothy and Anne Case (2000), "Unnatural experiments? Estimating the Incidence of Endogenous Policies," *The Economic Journal*, Vol. 110, No. 467, pp. F672-F694. [[Available online.](#)]

Donald, Stephen G. and Kevin Lang (2007), "Inference with Difference in Differences and Other Panel Data," *The Review of Economics and Statistics*, Vol. 89, No. 2. [[Available online.](#)]

Lemieux, Thomas and Kevin Milligan (2008), "Incentive Effects of Social Assistance: A regression discontinuity Approach," *Journal of Econometrics*, Vol. 142, No. 2, pp. 807-828. [[Available online.](#)]

\* Meyer, Bruce D. (1995), "Natural and Quasi-Experiments in Economics," *Journal of Business and Economics Statistics*. Vol. 13, No. 2, pp. 151-161. [[available online](#)]

## **Wednesday August 5<sup>th</sup>: Welfare programs and child tax credits; Regression Discontinuity Estimation**

The lecture will cover some policy topics related to taxation and labour supply. Specifically, we will examine the literature on welfare and child benefits, such as the Earned Income Tax Credit. We will then learn about the regression discontinuity method.

The afternoon session will be an exercise on implementing a regression discontinuity estimator based on the data from Lemieux and Milligan (2008).

### *Readings on welfare and child benefits*

Hotz, V. Joseph and John Karl Scholz (2003), "The Earned Income Tax Credit," in Robert Moffitt (ed.) *Means-tested Transfer Programs in the United States*. Chicago: University of Chicago Press. Working paper version [available online](#).

\* Lemieux, Thomas and Kevin Milligan (2008), "Incentive Effects of Social Insurance : A Regression Discontinuity Approach," *Journal of Econometrics*, Vol. 142, No. 2, pp. 807-828 [Available online](#).

Milligan, Kevin and Mark Stabile (2007), "The integration of child tax credits and welfare: Evidence from the Canadian National Child Benefit program," *Journal of Public Economics*, Vol. 91, No. 1-2 (February, 2007), pp. 305-326. [Available online](#)

Moffitt, Robert (2002), "Welfare Programs and Labor Supply," in Auerbach, Alan J. and Martin Feldstein (eds.) *Handbook of Public Economics, Vol. 4*. Amsterdam: Elsevier Science. Working paper [available online](#).

Saez, Emmanuel (2002), "Optimal Income Transfer Programs: Intensive Versus Extensive Labor Supply Responses," *Quarterly Journal of Economics*, Vol. 117, No. 3, pp. 1039-1073. [Available online](#).

### *Readings on Regression Discontinuity*

Almond, Douglas and Joseph J. Doyle Jr. (2009), "After Midnight: A Regression Discontinuity Design in Length of Postpartum Hospital Stays," manuscript. [[Available online](#).]

Angrist, Joshua D. and Victor Lavy (1999), "Using Maimonides' Rule to Estimate the Effect of Class Size on Scholastic Achievement," *Quarterly Journal of Economics*, Vol. 114, No. 2, pp. 533-575. [[Available online](#).]

Cipollone, Piero and Alfonso Rosolia (2007), "Social Interactions in High School: Lessons from an Earthquake," *American Economic Review*, Vol. 97, No. 3, pp. 948-965. [[Available online](#).]

Dinardo, John and David S. Lee (2004), "Economic Impacts of New Unionization on Private Sector Employers: 1984-2001," *The Quarterly Journal of Economics*, Vol. 119, No. 4, pp. 1383-1441. [[Available online.](#)]

Hahn, Jinyong, Petra Todd and Wilbert Van der Klaauw (2001), "Identification and Estimation of Treatment Effects with a Regression Discontinuity Design," *Econometrica* Vol. 69, No. 1, pp. 201-209. [[Available online.](#)]

Imbens, Guido W. and Thomas Lemieux (2008), "Regression Discontinuity Designs: A Guide to Practice," *Journal of Econometrics*, Vol. 142, No. 2, pp. 615-635. [[Available online.](#)]

Lee, David S. (2008), "Randomized Experiments from Non-Random Selection in U.S. House Elections," *Journal of Econometrics*, Vol. 142, no. 2, pp. 675-697. [[Available online.](#)]

\* Lee, David S. and Thomas Lemieux (2009), "Regression Discontinuity Designs in Economics," NBER Working Paper No. 14723. [[Available online.](#)]

McCrary, Justin (2008), "Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test," *Journal of Econometrics*, Vol. 142, No. 2, pp. 698-714. [[Available online.](#)]

Oreopoulos, Philip (2006), "Estimating Average and Local Average Treatment Effects of Education When Compulsory Schooling Laws Really Matter," *American Economic Review*, Vol. 96, No. 1, pp. 152-175. [[Available online.](#)]

Thistlethwaite, Donald L. and Donald T. Campbell (1960), "Regression Discontinuity Analysis: An Alternative to the ex-post facto Experiment," *The Journal of Educational Psychology*, Vol. 51, No. 6, pp. 309-317. [[Available online.](#)]

## **Thursday August 6<sup>th</sup>: Fiscal Federalism and Intergovernmental Grants**

The lecture will cover the basic models of fiscal federalism and intergovernmental grants.

The afternoon session will feature discussion of several empirical papers in this area, with special attention to the empirical techniques they use.

### *Readings*

Baker, Michael, A. Abigail Payne, and Michael Smart (1999), "An Empirical Study of Matching Grants: The 'Cap on CAP'," *Journal of Public Economics*, Vol. 72, No. 2, 269-88. [Available online.](#)

Bradford, David F. and Wallace E. Oates (1971) "The analysis of revenue-sharing in a new approach to collective fiscal decisions," *Quarterly Journal of Economics*, Vol. 85, No. 3, p. 416-439. [Available online](#)

\* Breton, Albert (1965), "A Theory of Government Grants," *Canadian Journal of Economics and Political Science*, Vol. 31, No. 2, pp. 175-187. [available online](#)

Gordon, Nora (2004), "Do federal grants boost school spending? Evidence from Title I," *Journal of Public Economics*, Vol. 88, No. 9, pp. 1771-1792. [available online](#)

Hines, James R. and Richard H. Thaler (1995), "Anomalies: The flypaper effect," *Journal of Economic Perspectives*, Vol. 9, No. 4, pp. 217-226. [available online](#)

Knight, Brian (2002), "Endogenous federal grants and crowd-out of state government spending: Theory and evidence from the federal highway aid program," *American Economic Review*, Vol. 92, No. 1, pp. 71-92. [available online](#)

Oates, Wallace (1972), *Fiscal Federalism*, Harcourt Brace: New York.

Oates, Wallace E. (2005), "Toward a Second-Generation Theory of Fiscal Federalism," *International Tax and Public Finance*, Vol. 12, No. 4, pp. 349-373. [Available online.](#)

Oates, Wallace E. (2008), "On the evolution of fiscal federalism: Theory and institutions," *National Tax Journal*, Vol. 61, No. 2, pp. 313-334. [Available online.](#)

## **Friday August 7<sup>th</sup>: Tax incidence**

The lecture will cover the historical approach to tax incidence, but quickly move on to the modern empirical literature which focuses much more on new behavioural economics.

The afternoon session will feature a discussion of several empirical papers on the topic.

### *Readings*

Carbonnier, Clement (2007), "Who pays sales taxes? Evidence from French VAT reforms, 1987-1999," *Journal of Public Economics*, Vol. 91, No. 5-6, pp. 1219-1229.

[Available online.](#)

Chetty, Raj, Adam Looney, and Kory Kroft (2008), "Salience and Taxation: Theory and Evidence," *American Economic Review*, forthcoming.. [Available online.](#)

Doyle, Joseph J. and Krislert Samphantharak (2008), "\$2.00 Gas! Studying the effects of a gas tax moratorium," *Journal of Public Economics*, Vol. 92, No. 3-4 [Available online.](#)

Dyck, Dagmar (2005), "Fiscal redistribution in Canada, 1994-2000," *Canadian Tax Journal*, Vol. 53, No. 4, pp. 974-1006. [Available online.](#)

Finkelstein, Amy (2007), "E-ZTax: Tax Salience and Tax Rates," NBER Working Paper No. 12924. [Available online.](#)

Fullerton, Don and Gilbert E. Metcalfe (2002), "Tax Incidence," in Auerbach, Alan J. and Martin Feldstein (eds.) *Handbook of Public Economics*, Vol. 4. Amsterdam: Elsevier Science, pp. 1787-1872. Working paper [available online.](#)

Gibbons, Stephen and Alan Manning (2006), "The Incidence of UK Housing Benefit: Evidence from the 1990s Reforms," *Journal of Public Economics*, Vol. 90, No. 4-5, pp. 799-822. [Available online.](#)

Gruber, Jonathan and Botond Koszegi (2004), "Tax Incidence When Individuals are Time-Inconsistent: The Case of Cigarette Excise Taxes," *Journal of Public Economics*, Vol. 88, No. 9-10, pp. 1959-1987. [Available online.](#)

\* Harberger, Arnold C. (1962), "The Incidence of the Corporation Income Tax," *Journal of Political Economy*, Vol. 70, No. 3, pp. 215-240. [Available online.](#)

Harberger, Arnold C. (2008), "The incidence of the corporation income tax revisited," *National Tax Journal*, Vol. 61, No. 2, pp. 303-312. [Available online.](#)

Kubik, Jeffrey D. (2004), "The Incidence of Personal Income Taxation: Evidence from the Tax Reform Act of 1986," *Journal of Public Economics*, Vol. 88, No. 7-8, pp. 1567-1588. [Available online.](#)

Whalley, John (1984), "Regression or Progression: The Taxing Question of Incidence Analysis," *Canadian Journal of Economics*, Vol. 17, No. 4, pp. 654-682. [Available online](#).

\* Whalley, John (1997), "The Incidence of the Corporate Tax Revisited," Technical Committee on Business Taxation Working Paper No. 1997-07. [Available online](#).