

HCMG 900: ProSeminar in Health Services Research

Spring 2009

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Office hours: Tues 4-6 or appt

Overview

This course explores econometric methods widely used in health care research with a focus on applications in health economics. Concepts, applications, and practice are emphasized, as opposed to technical derivations of estimators and their properties. Methods covered include models of treatment effects; models with qualitative, limited, and transformed dependent variables; two-part, GLM, and sample selection models; count data and duration models; and stochastic frontier models. The last part of the course considers testing for adverse selection and guest lectures on special topics.

Prerequisites: Microeconomics, econometrics

Readings

The reading list consists of published articles and a few working papers, which should be read prior to class (approximately two papers per week). The papers are available on-line through PennText (generally through Business Source Premiere and/or ProQuest) or SSRN. The course also will employ Andrew Jones's primer, *Applied Econometrics for Health Economists: A Practical Guide* (OHE Research, 2nd ed., 2007). A pre-print version is available online and will be posted to the class's WebCafé room, or you can buy a paperback copy. Jones's chapter, "Health Econometrics," in Volume 1A of the *Handbook of Health Economics* (Cutler and Newhouse, eds.; available in Lippincott reference) might be a useful resource. Useful econometric texts include W. Greene, *Econometric Analysis*, and J. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*. The STATA reference manuals also provide useful background on particular methods.

Other Requirements and Grading

In addition to reading the assigned papers prior to class, you are required to:

- Attend selected HCMG and LDI visiting speaker seminars as requested and possible.
- Complete several hands-on data analyses using data from MEPS and perhaps other sources (to be provided), preferably using STATA. These will not be graded.
- Provide an oral overview of at least one required article in class (from papers on the reading list marked by an asterisk) and present / lead discussion of a published paper chosen by you subject to my approval.
- Prepare and present to the class a term paper that reports the results of conducting an econometric analysis of some issue in health care. The focus should be on the appropriate use of data and estimation. The requirement can be met by attempting to extend or replicate prior work.
- Take the final exam.

Your course grade will be determined by equally weighting (1) your class participation and article presentations, (2) your term paper and oral presentation, and (3) the final exam.

Course Outline and Readings
(Approximate dates; current as of 1/15/09)

Week 1: Background / review on research methodology and panel data analysis

Weeks 2-3: Introduction to estimating treatment effects / program evaluation (difference-in-differences methods, robust standard errors, endogeneity and instrumental variables)

Guy David and Scott Harrington, Population Density and Racial Differences in Emergency Medical Services, working paper, June 2008.

Phillip Levine, Parental Involvement Laws and Fertility Behavior, *Journal of Health Economics* 22 (2003): 861-878.

Stephen Morris, Body Mass Index and Occupational Attainment, *Journal of Health Economics* 25 (2006): 347-364.

*Michael Chernew, Philip DiCicca, and Robert Town, Managed Care and Medical Expenditures of Medicare Beneficiaries, *Journal of Health Economics* 27 (2008): 1451-1461.

*Kilgore, Meredith, Michael Morrissey, and Leonard Nelson, Tort Law and Medical Malpractice Premiums, *Inquiry* 43 (2006): 255-270.

Weeks 4-5: Qualitative dependent variables (binary, ordered responses, conditional logit, multinomial logit)

Andrew Jones, *Applied Econometrics for Health Economists* ("Jones"), Chapters 2-5.

Didem Bernard, Jessica Banthin, and William Encinosa, Wealth, Assets, and the Affordability of Health Insurance, Economic Research Initiative on the Uninsured, University of Michigan, June 2007.

*Amy Davidoff, Linda Blumberg, and Len Nichols, State Health Insurance Market Reforms and Access to Insurance for High-Risk Employees, *Journal of Health Economics* 24 (2005): 725-750.

Silvia Balia and Andrew Jones, Mortality, Lifestyle, and Socio-Economic Status, *Journal of Health Economics* 27 (2008): 1-27.

*Jean Abraham, W. Vogt, and M. Gaynor, How Do Households Choose Their Employer-Based Health Insurance? *Inquiry – Excellus Health Plan* 43 (2006/2007): 315-332.

Weeks 6-7: Limited and transformed dependent variables (log transformation, two-part model, GLM, sample selection models)

Jones, Chapters 6-8, 11.

*Melinda Buntin and Alan Zaslavsky, Too Much Ado about Two-Part Models and Transformation? Comparing Methods of Modeling Medicare Expenditures, *Journal of Health Economics* 23 (2004): 525-542.

Siu Fai Leung and Shihti Yu, On the Choice between Sample Selection and Two-Part Models, *Journal of Econometrics* 72 (1996): 197-229.

*David Madden, Sample Selection Versus Two-Part Models Revisited: The Case of Female

Smoking and Drinking, *Journal of Health Economics* 27 (2008): 300-307.

Joseph Terza, Anirban Basu, and Paul Rathouz, Two-State Residual Inclusion Estimation: Addressing Endogeneity in Health Econometric Modeling, *Journal of Health Economics* 27 (2008): 531-543.

Weeks 8-9: Count data, duration models, and stochastic frontier models

Jones, Chapters 9-10.

*Darius Lakdawalla and Neeraj Sood, HIV Breakthroughs and Risky Sexual Behavior, *Quarterly Journal of Economics* 121 (2006): 1063.

Daron Acemoglu and Amy Finkelstein, Input and Technology Choices in Regulated Industries: Evidence from the Health Care Sector, *Journal of Political Economy* 116 (2008): 837-880.

Michael Rosko and Ryan Mutter, Stochastic Frontier Analysis of Hospital Inefficiency: A Review of Empirical Issues, *Medical Care Research and Review* 65 (2008): 131-166.

Week 10: Testing for adverse selection

*Amy Finkelstein and Kathleen McGarry, Multiple Dimensions of Private Information: Evidence from the Long-Term Care Insurance Market, *American Economic Review* 96 (2006): 938-958.

Hanming Fang, Michael Keane, and Dan Silverman, Sources of Advantageous Selection: Evidence from the Medigap Insurance Market, *Journal of Political Economy* 116 (2008): 303-350.

Week 11-13: Miscellaneous topics

Guest seminars by Tanguy Brachet and Jeffrey Silber, Center for Outcomes Research (dates, times, and papers to be determined)

David Card, Carlos Dobkin, and Nicole Maestas, Does Medicare Save Lives? NBER Working Paper 13668, November 2007.

Week 14: Term paper presentations