

Applied Health Economics: Using Econometrics to Evaluate Health Policies

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The course will focus on the use of non-experimental data to estimate causal models and evaluate ‘treatment effects’. The emphasis is on the issues that arise in health economics in finding appropriate data and reliable identification strategies, rather than on the underlying econometric theory.

Content

Identification strategies: finding relevant variation

- Randomised experiments
- Natural experiments
- Natural controls
- Anti-tests

Methods for dealing with unobserved heterogeneity and dependence

- Deviations and conditional estimates
- Numerical integration and classical simulation-based inference
- Bayesian MCMC
- Finite mixtures models
- Copulas

Evaluation of treatment effects

- Matching
- Regression discontinuity
- Difference-in-differences
- Instrumental variables

Reading material

The main source of material is:

Jones, A.M., “Panel data methods and applications to health econometrics”, in *Palgrave Handbook of Econometrics. Volume 2*, Mills, T.C. and Patterson, K. (eds.), London Palgrave MacMillan, in press, 2008.

This is available to download as HEDG WP #07/18 at:

<http://www.york.ac.uk/res/herc/research/hedg/wp.htm>

The practicalities of the methods are covered by the recent book *Applied Health Economics*. This focuses on specific empirical applications to the HALS, BHPS, ECHP and other datasets. The book includes extensive discussion of the Stata code and results:

A.M. Jones, N. Rice, T. Bago d’Uva and S. Balia, *Applied Health Economics*, Routledge, 2007 (ISBN: 9780415397728).

Programs and data from the book can be downloaded from:

<http://www.york.ac.uk/res/herc/research/hedg/software.htm>

Many of the methods covered during the course are reviewed more briefly in the following:

A.M. Jones, Health Econometrics, in Newhouse, J.P. and A.J. Culyer (eds.) *Handbook of Health Economics*, Elsevier, 2000 (ISBN: 0-444-50470-2).

Contoyannis, P., Jones, A.M. and Leon-Gonzalez, R., “Using simulation-based inference with panel data in health economics”, *Health Economics*, 13, 101-122, 2004.

The following general textbooks provide useful background for the microeconomic methods:

A.C. Cameron and P.K. Trivedi, *Microeconometrics. Methods and applications*, Cambridge University Press, 2005 (ISBN 0-521-84805-9)

J.M. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*, MIT Press, 2002, particularly chapters 15-20 (ISBN 0-262-23219-7)

Additional references will be given in the course material.

Programme

	First session	Second session
Monday 18 th August	Overview	The evaluation problem in health economics
Tuesday 19 th August	Categorical choice models for panel data	Practical: Describing & modelling the dynamics of health in the BHPS (AHE: Chapters 2, 9 & 10)
Wednesday 20 th August	Duration models	Practical: Health and retirement in the BHPS (AHE: Chapter 7)
Thursday 21 st August	Count data models	Practical: Health care use in the ECHP (AHE: Chapter 11)
Friday 22 nd August	Multiple equation models	Practical: Health and lifestyles in the HALS (AHE: Chapter 5 & other material)

Andrew Jones

Andrew Jones is Professor of Economics at the University of York, UK, where he directs the Graduate Programme in Health Economics. He researches and publishes in the area of microeconometrics and health economics. Andrew is the research director of the Health, Econometrics and Data Group (HEDG) at the University of York, visiting professor at the University of Bergen; organiser of the annual European Workshops on Econometrics and Health Economics; joint coordinator of the ECuity III project; joint editor *Health Economics*; joint editor *Health Economics Letters* and on the editorial boards of *Cuadernos Economicos de ICE*, *Journal of Health Economics* and *Population Health Metrics*. He is editor of the *Elgar Companion to Health Economics*.

<http://www.york.ac.uk/depts/econ/profiles/details/jonesa.htm>