

# DATA VISUALISATION & HEALTH ECONOMETRICS: A SHORT COURSE

**Bavarian Graduate Program in Economics (BGPE)**  
**7-12<sup>th</sup> September 2014, Muggendorf**

**Professor Andrew M. Jones**

*Department of Economics and Related Studies, University of York, UK*

The course is motivated by the use of non-experimental data to 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 economic and econometric theory. Particular attention will be devoted to applied microeconomic and graphical methods that can be used to model health care utilisation and expenditure, including binary data, count data and skewed and fat-tailed distributions. Throughout the course computer-based practical examples will be used to show how these methods can be applied using the statistical software Stata.

## Outline of Topics

- Introduction and Applications
- Data Visualisation
- Matching for Pre-processing
- Data description and Linear Regression
- Generalised Linear Models (GLMs)
- Flexible parametric models
- Semiparametric and other models

## Daily Schedule

7:00-9:00 Breakfast  
9:00-10:30 First session  
10:30-11:00 Coffee break  
11:00-12:30 Second session  
12:30-14:30 Lunch break  
14:30-16:00 Third session  
16:00-16:30 Coffee break  
16:30-18:00 Fourth session  
18:00-19:00 Free time  
19:00 Dinner

There will be a welcome meeting before dinner on Sunday 7<sup>th</sup>. Morning sessions will be lecture based and afternoon sessions will be a mix of lectures and computer-based practicals. The course will finish at 16.00 on Friday 12<sup>th</sup>.

## Reading material

### Main reference

The bulk of the course material is drawn from:

Jones, A.M., “Models for health care”, *Oxford Handbook of Economic Forecasting*, Hendy, D. and Clements, M. (eds.), Oxford, Oxford University Press, 2011.

This is available to download as HEDG WP #10/01 at:

<http://www.york.ac.uk/economics/postgrad/herc/hedg/wps/>

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

Jones, AM, Rice, N, Bago d’Uva, T and Balia, S. *Applied Health Economics, 2<sup>nd</sup> Edition* Routledge, 2013 (ISBN: 978-0-415-67682-3).

Programs and data from the book can be downloaded from:

<http://www.york.ac.uk/economics/postgrad/herc/hedg/software/>

### Supplementary reading

Some of the methods covered during the course are reviewed in the following:

Jones, AM. Health Econometrics, in Newhouse, JP and Culyer AJ (eds.) *Handbook of Health Economics*, Elsevier, 2000 (ISBN: 0-444-50470-2).

Jones, AM. “Panel data methods and applications to health econometrics”, in *Palgrave Handbook of Econometrics. Volume 2*, Mills, TC and Patterson, K. (eds.), London Palgrave MacMillan, 2009.

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

<http://www.york.ac.uk/economics/postgrad/herc/hedg/wps/>

Jones, AM and Rice, N. “Econometric evaluation of health policies”, in *Oxford Handbook of Health Economics*, Smith, PC and Glied, S. (eds.), Oxford: Oxford University Press, 2011.

This is available to download as HEDG WP #09/09 at:

<http://www.york.ac.uk/economics/postgrad/herc/hedg/wps/>

### Textbooks

The following general textbook provides useful background for the microeconomic methods:

Cameron, AC and Trivedi, PK. *Microeconometrics. Methods and applications*, Cambridge University Press, 2005 (ISBN 0-521-84805-9)

Along with their guide to doing microeconometrics in Stata, which is the source of data for the practical application:

Cameron, AC and Trivedi, PK. *Microeconometrics using Stata*. Stata Press, 2009 (ISBN: 1-59718-048-3)

Additional references will be given in the course material.