

Options for Quantitative Analysis

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Time: Wednesday 3rd June 2015; 08:30 – 12:00, 14:30 – 17:30

Aims and Objectives

The aim of this mini-course is to provide participants with a basic understanding of some of the choices that will need to be made when conducting quantitative analysis and to provide an overview of methods that can be used in testing hypotheses, particularly those related to causal analysis and impact evaluation. The course will thus expand participant's toolkit beyond the standard linear regression model as a means of quantitative analysis.

To achieve this, the course will:

(i) Discuss some of the common issues that arise when conducting quantitative analysis, examples including: (i) primary versus secondary data sources; (ii) correlation versus causality; (iii) evaluation of data; (iv) types of data and variable definitions (e.g. binary, multinomial, logs, shares, ratios,...); and (v) weighting and sampling.

(ii) Consider alternatives to the linear regression model that may be applicable when estimating causal effects or conducting impact evaluation studies. In particular, we will discuss: (i) Randomised experiments; (ii) Natural experiments; (iii) Regression discontinuity design; and (iv) Difference-in-Difference Analysis.

The course will focus on the application of methods for the analysis of quantitative analysis, and will thus present (using Stata) a number of examples using real world data to highlight the methods, as well as discuss variable construction and the interpretation of results.

References

Book Length Treatments:

Angrist, J.D. and J-S Pischke, 2015. *Mastering Metrics*. Princeton University Press

Cameron, A.C. and P.K. Trivedi, 2005. *Microeconometrics: Methods and Applications*. Cambridge University Press.

Dunning, T., 2012. *Natural Experiments in the Social Sciences*. Cambridge University Press.

Khandker, S.R., Koolwal, G.B. and H.A. Samad, 2010. *Handbook on Impact Evaluation: Quantitative Methods and Practices*. The World Bank.

Wooldridge, J.M., 2010. *Econometric Analysis of Cross-Section and Panel Data*. The MIT Press.

Specific References

Deaton, A.S., 2009. Instruments of development: Randomization in the tropics, and the search for the elusive keys to economic development. NBER Working Paper no. 14690.

Imbens, G.M. and J.M. Wooldridge, 2008. Recent developments in the econometrics of program evaluation. NBER Working Paper no. 14251.

Lechner, M., 2010. The estimation of causal effects by difference-in-difference methods. *Foundations and Trends in Econometrics*, 4(3), 165-224.

Lee, D.S. and T. Lemieux, 2010. Regression discontinuity designs in economics. *Journal of Economic Literature*, 48, 281-355.

Rosenzweig, M.R. and K.I. Wolpin, 2000. Natural "natural experiments" in economics. *Journal of Economic Literature*, 38(4), 827-874.