

Melvyn J. Weeks

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DCM: <http://www.econ.cam.ac.uk/faculty/weeks/DCM/DCMWebPage.htm>

Education

Ph.D University of Pennsylvania, November 1994.

“Simulation-Based Inference in the Multinomial Probit Model: Theory and Applications.”

Courses include: Macroeconomics, Microeconomics, Mathematical Programming, Econometrics, Advanced Econometrics, Labour Economics, Probability Theory, Time Series Analysis, Location Theory, Seminar in Finance, “C” Programming.

Master of Arts in Economics, University of Illinois, June 1985.

B.A. in Economics and Geography, University of Reading, England, June 1983.

Current Positions

University Lecturer, Faculty of Economics and Politics, University of Cambridge.

Fellow, Clare College, University of Cambridge

Assistant Editor Journal of Applied Econometrics, January 2000 to present.

Associate, Cambridge Econometrics, July 1999-

1 *Research Interests and Plans*

Microeconometrics, particularly discrete choice models; revealed and stated preference models; model testing and evaluation; non-linear threshold models; computationally intensive methods including simulation-based inference and the bootstrap; models of institutional change for transition economies; convergence within and across countries

Current research projects/plans include:

- working with Kenneth Train at UCLA, Berkeley, on examining the relationship between scale and heterogeneity in the mixed logit model
- working with Matias Eklof at Upsala University, Sweden on developing an Object-Oriented set of programs for estimating a wide class of discrete choice models. Version 1.0 has just been released.
- working with Alan Duncan on the properties of test statistics in a number of discrete choice models
- working with George Kapetanios at Queen Mary College, University of London, on evaluating the performance of a broad class of non-linear threshold models.
- working with Gernot Doppelhofer at the University of Cambridge. We are exploiting our joint interest in model uncertainty and extending measures of posterior importance for individual regressors, making adjustments for collinearity. The title of the paper we are working on is *The Jointness of Determinants of Economic Growth*
- working with Sriya Iyer at the University of Cambridge on the development of a multiple social interaction model of reproductive externalities. This work has been evaluated by Stephen Durlauf, and following his advice, we will submit the paper to the Journal of Political Economy.
- working with Martin Raiser at the World Bank and the EBRD on developing Bayesian models of Institutional Reform

2 *Software Development*

Version 1.0 of DCM (Discrete Choice Models), an econometrics package that may be used to estimate a number of discrete choice models, with particular emphasis on models requiring simulation methodologies, was released in May 2004. Current options include: multinomial logit, conditional logit, mixed logit, mixed probit, multinomial probit, ordered probit, ordered mixed probit. The software has been adopted by Kenneth Train, at UCLA Berkeley, one of the leading researchers in discrete choice methods.

The DCM Website is at

<http://www.econ.cam.ac.uk/faculty/weeks/DCM/DCMWebPage.htm>

Also see:

Matias Eklof and Melvyn Weeks (2004) *Estimation of Discrete Choice Models Using DCM for Ox*. Cambridge Working Papers in Economics in Economics, 0427.

Matias Eklof and Melvyn Weeks (2004) *Discrete Choice Models (DCM): An Object-Oriented Package for Ox*. mimeo, Faculty of Economics and Politics.

3 Conferences

Methods for Stated and Revealed Preference Data, May 2003. Joint with the Centre for MicroData Methods and Practice (Cemmap) at UCL.

Panel Data Conference, University of Cambridge 2006.

4 Teaching Experience

Teaching material, including lecture notes, for current courses is available at <http://www.econ.cam.ac.uk/faculty/people/weeks/index.htm>

Mathematics for Economists (Statistics module)

Using the material covered in a first year course as a platform, the aim of the course is to provide students with a solid grounding in statistical theory, that will be a necessary prerequisite for advanced econometric and statistical classes to be taken in the third year.

Classical Inference (Advanced Undergraduate)

This course builds on the foundations laid in the second year Distribution Theory and Inference course. It deals with estimation and hypothesis testing within the parametric framework of likelihood theory. Topics include: an introduction to asymptotic theory including convergence in probability and convergence in distribution; asymptotic distribution of the score and the maximum likelihood estimator in regular problems; and general principles pertaining to the construction of classical hypothesis testing procedures.

Microeconomic Methods - (Postgraduate)

This course focuses primarily on the statistical theory underpinning micro-econometric models. The methods discussed in this course are not the sole property of micro-economists. Many of the methods have previously been discussed widely in the biology and medical literature. Topics include: review of consumer demand theory and the link with econometric modelling; binary response models; censored and truncated sampling; multinomial choice; and introduction to simulation methods.

Simulation-Based Inference (Postgraduate - advanced)

The estimation of limited dependent variable models involving a large number of alternatives represents a significant computational burden unless extreme correlation assumptions are imposed upon the disturbance terms. Monte Carlo-based methods may be employed to simulate choice probabilities and thereby avoid multivariate integration. We introduce simulation-based inference by first examining the crude frequency simulator which provides a convenient point of departure by virtue of its simplicity. We then move on to an analysis of more sophisticated methods.

Applied Statistics (Undergraduate)

This course is concerned with the application of statistical methods to real world problems. Links with the underlying theory are emphasised. The overall objective of the course is to provide students with the ability to interpret data, with a view to unravelling one or more sets of interdependencies between variables. The course focuses upon the application of statistical methodology, and thus by necessity involves the use of statistical software such as SAS, GAUSS, Maple and LIMDEP.

Microeconometrics and Panel Data (Postgraduate - advanced)

A number of econometric techniques that are now widely used when modelling individual behaviour are introduced. Topics include multinomial choice models, duration analysis, stated and revealed preference models, random coefficient models, social interaction modelling and methods to evaluate the impact of economic policies. We also introduce a number of computationally intensive techniques including simulation-based inference and the bootstrap. Model evaluation, including non-nested hypothesis testing and measures of model uncertainty, is also covered.

5 *Advisory*

Advisor and Consultant, Department of Trade and Industry (RadioCommunications Agency) on (i) the determinants and impact of switching between 2G and 3G mobile telephony; (ii) the demand for digital television; and (iii) the demand for private mobile radio services. Models were used to estimate consumer surplus accruing following an introduction of new cellular mobile phone/television technology.

Discrete Choice Models of Demand for Cellular Mobile Telephones and Digital Television. Report to the Department of Trade and Industry (October 2002)

Discrete Choice Models of Demand for Private Radio Mobile Services. Report to the Department of Trade and Industry (January 2002)

Consultant, European Bank for Reconstruction and Development, June 1999 - present
Development of panel data techniques for estimating a Structural Model of Institutional Change.

Consultant, World Bank. April 1999 -April 2000
Construction and estimation of inequality measures for Uruguay.

Consultant, European Commission (Eurostat). March 1998 - May 1999
Imputation of Missing Data for the Regional Economies Database.

Consultant, Institute of Criminology, Cambridge, November 1997 - June 1998.
Provided statistical advice on the Home Office funded project *Criminal Deterrence and Penal Policy*.

6 *Editorial*

Assistant Editor and Book Review Editor of the Journal of Applied Econometrics

7 *Courses for Academics and Policymakers*

On the Specification, Estimation and Identification of Discrete Choice Models

University of Rosario, Columbia, July 21-24, 2004

University of Chile, Chile, July 26-27, 2004.

University of Cambridge, November 1-2, 2004.

University of Sienna, Italy, April 4-6, 2005.

8 *Other Experience*

Visiting Professor, International Monetary Fund, September 2000 - November 2000.
Provision of advice on development of an early warning system for systemic financial crisis. Work involved both conceptual and econometric input.

Lecturer (Grade B) in Econometrics and Statistics, Dept. of Economics, University of York, Sept. 1992-Jan 1996.

Senior Consultant, Institute for Food Policy Research, Washington, D.C., June 1989 - 2002

Working alongside Prof. M. Nerlove, duties included the development of a modelling framework designed to integrate cross-section and time series data pertaining to a model of a multiple input, multiple output production system; also assist in software and conducting statistical analysis.

Consultant, Nestle Rowntrees, York, Jan 1993 - 1995

Duties included the provision of advice on the specification and estimation a number of brand models for the confectionery market. Presented a number of seminar programmes designed to provide an overview of key econometric concepts to an audience of market analysts with relatively little experience in statistical analysis.

Consultant, El Colegio de Mexico, Mexico City, June 1992.

In June of 1992 I was asked to visit El Colegio and provide advice on the development of an internally consistent strategy for the expansion of the computer facilities. Specific tasks included the evaluation of computing needs in the social science departments.

Research Assistant, University of Pennsylvania, Philadelphia, PA, October 1991 - May 1992.

Under the supervision of Prof. F. Diebold, research was undertaken examining the properties of time varying parameter models under temporal aggregation. Particular focus was upon ARCH and GARCH time varying variance models.

Senior Computer Consultant, Social Science Data Centre, University of Pennsylvania,
Jan. 1987 - Jan. 1988

Duties included basic micro and mainframe consulting, and management of a local area network. Also employed as the centre's principle econometric software consultant.

Some Publications

- CORRADO, L., R. MARTIN, AND M. WEEKS (2004): “Identifying and Interpreting Regional Convergence Clusters Across Europe,” Cambridge Working Papers in Economics (CWPE) No. 0414. Department of Applied Economics and Faculty of Economics, University of Cambridge.
- (2005): “Identifying and Interpreting Convergence Clusters Across Europe,” *The Economic Journal*, 115(552).
- COSH, A., A. HUGHES, AND M. WEEKS (2000): “The Impact of Training on Business Employment Growth,” Research Report RR 245. Department for Education and Employment, December.
- DI TOMMASO, M. L., M. RAISER, AND M. WEEKS (2006): “Home Grown or Imported? Initial Conditions, External Anchors and the Determinants of Institutional Reform in the Transition Economies,” European Bank for Reconstruction and Development Working Paper 81 (2003). Forthcoming in *The Economic Journal* (2006).
- DOPPELHOFER, G., AND M. WEEKS (2005): “Jointness of Determinants of Economic Growth,” Cambridge Working Papers in Economics 0542. Faculty of Economics, University of Cambridge.
- DUNCAN, A., AND M. WEEKS (1997a): “Behavioural tax microsimulation with finite hours choices,” *European Economic Review*, 41, 619–626.
- (1997b): “Simulating Transitions using discrete Choice Models,” *Journal of the American Statistical Association (Papers and Proceedings)*.
- DUNCAN, A., AND M. WEEKS (1999): “Transition Estimators in Discrete Labour Supply Models,” in *Microsimulation: Methods and Applications*, ed. by L. Mitton, H. Sutherland, and M. Weeks. Cambridge University Press.
- EKLOF, M., AND M. WEEKS (2003): “On Specification, Identification and Estimation in a Class of Discrete Choice Models,” mimeo, Faculty of Economics, University of Cambridge.
- (2004): “Estimation of Discrete Choice Models Using DCM for Ox,” Cambridge Working Papers in Economics (CWPE) No. 0427, Department of Applied Economics and Faculty of Economics, University of Cambridge.
- FRIES, S., M. RAISER, AND M. WEEKS (1999): “Progress and Patterns in Reform,” in *Transition Report 1999: Ten Years of Transition*. European Bank for Reconstruction and Development.
- GODSILL, S., M. STONE, AND M. WEEKS (2003): “Assessing the Impact of Private Sector Balance Sheets on Financial Crises: A Comparison of Bayesian and Information-Theoretic Measures of Model Uncertainty,” IMF Working Paper.
- HOLLY, S., P. TURNER, AND M. WEEKS (2003): “Asymmetric Adjustment and Bias in Estimation of an Equilibrium Relationship from a Cointegrating Regression,” *Computational Economics*, 21(3), 195–202.

- ISACHENKOVA, N., AND M. WEEKS (2002): “Competing Risks of Small Firm Survival: A Bayesian Approach,” mimeo, Department of Applied Economics, University of Cambridge.
- IYER, S., AND M. WEEKS (2004): “Multiple Social Interaction and Reproductive Externalities: An Investigation of Fertility Behaviour in Kenya,” Cambridge Working Papers in Economics (CWPE) No. 0461. Department of Applied Economics and Faculty of Economics, University of Cambridge. Submitted to the Journal of Political Economy.
- MARIANO, B., M. WEEKS, AND T. SCHUERMAN (eds.) (2000): *Simulation Based Inference: Theory and Applications*. Cambridge University Press.
- MITTON, L., H. SUTHERLAND, AND M. WEEKS (1999): *Microsimulation: Methods and Applications*. Cambridge University Press, Cambridge.
- PESARAN, H., AND M. WEEKS (2000): “Non-Nested Hypothesis Tests,” in *Theoretical Econometrics*, ed. by B. Baltagi. Basil Blackwell, Oxford.
- RAISER, M., M. DI TOMMASO, AND M. WEEKS (2000): “The Measurement and Determinants of Institutional Change: Evidence from Transition Economies,” Working Paper No. 65, EBRD, London. (Submitted to the Journal of the American Statistical Association (2nd revision)).
- TRAIN, K., AND M. WEEKS (2005): “The Relationship Between Scale Normalisation and Inference in the Mixed Logit Model,” in *Applications of Simulation Methods in Environmental and Resource Economics*, ed. by A. Alberini, and S. R. Kluwer Academic Publisher.
- WEEKS, M. (1995): “Circumventing the Curse of Dimensionality in Applied Work Using Computer Intensive Methods,” *Economic Journal*, 105, 519–530.
- WEEKS, M. (1996): “Testing the Binomial and Multinomial Choice Models Using Cox’s Non-Nested Test,” *Journal of the American Statistical Association*, 105, 519–530.
- (1997): “The Multinomial Probit Model Revisited: A Discussion of Parameter Estimability, Identification and Specification Testing,” *Journal of Economic Surveys*, 11(3), 297–320.
- WEEKS, M. (1999): “Testing Binomial and Multinomial Choice Models Using Cox’s Non-Nested Test,” in *Simulation-Based Inference: Theory and Applications*, ed. by M. Mariano, M. Weeks, and T. Schuermann. Cambridge University Press, Cambridge, UK.
- WEEKS, M. (2002): “Discrete Choice Models of Demand for Cellular Mobile Telephones and Digital Television,” Report to the Radiocommunications Agency, DTI.
- WEEKS, M., AND C. ORME (1999): “The Statistical Relationship between Bivariate and Multinomial Choice Models,” Department of Applied Economics Working Paper 9912, University of Cambridge. Submitted to The Econometrics Journal.

WEEKS, M., AND M. STONE (2001): “Systemic Financial Crises, Balance Sheets, and Model Uncertainty,” Working Paper No. 01/162, International Monetary Fund, Washington DC.

YAO, Y., AND M. WEEKS (2003): “Provincial Conditional Income Convergence in China, 1953-1997: A Panel Data Approach,” *Econometric Reviews*, 22(1), 59–77.

Research Grants

Business Failure, Business Organisation and Macroeconomic Instability

Imputation of Missing Values in Survey Data: An Experimental Approach

ESRC - £40k.

Dynamic Common Factor Models for Regional Time Series (with Andrew Harvey and Ron Martin)

ESRC - £140k.

Approximating Flexible Substitution Patterns in Discrete Choice Models

ESRC - 50k. (Submitted December 2004).

Work in Progress

- Matias Eklof and M. Weeks (2003) *On Specification, Identification, and Estimation in a class of Discrete Choice Models*.
- Weeks, M.J., S. Godsill and M. Stone (2004) *Model Uncertainty in Predicting Financial Crisis: A Bayesian Perspective*
- Weeks, M.J., (2003) *Discrete Choice Models of Demand for Cellular Mobile Telephones and Digital Television*
- Isachenkova, N., Weeks, M. (2003) *Competing Risks of Small Firm Survival: A Bayesian Approach*

Selected Papers Presented and Conferences Organised

1. Organiser of an Invited Session on *Simulation Methods in Econometrics* at the 1995 American Statistical Association Meetings.
Paper Presented: *Testing Binomial and Multinomial Choice Models Using Cox's Non-Nested Test*.
2. *A Microsimulation Model of Labour Supply with Finite Hours Choices*
Presented at the meetings of the European Economics Association, Istanbul, August 1996.
3. *Probit Versus Logit: An Application of Cox's Non-Nested Test*. Presented at the meetings of the European Econometrics Association, Istanbul, August 1996.
4. Organiser of a Special Contributed Session on *Discrete Choice Models of Labour Supply* at the 1997 American Statistical Association Meeting (Anaheim).
5. *Simulated Transitions in Discrete Choice Models*. Presented at the meetings of the European Econometric Association, Toulouse, 1997.
6. *The Statistical Relationship between Bivariate and Multinomial Choice Models*. Presented at the meetings of European Economic Association, Berlin, August, 1998.
7. *Decision Structures and Discrete Choice: An Application to Labour Supply and Fertility*. Presented at the meeting of the European Population Society, Turin, June 1999.
8. *Non-Nested Models and the Likelihood Ratio Statistic: A Comparison of Simulation and Bootstrap-Based Tests*. Presented at the meetings of the European Econometric Association, Santiago de Compostela, September 1999.
9. *Decision Structures and Discrete Choice: An Application to Labour Supply and Fertility*. Presented at the Cowles Commission Conference on Structural Decision Making, Yale, April 2000.

10. *A Structural Model of Institutional Change: Evidence from Transition Economies*. Presented at the Annual Panel Data Conference, Geneva, June 2000.
11. *Provincial Income Convergence in China, 1953-1957. A Panel Data Approach*. Presented at the Annual Panel Data Conference, Geneva, June 2000.
12. *The Measurement and Determinants of Institutional Change*. Paper presented at the World Bank, and the University of Maryland, October 2000.
13. *Discrete Choice Models of Demand for Cellular Mobile Telephones and Digital Television*, presented at the Bank of Italy, November 2002.
14. *Latent Variable Models of Institutional Change*. Paper presented at University College, London, and University of Rome, Tor Vergata, November 2002.
15. *Model Uncertainty in Predicting Financial Crisis: A Bayesian Perspective*, Cass Business School, August 2003
16. *Estimation of Discrete Choice Models Using DCM for Ox*, Cass Business School, August 2003
17. *Social interactions and reproductive externalities: An econometric investigation of fertility behaviour in Kenya*, Washington DC. Paper presented at MacArthur Workshop on Social Interaction held at the Brookings Institute. December 2003
18. *Assessing the Impact of Private Sector Balance Sheets on Financial Crises: A Comparison of Bayesian and Information-Theoretic Measures of Model Uncertainty*. New York Federal Reserve Bank, March 2004
19. *Social interactions and reproductive externalities: An econometric investigation of fertility behaviour in Kenya*. Paper presented at The Centre for Fertility Studies, University of Turin, March 2004

1. Conference

Organiser of a workshop on *Methods for Stated and Revealed Preference Data*, held at the Institute for Fiscal Studies, 27 May 2003

(see <http://cemmap.ifs.org.uk/srp.shtml>)

Computing Skills

Extensive use and experience of statistical and econometric software on a number of platforms. Packages include: GAUSS, LIMDEP, PC-Give, S-PLUS, STATA, Rats, TSP and GAMS. Experience with UNIX.

Languages: Proficient in Fortran 77 and Ox.

Refereeing

Journal of Econometrics

Journal of Applied Econometrics

International Economic Review

Econometric Reviews

Other Skills and Interests

Played semi-professional soccer in England. Captained the 1st XI soccer team at the University of Reading, and the University of Illinois. Interested in contemporary fiction and the history of the novel. Extensive travel in Europe, Latin America and the U.S. I retain a basic proficiency in French.