



**Heriot-Watt University and SIRE PhD Masterclass on  
“Instrumental variables, causal inference and GMM estimation”**

**Heriot-Watt University, Thursday, 24 April 2014**

**Venue: MBG20, Mary Burton Building, Heriot-Watt University, Riccarton, Edinburgh**

This masterclass will cover recent developments in the estimation of linear structural models, including dynamic panel data models, using Instrumental Variables estimated by GMM. Further, in a cross-sectional setting, IV estimators for binary outcomes and associated causal inference will be considered. The material covered will be a mixture of theory and applications.

Professor Frank Windmeijer is Professor of Econometrics at the University of Bristol, and Research Fellow at several leading institutions for research in econometrics and its applications to policy: Centre for Microdata Methods and Practice, Institute for Fiscal Studies and Institute for the Study of Labor (IZA, Bonn, Germany). His main research interests are microeconometrics, panel data econometrics and economics of health care. His contributions to the area are fundamental and widely applied, including finite sample correction to the two-step GMM standard errors, as programmed up in e.g. Stata, inference with many weak instruments, and causal inference using binary treatment effects. His applied research is also fundamental, including analysing demand for health care, labour markets, and assessing the usefulness of genetic markers as instruments for e.g. obesity or alcohol intake.

**Programme**

<b>10:45-11:00</b>	<b>Coffee/Tea and Welcome</b>
<b>11:00-13:00</b>	<b>Session 1</b> Lecturer: <b>Professor Frank Windmeijer</b> University of Bristol (UK)  Topics: <i>Introduction to linear structural models</i> <i>GMM estimation using instrumental variables</i>
<b>13:00-14:00</b>	<b>Lunch</b>
<b>14:00-16:00</b>	<b>Session 2</b> Speaker: <b>Professor Frank Windmeijer</b> University of Bristol (UK)  Topics: <i>IV estimators for binary outcomes</i> <i>Causal inference using GMM</i>
<b>16:00-16:15</b>	<b>Coffee Break</b>
<b>16:15-17:00</b>	<b>Session 3</b>  Q&A Session and Discussion on Applications Facilitated by: <b>Mark Schaffer</b> (Heriot-Watt)
<b>17:00</b>	<b>Looking ahead to future Masterclasses</b>



**Heriot-Watt University and SIRE PhD Masterclass on  
“Bayesian Inference in the Social Sciences”**

**Heriot-Watt University, Friday, 25 April 2014**

**Venue: MBG20, Mary Burton Building, Heriot-Watt University, Riccarton, Edinburgh**

The course aims to bring Bayesian modelling to an applied economics setting, including related frameworks like Empirical Bayes and Hierarchical Bayes. The course will assume basic knowledge of econometrics and statistics at the postgraduate level but no further knowledge of the Bayesian paradigm. Theory will be touched upon, but the main concepts will be illustrated using examples from economics and other allied disciplines. Special focus will be placed on issues relating to modelling and computation. It is expected that participants will gain basic knowledge sufficient for them to start Bayesian modelling in the context of their own applications. Further references for self-study will be highlighted.

This is second of a series of three Masterclasses, the following one will be in June 2014.

Professor Taps Maiti is a world leading researcher in statistics. He has published widely in theoretical and applied statistics, including social science applications. He is a Fellow of the American Statistical Association and the Institute of Mathematical Statistics, and on the Editorial Board of Journal of the American Statistical Association.

**Programme**

<b>10:45-11:00</b>	<b>Coffee/Tea and Welcome</b>
<b>11:00-13:00</b>	<b>Session 1</b> Lecturer: <b>Professor Taps Maiti</b> Michigan State University (USA) and Heriot-Watt University (UK)  Topics: <i>Review of Masterclass 1</i> <i>Nonconjugate priors and Metropolis-Hastings algorithms</i> <i>Linear and generalized linear mixed effects models</i>
<b>13:00-14:00</b>	<b>Lunch</b>
<b>14:00-16:00</b>	<b>Session 2</b> Speaker: <b>Professor Taps Maiti</b> Michigan State University (USA) and Heriot-Watt University (UK)  Topics: <i>Latent variable models</i> <i>Advanced computation methods (Introduction)</i> <i>Spatial CAR Models (if time permits)</i>
<b>16:00-16:15</b>	<b>Coffee Break</b>
<b>16:15-17:00</b>	<b>Session 3</b> <i>Q&amp;A Session and Discussion on Applications</i> Facilitated by: <b>Arnab Bhattacharjee</b> (Heriot-Watt)
<b>17:00</b>	<b>Looking ahead to the third Masterclass</b>

**Students interested in attending should contact:**

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