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Xiamen University

Special Topics in Applied Econometrics:
Cross-Country Studies

Course Description:

This is a course on special topics in applied econometrics for the M.A. Economics of Globalization and European Integration. The purpose of this course is to familiarize participants with research methods in panel econometric methods to empirically investigate substantive issues in macroeconomics and development economics.

While a sizeable fraction of class time will be devoted to learn about the theoretical underpinnings of the relevant estimation and inference techniques, each session will also feature (i) a strong hands-on component as well as (ii) a discussion component. The hands-on component involves programming and applying several of the techniques discussed to cross-country panels and spends significant time on the interpretation of empirical findings and their implications for economic theory. The applications taken out in class will involve estimation and inference routines in MATLAB. The first session will therefore feature an introduction to Matlab programming language. The discussion component involves class discussions of selected critical papers from scientific journals as well as the Economist on matters of cross-country analysis, in particular convergence. While the former component shall provide students with the necessary knowledge, skills, and tools to take out relevant analyses, the latter component shall serve to prevent analyzing matters from an 'ivory tower perspective'.

All lecture slides and assignments can be found on the course website prior to the first lecture on 13 February 2012. The course can be counted as an optional course (5 ECTS credits).

Course Language:

English

Class Time and Location:

The course will take place from 13 February 2012 to 17 February 2012.

Class time and location: 10 am – 1 pm each day, Room P112

Course Requirements:

Grading for this course will be based on (i) participation in discussion (10%), and (ii) a take-home assignment (90%, to be given at the end of the course and completed by March 18, 2012).

Course Website:

www.marcelbluhm.com

Contact:

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Course Outline:

Part 1: Linear Panel Models

- Introduction
- The Pooled Model
- Unobserved Effects Panel Data Models

Literature:

Main Textbooks:

Acemoglu, D. (2008): Introduction to Modern Economic Growth, Princeton University Press.

Cameron, A. and P. Trivedi (2005): Microeconometrics: Methods and Applications, Cambridge University Press.

Wooldridge, J. (2002): Econometric Analysis of Panel Data, MIT Press.

Papers:

Barro, R. (1991): Economic Growth in a Cross-Section of Countries, Quarterly Journal of Economics 106, 407-443.

Barro, R. and X. Sala-I-Martin (1992): Convergence, Journal of Political Economy 100, 223-251.

Sala-I-Martin, X. (1997): I Just Ran Two Million Regressions, American Economic Review 87, 178-183.

Solow, R. (1956): A Contribution to the Theory of Economic Growth, Quarterly Journal of Economics 70(1), 65-94.

Discussions will be based on articles:

Durlauf, S. (2001): Manifesto for a Growth Econometrics, Journal of Econometrics 100, 65-69.

Economist Article: The Growth of Growth Theory: www.economist.com/node/6943519

Part 2: Non-Linear Panel Models

- Introduction to Non-Linear Models
- The Probit Model
- The Tobit Model
- Panel Sample Selection
- Issues With Cross-Country Regressions

Literature:

Main Textbooks:

Cameron, A. and P. Trivedi (2005): Microeconometrics: Methods and Applications, Cambridge University Press.

Wooldridge, J. (2002): Econometric Analysis of Panel Data, MIT Press.

Papers:

Binder, M. and M. Bluhm (2011): On the Conditional Effects of IMF Program Participation on Output Growth, CESifo Working Paper 3161.

Heckman, J. (1979): Sample Selection Bias as a Specification Error, Econometrica 47(1), 153-161.

Maddala, G. (1999): On the Use of Panel Data Methods with Cross-Country Data, *Annales D'Économie et de Statistique* 55-56.

Mundlak, Y. (1978): On the Pooling of Time Series and Cross Section Data, *Econometrica* 46(1), 69-85.

Neyman J. and E. Scott (1948): Consistent estimates based on partially consistent observations, *Econometrica* 16, 1-32.

Sala-I-Martin, X. (1997): I Just Ran Two Million Regressions, *American Economic Review* 87, 178-183.

Semykina, A. and Wooldridge J. (2010): "Estimating panel data models in the presence of endogeneity and selection," *Journal of Econometrics*, Elsevier 157(2), 375-380.

Sigmon, K. (1993): *MATLAB Primer Third Edition*, Mimeo Department of Mathematics University of Florida.

Vella, F. (1998): Estimating Models with Sample Selection: A Survey, *Journal of human Resources* 33(1), 127-169.

Vella, F. and M. Verbeek (1999): Two-step estimation of panel data models with censored endogenous variables and selection bias, *Journal of Econometrics* 90(2), 239-263.

Wall, H. (1995): Cricket vs. Baseball as an Engine of Economic Growth, *Royal Economic Society Newsletter*, 2-3.

Discussion will be based on article:

Economist Article: Measuring What Matters: www.economist.com/node/14447939

Economist Article: A Game of Catch-Up: www.economist.com/node/21528979

Part 3: Relaxing the Exogeneity Assumption

- Panel GMM
- The Pooled Model
- Selection of Instruments
- The Fixed Effects Model
- The Random Effects Model
- Dynamic Panel Data

Literature:

Main Textbooks:

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

Wooldridge, J. (2002): *Econometric Analysis of Panel Data*, MIT Press.

Papers:

Nickel, S. (1981): Biases in Dynamic Models with Fixed Effects, *Econometrica* 49(6), 1417-26.

Arellano, M. and S. Bond (1991): Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations, *Review of Economic Studies* 58(2), 277-97.

Discussion will be based on article:

Economist Article: Converging Economies: One Track Bind:

<http://www.economist.com/node/21528985>

Part 4: Bias Correction Methods

- Bias Correction in (Dynamic) Linear Panel Models
- Bias Correction in (Dynamic) Non-Linear Panel Models
- Bias Correction Methods for Panel Sample Selection

Literature:

Papers/Books:

Amemyia, T. (1985): *Advanced Econometrics*, Harvard University Press.

Arellano, M. and J. Hahn (2006) *Understanding Bias in Nonlinear Panel Models: Some Recent Developments*, Invited Lecture, Econometric Society World Congress, London.

Bun, M. and M. Carree (2005): *Bias-Corrected Estimation in Dynamic Panel Data Models*, *Journal of Business & Economic Statistics* 23, 200-210.

Dhaene, G. and K. Jochmans (2010): *Split-panel jackknife estimation of fixed-effect models*, Mimeo K.U. Leuven.

Everaert, G., Pozzi, L. (2007): *Bootstrap based bias correction for homogeneous dynamic panels*, *Journal of Economic Dynamics and Control* 31, 1160–1184.

Fernández-Val, I. and F. Vella (2011): *Bias corrections for two-step fixed effects panel data estimators*, *Journal of Econometrics* 163.

Gourieroux, C., P.C.B. Phillips and J. Yu (2010): *Indirect Inference for Dynamic Panel Models*, *Journal of Econometrics* 157.

Hahn, J. and G. Kuersteiner (2002): *Asymptotically unbiased inference for a dynamic model with fixed effects when both n and T are large*, *Econometrica* 70, 1639–1657.

Hahn, J. and G. Kuersteiner (2011): *Bias reduction for dynamic nonlinear panel models with fixed effects*, *Econometric Theory*.

Hahn, J. and W. Newey (2004): *Jackknife and analytical bias reduction for nonlinear panel models*. *Econometrica* 72, 1295–1319.

Han, C. and P.C.B. Phillips (2010): *GMM estimation for dynamic panels with fixed effects and strong instruments at unity*, *Econometric Theory* 26.

Kiviet, I. (1995): *On bias, inconsistency and efficiency of various estimators in dynamic panel data models*, *Journal of Econometrics* 68, 53–78.

Lancaster, T. (2000): *The incidental parameter problem since 1948*, *Journal of Econometrics* 95 391-413.

Phillips, P.C.B. and D. Sul (2007): *Bias in dynamic panel estimation with fixed effects, incidental trends and cross section dependence*, *Journal of Econometrics* 137, 162-188.