

Microeconometrics

Required Text:

C. Hsiao (2014), *Analysis of Panel Data*, 3rd edition. Cambridge, University Press.

A.C. Cameron and P.K. Trivedi (2005), *Microeconometrics*, Cambridge University Press.

Recommended Texts:

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

Q. Li and J.S. Racine (2007), *Nonparametric Econometrics*, Princeton: Princeton University Press.

1. Qualitative Choice Models — Linear Probability; Probit; Logit; Multinomial Probit; Conditional Logit; Nested Logit; Ordered and Sequential Outcomes; MLE; Single Index Model; Semiparametric Estimation; Maximum Score; Smoothed Maximum Score; Specification Tests; etc.

Required Readings:

Cameron and Trivedi (2005), ch. 14 and 15.

Recommended Readings:

Amemiya (1985), ch. 9.

Hsiao (2014), ch. 7.2.

Manski, C.F. (1975), “Maximum Score Estimation of the Stochastic Utility Model of Choice”, *Journal of Econometrics*, 3, 205-228.

Horowitz, J.L. (1992), “A Smoothed Maximum Score estimator for the Binary Response Model”, *Econometrica* 60, 505-531.

Hsiao, C. and B.H. Sun (1999), “Modeling Survey Response Bias — With an Application to the Demand for an Advanced Electronic Device”, *Journal of Econometrics* 189, 15-39.

2. Sample Selection Models — truncated and censored data; MLE; Heckman two-stage estimator; symmetrically trimmed least squares estimator; semi-parametric estimation; specification analysis; simultaneous equation models; coherency condition; etc.

Required Readings

Cameron and Trivedi (2005), ch. 16.

Hsiao (2014), ch. 8.1.

Recommended Readings:

T. Amemiya (1985), ch. 10.

Nelson, F.D. (1977), “Censored Regressions with Unobserved Stochastic Censoring Thresholds”, *Journal of Econometrics*, 6, 309-327.

Ahn, H. and Powell, J.L. (1993), “Semiparametric Estimation of Censored Selection Models with a Nonparametric Selection Mechanism”, *Journal of Econometrics*, 58, 3-29.

Robinson, P.M. (1982), “On the Asymptotic Properties of Estimators of Models Containing Limited Dependent Variables”, *Econometrica*, 50, 27-41.

Hsiao, C. and C. Kim (1990), “A Statistical Perspective on Insurance Rate-Making”, *Journal of Econometrics*, 44, 5-24.

Andrews, D.W.K. and M.M.A. Schafagans (1998). “Semiparametric Estimation of the Intercept of a Sample Selection Model”, *Review of Economic Studies*, 65. 497-517.

Chen, S. (1999), “Distribution-Free Estimation of the Random Coefficient Dummy Endogenous Variable Model”, *Journal of Econometrics*, 91, 171-199.

Hsiao, C., Y. Shen, B. Wang and G. Weeks (1007), “Evaluating the Impacts of Washington State Repeated Job Search Services on the Earnings of Prime-Age TANF Recipients”, *Journal of Applied Econometrics*, 22, 453-475.

Liu, E., C. Hsiao, T. Matsumoto and S. Chou (2009), “Maternal Full-Time Employment and Overweight Children: Parametric, Semi-parametric and Non-parametric Assessment”, *Journal of Econometrics*, 152, 61-69.

3. Nonparametric and Semiparametric Methods — Kernel Density Estimation, Conditional Density Estimation, Regression, Single Index Models, Partial Linear Models, Consistent Model Specification Tests.

Required Readings:

Cameron and Trivedi (2005), ch. 9.

Li and Racine (2007), ch. 1, ch. 5.1, ch. 5.2, ch. 2, ch. 12.1.

Recommended Readings:

Bierens, J.J. (1990), “A Consistent Conditional Moment Test of Functional Form”, *Econometrica*, 58, 1143-1458.

Hong, Y.Mj and H.L. White (1995), “Consistent Specification Testing via Nonparametric Series Regression”, *Econometrica*, 63, 1133-1159.

4. Program Evaluation — Selection on observables and unobservables; Propensity Score Matching; Difference-in-difference estimator; regression discontinuity; local instrumental variable estimator; etc.

Required Readings:

Hsiao (2014), ch. 9.6.1 - 9.6.3.

Recommended Readings:

Rosenbaum, P. and D.B. Rubin (1983), “The Central Role of Propensity Score in Observational Studies for Causal Effects”.

Imbens, G.W. and T. Lemieux (2008), “Regression Discontinuity Designs: A Guide to Practice”, *Journal of Econometrics*, 142, 615-635.

Dehejia, R.H. and S. Wahba (1999), “Re-evaluating the Evaluation of Training Programs”, *Journal of the American Statistical Association*, 94, 1053-1062.

Heckman, J.J. and E.J. Vytlacil (2001), “Local Instrumental Variables”, in *Nonlinear Statistical Modeling*, ed. by C. Hsiao, K. Morimune, and J.L. Powell, Cambridge University Press.

Hsiao, C. (2015), “Causal and Counterfactual Analysis”, *mimeo*.

Hsiao, C., S. Ching and S. Wan (2012), “A Panel Data Approach for Program Evaluation — Measuring the Benefits of Political and Economic Integration of Hong Kong with Mainland China,” *Journal of Applied Econometrics*, 27, 705-740.

5. Duration Analysis and Count Data — Proportional Hazard, Duration Regression Model, Left Censoring, Markov Chain Models, Count Data Models - Poisson and Negative Binomial Models, Simulated Maximum Likelihood.

Cameron and Trivedi (2005), ch. 17, ch. 20.

Recommended Readings:

Amemiya (1985), ch. 11.

Duan, J.C., J. Sun and T. Wang (2012), “Multiperiod Corporate Default Prediction — A Forward Intensity Approach”, *Journal of Econometrics*, 170, 191-209.

6. Panel Data Analysis

(a) Introduction — Advantages and Challenges

Hsiao, C. (2007), “Panel Data Analysis — Advantages and Challenges”, *Test*, 16, 1-22.

Hsiao (2003), ch. 1.

Hsiao, C. (2001), “Panel Data Models”, in *Comparison of Econometrics*, ed. by B. Baltagi, Oxford: Blackwell, 349-365.

Hsiao, C. (2002), “Economic Panel Data”, in *International Encyclopedia of the Social and Behavioral Sciences — Statistics Section*, ed. by J. Kadane and S. Fienberg, Oxford:

Elsevier.

(b) Static Variable Intercept Models — Least Squares Dummy Variable Estimation, Error Components Models, Fixed versus Random Effects Specification Analysis.

Hsiao (2003), ch. 3

Cameron and Trivedi (2005), ch. 21.

(c) Dynamic Models with Variable Intercepts — Random Effects Models, Fixed Effects Model, Maximum Likelihood and Transformed Maximum Likelihood Estimators, Generalized Method of Moments Estimators (GMM).

Hsiao (2003), ch. 4.

Ahn, S.C. and P. Schmidt (1995), “Efficient Estimation of Models for Dynamic Panel Data”, *Journal of Econometrics*, 68, 5-27.

Arellano, M. and O. Bover (1999), “Another Look at the Instrumental Variable Estimation of Error-Components Models”, *Journal of Econometrics*, 68, 29-51.

Binder, M., C. Hsiao and M.H. Pesaran (2005), “Estimation and Inference in Short Panel Vector Autoregressions with Unit Roots and Cointegration”, *Econometric Theory*, 21, 795-837.

Hsiao, C., M.H. Pesaran and A.K. Tahmiscioglu (2002), “Maximum Likelihood Estimation of Fixed Effects Dynamic Panel Data Models Covering Short Time Periods”, *Journal of Econometrics*, 107-150.

Hsiao, C., and A.K. Tahmiscioglu (2008), “Estimation of Dynamic Panel Data Models with Both Individual- and Time-Specific Effects”, *Statistical Planning and Inference*, 138, 2698-2721.

Hsiao, C. (2008), “Dynamic Panel Data Models”, *mimeo*.

Hsiao, C. and J. Zhang (2015), “IV, GMM or QMLE to Estimate Dynamic Panel Data Models”, *Journal of Econometrics*, 187, 312-322.

Hsiao, C. and Q.K. Zhou (2016), “Incidental Parameters, Initial Conditions and Sample

Size on Statistical Inference for Dynamic Panel Data Models,” *mimeo*.

Alvarez, J. and M. Arellano (2003), “The Time Series and Cross-Sectional Asymptotics of Dynamic Panel Data Estimators”, *Econometrica*, 71, 1121-1159.

7. Cross-Sectionally Dependent Panel Data — Spatial Approach, Factor Approach, Cross-Sectionally Mean Augmented Approach, Tests of Cross-Sectional Independence, Program Evaluation, etc.

Required Readings:

Hsiao (2015), ch. 9.

Recommended Reading:

Anselin, L., J. Le Gallo and H. Jayet (2008). “Spatial Panel Econometrics”, in *The Econometrics of Panel Data*, 3rd. ed., by L. Mátyás and P. Sevestre, Berlin: Springer-Verlag, 625-660.

Bai, J., (2009). “Panel Data Models with Interactive Fixed Effects”, *Econometrica*, 77, 1229-1279.

Bai, J., and S. Ng (2002). “Determining the Number of Factors in Approximate Factor Models”, *Econometrica*, 70, 191-221.

Hsiao, C. (2016), “Panel Models with Interactive Effects,” *mimeo*.

Pesaran, M.H., (2006). “Estimation and Inference in Large Heterogeneous Panels with Cross-Section Dependence”, *Econometrica*, 74, 967-1012.

Sarafidis, V. and T. Wansbeek (2012), “Cross-Sectional Dependence in Panel Data Analysis”, *Econometric Reviews*, 31, 483-531.

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