

## REFERENCES FOR PANEL DATA ECONOMETRICS (as of 1993)

### I. General References

Chamberlain, Gary. 1984. "Panel Data," in Griliches and Intriligator (eds.), **Handbook of Econometrics**, Volume 2. Amsterdam: North-Holland.

*A more advanced and succinct survey of panel data topics than Hsiao, with labor data applications.*

Hsiao, Cheng. 1986. **Analysis of Panel Data**. Cambridge: Cambridge University Press.

*This is an Econometric Society Monograph, which provides a useful survey of panel data topics at the level of an intermediate-advanced econometrics textbook.*

Maddala, G.S. 1971. "The Use of Variance Component Models in Pooling Cross Section and Time Series Data," **Econometrica** 39: 341-358.

Mairesse, Jacques. 1990. "Time Series and Cross-Sectional Estimates on Panel Data: Why are They Different and Why Should They Be Equal?," in J. Hartog, G. Ridder, and J. Theeuwes (eds.), **Panel Data and Labor Market Studies**, North-Holland-Elsevier: 81-95.

Mundlak, Yair. 1961. "Empirical Production Function Free of Management Bias." **Journal of Farm Economics** (February 1961): 44-56.

*One of the first applications of the fixed effects or covariance estimator to panel data. Contains a good discussion of the sources of bias in cross-sectional estimates of production functions.*

**Journal of Econometrics** 18(1). 1982. **Econometric Analysis of Longitudinal Data**. (especially the articles by Anderson and Hsiao, Chamberlain, and MaCurdy.

**The Econometrics of Panel Data**, *Annales de l'INSEE*, Avril-Sept. 1978.

*The proceedings of a conference held in Paris in 1977, this special issue contains 27 papers on panel data topics, several of which are quite useful. Unfortunately, the volume is hard to obtain.*

### II. Theoretical References on Specific Topics.

Amemiya, Takeshi, and Thomas E. Macurdy. "Instrumental Variable Estimation of an Error-Components Model." **Econometrica** 54: 869-881.

Breusch, Trevor S., Grayham E. Mizon, and Peter Schmidt. "Efficient Estimation Using Panel Data." **Econometrica** 57: 695-700.

Chamberlain, Gary. 1982. "Multivariate Regression Models for Panel Data." **Journal of Econometrics** 18: 5-45.

*A very careful treatment of the effects of heterogeneity bias and failure of strict exogeneity on regression estimates with continuous and discrete data. If you understand this paper, you will find it much easier to follow the rest of the literature (and may not need to read some of it).*

Griliches, Zvi, and Jerry A. Hausman. 1986. "Errors in Variables in Panel Data." **Journal of Econometrics** 31: 93-118.

*A very useful discussion of a frequently encountered problem in practice: the effects of measurement error on the precision of estimates made with panel data and fixed effects.*

Hansen, Lars Peter. 1982. "Large Sample Properties of Generalized Method of Moments Estimators." **Econometrica** 50: 1029-1055.

*The basic reference for the use of GMM in econometrics. Unfortunately, it is extremely difficult for the applied economist to read, due to its level of generality. Hansen and Singleton (below) may be better.*

Hausman, Jerry A., and William E. Taylor. 1981. "Panel Data and Unobservable Individual Effects." **Econometrica** 49: 1377-1398.

*What to do when you want to estimate coefficients for variables which do not change over time (although they do vary across individual units).*

### III. Endogenous Regressors and Dynamic Panel Models.

Ahn, Seung C., and Peter Schmidt. 1992. "Efficient Estimation of Models for Dynamic Panel Data." Photocopied. Arizona State University and Michigan State University.

Ahn, Seung C. and Peter Schmidt. 1992. "Efficient Estimation of Panel Data Models with Exogenous and Lagged Dependent Regressors." Photocopied. Arizona State University and Michigan State University.

*These two papers provide the background for the results summarized in the Ahn, Schmidt, and Wyhowski comment on Keane and Runkle, below.*

Arellano, Manuel. 1988. "An Alternative Transformation for Fixed Effects Models with Predetermined Variables." Oxford University Applied Economics Discussion Paper No. 57. Institute of Economics and Statistics, Oxford University.

Arellano, Manuel, and Stephen Bond. 1988. "Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations."

Bhargava, Alok, and Denis Sargan. 1983. "Estimating Dynamic Random Effects Models from Panel Data Covering Short Time Periods." **Econometrica** 51: 1635-1660.

Blundell, Richard, and Richard J. Smith. 1991. "Initial Conditions and Efficient Estimation in Panel Data Models." University College London Discussion Paper in Economics No. 91-04. Published (in French) in ?.

Keane, Michael P., and David E. Runkle. 1992. "On the Estimation of Panel-Data Models with Serial

Correlation When Instruments are not Strictly Exogenous," plus comments. **Journal of Business and Economic Statistics** 10: 1-29.

*This invited lecture, together with the comments by leading panel data econometricians, is an extremely useful summary of the state of the art in panel data estimation in the only case of real applied interest: when the right-hand-side variables are **not** strictly exogenous.*

Macurdy, Thomas E. 1985. "A Guide to Applying Time Series Models to Panel Data." Photocopied. Stanford, CA: Stanford University.

#### IV. Sample Selection and Attrition in Panels.

Griliches, Zvi, Bronwyn H. Hall, and Jerry A. Hausman. "Missing Data and Self Selection in Large Panels." **Annales de l'INSEE** (Avril-Sept. 1978).

Hausman, Jerry A., and David Wise. 1979. "Attrition Bias in Experimental and Panel Data: The Gary Income Maintenance Experiment." **Econometrica** 47: 455-474.

Nijman, Theo, and Marno Verbeek. 1992. "Nonresponse in Panel Data: The Impact on Estimates of a Life Cycle Consumption Function." **Journal of Applied Econometrics** 7: 243-257.

Poirier, Dale, and Paul Ruud. 1979. "A Simple Lognormal Test for Lognormal Regression." **Economics Letters** 4:251-255.

#### V. Selected Applications.

Hall, Bronwyn H., and Jacques Mairesse. 1992. "Exploring the Relationship between R&D and Productivity in French Manufacturing Firms." National Bureau of Economic Research Working Paper No. \_\_\_\_.

Hansen, Lars Peter, and Kenneth J. Singleton. 1982. "Generalized Instrumental Variable Estimation of Nonlinear Rational Expectations Models." **Econometrica** 50: 1269-1286.

Macurdy, Thomas E. 1981. "An Empirical Model of Labor Supply in a Life Cycle Setting." **Journal of Political Economy** 89: 1059-1085.

Olley, G.S., and Ariel Pakes. 1992. "The Dynamics of Productivity in the Telecommunications Industry." Center for Economic Studies, Bureau of the Census, U.S. Department of Commerce, Working Paper No. CES 92-2.

Pakes, Ariel, and Zvi Griliches. 1984. "Estimating Distributed Lags in Short Panels with an Application to the Specification of Depreciation Patterns and Capital Stock Constraints." **Review of Economic Studies** LI(2): 243-262.