Micro Econometrics:

Spring 2004

This course will study the use of econometric methods in the analysis of microeconomic data. In addition to a theoretical examination of the issues the course will have a substantial practical component. Students will be expected to develop a working understanding of GAUSS or a similar computer program. A substantial component of the material covered will be based on journal articles although the material covered early in the course can be found in the following texts:

W.Greene, (1997), *Econometric Analysis*, New York Macmillan

G.S.Maddala, (1983), *Limited Dependent and Qualitative Variables in Econometrics*, Cambridge University Press

Course Outline:

i) Binary Discrete choice models:

a) Linear probability models

b) Logit and probit

Maddala Chapter 2

ii) Multinomial Discrete choice models

a) Ordered Models

b) Unordered Models

Maddala Chapter 2

iii) Censored Regression Models.

Amemiya, T. (1984): "Tobit Models: A Survey," *Journal of Econometrics*, 24, 3-61.

Tobin, J., (1958) "Estimation of Relationships for Limited Dependent Variables," *Econometrica,* 26, 24-36.

iv) Sample Selection Models

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

Heckman, J.J.(1990), "Varieties of Selection Bias", *American Economic Review,* Papers and Proceedings, 80, 313-318.

Newey, W. (1984): "A Method of Moments Interpretation of Sequential Estimators," *Economics Letters,* 14, 201-206.

Olsen, R.J. (1980), "A Least Squares Correction for Selectivity Bias", *Econometrica,* 48, 1815-1820.

Roy, A. (1951), "Some Thoughts on the Distribution of Earnings", *Oxford Economic Papers,* 33, 135-146.

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

iv) Semi and Non-Parametric Estimation

a) Density Estimation

Silverman, P. (1986), *Density Estimation.* New York; Chapman and Hall.

b) Estimation of Discrete Choice Models

Ichimura, H. (1993): "Semiparametric least squares (SLS) and weighted SLS estimation of single index models" *Journal of Econometrics*, 58, 71-120.

Ichimura, H., and L.F.Lee (1991): "Semiparametric least squares (SLS) and weighted SLS estimation of multiple index models: Single equation estimation," in *Nonparametric and Semiparametric Methods in Econometrics and Statistics,* ed. W.Barnett, J.Powell and G.Tauchen, Cambridge University Press.

Klein, R. and R. Spady (1993); "An Efficient Semiparametric Estimator for the Binary Response Model," *Econometrica,* 61(2), 387−421

Manski, C. (1975), "Maximum Score Estimation of the Stochastic Utility Model of Choice".*Journal of Econometrics*, 3, 205-28.

Powell, J. (1986), "Symmetrically trimmed least squares estimation for tobit models," *Econometrica*, 54, 1435-1460.

c) Sample Selection Models

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

Newey, W.K. (1988). "Two step series estimation of Sample Selection Models," MIT Department of Economics Working Paper.

Powell, J. (1987), "Semiparametric Estimation of Bivariate Latent Variable Models," working paper #8704, Social Systems Research Institute, University of Wisconsin-Madison.

Robinson, P. (1988), "Root N Consistent Semiparametric Regression", *Econometrica*, 56, 931-954.

v) Simultaneous equations models with discrete variables

Heckman, J.J. (1978), "Dummy Endogenous Variables in a Simultaneous Equations System", *Econometrica*, 46, 931-960.

Heckman, J.J. (1997), "Instrumental Variables. A Study of Implicit Behavioral Assumptions Used in Making Program Evaluations", *Journal of Human Resources*, 32, 441-462.

Heckman, J.J. and Robb, R. (1985) "Alternative Methods for Evaluating the Impact of Interventions: An Overview", *Journal of Econometrics,* 30, 239-267.

Vella, F. (1993), "A Simple Estimator for Simultaneous Equations Models with Censored Endogenous Regressors", *International Economic Review,* 34, 441-457.

vi) Conditional MLE

Rivers, D., and Vuong, Q. (1988), "Limited Information Estimators and Exogeneity Tests for Simultaneous Probit Models", *Journal of Econometrics,* 39, 347-366.

Smith, R., and Blundell, R. (1986), "An Exogeneity Test for a Simultaneous Equation Tobit Model with an Application to Labor Supply", *Econometrica,* 54, 679-685.

vii) Models with endogenous treatments.

Heckman, J. H.Ichimura, J.Smith and P.Todd (1998), "Characterizing Selection Bias Using Experimental Data", *Econometrica,* 66, 1017-1098.

Imbens, G.W. and Angrist, J. (1994), "Identification and Estimation of Local Average Treatment Effects", *Econometrica,* 62, 467-475.

Robinson, C. (1989a), "The Joint Determination of Union Status and Union Wages Effects: Some Tests of Alternative Models", *Journal of Political Economy*, 97, 639-667.

viii) Diagnostic Tests for Discrete Choice Models

Gourieroux, C., Monfort, A., Renault, E.,and Trognon, A. (1987), "Generalized Residuals", *Journal of Econometrics,* 52, 5-32.

Hausman, J.A. (1978), "Specification Tests in Econometrics", *Econometrica*, 46, 1251-1271.

Ruud, P.A. (1984): "Tests for Specification in Econometrics," *Econometric Reviews*, 3, 221-242.

Pagan, A., and F.Vella (1989) "Diagnostic Tests for Models Using Unit Record Data: A Survey", *Journal of Applied Econometrics, S29-S60.*