American University
Department of Economics

Econ 783
Amos Golan
Spring 2013
TA: Tual Tuang

Seminar in Empirical Microeconomics

(Wednesday: 2:35-5:15 PM)

Traditionally, the applied economic researcher is faced with two basic sets of information: the "pure" economic theory, and the "hard" data. Combining the two is quite challenging in the sense that incorporating microeconomic theory within the estimation process, such that the data and the theory are fully consistent with each other, is a hard task to accomplish. For example, consider modeling the behavior of a non-competitive market (say, Apple vs. Samsung). Given the "hard" data of the various quantities and prices this game can be modeled as a simple discrete-choice model. However, in that case, the researcher is not incorporating the economic/game theory and her/his knowledge into the estimation procedure. Adding that theory (and other known facts, say in terms of the "optimal first order conditions") will add important information to the analysis. Another example is taken from labor economics. The researcher needs to model the labor market in such a way that she/he utilizes all of the observed and unobserved information (reservation price) while accommodating for the information she/he knows from economic theory.

In this class we will discuss and review such models.

Within the above framework, the objective of this class is to enhance our understanding of micro-econometric modeling. To achieve this objective we will concentrate on two inter-related parts. First, each participant will discuss in class (in great details) an applied paper. Second, each person will develop an empirical paper that deals directly with some micro-economic question of interest.

Specifically, in this Seminar, we will

1. Concentrate on applied micro-econometrics problems;
2. Investigate different real world problems and policies;
3. Work with data to better understand applied econometrics analysis and its relationship to microeconomic theory, policy and economic evaluations.

To achieve the above objectives, each student will

1. Summarize, analyze and discuss in class an applied paper, including the background and details of the econometric model used;
2. Write an empirical paper that deals with a micro-economic question of interest. In that paper the micro (pure) economic problem will be matched with the corresponding econometrics framework (that is conditional on the available data).

To successfully achieve the first objective

1. Each person will read every paper before the presentation and will write a brief summary.
2. Each person will prepare questions/comments for each paper prior to the presentation.

3. The person presenting should (i) review and summarize the article, (ii) discuss the basic objectives, (iii) describe the theoretical model, (iv) describe the data, (v) discuss –in great details – the econometrics background and estimation approach (If background material is needed, it should be presented).
   Note: Extra Credit: Replication of the paper's results using the same (or similar) data set.
   Note: All presentations are in power point (or pdf).
4. Attendance (in all classes) is mandatory.

To successfully achieve the second objective

1. Each student will write an empirical paper on a micro problem that is interesting to her/him (note: to gain the most out of this class, it is essential to work and carry on the research within the time frame specified.)

Where would you find a paper to summarize in class?

1. In the partial list below or search in the library and/or on the Web.
2. In one of the applied economic journals such as RESTAT, AER, JPE (search http://www.jstor.org/), J. of Applied Econometrics (http://jae.wiley.com/jae/) or other applied journals of the Am. Econ. Assoc, Game theory journals, Labor journals, etc.

The structure of the class is as follows:

1. First meeting. We will not meet in class on January 16. Details are provided in an email sent to you.
2. Second meeting is an organizational meeting, further discussions of what we will do, assignments of papers for each student, and presentation of additional material.

NOTE: *By the beginning of the second meeting each person has to select a paper to be presented (after approval). It is your responsibility to search before the second meeting.*

3. Second and/or Third meeting: "Information Processing in Economics/Econometrics" (may include a brief review of information and entropy methods in econometrics) to be presented by Golan.
4. From third/fourth meeting, students' presentations follow by class discussion and a further background/discussion when appropriate.
5. We may have one/two computer labs.

Important Dates:

1. February 6. Proposal (Second Part of PS I) for the Research paper is due. This includes: title, summary of project, relevant references and a very brief data description and sources.
2. February 13. No class meeting. Individual meetings in my office (details to follow).
3. March 13. No class (Spring Break).
4. March 20 – Computer Lab (Hurst 202).
5. April 19 (Friday) – 5 PM. Papers are due. (No late submissions!)
6. April 24 (Wed.), 2-5 pm. Students present their papers (we start at 2:30 PM sharp). Mandatory.

- Note: There will be one/two meetings in my office to discuss each individual's paper.

Grades:

1. Presentation in Class: 25%.
2. Participation in Class: 10%.
3. Final paper (and presentation in class): 65%.

Office Hours (Kreeger): Tuesday 12:00-2:00 and by appointment.

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Useful Text Books and Background Material

1. Cameron and Trivedi, (CT) "Microeconometrics" (Cambridge, 2005) – Highly Recommended. (See also: A. Colin Cameron and Pravin K. Trivedi. Microeconometrics Using Stata, Revised Edition. Stata Press, 2nd edition, 2010. Web link: http://cameron.econ.ucdavis.edu/musbook/mus.html
2. Greene, W. H., "Econometric Analysis" (New York, Macmillan, 7th ed., 2012).
3. Jeffrey M. Perloff, Larry S. Karp, Amos Golan, "Estimating Market Power and Strategies," (Cambridge University Press, 2007).
4. Handbook of Econometrics Volumes 6A-6B; Eds. J. Heckman and E. Leamer (Elsevier, 2007). Search: http://www.bestbookbuys.com/ for best prices. Or look at online version (below)
5. Joshua D. Angrist and Jörn-Steffen Pischke. Mostly Harmless Econometrics: An Empiricist's Companion. Princeton University Press, 2009
6. Peter Kennedy. A Guide to Econometrics. Blackwell Publishing, 6th edition, 2008
7. J. W. Wooldridge, 2002, *Econometric Analysis of Cross Section and Panel Data*, MIT Press
8. Whitney K. Newey and Daniel McFadden. Large sample estimation and hypothesis testing. In Daniel McFadden and Robert Engle, editors, Handbook of Econometrics, 5 volume 4, chapter 36. Elsevier, North Holland, 1994. URL http://dx.doi.org/10.1016/S1573-4412(05)80005-4
9. Handbook of Econometrics, Volumes I-VI. Direct access at http://www.sciencedirect.com/science/handbooks/15734412

Additional useful references

1. Hensher, Rose and Greene, Applied Choice Analysis (Cambridge, 2005).
2. Hsiao Cheng, Analysis of Panel data (2nd Ed., Cambridge, 2003).
3. Train, K. E., Discrete Choice Methods with Simulations (Cambridge, 2003).
4. Amemiya, T., Advanced Econometrics (Harvard, 1985).
5. Ullah, A. and D. Giles, eds., *Handbook of Applied Economic Statistics*, (Marcel Dekker, 1998).
6. Chow, Gregory C., Econometrics (New York: McGraw-Hill, 1983).
7. Mittelhammer, R. C., G. Judge and D. Miller, (MJM) Econometric Foundations (Cambridge, 2000).
8. Maddala, G. S., Limited Dependent and Qualitative Variables in Econometrics (Cambridge, 1983)

Suggested Topics of Interest

All *applied micro* papers are relevant. Examples include applied games, labor economics such as wage equations, demand and/or supply estimation of a firm or an industry, expenditure and cost equations, survey analysis (such as qualitative choice type analysis), semi parametric models and inequality measures. These examples are not exhaustive.

Below is a partial list of papers (some are older) dealing with these issues covering different types of estimation methods. You can choose one of these, or any other paper of interest. All papers must be approved. Wherever possible, the relevant chapters from CT and Greene are provided as well as additional background material.

A) General Background, Philosophy and Historical Perspectives

1. Heckman, James. 2010. "Building Bridges Between Structural and Program Evaluation Approaches to Evaluating Policy." *Journal of Economic Literature* 48(2): 356-398.
2. Imbens, Guido. 2010. "Better LATE than Nothing: Some Comments on Deaton (2009) and Heckman and Urzua (2009)." *Journal of Economic Literature* 48(2): 399-423.
3. Deaton, Angus. 2010. "Instruments, Randomization and Learning about Development." *Journal of Economic Literature* 48(2): 424-455.
4. The Spring 2010 issue of the *Journal of Economic Perspectives* is also devoted to a discussion of current "big picture" issues in applied econometrics.

B) General – Microeconometric Data Issues:

1. Characteristics of microeconometric data (see for example, Wooldridge, Chap 1, or Baltagi, Chap 1)
2. CT Chap. 5.
3. Greene 1.1-1.4; MJM 1.1-1.6 and 2.1-2.5.
4. Griliches, Z. Economic Data Issues in Handbook *of econometrics* / edited by Zvi Griliches and Michael D. Intriligator (North-Holland Pub. Co. ; New York, N.Y. 1983-1986). *Download at*: http://www.elsevier.com/hes/books/02/03/025/c0203025.htm
5. Heckman, and Smith. "Assessing the Case for Social Experiments," *Journal of Economic Perspectives*, Spring, 1995.

C) Computation

CT Chap. 10.

D) Discrete Choice Models - Background

1. Greene, 23; MJM, 20.1-20.3; Maddala, 1-3.

E) Tobit and other Censored and Truncated Regression Models

1. Greene, 24.1-24.4; MJM, 20.4.
2. Hausman, J. and D. Wise, Social experimentation, truncated distributions, and efficient estimation, *Econometrica*, 1977, vol 45, pp. 919-938.

F) Sample Selection Models

1. CT Chap 16.1-16.4

2. Greene, 24.5; MJM, 20.4.
3. Angrist, J., E. Bettinger, and M. Kremer, "Long-Term Educational Consequences of Secondary School Vouchers: Evidence from Administrative Records in Colombia," AER 96(3) June 2006 : 847-862
4. Vella, Francis, Estimating models with sample selection bias: A survey, *J. of Human Resources*, Winter 1998, only pp. 127-144.
5. Newely, Powell, Walker, Semiparametric estimation of selection models: some empirical results, AER, May 1990.
6. Chay, K. Y. and J. L. Powell, "Semiparametric Censored Regression Models," Journal of Economic Perspectives. 15 (2001) 4 (Fall): 29-42

G) Panel Data Models

1. Linear Panel Data Models: CT Chap. 21. (For more extensions, read Chap. 22)
2. Nonlinear Panel Data Models: CT Chap. 23.
3. Greene, 9, 15; MJM, 12, 13, 16.
4. Balgati, B. H., Panel data methods, in *Handbook of Applied Economic Statistic*, (eds. Ullah and Giles), Marcel Dekker, Inc., 1998.
5. Wolfers, Justin. 2006. "Did Unilateral Divorce Laws Raise Divorce Rates? A Reconciliation and New Results." *American Economic Review* 96(5): 1802-1820.

H) GMM and Information-Theoretic Models - Background

6. G. W. Imbens, R. H. Spady and P. Johnson, Information Theoretic Approaches to Inference in Moment Conditions Models, *Econometrica*, 66 (1998) 333-357.
7. Kitamura, Y. and M. Stutzer (1997), "An information-theoretic alternative to generalized method of moment estimation," *Econometrica, 66(4)*, 861-874.
8. A. Golan, "Information and Entropy Econometrics — A Review and Synthesis", Foundations and Trends® in Econometrics: Vol. 2: No 1–2, pp 1-145.
9. Hall, A., "Generalized Method of Moments" (Oxford University Press, 2005).

I) Quantile Regression

1. CT Chap. 4.6
2. Koenker R. and K. F. Hallock, "Quantile Regression," *Journal of Economic Perspectives—Volume 15, Number 4—Fall 2001—Pages 143–156*
3. Buchinsky, Moshe. 1998. "Recent Advances in Quantile Regression Models: A Practical Guide for Empirical Research." *Journal of Human Resources* 33: 88-126.
4. Koenker, Roger. 2003. "Short Course on Quantile Regression."

J) Discontinuity

1. CT 25
2. *Lee, D., E. Moretti and M. J. Butler "Do Voters Affect Or Elect Policies? Evidence From The U. S. House," QJE, August 2004, Vol. 119, No. 3, Pages 807-859
3. Van der Klaauw, Wilbert. 2002. "Estimating the Effect of Financial Aid Offers on College Enrollment: A Regression-Discontinuity Approach." *International Economic Review* 43(4): 1249-87.

4. Hahn, Jinyong, Petra Todd and Wilbert van der Klaauw. 2001. "Identification and Estimation of Treatment Effects with a Regression-Discontinuity Design." *Econometrica* 69(1): 201-09.
5. Imbens, Guido and Thomas Lemieux. 2008. "Regression Discontinuity Designs: A Guide to Practice." *Journal of Econometrics* 142(2): 615-635.
6. Lee, David and Thomas Lemieux. 2010. "Regression Discontinuity Designs in Economics." *Journal of Economic Literature* 48(2): 281-355.

K) Instrumental Variables (and Weak Instruments)

1. Linear IV: CT, Chap. 4.7-4.9
2. *Moreira, M. and L. Cruz, "On the Validity of Econometric Techniques with Weak Instruments Inference on Returns to Education Using Compulsory School Attendance Laws, *The J. of Human Resources, 2005, 40(2) 393-410*
3. Sections 2.2.3-2.3.4 of Joshua D. Angrist and Alan B. Krueger. Empirical strategies in labor economics. In Orley Ashenfelter and David Card, editors, *Handbook of Labor Economics*, volume 3A, chapter 23, pages 1277– 1366. Elsevier Science, Amsterdam, 1999. Web link: http://dx.doi.org/10.1016/S1573-4463(99)03004-7
4. Nonlinear IV: CT Chap. 6.4-6.5
5. Nonlinear IV: Joshua D. Angrist. Estimation of limited dependent variable models with dummy endogenous regressors: Simple strategies for empirical practice. Journal of Business and Economic Statistics, 19(1):2–16, January 2001. Web link: http://www.jstor.org/stable/1392531
6. Takeshi Amemiya. The nonlinear two-stage least-squares estimator. Journal of Econometrics, 2(2):105–110, July 1974. Web link http://dx.doi.org/10.1016/0304-4076(74)90033-5
7. Angrist, Joshua, Guido Imbens and Donald Rubin. 1996. Identification of Causal Effects Using Instrumental Variables." *Journal of the American Statistical Association*. 91: 444-455. (Read the comments as well.)
8. Heckman, James. 1997. "Instrumental Variables: A Study of Implicit Behavioral Assumptions Used in Making Program Evaluations." *Journal of Human Resources*. 32(3). 441-452.
9. Kling, Jeffrey. 2001. "Interpreting Instrumental Variables Estimates of the Returns to Schooling." *Journal of Business and Economic Statistics* 19(3): 358-364.
10. Manning, Alan. 2004. "Instrumental Variables for Binary Treatments with Heterogeneous Treatment Effects: A Simple Exposition." *Contributions to Economic Analysis & Policy* 3(1): 1-14.

L) The incidental parameter problem

1. CT, 23.2
2. *Tony Lancaster The incidental parameter problem since 1948, Journal of Econometrics 95 (2000) 391}413

M) Model/Variable Selection

1. Greene, Chap. 7.
2. MJM, Chap. 18.

N) Nonparametric – Background

1. CT Chap. 9.
2. Jeffrey S. Racine. Nonparametric econometrics: A primer. Foundations and Trends in Econometrics, 3(1):1–88, 2008. doi: 10.1561/0800000009. Web link: http://socserv.mcmaster.ca/racine/ECO0301.pdf

O) Program Evaluation

1. Imbens, Guido and Jeffrey Wooldridge. 2009. "Recent Developments in the Econometrics of Program Evaluation." *Journal of Economic Literature* 47(1): 5-86.
2. Blundell, Richard and Monica Costa-Dias. 2009. "Alternative Approaches to Evaluation in Empirical Microeconomics." Journal of Human Resources 44(3): 565-640.
3. See also Imbens's Web page: http://www.economics.harvard.edu/faculty/imbens)

P) Matching Methods

1. CT Chap. 25.4
2. Smith, Jeffrey and Petra Todd. 2005. "Does Matching Overcome LaLonde's Critique of Nonexperimental Methods?" *Journal of Econometrics* 125(1-2): 305-353.
3. Dehejia, Rajeev. 2005. "Practical Propensity Score Matching: A Reply to Smith and Todd." *Journal of Econometrics* 125(1-2): 355-364.
4. Smith, Jeffrey and Petra Todd. 2005. "Rejoinder." *Journal of Econometrics* 125(1-2): 365-375.

Q) Other Examples/Topics (Belong to any of the above or other topics)

1. Goux, D and E. Maurin, The Decline in Demand for unskilled labor: an empirical analysis method and its application, RESTAT, 2000, vol. 4, 596-607.
2. Hellerstein, J. K. and G. W. Imbens, Imposing Moment Restrictions from Auxiliary Data by Weighting, RESTAT (1999) 81, 1-14.
3. Mroz, T., The sensitivity of an empirical model of married women's' hours of work to econometric and statistic assumptions, *Econometrica*, 1987, 765-799.

For Other Possible Topics of Possible Interest see for example

Handbook of Applied Economic Statistics and Handbook of Econometrics 6A-6B