14.36 Undergraduate Advanced Econometrics Spring 2013

Jerry A. Hausman
jhausman@mit.edu
(E52-271D)

Lecture: M 12:00-2:00pm, E51-385
Recitation F 12-1 PM, E51-061 / Office Hours: M 2-4 PM, E52-310
TA: Maxim Pinkovskiy (maxim09(@mit.edu)

Course website: http://stellar.mit.edu/S/course/14/sp13/14.36/

Prof. Hausman has office hours each day when he is not travelling. The time is posted each day on the website, http://economics.mit.edu/faculty/hausman/spring

ADVANCED ECONOMETRICS

Texts:

W. Greene, *Econometric Analysis*, 2012. 7th edition.

Angrist and Pischke, *Mostly Harmless Econometrics: An Empiricist's Companion*, 2009. 1st Edition.

Supplementary Texts:

J. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*, 2002.
J. Wooldridge, *Introductory Econometrics: A Modern Approach*, 2006

Course Requirement:

Each student will write an applied econometric paper for the course. Professor Hausman or Maxim will discuss the topic of the paper with students. Outlines for student paper are due March 17th

COURSE OUTLINE

(links below may be broken, see Maxim if your Google Scholar efforts prove unfruitful)

1. Interpreting Regression and the Hausman Test

- Greene, Chapter 3, Sections 8.1-8.4
- Angrist and Pischke, Sections 1, 2, 3.1 – 3.2 (pp 27 – 67), 4.1 – 4.2 (pp 113 – 146), 4.6 (pp 188 – 215)

Application: Returns to Education

2. Non-Linear Regression

- Greene, Sections 7.1-7.2
- Angrist and Pischke, Sections 3.3 – 3.4 (pp 68 – 109), 6 (pp 249 – 268)

Application: Credit Score

3. Non-Parametric Regression

- Greene, Section 7.5

Application: Hausman and Newey (1995): "Non-Parametric Estimation of Exact Consumer Surplus," *Econometrica*

4. Probit/ Logit, Ordered Probit/ Ordered Logit, Tobit

- Greene, Sections 17.1-17.3, 19.3

Application: Married Women's Labor Force Participation
Application: Asset Allocation in Pension Plans

5. Quantile Estimation and Powell Estimation for Tobit

- Greene, Section 7.3
- Angrist and Pischke, Sections 7 (pp 269 – 292)
- Chay and Powell (2001): "Semiparametric Censored Regression Models," *Journal of Economic Perspectives*
  http://faculty.smu.edu/Millimet/classes/eco6375/papers/chay%20powell.pdf

Application: Academic Aptitude Determinants

6. Errors in Variable and Semiparametric Regression

- Han (1987): "Non-Parametric Analysis of a Generalized Regression Model: the Maximum Rank Correlation Estimator," *Journal of Econometrics*

http://www.sciencedirect.com/science/article/pii/0304407687900303#

- Hausman (2001): "Mismeasured Variables in Econometric Analysis: Problems from the Right and Problems from the Left," *Journal of Economic Perspectives*

https://www.math.umass.edu/~johnpb/s697m/hausman.pdf

Application:

- Hausman, Abrevaya, Scott-Morton (1998): "Misclassification of The Dependent Variable in a Discrete-Response Setting," *Journal of Econometrics*

http://faculty.smu.edu/millimet/classes/eco7377/papers/hausman%20et%20al.pdf

7. Panel Data

- Greene, Chapter 11.
- Angrist and Pischke, Sections 5 (pp 221 – 248)
- Hausman and Taylor (1981): "Panel Data and Unobservable Individual Effects," *Journal of Econometrics*.
  http://web.mit.edu/14.33/www/hausman.pdf

Application: Effect of Unions on Wages

8. Count Models

- Greene, Section 18.4.
- Hausman, Hall, and Griliches (1984): "Econometric Models for Count Data with an Application to the Patents-R & D Relationship," *Econometrica*.

http://emlab.berkeley.edu/~bhhall/papers/HausmanHallGriliches%20E84.pdf

Application: Moral Hazard in Healthcare Utilization in Germany

9. Duration Models

- Greene, Section 19.4
- Han and Hausman (1990): "Flexible Parametric Estimation of Duration and Competing Risk Models," *Journal of Applied Econometrics*
  http://math.uncc.edu/~zcai/s-paper35.pdf

Application: Unemployment Spell

10. Choice Models

- Greene, 18.2
- McFadden and Train (2000): "Mixed MNL Models for Discrete Response," *Journal of Applied Econometrics*

http://download.clib.psu.ac.th/datawebclib/e_resource/trial_database/WileyInterScienceCD/pdf/JAE/JAE_3.pdf

- Train (2003): "Discrete Choice Methods with Simulation," http://elsa.berkeley.edu/books/choice2.html
- Petrin (2002): "Quantifying the Benefits of New Products: The Case of the Minivan," *Journal of Political Economy* http://pages.stern.nyu.edu/~acollard/Petrin.pdf
- Burda, Harding and Hausman (2008): "A Bayesian Mixed Logit-Probit Model for Multinomial Choice," *Journal of Econometrics.* http://www.stanford.edu/~mch/resources/Harding_BayesianMixedLogit.pdf

Application: Travel Mode Choice Between Sydney and Melbourne, Australia

11. Weak and Many Instruments

- Greene, Section 10.6.6
- Hahn and Hausman (2003): "Weak Instruments: Diagnosis and Cures in Empirical Econometrics," *American Economic Review*.
- Hausman (2005): Lecture notes, Uppsala.
- Stock, Wright and Yogo (2002): "A Survey of Weak Instruments and Weak Identification in GMM," *Journal of Business and Economic Statistics*.
- Hahn and Hausman (2003), "IV Estimation with Valid and Invalid Instruments," mimeo http://economics.mit.edu/files/1056
- Hansen, Hausman and Newey (2008): "Estimation with Many Instrumental Variables," *Journal of Business and Economic Statistics*.

Application: Academic Aptitude Determinants