Reading List – ZICE 2014

November 28, 2013

Numerical Methods: General

(1) Judd, K.L. (1998): *Numerical Methods in Economics*. Cambridge, MA: MIT Press.

This textbook provides a broad introduction to numerical methods in economics. It should be part of your library.

Optimization

(2) Nocedal, J., and S.J. Wright (2006): *Numerical Optimization*. New York: Springer.

This textbook provides a comprehensive treatment of numerical optimization methods. It should be part of your library.

(3) Conn, A.R., Scheinberg, K., and L.N. Vicente (2009): *Introduction to Derivative-Free Optimization*. SIAM: http://www.ec-securehost.com/SIAM/MP08.html

(4) Schmedders, K. (2008): "Numerical Optimization Methods in Economics," in *The New Palgrave: A Dictionary of Economics*.

This Palgrave dictionary entry provides a brief and simplified introduction to numerical optimization methods in economics. It is a good starting point to obtain a first impression of numerical optimization.

Dynamic Programming

(5) Cai, Y., and K.L. Judd (2012): "Stable and efficient Computational Methods for Dynamic Programming," working paper.

(6) Cai, Y., and K.L. Judd (2012): "Dynamic programming with shape-preserving rational spline Hermite interpolation," *Economics Letters*, 117, 161-164.

(7) Cai, Y., and K.L. Judd (2012): "Shape-preserving dynamic programming," forthcoming in *Mathematical Methods of Operations Research*.

(8) Cai, Y., and K.L. Judd (2012): "Dynamic Programming with Hermite Approximation," working paper.

(9) Cai, Y., Judd, K.L., and T.S. Lontzek (2012): "The Social Cost of Stochastic and Irreversible Climate Change," working paper.

(10) Cai, Y., Judd, K.L., G. Thain and A.J. Wright (2012): "Solving Dynamic Programming Problems on a Computational Grid," working paper.

(11) Cai, Y., Judd, K.L. and R. Xu (2012): "Numerical Solution of Dynamic Portfolio Optimization with Transaction Costs," working paper.

Constrained Optimization and Estimation

(12) Dubé, J.-P., Fox, J. T., and C.-L. SU (2012): "Improving the Numerical Performance of Static and Dynamic Aggregate Discrete Choice Random Coefficients Demand Estimation," *Econometrica*, 80 (5), 2231–2267.

(13) Dubé, J.-P., Fox, J. T., and C.-L. SU (2012): "Supplement to Improving the Numerical Performance of Static and Dynamic Aggregate Discrete Choice Random Coefficients Demand Estimation," *Econometrica Supplementary Material*.

(14) Egesdal, M., Lai, Z., and C.-L. SU (2012): "Estimating Dynamic Discrete-Choice Games of Incomplete Information," working paper.

The first two authors of this paper are graduates of ICE 2012.

(15) Su, C.-L. (2012): "Estimating Discrete-Choice Games of Incomplete Information: A Simple Static Example," working paper, *The University of Chicago, Booth School of Business*.

(16) SU C.-L., and K.J. Judd,(2012): "Constrained Optimization Approaches to Estimation of Structural Models," *Econometrica*, 80 (5), 2213–2230.

This paper is the perhaps most influential computational work in economics during the last two decades. Do we need to say more?

Repeated and Dynamic Games

(17) Abreu D., Pearce D. G., and E. Stacchetti (1990): "Toward a Theory of Discounted Repeated Games with Imperfect Monitoring," *Econometrica*, 58 (5), 1041–1063.

(18) Abreu D., Pearce D. G., and E. Stacchetti (1986): "Optimal Cartel Equilibria with Imperfect Monitoring," *Journal of Economic Theory*, 39 (1), 251–269.

(19) Judd K., Yeltekin S., and J. Conklin (2003): "Computing Supergame Equilibria," *Econometrica*, 71 (4), 1239–1254.

A beautiful piece of work.

Heterogeneous Agent Models

(20) Judd, K.J., Maliar, L., and S. Maliar (2011): "Numerically stable and accurate stochastic simulation approaches for solving dynamic economic models," *Quantitative Economics*, 2, 173-210.

(21) Judd, K.J., Maliar, L., and S. Maliar (2011): "Supplement to Numerically stable and accurate stochastic simulation approaches for solving dynamic economic models: Appendices," *Quantitative Economics*, 2 (2), 173-210.

(22) Judd, K.J., Maliar, L., and S. Maliar (2012): "Merging Simulation and Projection Approaches to Solve High-Dimensional Problems," working paper.

(23) Mertens, T.M., and K.J. Judd (2012): Supplement to Equilibrium Existence and Approximation for Incomplete Market Models with Substantial Heterogeneity," working paper.

Income Taxation

(24) Judd, K.J. and C.L. Su (2006): "Optimal Income Taxation with Multidimensional Taxpayer Types," working paper.

Auctions

(25) Hubbard, T.P. and H.J. Paarsch (2013): "On the Numerical Solution of Equilibria in Auction Models with Asymmetries within the Private-Values Paradigm." Chapter 2 in the *Handbook of Computational Economics*, Volume 3, edited by Kenneth L. Judd and Karl Schmedders. New York: Elsevier.