Ph.D. Applied Computational Economics
Quantitative Macro Section

University of Nottingham

2023 Reading List

The following lists are designed to serve as a source of potential additional reading for the curious student. Note that these are optional from the perspective of the class.

Lecture 0: Introduction to Numerical Solutions and Coding

1. Chapter 2 ["An Overview"] of Stokey, N., Lucas, R. & E. Prescott (1989), *Recursive Methods in Economic Dynamics*.
2. Sigmon, K. (1993), *Matlab Primer*, 3^{rd} Edition, Available at `https://www.minet.uni-jena.de/fakultaet/iam/personen/primer.pdf`.
3. Chapter 1 ["Introduction"] of Judd, K. (1998), *Numerical Methods in Economics*.

Lecture 1: Recursive Methods and Solving Representative Agent Partial Equilibrium Models

1. Chapter 3 ["Mathematical Preliminaries"] of Stokey, N., Lucas, R. & E. Prescott (1989), *Recursive Methods in Economic Dynamics*.
2. Chapter 4 ["Dynamic Programming under Certainty"] of Stokey, N., Lucas, R. & E. Prescott (1989), *Recursive Methods in Economic Dynamics*.
3. Chapter 5 ["Applications of Dynamic Programming under Certainty"] of Stokey, N., Lucas, R. & E. Prescott (1989), *Recursive Methods in Economic Dynamics*.
4. Chapter 7 ["Measure Theory and Integration"] of Stokey, N., Lucas, R. & E. Prescott (1989), *Recursive Methods in Economic Dynamics*.
5. Chapter 8 ["Markov Processes"] of Stokey, N., Lucas, R. & E. Prescott (1989), *Recursive Methods in Economic Dynamics*.
6. Chapter 9 ["Stochastic Dynamic Programming"] of Stokey, N., Lucas, R. & E. Prescott (1989), *Recursive Methods in Economic Dynamics*.
7. Chapter 10 ["Applications of Stochastic Dynamic Programming"] of Stokey, N., Lucas, R. & E. Prescott (1989), *Recursive Methods in Economic Dynamics*.
8. Chapter 3 ["Dynamic Programming"] of Ljungqvist, L. & Sargent, T. (2018), *Recursive Macroeconomic Theory*, 4^{th} Edition.
9. Chapter 4 ["Practical Dynamic Programming"] of Ljungqvist, L. & Sargent, T. (2018), *Recursive Macroeconomic Theory*, 4^{th} Edition.

10. Chapter 12 ["Numerical Dynamic Programming"] of Judd, K. (1998), *Numerical Methods in Economics*.

11. Chapter 6 ["Approximation Methods"] of Judd, K. (1998), *Numerical Methods in Economics*.

12. Tauchen, G. (1986), "Finite state Markov chain approximations to univariate and vector autoregressions", *Economics Letters*.

13. Adda, J. & R. Cooper (2003), *Dynamic Economics: Quantitative Methods and Applications*.

14. Floden, M. (2008), "A note on the accuracy of Markov chain approximations to highly persistent AR(1) processes", *Economics Letters*.

15. Borağan Aruoba, S. & J. Fernández-Villaverde (2015), "A comparison of programming languages in macroceonomics", *Journal of Economic Dynamics and Control*.

16. Borağan Aruoba, S., Fernandez-Villaverde, J. & J. Rubio-Ramirez (2006), "Comparing solution methods for dynamic equilibrium economies", *Journal of Economic Dynamics and Control*.

Lecture 2: Solving Representative Agent General Equilibrium Models

1. Chapter 15 ["Pareto Optima and Competitive Equilibria"] of Stokey, N., Lucas, R. & E. Prescott (1989), *Recursive Methods in Economic Dynamics*.

2. Chapter 16 ["Applications of Equilibrium Theory"] of Stokey, N., Lucas, R. & E. Prescott (1989), *Recursive Methods in Economic Dynamics*.

3. Chapter 7 ["Recursive Competitive Equilibrium: I"] of Ljungqvist, L. & Sargent, T. (2018), *Recursive Macroeconomic Theory*, 4^{th} Edition.

4. Chapter 8 ["Equilibrium with Complete Markets"] of Ljungqvist, L. & Sargent, T. (2018), *Recursive Macroeconomic Theory*, 4^{th} Edition.

5. Shooting algorithm discussion in Chapter 11 ["Fiscal Policies in a Growth Model"] of Ljungqvist, L. & Sargent, T. (2018), *Recursive Macroeconomic Theory*, 4^{th} Edition.

6. Chapter 12 ["Recursive Competitive Equilibrium: II"] of Ljungqvist, L. & Sargent, T. (2018), *Recursive Macroeconomic Theory*, 4^{th} Edition.

7. Chapter 13 ["Regular Perturbations of Simple Systems"] of Judd, K. (1998), *Numerical Methods in Economics*.

8. Chapter 14 ["Regular Perturbations in Multidimensional Systems"] of Judd, K. (1998), *Numerical Methods in Economics*.

9. Ravikumar, B., Santacreu, A. & M. Sposi (2019), "Capital accumulation and dynamic gains to trade", *Journal of International Economics*.

10. Atolia, M., Chatterjee, S. & S. Turnovsky (2010), "How misleading is linearization? Evaluating the dynamics of the neoclassical growth model", *Journal of Economic Dynamics and Control*.

11. Mulligan, C. & X. Sala-i-Martin (1993), "Transitional dynamics in two-sector models of endogenous growth", *Quarterly Journal of Economics*.

Lecture 3: Solving Heterogeneous Agent General Equilibrium Models with Idiosyncratic Uncertainty

1. Chapter 17 ["Self-Insurance"] of Ljungqvist, L. & Sargent, T. (2018), *Recursive Macroeconomic Theory*, 4^{th} Edition.
2. Chapter 18 excepting 18.15 ["Incomplete Markets Models"] of Ljungqvist, L. & Sargent, T. (2018), *Recursive Macroeconomic Theory*, 4^{th} Edition.
3. Aiyagari, R. (1994), "Uninsured Idiosyncratic Risk and Aggregate Saving", *Quarterly Journal of Economics*.
4. Huggett, M. (1993), "The risk-free rate in heterogeneous agent incomplete insurance economies", *Journal of Economic Dynamics and Control*.
5. Rios-Rull, V. (1997), "Computation of Equilibria in Heterogeneous Agent Models", *Federal Reserve Bank of Minneapolis Staff Report.*
6. Heathecote, J., K. Storesletten, & G. Violante (2009), "Quantitative macroeconomics with heterogeneous households", *Federal Reserve Bank of Minneapolis Staff Report.*
7. Athreya, K. (2002), "Welfare implications of the bankruptcy reform act of 1999", *Journal of Monetary Economics*.
8. Chatterjee, S., D. Corbae, M. Nakajima, & V. Rios-Rull. (2007), "A quantitative theory of unsecured consumer credit with risk of default", *Econometrica*.
9. Conesa, J. & D. Krueger (1998), "Social security reform with heterogeneous agents", *Review of Economic Dynamics*.