This course analyzes expectations and learning in modern dynamic stochastic macroeconomic models. We develop techniques for solving for the rational expectations equilibrium (REE) and examine whether agents following adaptive or statistical learning schemes will converge over time to RE. When there are multiple REE, we will be interested in determining which of them can be possible points of convergence under learning. We will also consider cases in which learning can lead to non-REE learning dynamics. A substantial part of the course will be devoted to studying the implications of learning for macroeconomic policy and to looking at a range of applications.

The course will initially focus on adaptive learning theory, in some standard set-ups, and will mainly be based on my book with Seppo Honkapohja, Learning and Expectations in Macroeconomics, (LEM), augmented by material that reflects recent research. A number of applications of learning will also be considered. A separate reading list will provide references to many of the large number of papers that have applied learning to macroeconomics. You will be expected to write a short paper that assesses a recent article or working paper in this area.

Lecture topics and reading


   LEM, Ch. 1, Ch. 2, Ch. 4.3.


   LEM, Ch. 3, sections 3, 4 and 6

3. Application to OG-type models: Overlapping generations (OG) model with production; Increasing Social Returns (ISR) model. Hysteresis in policy.

   LEM, Ch. 4, sections 1, 2 and 6 (4.6.1 and 4.6.2).


   LEM, Ch. 8.


   LEM, Ch. 12, Ch. 4.6.3-4.6.4, Ch. 11.

Lecture Notes “Multivariate Stochastic Linear Difference Equations and Solutions to RE Models”
LEM, Ch. 10.
Evans and McGough, “Learning to Optimize”

LEM, Ch. 14.1, 14.3, 13.2, 14.4

8. Monetary policy in New Keynesian models with learning
G. W. Evans and S. Honkapohja, “Monetary policy, expectations and commitment,”

9. Monetary policy and perpetual learning

10. Recurrent hyperinflations and learning

11. Infinite-horizon learning
Lecture Notes on “Infinite-horizon learning”
B. Preston, “Learning about monetary policy rules when long-horizon expectations matter,”

12. Dynamic Predictor Selection
LEM, Ch. 15.6.
C.H. Hommes, “The heterogeneous expectations hypothesis: some evidence from the lab,”
13. Liquidity traps, deflation traps and stagnation.
   G.W. Evans, E. Guse and S. Honkapohja, “Liquidity traps, learning and stagnation,” European
   J. Benhabib, G.W. Evans and S. Honkapohja, “Liquidity traps and expectation dynamics: fiscal

   **Textbook Reference**

   George W. Evans and Seppo Honkapohja, *Learning and Expectations in Macroeconomics*, Princeton

   LEM is available from amazon.com if for some reason the UO bookstore does not get it in time.

   Draft typed lecture notes will be provided on many topics once the lectures on that topic are completed.

   **Grading.** There will be around three problem sets, a midterm exam and a paper. The midterm will count
   40%, the problem sets will count 25%, and the paper will count 35% of the grade. You can work on
   problem sets together, but should write up your answers separately.

   The paper should be based on an article or working paper connected with the course, i.e. a recent paper on
   macroeconomics and learning. The extended reading includes many good recent papers in this field,
   roughly grouped by topic. This reading list, though quite long, is incomplete. You should also look for a
   suitable paper by looking at the websites of relevant conferences. Links to a number of relevant
   conferences are included on the extended reading list. Your paper should be a critical assessment of the
   article or working paper, with indications of significant omissions and suggestions for useful extensions.
   Ideally your paper would include some additional original material, e.g. modest extensions of results in
   the paper or simulations that corroborate, extend or fail to verify results given in the article or working
   paper. The grade for the paper will be based in part on a short presentation during finals week, during a
   period that includes the scheduled final exam time, which is Monday, March 16, 12:30-2:30pm.