

Master's seminar

Topics in Macroeconomics - Replication

In this seminar we will study and replicate influential articles in the field of macroeconomics. The selected articles contain contributions to macroeconomic **theory**, macroeconomic **modelling**, and **computation** of macroeconomic models.

Our focus will lie on the *replication* and *discussion* of the results. Each student will be charged with an article from the list below which they present to and discuss with the seminar group and replicate throughout the semester.

- Grading:
 - To obtain 6 ECTS, participants
 1. deliver a presentation on a research article (selection below),
 2. write a replication report on this article (approx. 10 pages)
 - Performance in 1. & 2. are weighted in *equal parts* in the final grade.
- Course meeting times:
 - Kick-off meeting: **October 21st**.
 - Seminar presentations: as announced in the kick-off meeting.
- Admission:
 - Successful participation in Advanced Macroeconomics 1 or 2 is required.
 - To sign up for the seminar, send an email with your **top-3 preferences** over the articles below to markus.epp@vwl.uni-freiburg.de until **October 19th**.
 - The seminar topics will be assigned after the application deadline and the allocation is announced during the kick-off.
- Important notes:
 - On demand, the course can be aired on ZOOM.
 - Familiarity with a numerical programming language is beneficial. We recommend [Matlab](#), which is free of charge for Freiburg's students, and open source software packages like [Python](#) and [R](#).
 - The textbook by [Heer and Maussner \(2009\)](#) and the [QuantEcon](#) project provide excellent explanations as well as Matlab and Python codes for the used methods.
- Further details will be announced during the kick-off meeting.

- Participants can select a paper from the following list:

1. Stochastic growth models: value-function & policy-function iteration

- (a) Coleman, Wilbur John. “Solving the stochastic growth model by policy-function iteration.” *Journal of Business & Economic Statistics* 8.1 (1990): 27-29.
- (b) Hwang, In Chang. “A Recursive Method for Solving a Climate–Economy Model: Value Function Iterations with Logarithmic Approximations.” *Computational Economics* 50.1 (2017): 95-110.
- (c) Kirkby, Robert. “A toolkit for value function iteration.” *Computational Economics* 49.1 (2017): 1-15.

2. Monetary policy and the business cycle: LQ & perturbation methods

- (a) Cooley, Thomas F., and Gary D. Hansen. “The inflation tax in a real business cycle model.” *The American Economic Review* (1989): 733-748.
- (b) Schmitt-Grohé, Stephanie, and Martin Uribe. “Optimal simple and implementable monetary and fiscal rules.” *Journal of Monetary Economics* 54.6 (2007): 1702-1725.

3. Monetary policy at the ZLB: log-linear vs. non-linear solutions

- (a) Eggertsson, Gauti B., and Sanjay R. Singh. “Log-linear Approximation versus an Exact Solution at the ZLB in the New Keynesian Model.” *Journal of Economic Dynamics and Control* 105 (2019): 21-43.
- (b) Boneva, Lena Mareen, R. Anton Braun, and Yuichiro Waki. “Some unpleasant properties of loglinearized solutions when the nominal rate is zero.” *Journal of Monetary Economics* 84 (2016): 216-232.

4. Heterogeneous agents: Monte-Carlo simulations

- (a) Krusell, Per, and Anthony A. Smith, Jr. “Income and Wealth Heterogeneity in the Macroeconomy.” *Journal of Political Economy* 106.5 (1998): 867-896.
- (b) Storesletten, Kjetil, Chris I. Telmer, and Amir Yaron. “The welfare cost of business cycles revisited: Finite lives and cyclical variation in idiosyncratic risk.” *European Economic Review* 45.7 (2001): 1311-1339.
- (c) Young, Eric R. “Solving the incomplete markets model with aggregate uncertainty using the Krusell–Smith algorithm and non-stochastic simulations.” *Journal of Economic Dynamics and Control* 34.1 (2010): 36-41.

5. Heterogeneous agents: recursive methods

- (a) Erosa, Andrés, and Gustavo Ventura. “On inflation as a regressive consumption tax.” *Journal of Monetary Economics* 49.4 (2002): 761-795.
- (b) Den Haan, Wouter J. “Solving dynamic models with aggregate shocks and heterogeneous agents.” *Macroeconomic dynamics* 1.2 (1997): 355-386.
- (c) Reiter, Michael. “Solving the incomplete markets model with aggregate uncertainty by backward induction.” *Journal of Economic Dynamics and Control* 34.1 (2010): 28-35.