

Syllabus for FDPE Macroeconomic Theory: Module 3, spring 2016

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Overview

The module starts by introducing students to business cycle facts and methods. It then presents the main theoretical concepts and methods for solving and calibrating stochastic dynamic general equilibrium models (DSGE), starting with the basic real business cycle model (RBC). Further topics include the extension to the open economy as well as the analysis of financial frictions and asset pricing. The course will mainly draw elements from the following books:

- David **DeJong** and Chetan **Dave** (2011): “Structural Macroeconometrics”, 2nd ed. Princeton University Press
- Thomas **Cooley**, ed. (1995): “Frontiers of Business Cycle Research”, Princeton University Press
- Michael **Wickens** (2011): “Macroeconomic Theory”, 2nd ed.
- George **McCandless** (2008): “The ABCs of RBCs. An Introduction to Dynamic Macroeconomic Models” Harvard University Press
- Stephanie **Schmitt-Grohe** and Martin **Uribe**, “Open Economy Macroeconomics”, textbook manuscript, current version at: <http://www.columbia.edu/~mu2166/book/>

OTHER NOTEWORTHY BOOKS:

Recursive methods and old-time classics:

- David Romer (2011): “Advanced Macroeconomics”, 4th ed., McGraw Hill (+ solution manual by Rohaly)
- Thomas Sargent and Lars Ljungqvist (2012), “Recursive Macroeconomic Theory”, 3rd ed., MIT Press
- Robert Lucas and Nancy Stokey with Edward Prescott (1989): “Recursive Methods in Economic Dynamics”, Harvard University Press (+ solution manual by Irygoyen, Rossi-Hansberg and Wright)
- Thomas Sargent (1987): “Macroeconomic Theory”, 2nd ed. Emerald Group Publishing
- Thomas Sargent (1987): “Dynamic Macroeconomic Theory”, 5th ed. Harvard University Press (+ solution manual by Manuelli)
- Lars Hansen and Thomas Sargent (2014): “Recursive Models of Dynamic Linear Economies”, Princeton University Press
- Oliver Blanchard and Stanley Fischer (1989): “Lectures on Macroeconomics”, MIT Press
- Brukhard Heer and Alfred Mausner (2009): “Dynamic General Equilibrium Modeling”, 2nd. Ed. Springer Verlag
- Jerome Adda and Russell Cooper (2003): “Dynamic Economics”, MIT Press

Open Economy Texts:

- Maurice Obstfeld and Kenneth Rogoff (1996): “Foundations of International Macroeconomics”, MIT Press (+ solution manual by Gopinath, Obstfeld and Rogoff)

- Carlos Vegh (2013): “Open Economy Macroeconomics in Developing Countries.”, MIT Press
- Nelson Mark (2001): “International Macroeconomics and Finance”, Wiley-Blackwell
- G. Lim and Paul McNelis (2008): “Computational Macroeconomics for the Open Economy”, MIT Press

Macroeconometrics and empirical methods:

- James Hamilton (1994): “Time Series Analysis”, Princeton University Press
- Helmut Lutkepohl (2005): “New Introduction to Multiple Time Series Analysis”, Springer Verlag
- Fabio Canova (2007): “Methods for Applied Macroeconomic Research”, Princeton University Press
- Carlo Favero (2001): “Applied Macroeconometrics”, Oxford University Press

Outline

Lecture 1: empirical introduction to business cycle fluctuations

Lecture 2: stochastic growth model

Lectures 3 and 4: Methods of solving and analyzing DSGE models (log-linearization, numerical solution methods, impulse responses, computation of moments, stochastic simulations)

Lectures 5 and 6: The basic real business cycle model + some extensions

Lecture 7: Open economy RBC models

Lecture 8: Financial frictions: costly state verification (Bernanke Gertler model)

Lecture 9: Financial frictions: moral hazard (Holmström Tirole model)

Software

Modern quantitative macroeconomics relies on software computations and numerical methods since analytical solutions are rarely available. The assignments contain both analytical and computational exercises. Dynare is a common tool for solving standard dynamic models numerically using perturbation methods. It is a Matlab library. You will be introduced to Dynare in the exercise sessions. Octave is an open source [Matlab](#) 'clone' and provides useful alternative if you do not have Matlab. Follow the [Dynare](http://www.dynare.org) (<http://www.dynare.org>) instructions (<http://www.dynare.org/DynareWiki/DynareOctave>) to [install Dynare with Octave](#).