Title
An Introduction to Macroeconomic Modeling and Estimation with Dynare

Responsible: Maik Wolters, Eric Mayer
Target group: Bachelor and Master students
Number of participants: 60 max

Course period:
Term: June – July 2021
ECTS: 5

Contents & Objectives:
This course teaches students how to build, simulate and estimate macroeconomic models. The objective of this course is to develop practical research skills so that students are able to independently work with macroeconomic models using MATLAB® and Dynare.

Specifically, we consider the class of Dynamic Stochastic General Equilibrium (DSGE) models, in which consumers, firms, and the public sector (monetary and fiscal policy) interact in a unified modelling framework. These models typically involve forward looking behavior. They have become the workhorse models for policy analysis at central banks, monetary institutions around the world as well as other international institutions such as the European Commission or the International Monetary Fund (IMF). Students will learn how to solve and analyze this behavior using the appropriate techniques.

The course consists of two blocks. The first block consists of lectures that introduce the relevant theoretical background knowledge as well as the models we will use. These lectures are followed by practical sessions with hands-on computational exercises. In the second block, students will apply the concepts and techniques learned in an independent project. Students may choose a project according to their personal preferences from a list of proposed projects. This project is supervised by weekly one-to-one consultation hours. To receive 5 ECTS, students hand-in their project codes as well as a short project report.

Prerequisites:
Interests in macroeconomic models as well as basic understanding of economic principles. Basic programming skills in MATLAB or comparable languages are recommended, but not necessary.

Course Structure:

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<th>CONTENTS</th>
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<td>Introduction to the New Keynesian Model and Programming in MATLAB</td>
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<td>2</td>
<td>Macro Models in Dynare and the Dynare Language</td>
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<td>3</td>
<td>Solving and Simulating DSGE models in Dynare</td>
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<td>Estimating DSGE models in Dynare</td>
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<td>5</td>
<td>Advanced topics of macroeconomic modelling (forecasting, model uncertainty, zero lower bound)</td>
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<td>Week 2 – 4</td>
<td>Project period with individual consultation hours</td>
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Literature:
Faculty of Business Management and Economics


Additional literature will be announced throughout the course.

Assessment:

Written project report of 5 pages, project duration of 3 weeks.

Contact:

Dominik Hecker (Dominik.hecker@uni-wuerzburg.de)

Application:

- transcript of records (regarding your current degree programme)
- certificate of secondary school
- short CV
- copy of passport
- application form (will be generated in the application process)

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