

## International Economics Development Economics

Academic year 2020-2021

## Advanced International Macroeconomics A: Methods and Models

**EI082 - Autumn - 3 ECTS**

Thursday 12h15 - 14h00

### Course Description

This course provides a graduate-level treatment of the international macroeconomics of trade and financial linkages. Topics covered include: small open economy models of inter-temporal trade; international business cycles and capital flows; nominal rigidities and exchange rate determination, applications of perturbation methods and global solution methods.

### > PROFESSOR

[Paolo Cavallino](#)

[Office hours](#)

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### > ASSISTANT

[Office hours](#)

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## Syllabus

[Tentative; revised version on first day of class]

This course provides an overview of the basic dynamic models of international macroeconomics and their solution methods. We will study and solve the classical small open economy (SOE) real business cycle (RBC) model, the SOE New Keynesian (NK) model, and the two-country model. We will study and use different solution methods including perturbation methods and global solution methods.

The course is mostly focused on modelling techniques and solution methods. However, we will also look at the data and evaluate the empirical performance of the model considered. The goal is to learn the basic tools that are necessary to understand and replicate existing papers in the field of international macroeconomics, and eventually write original ones.

The lectures will be mostly taught using the white board (or its digital counterpart in case of virtual lectures) and through live-coding.<sup>1</sup> I will use slides and static codes only when strictly necessary or to save time. Slides, codes and, possibly, digital white boards will be shared with you after the class.

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<sup>1</sup> Live-coding is the process of designing and implementing a [coding] project in front of class during lecture period. By contrast, when using static code the instructor never types, but instead views, compiles, and executes code examples.

**Prerequisites:** Masters level knowledge of multivariate calculus, linear algebra, and probability is required. Prior knowledge of a programming language will be useful but not necessary for picking up Matlab and Dynare.

**Course materials:** There is no text book for the course, but we will be using a number of references which will be mentioned before each lecture. For the first part of the course (SOE-RBC) we will be using Open Economy Macroeconomics by Martin Uribe and Stephanie Schmitt-Grohé (Princeton University Press, 2017), while for the rest of the course I will cover classical papers and selected sections of other textbooks.

**Software:** We will be using of Matlab and Dynare, which are software packages for solving and simulating dynamic models. If you have never used them before these are two free references to get started:

- Matlab Primer (Sigmon) (<http://www.math.ucsd.edu/~bdriver/21d-s99/matlab-primer.html>)
- Dynare User Guide (Mancini Griffoli) (<http://www.sfu.ca/~kkasa/UserGuide>)

**Grades:** The final grade of the course will be the average of two graded homework assignments. More details will be provided during the first lecture.

**Course schedule:** Below is a tentative course schedule. I might revise it before and/or during the course to include or exclude topics depending on our pace and the background of the students enrolled.

Date	Topics
Class 1	
Thursday, September 14 <sup>th</sup>	SOE-RBC I: decentralized equilibrium, log-linearization and equilibrium dynamics.
Class 2	
Thursday, September 21 <sup>st</sup>	SOE-RBC II: calibration and numerical solution (introduction to Dynare), data and performance of the model.
Class 3	
Thursday, September 28 <sup>th</sup>	SOE-RBC III: terms of trade and the real exchange rate, nonstationary technology shocks.
Class 4	
Thursday, October 1 <sup>st</sup>	SOE-NK I: decentralized equilibrium, calibration and numerical solution.
Class 5	
Thursday, September 8 <sup>th</sup>	SOE-NK II: welfare analysis and optimal monetary policy.
Class 6	
Thursday, September 15 <sup>th</sup>	The two-country model: macroeconomic interdependence, international risk-sharing.
Class 7	
Thursday, September 22 <sup>nd</sup>	Global solution methods: dynamic programming, value function and policy function iteration, application.