MPE_AMEM: Introduction and Technical Requirements

Tomas Motl, Course for Masaryk University, Spring 2022

Course Content

What you will learn

- how macroeconomic forecasting is done
- structure of a simple, workhorse macroeconomic model
- how to tailor a model to an economy (at least the basics)

What you will not learn

- modeling theory, fancy DSGE stuff
- coding, fancy math
- some important parts of real-life model use will be skipped or discussed only briefly, for the sake of time:
    - how to calibrate model and verify its properties
    - how to identify initial condition for the forecast
    - ask questions, we can discuss more if we have time

Outline

- derive a basic small open economy model, examine properties
- tailor the model to chosen economy
- use the model to reproduce a specific historical period

Requirements to pass

- finish two presentations
- finish final project
- work will be done in groups of 3-4 people

This course is for you

- course will be useful for you if:
    - you are active, ask questions, interrupt me when you don't understand
    - actually do the work yourself
    - read the materials provided
- lecture materials will be available always well before the next lecture
    - if you study them (they are short), we can spend less time on theory and more time on interesting stuff
    - if you ask questions, I'll be able to tailor the course better for you

- you can probably get the presentations / project from older students, but then you will learn nothing
    - the point of this course is to try something you haven't done before, so you learn something
    - if you just want credits, take swimming or something

Course Organization:

Schedule + tentative outline

- 6 blocks, each on Tuesday from 18.00
- Schedule and content:
    - **Block 1: Introduction, 3-equation NK model**
      March 8
    - **Block 2: Open economy model**
      March 15

      Presentation 1
    - **Block 3: Tailoring the model to a particular economy**
      April 5
    - **Block 4: Bringing the model to data**
      April 12

      Presentation 2
    - **Block 5: Interpreting a particular historical period via the model**
      April 26
    - **Block 6: Model forecast, expert judgment**
      May 3

      Final project

Technical Requirements

Please make sure to have the following software ready for the second lecture.

Matlab:

- you have access to university license
- the codes we will use were tested in Matlab 2019a, so please install this version
- only basic installation needed (~3GB) no need to install toolboxes

PDF Viewer

- Acrobat Reader is fine
- SumatraPDF is better

Excel / LibreOffice / OpenOffice

IRIS Toolbox

- IRIS version 20150119 - provided in Study Materials

    - read about IRIS here: https://iris.igpmn.org/
- you need to start IRIS each time you start Matlab
    - change Matlab current folder to the folder with IRIS
    - run command "irisstartup"
    - you should see the following output

```
IRIS Toolbox Release 20150119.
Copyright (c) 2007-2021 IRIS Solutions Team.

IRIS root: /home/tomas/IRIS/IRIS_Tbx_20150119.
User config file: No user config file found.
LaTeX binary files: /usr/bin.
X13-ARIMA-SEATS: Version 1.1 Build 9.
```

LaTeX installation:

- Install MikTeX (https://miktex.org/) or TeXLive (https://www.tug.org/texlive/) - both are free implementation of LaTeX
- When installing, make sure to choose to "Install packages on-the-fly"
- When you start IRIS, you should see that IRIS found your installation of LaTeX (second last line in the output in box above). If not, follow this solution: http://iris-toolbox.blogspot.com/2011/03/latex-not-found.html

Testing

- download "closed.zip" from Study Materials
- start Matlab, start IRIS
- run file "run_toy_kalman.m"
- if you get two PDF files with charts, everything works

If you have a problem, email me right away

About Me

- graduated in 2010 from PřF MU
- two years PhD with prof. Vašíček, then left for OGResearch (https://www.ogresearch.com/)
- work on model development, forecasting, training, ...
- hired by IMF and other institutions to provide trainings in Africa (Angola, Rwanda, Morocco, Mozambique, ...) and Asia (Mongolia, Philippines, ...)
- recently also macroprudential modeling, yield curve modeling, ...