

# Research projects

December 2016

Each student picks 1 of the following topics. Each student must hand in

- A 10-page document describing the economic question, methodology and results. I expect *economic comments*. Only typed up documents will be accepted.
- A Matlab file and all necessary files (data) to replicate the results. I must be able to run the code on my computer

You should email the solutions to me. I expect students to pick different research topics. I let the coordination up to you. If you have other ideas for problem sets, feel free to tell me about it. I am open to discussion.

## 1 BGG versus KM

Compare BGG to KM. This comparison shall be based on discussion on modeling choices, FOCs, IRFs and simulations. This research project is more complex than it seems.

- For the BGG Dynare file, consider the mod file studied in class
- For the KM Dynare file, consider the mod file in Iacoviello AER paper 2005. Iacoviello, Matteo (2005), "House Prices, Borrowing Constraints and Monetary Policy in the Business Cycle", American Economic Review, Vol. 95, No. 3 (June), pp. 739-764. The Dynare code and paper are available on M. Iacoviello's webpage.

I expect a thorough investigation. What model is best suited for analyzing the current macroeconomic fluctuations?

## 2 Amplification-persistence trade-off in KM

Consider the paper by Pintus, Collateral constraints and the amplification-persistence trade-off. 2009.

<https://halshs.archives-ouvertes.fr/file/index/docid/439243/filename/DT2009-29.pdf>

Replicate the main results of the paper using Dynare. For that purpose, you need to enter the model as it appears in section 3. What do we learn from the paper?

### **3 KM with capital and consumption habit**

Consider the paper by Pintus and Wen, Review of Economic Dynamics. 2013. Leveraged borrowing and boom-bust cycles. Replicate the main results of the paper using Dynare. For that purpose, you need to enter the model as it appears in section 2.3. Appendix A shows the linearized model. If possible, enter the model in levels (section 2.3.), rather than in a linearized fashion. What do we learn from the paper?

### **4 Heterogeneous investors in KM**

Consider the paper by Maria Teresa Punzi and Katrin Rabitsch. Investor borrowing heterogeneity in a Kiyotaki-Moore style macro model. Economics Letters 130 (2015) 75-79. Replicate the main results of the paper using Dynare. What do we learn from the paper?

### **5 Financial frictions and indeterminacy**

Consider the paper by Zheng Liu and Pengfei Wang, Credit Constraints and Self-fulfilling Business Cycles. American Economic Journal: Macroeconomics, 2014, 6(1): 32-69. Replicate the main results of the paper using Dynare. The paper deals with indeterminacy. Your job is then to get indeterminacy using Dynare, which means that Blanchard Kahn conditions will not hold. The model's equations in appendix A.3. might help you for your coding using Dynare. What do we learn from the paper?