ECON 268: International Finance and Exchange Rates (Spring 2020)

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Overview

The course covers advanced topics in open and closed-economy macroeconomics. It is structured in three "mini" courses covering the following topics: i) Sovereign debt and default; ii) Intermediation, financial crises and capital flows; iii) The role of households' heterogeneity over the business cycle. We will spend roughly five classes on each topic. The format of the three "mini" courses is homogeneous:

- The first class introduces the benchmark model(s).
- The second class presents computational algorithms and discusses approaches followed in the literature for quantitative analysis.
- In the remaining three classes we will discuss recent applications.

There are no required textbooks, most of the readings are based on journal articles or working papers. For the computational aspects, it is good if you could have access to "Dynamic General Equilibrium Modeling" by Herr and Maussner and "Numerical Methods in Economics" by Judd.

Course organization

The class meets on Tuesdays and Thursdays from 9:30am to 11:20pm on Zoom. The easiest way to contact me is via email at `luigi.bocola@gmail.com`. If you want to chat about the course material or your project send me an email, so that we can set up a virtual meeting. I will post relevant course material (slides, problem sets, ...) on a dropbox folder. Please give me your email, so that I can invite you to the folder.

Course evaluation

Per university policy, all spring 2020 courses will receive a "S/NC" grade. The course evaluation is based on problem sets, class participation, and a research project.

Problem sets. Each mini course has an associated computational problem set. I wil post the problem set after the second class, and you will have two weeks to complete it. You can submit the problem sets via email (please send me written answers in LaTeX).

Class participation. This is a second year PhD class, the goal is to understand what type of research is done at the frontier, and to start developing ideas for your dissertation and/or help you carrying out your current projects. Class participation is essential in achieving this goal. To facilitate it, and in the applied part of each mini course, one of you will present a paper related to the topic that I will cover in class. The paper is your pick. Please, tell me and the rest of the class what is the underlying question, what is the methodology, what is the finding, what is new relative to previous papers in the literature, and whether, by reading the paper, you found something useful for your research (20 minutes presentation).

Research project. The research project should formulate an applied research question broadly related to one of the topics covered in class, explain the novelty relative to the existing literature, sketch the details of the economic environment/model used to address the question, formulate a quantitative strategy and include a detailed and realistic plan on how to obtain results. Ideally, by May 15 you are settled on the question, know the relevant literature, and have a clear plan on the model/method that you want to use. By that stage, you should have talked to me about your project at least once. It is ok if you want to continue working on one of the research project that you already started, provided that you will plan to use some of the methods learned in this class. In that case, please let me know as soon as you make that determination.

Each of you will give a 45 minutes presentation of the project on June 2 and June 4. In addition, you should submit a short write up of the project by June 9.

Preliminary list of topics

The plan is to cover the following topics in order. There might be some adjustments as we proceed, and I will keep you informed. The articles with a "*" are those that I plan to discuss in details in class. It would be good if you could have a look at those before we meet.

Sovereign debt and default

- **Class 1**: The workhorse model of sovereign debt and default

  * Aguiar, Mark, and Manuel Amador. "Chapter 11 - Sovereign Debt." In Handbook of International Economics, edited by Elhanan Helpman and Kenneth Rogoff Gita Gopinath, 4:647-87. Handbook of International Economics. Elsevier, 2014.

  Aguiar, Mark, and Gita Gopinath. "Defaultable Debt, Interest Rates and the Current Account." Journal of International Economics 69, no. 1 (June 2006): 64-83.

  * Arellano, Cristina. "Default Risk and Income Fluctuations in Emerging Economies." American Economic Review 98, no. 3 (June 2008): 690-712.

  Eaton, Jonathan, and Mark Gersovitz. "Debt with Potential Repudiation: Theoretical and Empirical Analysis." The Review of Economic Studies 48, no. 2 (April 1, 1981): 289-309.

- **Class 2**: Bringing the model to the data: numerical solution and calibration

  Aguiar, M., S. Chatterjee, H. Cole, and Z. Stangebye. "Chapter 21 - Quantitative Models of Sovereign Debt Crises." In Handbook of Macroeconomics, edited by John B. Taylor and Harald Uhlig, 2:1697-1755. Elsevier, 2016.

  * Chatterjee, Satyajit, and Burcu Eyigungor. "Maturity, Indebtedness, and Default Risk." American Economic Review 102, no. 6 (May 2012): 2674-99.

  * Hatchondo, Juan Carlos, Leonardo Martinez, and Horacio Sapriza. "Quantitative Properties of Sovereign Default Models: Solution Methods Matter." Review of Economic Dynamics 13, no. 4 (October 2010): 919-33.

  * Bocola, Luigi, Bornstein, Gideon and Alessandro Dovis. "Quantitative Sovereign Default Models and the European Debt Crisis." Journal of International Economics 118, May 2019: 20-30.

  * Herr and Maussner (2009). Dynamic General Equilibrium Modeling. Chapter 6

- **Class 3**: The costs of sovereign defaults

  Arellano, Cristina, Andrew Atkeson, and Mark Wright. "External and Public Debt Crises." NBER Macroeconomics Annual 30, no. 1 (2016): 191-244.

  Bulow, Jeremy and Kenneth Rogoff. "Sovereign Debt: Is to Forgive or to Forget?." American Economic Review, 79, no. 1 (1989): pp. 43-50

  Cole, Harald and Patrick J. Kehoe. "Models of Sovereign Debt: Partial vs General Reputation." International Economic Review, 39, no. 2 (1998): pp. 55-70

  * Hebert, Benjamin, and Jesse Schreger. "The Costs of Sovereign Default: Evidence from Argentina." American Economic Review, 107, no. 10 (2017): pp. 3119-3145

  * Yeyati, Eduardo Levy, and Ugo Panizza. "The Elusive Costs of Sovereign Defaults." Journal of Development Economics 94, no. 1 (January 2011): 95-105.

  * Mendoza, Enrique G., and Vivian Z. Yue. "A General Equilibrium Model of Sovereign Default and Business Cycles." The Quarterly Journal of Economics 127, no. 2 (May 1, 2012): 889-946.

  Du, Wenxin and Jesse Schreger. "Sovereign Risk, Currency Risk, and Corporate Balance Sheets." manuscript, Columbia Business School, September 2017

- **Class 4**: Sovereign default risk and banks' balance sheet

  * Arellano, Cristina, Bocola, Luigi, and Bai, Yan. "Sovereign Default Risk and Firm Heterogeneity", Manuscript, Stanford University, March 2019.

  Bocola, Luigi. "The Pass-Through of Sovereign Risk." Journal of Political Economy 124, no. 4 (July 7, 2016): 879-926.

  * Gennaioli, Nicola, Martin, Alberto, and Rossi, Stefano. "Banks, Government Bonds and Default: What do the Data Say?", forthcoming at the Journal of Monetary Economics

  Perez, Diego. "Sovereign Debt, Domestic Banks and the Provision of Public Liquidity." Manuscript, New York University, 2018.

* Morelli, Juan, Pablo Ottonello and Diego Perez. "Global Banks and Systemic Debt Crises", manuscript, NYU, 2019

- **Class 5**: Multiple equilibria

  Aguiar, Mark, and Amador, Manuel. "A Contraction for Sovereign Debt Models." Manuscript, Princeton University, 2019

  Auclert, Adrien, and Matthew Rognlie. "Unique Equilibrium in the Eaton-Gersovitz Model of Sovereign Debt." Journal of Monetary Economics 84 (December 2016): 134-46.

  * Bocola, Luigi, and Alessandro Dovis. "Self-Fulfilling Debt Crises: A Quantitative Analysis." American Economic Review 109, no. 12 (December 2019): 4343-4377.

  Calvo, Guillermo A. "Servicing the Public Debt: The Role of Expectations." American Economic Review 78, no. 4 (1988): 647-61.

  * Cole, Harold L., and Timothy J. Kehoe. "Self-Fulfilling Debt Crises." The Review of Economic Studies 67, no. 1 (2000): 91-116.

  Lorenzoni, Guido, and Ivan Werning. "Slow Moving Debt Crises." American Economic Review, 109, no. 9 (September 2019): 3229-63

Intermediation, financial crises and capital flows

- **Class 1**: A benchmark model

  * Bernanke, Ben S, Mark Gertler, and Simon Gilchrist. 1999. "The financial accelerator in a quantitative business cycle framework." Handbook of Macroeconomics 1:1341-1393.

  * Gertler, Mark, and Peter Karadi. "A Model of Unconventional Monetary Policy." Journal of Monetary Economics, Carnegie-Rochester Conference Series on Public Policy: The Future of Central Banking April 16-17, 2010, 58, no. 1 (January 2011): 17-34.

Gertler, Mark, and Peter Karadi. "QE 1 vs. 2 vs. 3...: A Framework for Analyzing Large-Scale Asset Purchases as a Monetary Policy Tool." International Journal of Central Banking 9, no. 1 (2013): 5-53.

* Gertler, Mark, and Nobuhiro Kiyotaki. "Chapter 11 - Financial Intermediation and Credit Policy in Business Cycle Analysis." In Handbook of Monetary Economics, edited by Benjamin M. Friedman and Michael Woodford, 3:547-99. Elsevier, 2010.

- **Class 2**: Bringing the model to data: numerical solution and calibration/estimation

  * Judd, Kenneth L., Lilia Maliar, Serguei Maliar, and Rafael Valero. "Smolyak Method for Solving Dynamic Economic Models: Lagrange Interpolation, Anisotropic Grid and Adaptive Domain." Journal of Economic Dynamics and Control 44 (July 2014): 92-123.

- **Class 3**: Financial amplification

  * Nobuhiro Kiyotaki and John Moore. "Credit Cycles." Journal of Political Economy Vol. 105, No. 2 (April 1997), pp. 211-248

  * Jermann, Urban and Vincenzo Quadrini. 2012. "Macroeconomic effects of financial shocks." American Economic Review 102 (1):238-71.

  * Krishnamurthy, Arvind. 2003. "Collateral constraints and the amplification mechanism." Journal of Economic Theory 111 (2):277-292.

  * Bocola, Luigi and Guido Lorenzoni. "Risk Sharing Externalities". Working paper. Stanford University, February 2020

  Di Tella, Sebastian. 2017. "Uncertainty shocks and balance sheet recessions." Journal of Political Economy 125 (6):2038-2081.

  Carlstrom, Charles T, Timothy S Fuerst, and Matthias Paustian. 2016. "Optimal contracts, aggregate risk, and the financial accelerator." American Economic Journal: Macroeconomics 8 (1):119-47.

- **Class 4**: Financial intermediation in international macro, UIP deviations, currency choices and crises

* Bocola, Luigi, and Guido Lorenzoni. “Financial Crises, Dollarization, and Lending of Last Resort in Open Economics." forthcoming at the American Economic Review.

* Burnside, Craig, Martin Eichenbaum, and Sergio Rebelo. “The returns to currency speculation in emerging markets." American Economic Review, 97, no. 2, pp. 333-338, 2007.

Gopinath, Gita and Jeremy Stein. “Banking, Trade, and the Making of a Dominant Currency." manuscript, Harvard University, 2018.

Krugman, Paul. “Balance sheets, the transfer problem, and financial crises." in International finance and financial crises: Essays in Honor of Robert P Flood, edited by P. Isard and A. Rose. Springer, 31-55.

* Hanno, Lustig and Adrien Verdehlan. “The Cross-Section of Foreign Currency Risk Premia and US Consumption Growth Risk." American Economic Review, 97, no. 1, pp. 89-117, 2007.

- **Class 5**: Financial intermediation in international macro, CIP deviations and exchange rates

* Amador, Manuel, Javier Bianchi, Luigi Bocola and Fabrizio Perri. “Exchange Rate Policies at the Zero Lower Bound.” forthcoming at the Review of Economic Studies

* Du, Wenxin, Alexandre Tepper, and Adrian Verdelhan. “Deviations from Covered Interest Rate Parity.” Journal of Finance 73, no. 3 (2018): 915:957

The role of households' heterogeneity over the business cycle

- **Class 1**: Benchmark models

* Krusell, Per and Anthony A Smith, Jr. 1998. “Income and wealth heterogeneity in the macroeconomy.” Journal of political Economy 106 (5):867-896.

* Krueger, Dirk, Kurt Mittman and Fabrizio Perri. “Macroeconomics and Heterogeneity, Including Inequality”, Handbook of Macroeconomics, Vol. 2, 2016

* Kaplan, Greg and Gianluca Violante. "Microeconomic Heterogeneity and Macroeconomic Shocks". Journal of Economic Perspective 32, no. 3 (Summer 2018): pp. 167-194

* Kaplan, Greg and Giovanni L Violante. 2014. "A model of the consumption response to fiscal stimulus payments." Econometrica 82 (4):1199-1239.

- **Class 2**: Bringing the model to the data: numerical solution and calibration

  * Maliar, Lilia, Serguei Maliar, and Fernando Valli. 2010. "Solving the incomplete markets model with aggregate uncertainty using the Krusell-Smith algorithm." Journal of Economic Dynamics and Control 34 (1):42-49.

  * Reiter, M. "Solving heterogeneous-agent models by projection and perturbation." Journal of Economic Dynamics and Control 33, no. 3 (2009): pp. 649-665

  * Wimberry, Thomas. "A method for solving and estimating heterogeneous agent macro models". Quantitative Economics 9, no. 3 (November 2018): pp. 167-194

  * Boppart, Timo, Per Krusell, and Kurt Mitman. "Exploiting MIT shocks in heterogeneous-agent economies: the impulse response as a numerical derivative." Journal of Economic Dynamics and Control 89 (2018): 68-92.

- **Class 3**: Guest class by Adrien Auclert on solving models with idiosyncratic income risk and incomplete markets

- **Class 4-5**: Households' heterogeneity and the business cycle

  * Berger, David, Luigi Bocola and Alessandro Dovis. "Imperfect Risk Sharing and the Business Cycle". Manuscript, Stanford University, June 2019

  * Guerrieri, Veronica and Guido Lorenzoni. 2017. "Credit crises, precautionary savings, and the liquidity trap." The Quarterly Journal of Economics 132 (3):1427-1467.

  * Bayer, Christian, Ralph Lutticke, Lien Pham-Dao and Volker Tjaden. "Precautionary Savings, illiquid assets, and the aggregate consequences of shocks to household income risk". Econometrica 87, no. 1: pp. 225-290

Challe, Edouard, Julien Matheron, Xavier Ragot, and Juan F Rubio-Ramirez. 2017. "Precautionary saving and aggregate demand." Quantitative Economics 8 (2):435-478.

* Acharya, Sushant and Keshav Dogra. "Understanding HANK. Insights from a PRANK". forthcoming at Econometrica

Heathcote, Jonathan and Fabrizio Perri. 2018. "Wealth and volatility." The Review of Economic Studies 85 (4):2173-2213.

Ravn, Morten O and Vincent Sterk. 2017. "Job uncertainty and deep recessions." Journal of Monetary Economics 90:125-141.

Werning, Ivan. "Incomplete Markets and Aggregate Demand". Manuscript, MIT, 2016