European University Institute
Department of Economics
Winter 2020 (Block III)
9:00 – 11:00, Wednesday February 12 – March 11

Advanced Macro

On Learning & Beliefs, Debt & Credit, Sovereign Debt & Risk-Sharing

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This (half-credit) advanced course is open to everyone, including 1st year graduates. The course is self-contained, although familiarity with recursive methods is recommended. It is an introduction to the three topics of the title. They lead to related extensive literatures in current research in macro and finance, which allow us to better understand economic cycles, crises and recessions, and how to design stabilization policies and institutions. For students taking the course for credit, the grade of the course will be based on class participation [15%] and a take-home exam [85%]; for the former participants are encouraged to read, at least the (*) articles ahead of the lectures.

Syllabus

1. Rationality and Subjective Beliefs: Asset Prices and Policy Design.

We reassess and relax the Rational Expectations Hypothesis and introduce models where agents form their expectations adaptively or are Bayesian learners. This introduction to learning in macro and finance helps to explain the behaviour of asset prices and in.

(*) Adam, Klaus, Albert Marcet, and Juan Pablo Nicolini. 2016. "Stock Market Volatility and learning," *Journal of Finance,* 71(1), 33-82.

Bao, Te, Cars Hommes, Joep Sonnemans, and Jan Tuinstra. 2012. "Individual Expectations, Limited Rationality and Aggregate Outcomes," *Journal of Economic Dynamics and Control,* 36(8), 1101-1120.

(*) Evans, George W. and Seppo Honkapohja. 2001. *Learning and Expectations in Macroeconomics*. Princeton University Press. Ch 1 & 2.

[1] * European University Institute, Barcelona Graduate School of Economics – UPF & CREi, NBER & Course materials, updated through the course, and office hours in the Economics Moodle.

Marcet, Albert and Juan P. Nicolini. 2003. "Recurrent Hyperinflations and Learning." American Economic Review 93 (5):1476-1498.

Sargent, Thomas J. 1999. *The Conquest of American Inflation*. Princeton University Press. Ch. 3 - 5.

Woodford, Michael. 2013. "Macroeconomic Analysis without the Rational Expectations Hypothesis," *Annual Review of Economics,* 5: 303-346.

2. Money market instruments, debt and credit

We start by studying two contrasting theories of the optimality of debt contracts, one of them especially suited to study models where financial frictions play an important role. These models are behind most current models of business cycles and crises.

Dang, Tri Vi, Gary Gorton and Bengt Holmström, 2015, "Ignorance, Debt and Financial Crises," Yale U. Working Paper

(*) Dang, Tri Vi, Gary Gorton and Bengt Holmström, 2019. "The Information View of Financial Crisis," Yale U. Working Paper

(*) Kiyotaki, Nobu and John Moore. 1997. "Credit Cycles," *Journal of Political Economy,* 105(2), 1477-1507.

Quadrini, Vincenzo, 2011. "Financial Frictions in Macroeconomic Fluctuations," *Economic Quarterly,* 97(3), 209-254.

Townsend, Robert M., 1979. "Optimal Contracts and Competitive Markets with Costly State Verification," *Journal of Economic Theory,* 21(2), 265 -293.

3. Self-Confirming and Self-Fulfilling Equilibria.

Based on the previous two lectures, we discuss different forms of multiplicity of equilibria and their applications to financial and debt crises.

Ayres, João, Gaston Navarro, Juan Pablo Nicolini and Pedro Teles, 2018. "Sovereign Default: The Role of Expectations," *Journal of Economic Theory,* 175, 803 – 812.

(*) Calvo, Guillermo, 1988. "Servicing the Public Debt: The Role of Expectations," American Economic Review, 78, 647 - 661.

Cole, Harold and Timothy Kehoe, 2000. "Self-Fulfilling Debt Crises," *The Review of Economic Studies*, 67, 91 - 116.

Fudenberg, Drew and David K. Levine. 2007. Self-Confirming and the Lucas Critique," Harvard University and Washington University.

(*) Gaballo, Gaetano, and Ramon Marimon. 2019. "Breaking the Spell with Credit-Easing: Self-Confirming Credit Crises in Competitive Search Economies," EUI.

Sargent, Thomas J. 1999. *The Conquest of American Inflation*. Princeton University Press. Ch.7.

4. Sovereign debt: Value, Default and Crises.

A core part of the course is the analysis of sovereign debt. We revisit classical models of default and the recent literature on the value of sovereign debt.

Aguiar, Manuel and Manuel Amador, 2014. "Sovereign Debt," in *Handbook of International Economics*, Vol. 4, pp. 647 - 687. North Holland.

Aguiar, Manuel and Harold Cole, 2016. "Quantitative Models of Sovereign Debt Crises**,"** in *Handbook of Macroeconomics*, Vol. 4.

(*) Arellano, Cristina, 2008. "Default Risk and Income Fluctuations in Emerging Markets*," American Economic Review*, 98(3), 690 - 712.

(*) Cochrane, John H. 2019. "The Value of Government Debt," NBER Working Paper 26090.

Sargent, Thomas J. 2012. Nobel Lecture: United States Then, Europe Now, *Journal of Political Economy,* 120, 1, 1-40.

5. Heterogeneous Countries and Agents: Risk-sharing contracts and institutions, and reassessing complete markets when agents have different beliefs.

We close the course with an introduction to Recursive Contracts, which then we apply to study risk-sharing contracts and the design of a European Stability Fund, as a development of the European Stability Mechanism (ESM). We end with a challenge that models with heterogeneous beliefs reveals.

(*) Ábrahám, Árpad, Eva Cárceles-Poveda, Yan Liu and Ramon Marimon, 2019. "On the Optimal Design of a Financial Stability Fund," EUI.

(*) Blume, Lawrence E. & Cogley, Timothy & Easley, David A. & Sargent, Thomas J. & Tsyrennikov, Viktor, 2018. "A case for incomplete markets," *Journal of Economic Theory*,178(C), 191-221.

Chien, YiLi, Harold Cole and Hanno Lustig, 2011. "A Multiplier Approach to Understanding the Macro Implications of Household Finance," *Review of Economic Studies,* 78(1), 199-234.

Marcet, Albert and Ramon Marimon, 2019. "Recursive Contracts," *Econometrica,* 87(5), 1589 – 1631.

Müller, Andreas, Kjetil Storesletten and Fabrizio Zilibotti, 2019. "Sovereign Debt and Structural Reforms," *American Economic Review,* 109(12), 4220 – 4259.