CREI Course Offer – Summer 2024

Category	Description
Summer School Description	The Barcelona CREI Macroeconomics Summer School offers an overview of the current state of research in key areas of macroeconomics. The courses are taught by leading experts in their fields. They cover recent developments in different areas of macroeconomics, including international macroeconomics, asset and credit bubbles, sovereign debt crises, numerical methods, firms and finance, and econometrics for policy evaluation. A key benefit of attending this summer school is that courses provide both technical tools and "big picture" ideas on macroeconomics and finance, so that they can be useful for advanced students and practitioners alike. Moreover, faculty are accessible to summer school participants for lively discussions on research and – more generally – on course contents. CREi Centre de Recerca en Economia Internacional This Summer School is jointly organized by the Barcelona School of Economics and the Center for Research in International Economics (CREI), a research institute sponsored by the Generalitat de Catalunya and Universitat Pompeu Fabra, in fulfillment of its aim to promote the dissemination of research in macroeconomics and related areas.

Participant Profile	The courses are aimed at advanced undergraduate and graduate students, as well as more senior researchers and practitioners willing to brush up their knowledge and expose themselves to the latest advances in academic research.
Prerequisites or other specific criteria	Familiarity with basic modeling and econometric tools is recommended to take full advantage of course materials.

Course list for 2024

Code	Course	Professor	Time	Start	End
24ME06	**The Macroeconomics of Credit and Asset Bubbles**	**Alberto Martin**	9.00-11.00	25-Jun	29-Jun
24ME07	**Sovereign Debt Crises: Theory, Evidence and Policy**	**Fernando Broner**	11.30-13.30	25-Jun	29-Jun
24ME02	**Numerical Methods for Fiscal and Monetary Policy Analysis**	**Davide Debortoli**	14.30-16.30	25-Jun	29-Jun
24ME02P	*Numerical Methods: Computer Lab Practicals*	Davide Debortoli	17.00-18.00	25-Jun	29-Jun
24ME13	**Labor Misallocation**	**Joan Monrás**	9.00-11.00	1-Jul	5-Jul
24ME14	**The Data Economy: Tools and Applications**	**Isaac Baley**	11.30-13.30	1-Jul	5-Jul
24ME12	**POLICYMETRICS: Econometrics for Macroeconomic Policy Making**	**Geert Mesters**	14.30-16.30	1-Jul	5-Jul
24ME12P	*POLICYMETRICS: Econometrics for Macroeconomic Policy Making: Lab Practicals*	Geert Mesters	18.00-19.00	1-Jul	5-Jul

Course details:

COURSE TITLE	Sovereign Debt Crises: Theory, Evidence and Policy
Overview and Objectives	This course provides an overview of sovereign debt crises from theoretical, empirical and policy points of view. It covers both traditional and new theories that emphasize the interplay between international and domestic financial markets, and the relevant empirical evidence. It discusses the distinction between liquidity and solvency crises and the appropriate policy responses. The last part of the course is devoted to an analysis of the European crisis. The course is aimed at students, researchers, and practitioners. It provides a formal analysis of some of the main theoretical models and empirical studies in the sovereign debt academic literature. At the same time, the presentation is accessible as it emphasizes conceptual understanding and policy implications.
Prerequisites	NA
Course Outline	1. What are the costs of sovereign default? Reputation and sanctions 2. Market structure and defaults: Secondary markets and collateral damage 3. Rollover crises: Lender of last resort and moral hazard 4. Solvency crises: Debt overhang, buybacks and restructuring 5. Lessons from Europe
List of References	● Acharya, V., I. Drechsler, and P. Schnabl (2014), "A pyrrhic victory? Bank bailouts and sovereign credit risk," *Journal of Finance*

	● Aguiar, M. and G. Gopinath (2006), "Defaultable debt, interest rates and the current account," *Journal of International Economics* ● Arellano, C. (2008), "Default risk and income fluctuations in emerging economies," *American Economic Review* ● Arellano, C. and A. Ramanarayanan (2012), "Default and the maturity structure in sovereign bonds," *Journal of Political Economy* ● Broner, F., A. Erce, A. Martin, and J. Ventura (2014), "Sovereign debt markets in turbulent times: Creditor discrimination and crowding-out effects," *Journal of Monetary Economics* ● Broner, F., G. Lorenzoni and S. Schmukler (2013), "Why do emerging economies borrow short term?" *Journal of the European Economic Association* ● Broner, F., A. Martin and J. Ventura (2010), "Sovereign risk and secondary markets," *American Economic Review* ● Broner, F. and J. Ventura (2016), "Rethinking the effects of financial globalization," *Quarterly Journal of Economics* ● Cole, H. and T. Kehoe (2000), "Self-fulfilling debt crises," *Review of Economic Studies* ● Cruces, J. and C. Trebesch (2013), "Sovereign defaults: The price of haircuts," *AEJ: Macroeconomics* ● Gennaioli, N., A. Martin and S. Rossi (2014), "Sovereign default, domestic banks, and financial institutions," *Journal of Finance* ● Obstfeld, M. and K. Rogoff (1996), Foundations of International Macroeconomics, Ch. 6.1 ● Obstfeld, M. and K. Rogoff (1996), Foundations of International Macroeconomics, Ch. 6.2 ● Reinhart, C. and K. Rogoff (2011), "From financial crash to debt crisis," *American Economic Review* ● Reinhart, C., V. Reinhart, and K. Rogoff (2012), "Public debt overhangs: Advanced-economy episodes since 1800," *Journal of Economic Perspectives* ● Reinhart, C. and B. Sbrancia (2015), "The liquidation of government debt," *Economic Policy* ● Reinhart, C. and C. Trebesch (2016), "Sovereign debt relief and its aftermath," *Journal of the European Economic Association* ● Rose, A. (2005), "One reason countries pay their debts: Renegotiation and international trade," *Journal of Development Economics*

Software / Hardware Needed	NA
About the Instructors	Fernando Broner is a Senior Researcher at CREI and a Research Professor at the BSE. He is Co-Director of the Master in International Trade, Finance and Development at the BSE and coordinator of Macroeconomics teaching in the PhD program at Universitat Pompeu Fabra. He has been Visiting Professor at MIT and London Business School, Assistant Professor at the University of Maryland, Advisor at the Bank of Spain's Division of International Economics and Visiting Scholar at the IMF and World Bank. Professor Broner received his PhD in Economics from MIT in 2000. He is a Research Fellow at CEPR and has been a Co-Editor at the Journal of International Economics. He was awarded a European Research Council Starting Grant in 2010. His work has appeared in the *American Economic Review*, the *Review of Economic Studies,* the *Quarterly Journal of Economics*, and the *Journal of the European Economic Association*, among others. His research interests include International Economics, Finance, and Macroeconomics.

COURSE TITLE	The Macroeconomics of Credit and Asset Bubbles
Overview and Objectives	What are bubbles? What are their effects on the economy? How should policymakers deal with them? In this course, we address these questions from a macroeconomic perspective. We first review the stylized evidence on credit and asset bubbles. We then develop a workhorse model to think about bubbles and their macroeconomic effects. In particular, we focus on the effects of credit and asset bubbles on business cycle models. We conclude by using the model to shed light two key debates regarding bubbles: (i) How

	should monetary policy respond to asset bubbles?; (ii) What roles do bubbles play in driving credit booms and busts? This course is intended for students, researchers and practitioners who want to become familiar with the state of knowledge on the origins and macroeconomic effects of bubbles.
Prerequisites	NA
Course Outline	• Bubbles and crashes: a review of the empirical evidence • The theory of rational bubbles: an introduction • Credit and asset bubbles in business cycle models • Bubbles and monetary policy • Bubbles, credit booms, and information depletion
List of References	• Asriyan, V., L. Fornaro, A. Martin, and J. Ventura, Monetary Policy for a Bubbly World, Review of Economic Studies, forthcoming. • Asriyan, V., L. Laeven, and A. Martin, Collateral Booms and Information Depletion, Review of Economic Studies, forthcoming. • Abel, A., N. Mankiw, L. Summers and R. Zeckhauser, Assessing Dynamic Efficiency: Theory and Evidence, Review of Economic Studies, 1989. • Carvalho, V., A. Martin and J. Ventura, Bubbly Business Cycles, American Economic Review, 2012. • Gali, J., Monetary Policy and Bubbles in a New Keynesian Model with Overlapping Generations, American Economic Journal: Macroeconomics. • Guerrón-Quintana, P., Hirano, T. and R. Jinnai, Recurrent Bubbles and Growth, Boston University mimeo, 2021. • Hiraona, T., M. Inabab, and N. Yanagawa, Asset Bubbles and Bailouts, Journal of Monetary Economics, 2015 • Leroy, S., Rational Exuberance, Journal of Economic Literature, 2004. • Martin, A. and J. Ventura, Theoretical Notes on Bubbles and the Current Crisis, IMF Economic Review, 2011. • Martin, A. and J. Ventura, Economic Growth with Bubbles, American Economic Review, 2012.

	● Martin, A. and J. Ventura, Managing Credit Bubbles, Journal of the European Economic Association, 2016. ● Martin, A. and J. Ventura, The Macroeconomics of Rational Bubbles: A User's Guide, Annual Review of Economics, 2018. ● Tirole, J., Asset Bubbles and Overlapping Generations, Econometrica, 1985.
Software / Hardware Needed	NA
About the Instructors	Alberto Martin is a Senior Researcher at the Center for Research in International Economics (CREI), an Adjunct Professor at Universitat Pompeu Fabra, a Research Professor at the BSE and a Research Fellow at the CEPR (London). He has been a Research Fellow and a Senior Economist at the International Monetary Fund, a Senior Advisor at the European Central Bank, a consultant for the United Nations Development Programme, and an economist in Argentina's Ministry of Economics. Professor Martin was awarded a Fulbright Fellowship (2000), a Lamfalussy Fellowship from the European Central Bank (2011), and Consolidator and Advanced Research Grants from the European Research Council (2014 and 2022, respectively). He has been a Member of the Editorial Board of the *Review of Economic Studies* and an Associate Editor of the Journal of International Economics. His work has appeared in the *American Economic Review*, the *Review of Economic Studies,* the *Journal of Finance*, and the *Journal of the European Economic Association*, among others. His research interests include Macroeconomics, Finance and International Economics.

COURSE TITLE	Numerical Methods for Fiscal and Monetary Policy Analysis
Overview and Objectives	This course will cover state-of-the-art techniques to solve and simulate modern macroeconomic models, with specific applications to models used for fiscal and monetary policy analysis. Through a combination of theory classes and lab sessions, participants will learn the main methodologies, their pros and cons, and how to implement them in specific applications. Some examples are models to study the role of a zero-lower bound constraints on the nominal interest rate and forward-guidance policies, sovereign debt models, models with financial frictions, and heterogeneous agent models. The course is designed for graduate students, researchers and practitioners in policy institutions who would like to upgrade their toolbox for solving and analyzing modern macroeconomic models, and for studying their policy implications. Computer Lab Practicals The course includes 5 hours of practical sessions to give participants the opportunity to familiarize with the different routines described in class, and will demonstrate their advantages and disadvantages in terms of accuracy and efficiency.
Prerequisites	No previous knowledge of numerical methods is required, but a basic knowledge of MATLAB (or another programming language) would be very helpful.
Course Outline	● Introduction to Local Solution Methods (Perturbation): Basic principles about solving and simulating dynamic models; linear and higher-order approximation of stochastic models (the perturbation method); ● Fiscal and Monetary Policy Rules: Simple rules; regime-switches; the zero-lower bound. ● Optimal Fiscal and Monetary Policy: The welfare criterion; optimal simple rules; optimal Ramsey policy; commitment vs. discretion.

	● Solving models with Global Approximations: Models with borrowing constraints; sovereign default models. ● Heterogeneous Agent Models: How to deal with idiosyncratic and aggregate uncertainty; solution with perturbation methods; solution with sequence-space Jacobian.
List of References	Main references (additional references will be provided during the course) ● Auclert, A., Bardóczy, B., Rognlie, M., & Straub, L. (2021), "Using the sequence-space Jacobian to solve and estimate heterogeneous-agent models," Econometrica, 89(5), 2375-2408. ● Fernandez-Villaverde J. and J. Rubio Ramirez (2016), "Solution and Estimation Methods for DSGE Models", Handbook of Macroeconomics, Vol. 2. ● Guerrieri, L. and M. Iacoviello (2015), "OccBin: A toolkit for solving dynamic models with occasionally binding constraints easily", Journal of Monetary Economics, 70, 22-38. ● Debortoli, D., Galí, J., & Gambetti, L. (2020), "On the empirical (ir) relevance of the zero lower bound constraint," NBER Macroeconomics Annual, 34(1), 141-170. ● Schmitt-Grohé, S., and M. Uribe (2005), "Optimal fiscal and monetary policy in a medium-scale macroeconomic model," NBER Macroeconomics Annual, 20, 383-425.
Software / Hardware Needed	Sample codes and exercises will be provided in MATLAB.
About the Instructors	Davide Debortoli is Professor of Economics at UPF, Research Associate at CREI, Affiliated Professor at the BSE and a Research Fellow at the CEPR. He has held an academic position at the University of California San Diego, and visiting positions at the Norges Bank and Bocconi University. He has been awarded a Marie Curie Fellowship from the European Commission (2016), and the Wim Duisenberg Fellowship from the European Central Bank (2020). His research interests include Macroeconomics, Fiscal Policy and Monetary Policy.

COURSE TITLE	The Data Economy: Tools and Applications
Overview and Objectives	In today's interconnected world, businesses across modern economies are immersed in a data revolution. They gather, dissect, utilize, and trade colossal volumes of data. Starting from the premise that data is digitized information that facilitates prediction and reduces uncertainty, this course leverages a range of theoretical frameworks at the research frontier in macroeconomics and finance to model and measure data economies. By doing so, we aim to uncover the intricate ways in which firm-level data choices resonate throughout the broader macroeconomic and financial landscapes. Our applications span a wide spectrum, encompassing critical aspects such as assessing the economic worth of data and unraveling its influence on the structure of production, pricing dynamics, firm behavior, market competitiveness, intermediation, and the intricacies of financial markets. The course is aimed at students and practitioners interested in understanding contemporary issues related to the data economy, its welfare consequences, and optimal data policy. We put forward a broad research agenda for an interdisciplinary audience with a formal yet accessible approach.
Prerequisites	NA

Course Outline	• Introduction to the Data Economy • Firms' Data Sources • Data-Driven Predictions and Aggregate Outcomes • Using Data in Strategic Settings • Data in Production and Data Feedback Loop • Data Measurement and Valuation • Data Policy and Welfare
About the Instructors	Isaac Baley is an associate professor with tenure at Universitat Pompeu Fabra, an associate researcher at CREI, and an affiliated professor at the Barcelona School of Economics. Isaac received his Ph.D. in Economics from New York University. His research aims to understand the impact of micro-level frictions -- imperfect information, adjustment costs, and search -- for macroeconomic outcomes. He received the EEA Award for Exceptional Teaching and an ERC grant.

COURSE TITLE	POLICYMETRICS: Econometrics for Macroeconomic Policy Making
Overview and Objectives	Real world policy decisions often result from analyzing different models and making judgment calls. This practical approach has benefits in terms of robustness, but a major downside is that it can be difficult to identify the most appropriate course of policy. Questions arise, such as how to accurately calibrate the magnitude and timing of a fiscal package or how to strike the right balance between inflation and unemployment through monetary policy. In this course, participants will learn how modern econometric methods, in particular methods for impulse response estimation and forecasting, can be used as building blocks to evaluate and improve practical macroeconomic policy decisions. The methodology allows participants to combine insights from multiple economic models, qualitative evidence, and judgment to reach optimal policy decisions in complex and data rich macroeconomic environments. The course is designed for monetary and fiscal policy makers, their staff members, and researchers and PhD students interested in the econometrics of policy making.
Prerequisites	Participants should be familiar with basic macroeconometric models and methods.
Course Outline	The course provides a bottom-up approach to explain the econometrics of policy making. • Impulse response estimation and forecasting • Testing optimality of policy decisions • Optimizing policy decisions • Communicating policy decisions • Ranking policy institutions

	Participants will be exposed to a variety of real time policy problems and learn how to analyze policy decisions using minimal assumptions. Implementation material is provided for all methods and practical assignments allow to develop a quick understanding for implementing.
List of References	Barnichon, R. and Mesters, G., A Sufficient Statistics Approach for Macro Policy, American Economic Review, 2023. Barnichon, R. and Mesters, G., Evaluating Policy Institutions ---150 years of US Monetary Policy---, Working Paper, 2023. Barnichon, R. and Mesters, G., The Phillips Multiplier, Journal of Monetary Economics, 2021. Barnichon, R. and Mesters, G., Identifying modern macro equations with old shocks, The Quarterly Journal of Economics, 2020. Chetty, R., Sufficient Statistics for Welfare Analysis: A Bridge Between Structural and Reduced-Form Methods, Annual Review of Economics, 2009. Elliot, G., and Timmermann, A., Economic Forecasting. Princeton University Press, 2016. Hansen, L.P., Sargent, T.J., Robustness, Princeton University Press, 2008. McKay, A. and Wolf, C., What Can Time-Series Regressions Tell Us About Policy Counterfactuals?, Econometrica, 2023. Ramey, V., Macroeconomic Shocks and Their Propagation. In Handbook of Macroeconomics. , ed. J. B. Taylor and H. Uhlig. Amsterdam, North Holland:Elsevier, 2016. Sims, C. A., and Zha, T, Does Monetary Policy Generate Recessions?, Working Paper, 1995.

Software / Hardware Needed	Empirical implementation code is provided in Matlab and R.
About the Instructors	Geert Mesters is an Associate Professor at Universitat Pompeu Fabra, Research Professor at the BSE and an Associate Researcher at CREI. He holds a PhD from the Tinbergen Institute and VU Amsterdam. He has been awarded a Starting Grant from the European Research Council, a VENI research grant from the Netherlands Ministry of Science and a Ramon y Cajal fellowship from the Spanish Ministry of Science. He received the Arnold Zelner thesis award from the American Statistical Association and the Christian Huygens award. His research has been published in the American Economic Review, Quarterly Journal of Economics, Journal of Econometrics, The Review of Economics and Statistics and the Journal of Monetary Economics. His research interests include macroeconomics, econometrics and statistics.