Matthias Rottner

Department of Economics
European University Institute
Via delle Fontanelle, 18
50014 San Domenico di Fiesole (FI), Italy

Phone: + 49 176 707 36454
Email: matthias.rottner@eui.eu
sites.google.com/view/matthias-rottner/

Placement Officer: David Levine   david.levine@eui.eu +39 0554685913

Research Interests

Macroeconomics, Monetary Policy, Macro-Finance, Computational Methods

References

Evi Pappa	Leonardo Melosi	Francesco Bianchi
Universidad Carlos III Madrid	Federal Reserve Bank of Chicago	Duke University
ppappa@eco.uc3m.es	leonardo.melosi@chi.frb.org	francesco.bianchi@duke.edu
+34 916 249 623	+1 312 718 8361	+ 1 412 715 6283

Education

09/2016 - present	Ph.D. in Economics, European University Institute Advisors: Evi Pappa, Leonardo Melosi Thesis Title: ”Essays in Macroeconomics” Expected Completion: May 2021
01/2019 - 06/2019	Visiting Researcher, Federal Reserve Bank of Chicago
01/2019 - 06/2019	Visiting Researcher, Northwestern University
09/2016 - 08/2017	MRes in Economics, European University Institute
09/2014 - 08/2016	MSc in Economics, University of Copenhagen
04/2011 - 03/2014	BA in Economics, University of Erlangen-Nürnberg

Professional Experience

09/2020 - 12/2020	Consultant, European Central Bank DG Macroprudential Policy and Financial Stability
09/2019 - 08/2020	PhD Traineeship, European Central Bank DG Macroprudential Policy and Financial Stability
08/2018 - 12/2018	Internship, Deutsche Bundesbank DG Financial Stability
Summer 2015,16,17	Internship, Bank of Estonia Research Unit
04/2014 - 06/2014	Internship, Kiel Institute for the World Economy Economics and Research Department

Teaching

09/2019 - 09/2019	Macro-Prudential Policy: A Quantitative Approach (Graduate)
	Florence School of Banking and Finance, TA for Enrique Mendoza
11/2017 - 01/2018	Macroeconomics I (Graduate)
	European University Institute, TA for Axelle Ferrière
10/2011 - 03/2014	Statistics (Undergraduate)
	University of Erlangen-Nürnberg, TA for Ingo Klein

Working Papers

Financial Crises and Shadow Banks: A Quantitative Analysis *(Job Market Paper)*

Motivated by the build-up of shadow bank leverage prior to the Great Recession, I develop a nonlinear macroeconomic model that features excessive leverage accumulation and show how this can cause a bank run. Introducing risk-shifting incentives to account for fluctuations in shadow bank leverage, I use the model to illustrate that extensive leverage makes the shadow banking system runnable, thereby raising the vulnerability of the economy to future financial crises. The model is taken to U.S. data with the objective of estimating the probability of a run in the years preceding the financial crisis of 2007-2008. According to the model, the estimated risk of a bank run was already considerable in 2004 and kept increasing due to the upsurge in leverage. I show that levying a leverage tax on shadow banks would have substantially lowered the probability of a bank run. Finally, I present reduced-form evidence that supports the tight link between leverage and the possibility of financial crises.

Hitting The Elusive Inflation Target *with F. Bianchi and L. Melosi, NBER WP 26279*

Since the 2001 recession, average core inflation has been below the Federal Reserve's 2% target. This deflationary bias is a predictable consequence of the current symmetric monetary policy strategy that fails to recognize the risk of encountering the zero lower bound. An asymmetric rule according to which the central bank responds less aggressively to above-target inflation corrects the bias, improves welfare, and reduces the risk of deflationary spirals - a pathological situation in which inflation keeps falling indefinitely. This approach does not entail any history dependence or commitment to overshoot the inflation target and can be implemented with an asymmetric target range.

Reversal Interest Rate and Macroprudential Policy *with M. Darracq Pariès and C. Kok, ECB WP 2487*

Could a monetary policy loosening entail the opposite effect than the intended expansionary impact in a low interest rate environment? We demonstrate that the risk of hitting the rate at which the effect reverses depends on the capitalization of the banking sector using a non-linear macroeconomic model calibrated to the euro area economy. The framework suggests that the reversal interest rate is located in negative territory of around -1% per annum. The possibility of the reversal interest rate creates a novel motive for macroprudential policy. We show that macroprudential policy in the form of a countercyclical capital buffer, which prescribes the build-up of buffers in good times, can mitigate substantially the probability of encountering the reversal rate, improves welfare and reduces economic fluctuations. This new motive emphasizes also the strategic complementarities between monetary policy and macroprudential policy.

Pandemic Recessions and Contact Tracing *with L. Melosi, CEPR WP 15482*

We study contact tracing in a new macro-epidemiological model in which infected agents may not show any symptoms of the disease and the availability of tests to detect these asymptomatic spreaders of the virus is limited. Contact tracing is a testing strategy aiming at reconstructing the infection chain of newly symptomatic agents. A coordination failure arises as agents fail to internalize that their individual consumption and labor decisions raise the number of traceable contacts to be tested, threatening the viability of the tracing system. The collapse of the tracing system considerably aggravates the pandemic's toll on the economy and mortality. A timely, limited lockdown solves the coordination failure allowing policymakers to buy time to expand the testing scale and to preserve the tracing system. We provide theoretical underpinnings to the risk of becoming infected in macro-epidemiological models. Our solution method is not affected by curse-of-dimensionality problems.

Work in Progress

Solving New Keynesian Models with Machine Learning: A Neural Network Approach *with H. Kase*

We analyze the potential of machine learning techniques to solve nonlinear macroeconomic models with an occasionally binding zero lower bound on the interest rate. We show that neural networks can capture the nonlinear dynamics that arise from the zero lower bound such as precautionary savings and the deflationary bias.

Understanding Adventures at the Zero Lower Bound Through Heterogenity

Policy Publications

Enhancing macroprudential space when interest rates are "low for long" with M. Darracq Pariès and C. Kok; ECB Macroprudential Bulletin, Issue 11, 2020 - *Link*

A macroprudential perspective on replenishing capital buffers with K. Budnik, M. Darracq Pariès, C. Kok, J. Lang, M. Lo Duca, E. Rancoita, C. Rodriguez d'Acri and E. Ryan; ECB Financial Stability Review, Vol. 2, 2020 - *Link*

Presentations (incl. scheduled)

2020	European Central Bank DG-Research Ad Hoc Seminar
	De Nederlandsche Bank 23rd Annual Research Conference
	CEPR and Bank of Finland Joint Conference on Monetary Policy Tools
	VfS Annual Conference 2020
	28th Annual Symposium of the Society for Nonlinear Dynamics and Econometrics
	4rd Annual Workshop of ESCB Research Cluster 3 (discussant)
	European Central Bank DG-MF Seminar Series
	NBER SI 2020 Monetary Economics (co-author presented)
	Danmarks Nationalbank Research Unit
2019	Northwestern University Macroeconomics Lunch Seminar
	Bank of Estonia Christmas Seminar
2018	Deutsche Bundesbank DSGE Working Group
	Bank of Estonia Christmas Seminar

Scholarships

2021	PhD Grant, European University Institute
2016 - 2021	PhD Scholarship, German Academic Exchange Service (DAAD)
2019	U.S. Department Visiting Grant, European University Institute

Training Activities and Summer Schools

2018	Credit and the Macroeconomy, FBF Florence, Moritz Schularick
2018	Financial Frictions and Macroprudential Policy, FBF Florence, Nobuhiro Kiyotaki
2017	Estimation with DSGE & Time-Series Models, CEMFI Madrid, Marco Del Negro
2017	Computational Methods, FBF Florence, Fabio Canova & Wouter den Haan
2016	Macroeconometrics Summer School, BGSE Barcelona, Luca Gambetti & Gary Koop

Skills

Software:	Matlab, Dynare, Stata, Python, LaTeX
Languages:	English (fluent), German (native), French (conversational), Estonian (basic)

Personal Information

Citizenship:	German