

CONTACT INFORMATION

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WORK EXPERIENCE

Bank of Finland, Monetary Policy and Research Department, Research Unit
Adviser (May 2018 to present)
Senior economist (September 2014 to April 2018)
Economist (September 2012 to August 2014)

Centro de Economia e Finanças da Universidade do Porto (*CEF.UP*), Faculdade de
Economia da Universidade do Porto, University of Porto
External research affiliate (January 2011 to present)

IMFS, Goethe University Frankfurt
“Robert Solow” postdoctoral fellow (September 2011 to August 2012)

European Central Bank, Monetary Policy Strategy Division
Trainee (May 2011 to August 2011)

RESEARCH INTERESTS

Macroeconomics, DSGE modelling, financial economics and econometrics

EDUCATION

Ph. D. in Economics, University of Porto, Portugal
Thesis title: “*Macroeconomics of Investment Dynamics and Financing*”
May 2011

Visiting Ph. D. Scholar, Columbia University, New York
August 2009 to July 2010

M. Eng (*Laurea* in Ingegneria Gestionale), University of Brescia, Italy
March 2005

ADDITIONAL EDUCATION

- 2016 EABCN training school on “Advances in Bayesian analysis of DSGE models”, European University Institute, Florence
- 2015 Course on “Identification analysis and global sensitivity analysis for macroeconomic models”, Joint Research Centre and Università Cattolica, Milan
- 2013 Advanced workshop for central bankers, Center for International Macroeconomics, Northwestern University, Evanston
- 2009 Dynare summer school, CEPREMAP, Paris
- 2008 Ninth Trento summer school intensive course in “Financial instability and crises”, CEEL-University of Trento

SHORT VISIT

- 2016 Oxford University (2 weeks)

PUBLICATIONS

- 2023 “**Inflation dynamics in the frequency domain**” (with Manuel M. F. Martins), *Economics Letters*, 231, October 2023
- 2022 “**Investment dynamics and forecast: mind the frequency**” (with Juha Kilponen), *Finance Research Letters*, 49, October 2022

- 2021 **"Time-frequency forecast of the equity premium"** (with Gonalo Faria), *Quantitative Finance*, **21**(12), December 2021, 2119-2135
- 2021 **"Bond vs bank finance and the Great Recession"** (with Manuel M. F. Martins), *Finance Research Letters*, **39**, March 2021
- 2020 **"The yield curve and the stock market: mind the long run"** (with Gonalo Faria), *Journal of Financial Markets*, **50**, September 2020
- 2020 **"Investment, Tobin's Q, and cash flow across time and frequencies"**, *Oxford Bulletin of Economics and Statistics*, **82**(2), April 2020, 331-346
- 2018 **"Forecasting stock market returns by summing the frequency-decomposed parts"** (with Gonalo Faria), *Journal of Empirical Finance*, **45**, 228-242
- 2017 **"Financial shocks, financial stability, and optimal Taylor rules"** (with Manuel M. F. Martins and Ins Drumond), *Journal of Macroeconomics – Special Issue on "Banking in Macroeconomic Theory and Policy"*, **54**(B), December 2017, 187-207
- 2016 **"Time-frequency characterization of the U.S. financial cycle"**, *Economics Letters*, **144**, July 2016, 75-79
- 2014 **"Investment dynamics with information costs"**, *Journal of Money, Credit, & Banking*, **46**(8), December 2014, 1627-1656
- 2014 **"Pervasive inattentiveness"**, *Economics Letters*, **125**(2), November 2014, 287-290
- 2014 **"Sticky information models in Dynare"** (with Maik Wolters), *Computational Economics*, **43**(3), March 2014, 357-370
- 2013 **"(Un)anticipated monetary policy in a DSGE model with a shadow banking system"** (with Manuel M. F. Martins and Ins Drumond), *International Journal of Central Banking*, **9**(3), September 2013, 73-117 (this paper is available for replication in the Macroeconomic Model Data Base at <http://www.macromodelbase.com/>)

PAPERS UNDER REVIEW AT JOURNALS

"Forecast combination in the frequency domain" (with Gonalo Faria), Bank of Finland Research Discussion Paper 01 / 2023

“Monetary policy rules: model uncertainty meets design limits” (with Alexander Dück), Bank of Finland Research Discussion Paper 12 / 2023 (previously circulated as “Robust frequency-based monetary policy rules”, IMFS Working Paper Series No. 180, February 2023)

“Forecasting inflation with the New Keynesian Phillips Curve: frequency matter” (with Manuel M. F. Martins), Bank of Finland Research Discussion Paper 04 / 2020

WORKING PAPERS / WORK IN PROGRESS

- 2023 **“The economic value of frequency-domain information”** (with Gonçalo Faria) (previously circulated as “Frequency-domain information for active portfolio management”, Bank of Finland Research Discussion Paper 02 / 2020)
- 2023 **“Robust design of countercyclical capital buffer rules”** (with Dominik Hecker, Hun Jang, and Margarita Rubio)
- 2021 **“Review of macroeconomic modelling in the Eurosystem: current practices and scope for improvement”** (with several coauthors from the ECB and NCBs), Occasional Paper Series 267, European Central Bank
- 2020 **“The Aino 3.0 model”** (with Aino Silvo), Bank of Finland Research Discussion Paper 09 / 2020
- 2019 **“Assessing US aggregate fluctuations across time and frequencies”** (with Thomas Lubik and Christian Matthes), Bank of Finland Research Discussion Paper 05 / 2019
- 2016 **“The Aino 2.0 model”** (with Juha Kilponen, Seppo Orjasniemi and Antti Ripatti), Bank of Finland Research Discussion Paper 16 / 2016 (this paper is available for replication in the Macroeconomic Model Data Base at <http://www.macromodelbase.com/>)
- 2013 **“Lumpy investment in sticky information general equilibrium”**, Bank of Finland Research Discussion Paper 16 / 2013

OTHER WORKS

- 2022 **“Optimal bank capital requirements: What do the macroeconomic models say?”** (with Adam Gulan and Esa Jokivuolle), Bank of Finland Economics Review 02 / 2022

- 2019 “**Moving macroeconomic analysis beyond business cycles**” (with Renee Haltom, Thomas Lubik and Christian Matthes), Federal Reserve Bank of Richmond Economic Brief, 2019, 19-04
- 2012 “**Notes on the implementation of the Christiano, Motto and Rostagno (2010) model in Dynare**”, available at http://fabioverona.rvsteam.net/research_papers_5.html

POLICY ACTIVITIES

2015-2016 Member of the Task Force on Operationalizing Macroprudential Research under the Macroprudential Policy Group of the European Central Bank’s Financial Stability Committee. Main task: operationalization of the ECB model for macroprudential policy analysis and simulations (known as “3D model”) to Finland

Since 2014 Developing and maintaining the DSGE models (*Aino 2.0* and *Aino 3.0*) used for forecasting and policy simulations at the Bank of Finland

CONFERENCES AND SEMINARS

2023 Conferences: Annual Conference of the **International Association for Applied Econometrics** (Oslo), **Dynare** conference (Central Bank of Malta, scheduled)

Seminars: **Bank of Finland** (4x), **Labore** (Helsinki, scheduled)

2022 Conferences: **ICEA Inflation** conference (online), **SUERF Colloquium / OeNB Economic Conference** on “The return of inflation” (online / Vienna)

Seminar: **Bank of Finland**

2021 Conferences: International workshop in **Financial Markets and Nonlinear Dynamics** (online / Paris), **Big Data and Machine Learning in Finance** conference (online / Milan), **Summer Seminar of Finnish Economists** (online / Jyväskylä), **CEF** conference (online / Tokio), **International Symposium on Forecasting** (online)

Seminars: **Bank of Finland** (6x)

2020 Seminars: **University of Turku**, **Bank of Finland**

- 2019 Conferences: **American Economic Association** meeting (Atlanta), **Finnish Economic Association** meeting (Oulu), **HenU/INFER Workshop on Applied Macroeconomics** (Kaifeng), Research Conference of the CEPR Network on **Macroeconomic Modelling and Model Comparison** (Frankfurt), **European Economic Association** meeting (Manchester)
- Seminars: **Bank of Finland**, **ECB WGEM** meeting (Tallin), **Bundesbank**
- 2018 Conferences: **Finnish Economic Association** meeting (Turku), **Asset Pricing Workshop** (University of York), **Dynare** conference (ECB), International Conference on **Computational and Financial Econometrics** (Pisa)
- Seminars: **Bank of England**, **University of Jyväskylä**, **University of Porto**, **University of Minho**
- 2017 Conferences: **American Economic Association** meeting (Chicago), **Workshop on Financial Econometrics and Empirical Modeling of Financial Markets** (Ruhr University of Bochum), **Nordic Econometric Meeting** (Tartu), International Conference on **Econometrics and Statistics** (Hong Kong), **CEF** conference (New York)
- Seminars: **Bank of Finland** (2x), **HECER Time Series Econometrics Seminar** (Helsinki), **Kuntien takauskeskus** (Helsinki), **ECB WGEM** meeting (Frankfurt)
- 2016 Conferences: **American Economic Association** meeting (San Francisco), **FMA European Conference** (Helsinki), Annual Conference of the **International Association for Applied Econometrics** (Milan), Annual Meeting of the **Portuguese Economic Journal** (Coimbra), **XXIV Finance Forum** (Madrid)
- Seminars: **Aalto University Finance** (2x), **Bank of Finland** (4x), **HECER Macroeconomics and Development Seminar** (Helsinki), **National Bank of Belgium**, **University of Porto**, **Helsinki Macroeconomics Research Away Day**, **Católica Porto Business School**, **University of Padova**
- 2015 Conferences: **American Economic Association** meeting (Boston), **CEUS 2015 Workshop on "Recent Issues of European Integration"** (Vallendar), **CEF** conference (Taipei), **EcoMod** (Boston), **European Economic Association** meeting (Mannheim), Workshop on **Macro, Banking and Finance** (Pavia), International Conference on **Computational**

and Financial Econometrics (London)

Seminars: **Lancaster University, Bank of Finland (2x), University of Porto, Helsinki Macroeconomics Research Away Day, Hamburg University**

2014 Conferences: **American Economic Association** meeting (Philadelphia), **Finnish Economic Association** meeting (Kuopio), **Royal Economic Society** conference (Manchester), symposium of the **Society for Nonlinear Dynamics and Econometrics** (New York), **Birmingham Macroeconomics and Econometrics** conference (Birmingham), **CEUS 2014 Workshop on “Challenges of Monetary Union at the Age of 15”** (Vallendar), International Symposium on **Money, Banking and Finance** (Lyon), **CEF** conference (Oslo), **World Finance** conference (Venice), **LACEA** meeting (São Paulo), Macroeconomics international workshop on **“DSGE Modeling and Economic Policy”** (Rennes), International Rome Conference on **Money, Banking and Finance** (Rome)

Seminars: **Bank of Finland (2x), Helsinki Macroeconomics Research Away Day**

2013 Conferences: **American Economic Association** meeting (San Diego), **Finnish Economic Association** meeting (Mariehamn), **Austrian Economic Association** meeting (Innsbruck), **Midwest Macroeconomics** meeting (University of Illinois at Urbana - Champaign), **INFER** annual conference - special session on “Aggregate Fluctuations and Firm-Level Behavior” (Orléans), **Information Processing in Macroeconomics and Finance** conference (Toulouse), **CEF** conference (Vancouver), **European Economic Association** meeting (Gothenburg)

Seminars: **Bank of Finland (2x), Helsinki Macroeconomics Research Away Day, University of Turku**

2012 Conferences: **Royal Economic Society - PhD Presentation** meeting (London), **“Financial and Macroeconomic Stability: Challenges Ahead”** conference (Istanbul), **European Workshop in Macroeconomics** (Vienna), **World Finance** conference (Rio de Janeiro), **European Economic Association** meeting (Malaga), International Rome Conference on **Money, Banking and Finance** (Rome), **Spanish Economic Association** meeting (Vigo)

Seminars: **IAE-CSIC** (Barcelona), **De Nederlandsche Bank, HSE/ICEF** (Moscow), **Bank**

of Finland, National Bank of Serbia, EESP-FGV (São Paulo), HECER - Helsinki Center of Economic Research (Helsinki)

2011 Conferences: **Royal Economic Society - PhD presentation** meeting (London), **CEF** conference (San Francisco), **Dynare** conference (Atlanta FED), **Money Macro and Finance** conference (Birmingham), **Economic Policy and the Business Cycle** conference (University of Milano Bicocca), **Spanish Economic Association** meeting (Malaga)

Seminars: **Católica-Lisbon, European Central Bank, Goethe University Frankfurt**

2010 Seminar: **Columbia University**

2009 Seminars: **University of Porto, Columbia University**

DISCUSSIONS

2019 “The direction and intensity of China’s monetary policy conduct: A dynamic factor modelling approach” by Funke and Tsang, Conference on *China’s progress to “moderately prosperous society”* – Helsinki

2017 “The transmission of US monetary policy normalization to emerging markets” by Hernandez, 15th *ESCB Emerging Markets Workshop* – Saariselkä

2014 “Capital regulation in a macroeconomic model with three layers of default” by Clerc, Derviz, Mendicino, Moyen, Nikolov, Stracca, Suarez and Vardoulakis, *Macroeconomics international workshop on “DSGE Modeling and Economic Policy”* – Rennes

2013 “Monetary and macroprudential policy in Norway” by Brubakk and Gelain, Bank of Korea Seminar on *Macrofinancial Linkages and Macropudential Policies* – Seoul

TEACHING EXPERIENCE

2021-2023 “Theory and practice of DSGE modelling”, Ph.D. course at the University of Porto, Faculty of Economics

2018 “Macro models for macro-prudential analysis”, 4 hours lecture in the course “Systemic risk and macro-prudential policy”, Hanken University

2016-2018 “Macro models for macro-prudential analysis”, 4 hours lecture in the course “Financial stability, transmission of finance, and macro-prudential policy”, University of Vaasa

2016-2018 “Macro models for macro-prudential analysis”, 4 hours lecture in the course “Principle of banking”, University of Jyväskylä

SCHOLARSHIPS AND AWARDS

2012 Young economist best paper award, International Rome Conference on Money, Banking and Finance

2011-2012 Robert Solow postdoctoral fellowship, Cournot Foundation

2006-2010 Ph. D. scholarship, Fundação para a Ciência e a Tecnologia

2002-2003 Erasmus scholarship, University of Brescia

2000-2003 Merit scholarship, University of Brescia

LANGUAGES

English (fluent), Italian (native), Portuguese (fluent), Spanish (intermediate), Finnish (beginner)