Réka Rátfai

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https://rratfai.github.io

EDUCATION

University of Hamburg — Hamburg, Germany
Ph.D. in Economics — 2021 - 2027 (expected)

Aarhus University — Aarhus, Denmark
M.Sc. in Quantitative Economics — 2016 - 2018

Eötvös Loránd University — Budapest, Hungary
B.Sc. in Applied Economics, with distinction — 2013 - 2016

RESEARCH INTERESTS

Macroeconomics, Macro-Finance, Time-Series Econometrics, Continuous-Time Methods/Filtering

JOB MARKET PAPER

Real-Time Recovery of Structural Shocks from High-Frequency Data

Abstract: Macroeconomic flows are released on a coarse data grid, while asset prices are observed daily. Forcing both onto a common grid discards or distorts information through temporal aggregation. I develop a continuous-time filter that treats flows and stocks in their correct measurement form and recovers latent states and structural shocks simultaneously in real time, making full use of the information that financial markets deliver for macroeconomic policy. Closed-form results quantify how much the high-frequency asset-price channel adds to shock identification, without imposing a zero window-start error as in standard high-frequency identification. Daily data raise shock recovery from 0.2–0.5 to 0.85–0.94. On US data, a model-free test shows that official flows are averages, while asset prices carry the shocks.

WORKING PAPERS

What Is in a Flow? Real-Time Filtering of Mixed Stock–Flow Systems

Abstract: This note collects, in general matrix form, the filtering machinery for continuous-time linear state-space systems observed through a mix of stocks and flows. It sets out the two measurement forms of a reported flow, the correlated-noise Kalman–Bucy filter they imply, and exact discrete filters built from matrix-exponential blocks. It derives projection operators that recover structural shocks online, with closed-form ceilings on their attainable correlation, and gives verifiable criteria for whether a system fits the framework. Proofs are included.

Technical note, 2026.

WORK IN PROGRESS

Resurrecting the New Keynesian Framework: A Linear Kalman–Bucy Approach
with Juan Carlos Parra-Alvarez and Olaf Posch

Term Structure in the FTPL Model
with Olaf Posch

CONFERENCE PRESENTATIONS

2026 EEA-ESEM (Dublin), Verein für Socialpolitik Annual Conference (Innsbruck), Kiel–Hamburg Joint Research Seminar (scheduled), CFE-CMStatistics (Berlin, scheduled), Econometric Society European Winter Meeting (Warsaw, scheduled)
2025 University of Rostock (invited seminar)

HONORS & AWARDS

Best Paper in Economics (Bachelor), Hungarian Society of Economics 2016
Best Bachelor Thesis, Eötvös Loránd University 2016
Merit Scholarship (competitive), Eötvös Loránd University 2013 - 2016

SUMMER SCHOOLS & WORKSHOPS

6th Workshop on Sequential Monte Carlo Methods, ICMS, Edinburgh 2024
Summer School on Bayesian Filtering (SSBF), ICMS, Edinburgh 2024
Barcelona School of Economics: Bayesian Econometrics III (DSGE) 2021

RESEARCH EXPERIENCE

University of Hamburg Hamburg, Germany
Research Associate, Chair of Methods in Economics 2021 - present
Research on continuous-time filtering and macroeconometrics.

University of Hamburg Hamburg, Germany
Research Associate, DFG project "Continuous-Time FTPL" 2025

TEACHING EXPERIENCE

University of Hamburg Hamburg, Germany
Teaching Associate 2021 - present
Econometrics II; Macroeconomics I and II; Mathematical Analysis for Economics I and II (all undergraduate)

PROFESSIONAL EXPERIENCE

OTP Fund Management Budapest, Hungary
Econometric Modeller and Macroeconomic Analyst 2020 - 2021
Global macro research and risk advisory; monitoring tools in R/Shiny.

European Central Bank Frankfurt, Germany
Trainee, Forecast Coordination Unit, DG Economics 2019
Forecast-error evaluation; internal study on oil-price assumptions.

NEAS Energy / Centrica Trading Aalborg, Denmark
Student Analyst, Gas Department 2017 - 2018
Volatility analysis and forecasting of gas prices with high-frequency data.

SKILLS

Programming: Matlab, R, Python
Languages: Hungarian (native), English (fluent), German (C1), Danish (basic)
Citizenship: Hungarian

REFERENCES

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