

Jozef BARUNÍK

VITAE 2025 (APRIL)

<https://barunik.github.io/>

RESEARCH PROFILE

Fundamental and applied research in financial econometrics, statistical methods for economists, and econometrics. The main interest of research is in fields of asset pricing, high-frequency data, dynamic networks, machine learning, high-dimensional data sets.

ACADEMIC EXPERIENCE

- | | |
|------------------|--|
| 2017/4 – CURRENT | Associate Professor (habilitation) at CHARLES UNIVERSITY in Prague, <i>Institute of Economic Studies</i>
Department of Macroeconomics and Econometrics, Master in Finance and Data Analytics program director, Researcher, Lecturer |
| 2011/10 – 2017/3 | Assistant Professor at CHARLES UNIVERSITY in Prague, <i>Institute of Economic Studies</i>
Department of Macroeconomics and Econometrics, Researcher, Lecturer |
| 2013 – CURRENT | Research Fellow (Deputy Head of the Department from 2014, Head of the Department from 2018) at ACADEMY OF SCIENCES OF THE CR
<i>Institute of Information Theory and Automation</i>
Department of Econometrics |
| 2011 – 2012 | PostDoc at ACADEMY OF SCIENCES OF THE CR
<i>Institute of Information Theory and Automation</i>
Department of Econometrics |
| 2007 – 2011 | Research Assistant at ACADEMY OF SCIENCES OF THE CR
<i>Institute of Information Theory and Automation</i>
Department of Econometrics |

EDUCATION

- | | |
|-----------------|---|
| 2007/9 – 2011/9 | PhD in Economics, CHARLES UNIVERSITY, Prague
Institute of Economic Studies |
| 2004 – 2006 | Mgr. (MSc. equivalent) in Economics, PhDr., CHARLES UNIVERSITY, Prague
Institute of Economic Studies |
| 2001 – 2004 | Bc. (BSc. equivalent) in Economics, CHARLES UNIVERSITY, Prague
Institute of Economic Studies |

PUBLICATIONS

BIBLIOMETRY

CITATIONS (SCOPUS): 3609 ,

H-INDEX (SCOPUS): 23

CITATIONS (WOS): 3324,

H-INDEX (WOS): 23

CITATIONS (GOOGLE SCHOLAR): 5683,

H-INDEX (GOOGLE SCHOLAR): 30

RESEARCHERID: G-7617-2014

ORCID: 0000-0001-5097-2607

REPEc CITATIONS RANKINGS:

Top 5 Economists (top 1%) in the Czech Republic, Top 100 in European Union, Top 500 in World

SELECTED RESEARCH PUBLICATIONS

1. The Dynamic Persistence of Economic Shocks (with L.Vacha), *The Review of Economics and Statistics* , forthcoming (2025) [DOWNLOAD](#)
2. Predicting the volatility of major energy commodity prices: the dynamic persistence model (with L.Vacha), *Energy Economics*, forthcoming (2024), Vol. 140, 107982 [DOWNLOAD](#)
3. Dynamic industry uncertainty networks and the business cycle (with M.Bevilacqua and R.Faff) Vol. 1598, 104793 (2024) (PREPRINT 2021 [DOWNLOAD](#)) *Journal of Economic Dynamics and Control*,
4. Persistence in Economic Networks (with M.Ellington) (2024) *European Journal of Operational Research* (PREPRINT 2021 [DOWNLOAD](#))
5. Quantile Spectral Beta: A Tale of Tail Risks, Investment Horizons, and Asset Prices (with M.Nevrla), *Journal of Financial Econometrics*, Vol. 21, No. 5, pp. 1590-1646 (2023) [DOWNLOAD](#)
6. Asymmetric Network Connectedness of Fears (with M.Bevilacqua, and R.Tunaru), *The Review of Economics and Statistics* , 104(6): 1-13 (2022) [DOWNLOAD](#)
7. Measurement of common risks in tails: A panel quantile regression model for financial returns (with F.Cech) *Journal of Financial Markets*, 52 (2021) [DOWNLOAD](#)
8. Forecasting dynamic return distributions based on ordered binary choice (with S.Anatolyev) *International Journal of Forecasting*, 35(3), pp.823-835 (2019) [DOWNLOAD](#)
9. Quantile Coherency: A General Measure for Dependence between Cyclical Economic Variables (with T.Kley) *The Econometrics Journal* (2019), 22(2), pp. 131-152 [DOWNLOAD](#)
10. Measuring the Frequency Dynamics of Financial Connectedness and Systemic Risk (with T.Krehlik) *Journal of Financial Econometrics*, 16 (2), pp. 271-296 (2018) [DOWNLOAD](#)
11. Do co-jumps impact correlations in currency markets? (with L.Vacha) *Journal of Financial Markets*, 37, pp.97-119 (2018) [DOWNLOAD](#)
12. Modeling and Forecasting Persistent Financial Durations (with F.Zikes and N.Shenai) *Econometric Reviews*, 36:10, 1081-1110 (2017) [DOWNLOAD](#)
13. Asymmetric connectedness of stocks: How does bad and good volatility spill over the U.S. stock market? (with E. Kocenda and L.Vacha) *Journal of Financial Markets*, 27, 55-78, (2016). [DOWNLOAD](#)

14. Semiparametric Conditional Quantile Models for Financial Returns and Realized Volatility, (with F.Zikes) *Journal of Financial Econometrics*, 14 (1), 185–226, (2016). [DOWNLOAD](#)
15. Estimation of Financial Agent-Based Models with Simulated Maximum Likelihood (with J.Kukacka) *Journal of Economic Dynamics and Control*, 85, pp. 21-45 (2017) [DOWNLOAD](#)
16. Asymmetric volatility connectedness on forex markets (with E. Kocenda and L.Vacha) *Journal of International Money and Finance*, 77C, pp. 39-56, (2017). [DOWNLOAD](#)
17. Cyclical properties of supply-side and demand-side shocks in oil-based commodity markets (with T. Krehlik) *Energy Economics*, 65:208-218 (2017) [DOWNLOAD](#)
18. Good volatility, bad volatility: Which drives the asymmetric connectedness of Australian electricity markets? (with N.Apergis and M.C.Lau) *Energy Economics*, 66:108-115 (2017) [DOWNLOAD](#)
19. Modeling and forecasting exchange rate volatility in time-frequency domain, (with T.Krehlik and L.Vacha) *European Journal of Operational Research*, 251 (1), pp. 329 -340, (2016) [DOWNLOAD](#)
20. How does bad and good volatility spill over across petroleum markets? (with E. Kocenda, and L. Vacha) *The Energy Journal*, 36 (3), 309–329, (2015) [DOWNLOAD](#)
21. Are benefits from oil – stocks diversification gone? A new evidence from a dynamic copulas and high frequency data, (with K. Avdulaj) *Energy Economics* , 51, pp. 31–44, (2015) [DOWNLOAD](#)
22. Are Bayesian Fan Charts Useful for Central Banks? Uncertainty, Forecasting and Financial Stability Stress Tests, (with M. Franta, R. Horvath, K. Smidkova) *International Journal of Central Banking* 10 (1), pp.159–187 (2014) [DOWNLOAD](#)
23. Comovement of energy commodities revisited: Evidence from wavelet coherence analysis, (with L. Vacha) *Energy Economics*, 34(1), pp. 241–247, (2012) [DOWNLOAD](#)
24. Can a stochastic cusp catastrophe model explain stock market crashes? (with M.Vosvrda) *Journal of Economic Dynamics and Control* 33, pp. 1824–1836 (2009) [DOWNLOAD](#)

MAJOR ACADEMIC COLLABORATIONS *(last 5 years)*

- E.Gerba, London School of Economics, Bank of England, UK
- C.Canon, Bank of England, UK
- R.Tunaru University of Sussex, UK
- M.Ellington University of Liverpool, UK
- M.Bevilacqua London School of Economics, University of Liverpool, UK
- T.Kley London School of Economics, UK
- M.Babiak Lancaster University, UK
- W.K.Haerdle, Humboldt Universitat, DE

SELECTED INVITED TALKS *(last 5 years)*

- various research seminars
- Bank of England, London 2025
- Western Finance Association, San Francisco 2023
- Bank of England, London 2023

- International Finance and Banking Society, Oxford 2023 (invited talk)
- Swiss Society for Financial Market Research, Zurich, 2023
- European Finance Association, Barcelona 2022 (invited talk)
- International Symposium on Forecasting, Oxford, 2022 (invited talk)
- London School of Economics (Systemic Risk Centre) March 2020
- Humboldt-Universität zu Berlin, School of Business and Economic, C.A.S.E. (July 2017, September 2018, March 2019)
- Danmarks Nationalbank, Copenhagen 2019

GRANT SUPPORT (*main researcher only*)

2024 – 2026	<i>(Principal Investigator)</i> Grant Agency of the Czech Republic (GA CR) Taming the tail risks in financial markets with data-driven methods
2019 – 2023	<i>(Principal Investigator, joint with W.K.Haerdle from MFF UK and HU Berlin)</i> Grant Agency of the Czech Republic (GA CR EXPRO) Dynamic Models for the Digital Finance
2020 - 2025	<i>(Local Coordinator)</i> of the collaborative EU Grant COST ACTIONS 2020 2025 project Fintech and Artificial Intelligence in Finance - Towards a transparent financial industry
2016 – 2018	<i>(Principal Investigator)</i> Grant Agency of the Czech Republic (GA CR) New measures of dependence between economic variables
2016 – 2018	<i>(Investigator, joint with L.Vacha)</i> Grant Agency of the Czech Republic (GA CR) Measurement of frequency-dependent financial risk factors
2014 – 2016	<i>(Local Coordinator)</i> of the collaborative project under the 7th FP for EU research Financial Distortions and Macroeconomic Performance: Expectations, Constraints and Interaction of Agents
2014 – 2016	<i>(Principal Investigator, (joint with E.Kočenda from CERGE-EI)</i> Grant Agency of the Czech Republic (GA CR) Dynamic correlations and financial market risk
2013 – 2015	<i>(Principal Investigator)</i> Grant Agency of the Czech Republic (GA CR) Multivariate spectral analysis of financial markets
2013 – 2015	<i>(Investigator, joint with L.Vacha)</i> Grant Agency of the Czech Republic (GA CR) Wavelet analysis of nonstationary and long memory economic time series.
2008 – 2010	<i>(Principal Investigator)</i> Grant Agency of Charles University (GA UK) New Nonlinear Capital Markets Theories: Fractal, Bifurcational & Behavioral Approach

TEACHING EXPERIENCE

INSTITUTE OF ECONOMIC STUDIES, CHARLES UNIVERSITY IN PRAGUE

2013 – CURRENT	ADVANCED ECONOMETRICS – <i>Lectures</i>	(Masters)
2011 – 2013	ECONOMETRICS II – <i>Lectures</i>	(Bachelors)
2007 – CURRENT	APPLIED ECONOMETRICS – <i>Lectures / Seminars</i>	(Masters)
2007 – CURRENT	QUANTITATIVE FINANCE I – <i>Lectures / Seminars</i>	(Masters)
2007 – CURRENT	QUANTITATIVE FINANCE II – <i>Lectures / Seminars</i>	(Masters)
2007 – 2011	ADVANCED ECONOMETRICS – <i>Seminars</i>	(Masters)

My lectures and seminars consecutively rank among “BEST COURSES TAUGHT AT THE IES” in years 2010 – 2024.

THESES SUPERVISION

CURRENT PHD STUDENTS	A.Sarkany, L.Nechvatalova, M.Hronec, J.Kurka, L.Janasek
PHD STUDENTS (FINISHED)	M.Nevrla (2024), B.Malinska (Oct 2022), F.Cech (June 2019) T.Krehlik (Sept 2017), K.Avdulaj (Feb 2016), J.Kukacka (April 2016)
EXTERNAL EXAMINER	PhD Dissertation of N.Nava, ULC, London, UK.
MASTER THESES	83 supervised
BACHELOR THESES	8 supervised

RESEARCH VISITS

MARCH 2025	Bank of England
SEPT 2023	Bank of England
MARCH 2020	London School of Economics (Systemic Risk Centre)
MARCH 2019	Humboldt-Universität zu Berlin, School of Business and Economic, C.A.S.E.
SEPT 2018	Humboldt-Universität zu Berlin, School of Business and Economic, C.A.S.E.
JULY 2017	Humboldt-Universität zu Berlin, School of Business and Economic, C.A.S.E.
MAY 2016	London School of Economics
FEBRUARY 2015	Ruhr-Universität Bochum, Department of Mathematics, Institute of Statistics
FEBRUARY 2012	(INVITED) ECARES - Solvay Brussels School of Economics and Management,
SEPTEMBER 2013	Université libre de Bruxelles (prof. D.Veredas)
APRIL 2009	CENDEF - Center for Nonlinear Dynamics in Economics and Finance, Department of Quantitative Economics, University of Amsterdam (prof. C. Hommes)

PROFESSIONAL SERVICES

CURRENT

EDITORIAL BOARD	Journal of Economic Interaction and Coordination
EDITORIAL BOARD	Czech Journal of Economics and Finance
EDITORIAL BOARD	Digital Finance
EDITORIAL BOARD	Kybernetika

PAST

COMMITTEES	ERC Consolidators, Evaluation Panel (Member)
COMMITTEES	Grant Agency of the Czech Republic, Evaluation Panel (Member)
CONSULTANT	(external) Market Intelligence division, Bank of England
PRESIDENT	Czech Econometric Society
REFEREEING	(frequently for several journals) Selected list of journals: The Review of Asset Pricing Studies, Journal of Financial Econometrics, International Journal of Forecasting, Journal of Econometrics, Journal of Business & Economic Statistics, Journal of Banking and Finance, Journal of Economic Behavior & Organization, Journal of Money, Credit and Banking, Journal of Economic Dynamics and Control, Journal of Financial Markets, Journal of International Money and Finance, The Energy Journal, Energy Economics
EDITOR	The Czech Economic Review
EDITOR	Bulletin of the Czech Econometric Society

AWARDS

- 2015 “ENERGY ECONOMICS CONTEST AWARD” 1st place (joint work with B.Malinska)
- 2014 “ECONOMIC RESEARCH AWARD” (CZECH NATIONAL BANK)
- 2013 “ENERGY ECONOMICS CONTEST AWARD” 1st place (joint work with K.Avdulaj)
- 2012 “OTTO WICHTERLE AWARD BY THE ACADEMY OF SCIENCES OF THE CZECH REPUBLIC”
- 2012 “ČEZ CORPORATE CHAIR HOLDER (2012+) ”
- 2011 “ENERGY ECONOMICS CONTEST AWARD” 1st place (joint work with L.Vacha)
- 2011 “CZECH ECONOMETRIC SOCIETY AWARD” 1st place (Best Student Paper)
- 2010 “CZECH ECONOMETRIC SOCIETY AWARD” 3rd place (Best Student Paper)

LANGUAGES

- SLOVAK Mothertongue
- CZECH Mothertongue
- ENGLISH: Fluent (English Language State Certificate, 2000)
- ITALIAN: Basics
- GERMAN: Basics

COMPUTER SKILLS

- Basic Knowledge: C++, HTML, PHP, MySQL
- Intermediate Knowledge: Julia, L^AT_EX, Python, Mathematica, MATLAB, R, Ox

INTERESTS AND ACTIVITIES

- Family
- Road Cycling, Running, Cross-country Skiing
- Jazz, Food, and Wine
- Technology, Programming, Artificial Intelligence