Banka Slovenije

in cooperation with

the Research Centre of the School of Economics and Business

invites you to a seminar

A Cointegration Perspective on Treatment Effects, Difference-in-Differences and Synthetic Controls

Co-author and speaker:

Martin Wagner

Professor of Economics and Head of the Quantitative Economics Division at the University of Klagenfurt

The paper is a joint work of Werner Ploberger and Martin Wagner.

The seminar will be held in the

Great Hall of Banka Slovenije

on Thursday, 26 November 2026 at 14:00

Abstract:

Many macroeconomic aggregates exhibit trending behavior, with both deterministic and stochastic trends, the latter giving rise to potential cointegration amongst variables. In such contexts, cointegration provides a natural definition of synthetic controls (donor pools), and the change of the deterministic trend slope of the treated unit can be interpreted as treatment effect. The analysis is performed in a local-to-zero framework that keeps the deterministic and the stochastic trend at the same order independent of sample size. Estimation and inference are based on (i) performing an affine-annihilating transformation, (ii) a basis change to a chosen and fixed number of trigonometric ordinates and (iii) augmenting the regression to correct for second-order biases. These steps lead to asymptotic standard t- and F-inference, without any kernel or bandwidth choice, in an asymptotically classical regression model. Adding one specific additional regressor allows the treatment effect to be estimated without knowledge concerning the cointegrating rank of the explanatory variables. The theory furthermore allows to test assumptions important for valid treatment effect estimation, e.g., the presence of cointegration and the constancy of the cointegrating relationship before and after the treatment. We furthermore address the implications of treated donors, discuss the selection of donor pools and quantify the implications (efficiency loss) incurred by using a finite number of trigonometric ordinates. The theory is put into practice for a number of examples, including German unification, New Zealand's reform era of the second half of the 1980s and the impact of Austria's accession to the European Union on its only Objective-1 region, Burgenland.

About the co-author and speaker:

Martin Wagner is a professor of Economics and Head of the Quantitative Economics Division at the University of Klagenfurt, Fellow at IHS and Visiting Professor at the University of Ljubljana. Previously, he served as Chief Economic Advisor (2019–2025) and Chief Economist (2017–2018) at the Bank of

Slovenia, representing it on the Eurosystem's Monetary Policy Committee. He held professorships at TU Dortmund University and the University of Graz, with earlier roles at IHS, the University of Bern and TU Wien. He earned his Habilitation from the University of Bern (2005) and his PhD from TU Wien (2000). A former fellow at the European University Institute (Jean Monnet, Simone Veil) and Princeton, he has been a guest professor in six countries. His research, funded amongst others by the DFG, FWF, the Anniversary Fund of the OeNB or the European Commission, focuses on econometrics, quantitative economics, transition economics and environmental economics, and more recently also big data analysis for energy and tourism markets. He currently serves as a managing editor of the German Economic Review, and his work is widely published, including in the Journal of Econometrics, Econometric Theory, Econometrics Journal, Journal of Applied Econometrics, Econometrics, Econometric Reviews, Economics Letters, Econometrics and Statistics, Journal of Time Series Analysis, Journal of Empirical Finance or the Oxford Bulletin of Economics and Statistics.

How to sign up:

To sign up for the seminar, please send an email to seminar@bsi.si. You can sign up by Tuesday, 25 November 2026. The seminar will be held in English.