Banka Slovenije

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the Research Centre of the School of Economics and Business

invites you to a seminar

Panel Machine Learning with Mixed-Frequency Data: Monitoring State-Level Fiscal Variables

Co-author and speaker:

Dalibor Stevanović

Professor at Economics Department, School of Management, Université du Québec à Montréal

The paper is a joint work of Philippe Goulet Coulombe, Massimiliano Marcellino and Dalibor Stevanović.

The seminar will be held in the

Great Hall of Banka Slovenije

on Wednesday, 9 September 2026 at 14:00

Abstract:

Authors study the nowcasting of U.S. state-level fiscal variables using machine learning (ML) models and mixed-frequency predictors within a panel framework. Neural networks with continuous and categorical embeddings consistently outperform both linear and nonlinear alternatives, especially when combined with pooled panel structures. These architectures flexibly capture differences across states while benefiting from shared patterns in the panel structure. Forecast gains are especially large for volatile variables like expenditures and deficits. Pooling enhances forecast stability, and ML models are better suited to handle cross-sectional nonlinearities. Results show that predictive improvements are broad-based and that even a few high-frequency state indicators contribute substantially to forecast accuracy. Authors findings highlight the complementarity between flexible modeling and cross-sectional pooling, making panel neural networks a powerful tool for timely and accurate fiscal monitoring in heterogeneous setting.

About the co-author and speaker:

Dalibor Stevanović is a full professor, holder of the Chair in Macroeconomics and Forecasting, and co-director of graduate studies at School of Management, Economics Department, Université du Québec à Montréal. Professor Stevanović holds research positions at several international research centres (CIRANO, Rimini Centre for Economic Analysis, Centre for Monetary and Financial Economics). His research interests are time series econometrics, macroeconomics and finance, with a special focus on machine learning and big data analysis. He is publishing research articles in leading academic journals.

How to sign up:

To sign up for the seminar, please send an email to seminar@bsi.si. You can sign up by Tuesday, 9 September 2026. The seminar will be held in English.