25th MIC
Management International Conference
Koper, Slovenia • 3–6 June 2026

Macroeconomic Shocks in Serbia and Slovenia: A Comparative Forecasting Model Using the Statista Dataset

Nemanja Lojanica
University of Kragujevac, Faculty of Economics, Serbia
nlojanica@kg.ac.rs

Sergej Gričar
University of Novo Mesto, Faculty of Business and Management Sciences, Slovenia
sergej.gricar@uni-nm.si

Štefan Bojnec
Faculty of Management, University of Primorska, Slovenia
stefan.bojnec@fm.upr.si

Saša Obradović
University of Kragujevac, Faculty of Economics, Serbia
sobradovic@kg.ac.rs

Abstract. This paper aims to investigate the transmission and forecasting of macroeconomic shocks in Serbia and Slovenia through a comparative time-series modeling framework. As two former Yugoslav republics that have followed divergent economic and institutional trajectories—Slovenia having integrated into the European Union and Eurozone, while Serbia remains outside the EU monetary framework—their macroeconomic responses to external and domestic shocks provide a compelling basis for comparative analysis. The study will focus on key macroeconomic indicators, including GDP growth, inflation rates, unemployment, exchange rates, trade openness, and public debt, utilizing harmonized annual and quarterly data obtained from the Statista dataset. The primary objective is to identify long-run equilibrium relationships and short-run dynamic adjustments between core macroeconomic variables in each country, and to evaluate differences in shock transmission mechanisms. The methodology will employ time-series econometric techniques, beginning with unit root tests (ADF and Phillips–Perron) to determine the order of integration of the variables. Once stationarity properties are established, Johansen cointegration tests will be applied to assess the existence of long-run relationships among macroeconomic aggregates. For each country, a Vector Error Correction Model (VECM) will be estimated to capture both long-run equilibrium dynamics and short-run deviations.

To compare the macroeconomic adjustment processes between Serbia and Slovenia, forecast error variance decompositions (FEVDs) will be generated. This tool will allow for the examination of how shocks—such as global financial crises, energy price spikes, or monetary disturbances—propagate through each economy over time. Additionally, out-of-sample forecasting performance will be evaluated using rolling-window estimations, comparing forecast accuracy metrics such as RMSE and MAE across both models. Preliminary expectations suggest that Slovenia, as a Eurozone member with deeper financial integration, may exhibit faster adjustment to external shocks but potentially greater exposure to euro-area disturbances. In contrast, Serbia's monetary autonomy may allow for more flexible short-term responses, albeit with higher vulnerability to exchange rate volatility and inflationary pressures. The comparative framework is expected to highlight structural differences in institutional settings, policy regimes, and economic openness.

The contribution of this research lies in integrating cointegration-based time-series modeling with comparative forecasting analysis within a post-transition regional context. By systematically examining long-run relationships and dynamic shock responses in Serbia and Slovenia, the study aims to provide insights into macroeconomic resilience, policy effectiveness, and convergence patterns in Southeast

Europe. The findings are anticipated to be relevant for policymakers, regional economic analysts, and scholars interested in transition economies and comparative macroeconomic modeling.

Keywords: macroeconomic indicators, time series analysis, case study

References

Jakšić, P., Pjanić, M., Milošević, M. *et al.* 2025. Impact of Macroeconomic Factors on Stock Indices Volatility: a GARCH Analysis for USA, Germany, Serbia and Croatia. Computational Economics. https://doi.org/10.1007/s10614-025-11170-1

Barišić, P., Kovač, T., and V. Arčabić. 2023. 'More than just supply and demand: Macroeconomic shock decomposition in Croatia during and after the transition period.' Structural Change and Economic Dynamics 67: 420-438.

Gričar, S., Bojnec, Š., Karadžić, V., and T. Backović. 2022. 'Three Decades of Macroeconomic Flux in Montenegro and Slovenia'. Montenegrin Journal of Economics 18 (2) : 61-71.

Lakić, S., Ćetković, J., Pejović, B., Žarković, M., and M Knežević, M. 2021. 'Economic Growth Determinants in South-East European Countries: A System Generalized Method of Moments Approach. ' East European Politics and Societies, *36* (3) : 935-956.