GDP nowcast using machine learning algorithms: A real-time evaluation *

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ABSTRACT

The delay in the release of Gross Domestic Product (GDP) data in Latin America and the Caribbean presents challenges for timely economic policy-making. This study develops a GDP nowcasting model for Bolivia using Machine Learning (ML) algorithms and real-time data. Three main approaches are employed: penalized regression methods (Ridge, Lasso, Elastic Net), tree-based models (Random Forest, Gradient Boosting), and support vector regression (SVR). The analysis employs 87 macroeconomic variables covering the period 2007–2023. Results show that Gradient Boosting achieves the best predictive accuracy in-sample, while Ridge and SVR yield lower mean squared errors (MSE) out-of-sample. The findings highlight the potential of these techniques to estimate GDP in real time and support economic and public policy decisions in Bolivia, thereby enhancing strategic decision-making.

JEL Classification: *C53, C61, C82*
Keywords: *Nowcasting, Machine Learning, GDP, Penalized Regression, Decision Trees, Real-Time Economy*

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