# Seasonal Weighted Lag Adaptive LASSO

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The main purpose of this paper is to propose a new LASSO type penalty aiming to improve out-of-sample forecasting performance for seasonal time series in high dimensionality scenarios. We also present results concerning parameter estimation performance. Our approach leads to what we call SWLadaLASSO (seasonal weighted lag adaptive LASSO) which assigns larger penalties for higher-lagged covariate coeffcients - based on the idea of WLadaLASSO by Konzen and Ziegelmann (2016) - except those associated with the seasonal lags of the response variable. It can be considered a generalization of the WLadaLASSO. In our Monte Carlo studies, the SWLadaLASSO is superior in terms of forecasting, parameter estimation and also covariate selection in most of the cases when compared to other LASSO-type penalty models. An empirical application is conducted to evaluate the capability of the proposed approach to forecast Brazilian GDP growth. Additionally, a set of forecast combinations is implemented in search of forecast accuracy improvement.