Colombian inflation forecast using Long Short-Term Memory approach

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We use Long Short Term Memory (LSTM) neural networks, a deep learning technique, to forecast Colombian headline inflation one year ahead through two approaches. The first one uses only information from the target variable, while the second one incorporates additional information from some relevant variables. We employ sample rolling to the traditional neuronal network construction process, selecting the hyperparameters with criteria for minimizing the forecast error. Our results show a better forecasting capacity of the network with information from additional variables, surpassing both the other LSTM application and ARIMA models optimized for forecasting (with and without explanatory variables). This improvement in forecasting accuracy is most pronounced over longer time horizons, specifically from the seventh month onwards.