

package `tvCoef`: implementing time-varying coefficients models has never been so easy




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Abstract

In official statistics, linear regressions are everywhere: trading-day adjustments and forecasting models rely on RegARIMA models and macroeconomic models use error correction models. These methods generally provide reliable results and a straightforward interpretation.

However, they assume that the relationships between the variables are fixed in time: this assumption may make sense in the short term, but is generally no longer valid when the models are estimated over a long period, which leads to sub-optimal modelling.

Many authors have studied time-varying coefficients, but practical applications of these methods are not easily reproducible for the average user and even more difficult to set up in production.

The goal of this study is to provide a new  tool, `tvCoef`, to easily select, implement and test time-varying regressions models. This tool will particularly appeal to data analysts in official statistics branch but could also prove useful to any statistician using . It implements piecewise regression models, local regressions and state-space models using `rjd3sts`, the  interface to JDemetra+ state-space implementation.