A time series model for responses on the unit interval

Abstract

We introduce an autoregressive model for responses that are restricted to lie on the unit interval, with beta-distributed marginals. The model includes strict stationarity as a special case, and is based on the introduction of a series of latent random variables with a simple hierarchical specification that achieves the desired dependence while being amenable to posterior simulation schemes. We discuss the construction, study some of the main properties, and compare it with alternative models using simulated data. We finally illustrate the usage of our proposal by modelling a yearly series of unemployment rates..

Keywords

Autoregressive models, Beta processes, Latent variables, Unemploymentrates.