

Real Estate Time Series Forecasting under Bubble Regimes
Daniel Reis

Abstract

The objective of this paper is to evaluate the predictive accuracy of linear and nonlinear time series models in the real estate market context, a segment of the economy that witnessed periods of sharp increases and falls in prices, that is, bubbles. In our understanding, a bubble period characterizes a significant change in the behavior of the economic agents and can be interpreted as a structural break in the path of an observed time series. We believe that nonlinear models can provide more flexible characterizations of the DGP to incorporate such observed changes in series of the real estate market which have experienced periods of bubbles. In order to date-stamp the beginning and the end of the real estate bubble, we use PWY and PSY procedures (Phillips et al., 2009, 2015) on the monthly time series of the price-rent ratio for the United States and for seven Metropolitan Statistical Areas (MSAs) during the period between 1987 and 2017. Our expectation is that, in this context, the forecasting accuracy statistics favor the nonlinear models under competition.