

國立高雄大學統計學研究所

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Detection of Change-points in Time-Series Regression Models

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摘要

Many time series exhibit non-linear dynamics that can be characterized by regime changes in persistence and volatility. In this context, change-point models have gained a lot of attention in econometrics, statistics and other fields, such as modeling the dynamics of short-term interest rates, real exchange rates, unemployment rates, stock prices, production, and inventories. The change-point time-series models are shown to have a superior forecast performance in times of recession, especially when there are significant discontinuities, so-called jumps, in financial variables of the financial markets. Chang et al. (2020) proposed an efficient algorithm (ordered iterative least squares, OiLS) to detect the threshold points of threshold polynomial regression models. In this proposal, we consider a change-point time-series regression model for stationary dependent data and apply the OiLS method to estimate the change points. We also show some finite sample performances of the OiLS estimation method.

關鍵詞：change point, ordered iterative least squares, time-series regression

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