[PDF (161K)] [References]

A Consistent Estimator of the Smoothing Parameter in the Hodrick-Prescott Filter

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Abstract: The so-called Hodrick-Prescott filter was first introduced in actuarial science to estimate trends from claims data and now is widely used in economics and finance to estimate and predict e.g. business cycles and trends in financial data series. This filter depends on the noise-to-signal ratio α that acts as a smoothing parameter. We propose a new consistent estimator of this smoothing parameter and construct corresponding non-asymptotic confidence intervals with a precise confidence level.

Key words: Adaptive estimation, Gaussian process, Hodrick-Prescott filter, orthogonal parametrization

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