

Title:

Improved Nonparametric Confidence Intervals in Time Series Regressions

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Abstract:

Confidence intervals in time series regressions suffer from notorious coverage problems. This is especially true when the dependence in the data is noticeable and sample sizes are small to moderate, as is often the case in empirical studies. This paper proposes a method that combines prewhitening and the studentized bootstrap. While both prewhitening and the studentized bootstrap each provides improvement over standard normal theory intervals, one can achieve a further improvement by conjoining them in an appropriate way. As a side note, it is stressed that symmetric confidence intervals equal-tailed ones, since they exhibit improved coverage accuracy. We propose concrete ways to deal with the issues of block size, choice of kernel, and choice of bandwidth. The improvements in small sample performance are supported by a simulation study.