

# **Robust Inference in Regression Models**

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## ABSTRACT

This study proposed a hybrid of the forward search algorithm and the bootstrap method in estimating a model with contaminated data or that there is a structural change. The method is compared to ordinary least squares, simple bootstrap, and simple forward search algorithm. The simulation study illustrates that the algorithm would always yield narrower confidence interval even when there is model misspecification and contamination. Moreover, it has a comparable predictive ability with simple forward search and yields comparable estimates of the regression coefficients with lower percent bias. Thus, the hybrid of forward search and bootstrap method can further robustify estimates of regression coefficients in the presence of structural change and/or data contamination.

Keywords: *Ordinary Least Square, Bootstrap, Forward Search Algorithm, Robust statistics*