

On the performance of the restricted estimators

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The ordinary least squares (OLS) estimator is often used to estimate the parameters in linear regression models. Multicollinearity among the columns of the explanatory variables is known to cause severe distortion of the OLS estimates of the parameters. Therefore, alternative methods to solve the multicollinearity problem are preferred. One of the methods for solving the multicollinearity problem is through the use of non-sample information on the parameters which results in the restricted estimators. This study provides the results on the performance of the restricted two parameter estimator (see [3]), which includes the restricted ridge (see [1]), restricted Liu and restricted shrunken estimators as special cases, over the restricted least squares and the OLS estimators under the matrix mean square error (MSE) criterion when the restrictions are not correct and when they are correct. Theoretical results are evaluated via a numerical example based on Webster et al. [4] and the behavior of the restricted estimators is examined by the surface plot of the scalar MSE on the data set.

References

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