

Restricted Ridge Estimation

Jürgen Groß

University of Dortmund, Dortmund, Germany

Abstract

Under the linear regression model with additional linear restrictions on the parameter vector, a ridge estimator for the vector of parameters is introduced. This estimator is a generalization of the well known restricted least squares estimator and is confined to the (affine) subspace which is generated by the restrictions. Necessary and sufficient conditions for the superiority of the new estimator over the restricted least squares estimator are derived. The new estimator is not to be confounded with the restricted ridge regression estimator introduced by Sarkar (1992). Eventually, an estimator for the ridge parameter is proposed.

Keywords

Least Squares, Linear Restrictions, Matrix Risk, Ridge Estimator, Shrinkage.

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