

Best equivariant estimator of regression coefficients in a seemingly unrelated regression model with known correlation matrix

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Received: 25 February 2014 / Revised: 22 January 2015 / Published online: 12 March 2015
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Abstract This paper derives the best equivariant estimator (BEE) of the regression coefficients of a seemingly unrelated regression model with an elliptically symmetric error. Equivariance with respect to the group of location and scale transformations is considered. We assume that the correlation matrix of the error term is known. Since the correlation matrix is a maximal invariant parameter under the group action, the model treated in this paper is generated as exactly one orbit on the parameter space. It is also shown that the BEE can be viewed as a generalized least squares estimator.

Keywords Equivariant estimator · Seemingly unrelated regression model · Group invariance · Maximal invariant · Generalized least squares estimator

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