

ESTIMATION OF THE RATIO OF THE SCALE PARAMETERS OF TWO EXPONENTIAL DISTRIBUTIONS WITH UNKNOWN LOCATION PARAMETERS

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(Received March 9, 1988; revised February 20, 1989)

Abstract. We consider the estimation of the ratio of the scale parameters of two independent two-parameter exponential distributions with unknown location parameters. It is shown that the best affine equivariant estimator (BAEE) is inadmissible under any loss function from a large class of bowl-shaped loss functions. Two new classes of improved estimators are obtained. Some values of the risk functions of the BAEE and two improved estimators are evaluated for two particular loss functions. Our results are parallel to those of Zidek (1973, *Ann. Statist.*, **1**, 264-278), who derived a class of estimators that dominate the BAEE of the scale parameter of a two-parameter exponential distribution.

Key words and phrases: Two-parameter exponential distribution, equivariant estimator, inadmissible, risk reduction, scale parameter.