

A permutation test for production frontier shifts

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Abstract

In this paper we introduce an exact, and easily implementable, test for the significance of frontier shifts estimated using DEA. The test is based on permutations and therefore does not directly rely on asymptotic distributional assumptions, which also makes it suitable for practical purposes with limited sample sizes. Extensive simulation studies are conducted in order to assess the power of the proposed test and the results of these show that the test is extremely powerful. Finally, an empirical illustration where the test is applied to a well-known data set from the literature is provided.