

Measuring global municipal performance in heterogeneous contexts: A semi-nonparametric frontier approach

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Abstract

Local governments play an important role in providing public goods and services to citizens. Actually, in line with the subsidiarity principle they are increasingly responsible for a wider range of duties, which coupled with the existing growing financial constraints in most developed countries make the measurement of municipal efficiency a priority for municipal governments, especially at a time of economic downturn. In this paper we evaluate public expenditure efficiency of a sample of Spanish local governments over an eight-year period that covers years before and after the last financial crisis (2005-2012). For that purpose, we employ a novel approach, the so-called Stochastic semi-Nonparametric Envelopment of Data (StoNED) (Kuosmanen and Kortelainen, 2012), which allows for combining the advantages presented by parametric techniques together with the flexibility of nonparametric techniques, i.e. we consider both inefficiency and noise in the deviations from the estimated function in a flexible framework. This technique has been adapted to the presence of different operational conditions using a convex nonparametric least squares (CNLS) regression that jointly estimates the expected output conditional on inputs and the effects of the contextual variables (Johnson and Kuosmanen, 2011). The results show a remarkable decrease in efficiency levels during the years prior to the economic crisis, especially for municipalities with a larger population, although this trend reversed as of 2010.

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