

Cost Benchmarking in the German Water Sector

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Abstract

The German water sector is highly fragmented, hardly regulated and predominantly under public ownership. Given significant economies of scale in water distribution and weak incentives for efficient production severe inefficiencies are likely to be observed. To determine German water utilities' efficiency, we apply different methods of productivity analysis on a unique data set supplied by Rödl & Partner. Built up since more than a decade, this data set contains information on more than 300 German water utilities on a remarkable level of detail. In a first step, we apply cluster analysis to endogenously determine company size clusters. Subsequently, we identify the specific production technology i.e. the optimal cost function parameterization for three different groups of companies. Testing the estimated models against established size cluster in the German water sector (small companies: Yearly water distribution up to 500,000 m³; medium companies: 500,000 up to 2,500,000 m³ and big companies: above 2,500,000 m³) we find that endogenous clustering leads to less robust results. Applying Data Envelopment Analysis and Stochastic Frontier Analysis and eliminating outliers by peer stripping we reach rang correlations of 0,95 on average for all the three different size clusters. Average SFA-efficiencies are astonishingly high at about 0.8, whereas the DEA-ones are a little lower. Our findings improve previous sector benchmarking by identifying peer companies for any German water utility. This information might be useful both for utilities' management and for the sector's overall economic performance. In addition, our results show that modern econometric benchmarking techniques can be a proper mean also in current cartel office cases.