

Assessing the productivity change of water companies in England and Wales : a dynamic metafrontier approach

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Abstract

The assessment of productivity change and its drivers across water companies and over time is a powerful tool for both regulators and companies when setting water tariffs. Water and sewerage companies (WaSCs) and water only companies (WoCs) provide different services. Hence, their productivity change cannot directly be evaluated jointly. In this paper and for the first time, we provide a pioneering approach to assess and compare the dynamics of productivity change of WaSCs and WoCs. To achieve this, both the traditional Malmquist productivity index and the metafrontier Malmquist productivity index and its components are computed to assess the productivity change for a sample of English and Welsh water companies over the period 2001-2014. The findings from both indices indicate that productivity for both WaSCs and WoCs did not improve during this period, mainly due to the negative shift in the production frontier which offset the positive effect of efficiency change. It is also reported that the performance of the WoCs over time was slightly better than that of the WaSCs. Finally, our study provides some insights into the relationship between productivity change and the regulatory cycle. This information is essential to improve the regulation of water and sewerage services, contributing to the long-term sustainability of the urban water cycle.

Keywords: Data envelopment

analysis | Metafrontier | Performance | Productivity | Regulation | Water companies.

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