Chapter 10

Benchmarking Regulators: A Data Envelopment Analysis of Italian Water Authorities’ Performance

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ABSTRACT

In this chapter, Data Envelopment Analysis is employed in a particular perspective, as the authors conduct an evaluation of the efficiency performance of regulatory agencies. The Italian water sector regulation, as it was organized until 2010, with high fragmentation of the regulatory activity (92 regulators over the country), is particularly suitable for benchmarking analysis. The ratio of this approach relies on the fact that regulators, as other public entities, are resource-consuming operators whose cost ultimately burdens the consumers. Therefore, it is relevant to test whether they operate efficiently. The authors run several DEA-based models, including different sets of variables and assuming different orientation. From the empirical analysis, a relevant “pure” technical inefficiency (VRS) emerges. A secondary but not negligible role is also played by the scale effect, with some interesting considerations related to the optimal OTAAs size.

INTRODUCTION

The Italian water sector has undergone major modifications since the implementation of the reform promoted with the law no. 36/1994 (Galli’s Act, henceforth), which had the target to reduce the fragmentation of the water supply and sewerage services in the Country (provided in the ‘90s by more than 9000 firms and municipalities) and to improve the quality of the service (e.g. by reducing the number and duration of interruptions and the water losses along the network, and by increasing the number of sewerage connections). To facilitate the achievement of such targets, the country has been divided into 92 “Optimal Territorial Areas” (OTAs, or ATO in Italian). In each one, a single integrated firm should

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have been in charge of providing the water and sewerage services, thus being able to achieve larger efficiency by exploiting economies of scale and scope. To prevent potential abuses of the firm (clearly a monopolist) on the consumers, in each area a regulatory authority (Optimal Territorial Area Authority, or OTAA) was established, with tasks mainly related to long run economic planning and control activities. Such a system, with industrial providers and regulatory bodies, was evidently inspired by the British one, but with a peculiarity: the one-to-one relationship between controller and controlled firm. Such a rare (or unique) case in regulation led to a total number of 92 regulatory authorities in the country, operating without any central coordination.

Recently Italian OTAAs have been abolished by law (no. 42/2010), leaving to the Regions the responsibility of reorganizing the system and re-attributing the regulatory tasks previously performed by the OTAAs. Later, a subsequent Government decree (no.201/2011, converted in the law no.214/2011) has transferred some of the control and regulation activities related to the water sector to the Gas and Electric Energy Authority (AEEG), suggesting a tendency towards centralization of regulation. In such a framework, this contribution is able to provide helpful policy insights, since its purpose is twofold.

The first point is focused on the ratio of existence of a regulation authority, which is aimed to guarantee accessible prices and good quality of service to customers, characteristics (the former especially) which are not likely to be achieved in an unregulated monopolistic framework. However, the authority as well is a resource-consuming entity, whose cost ultimately burdens the consumers, either through the tariffs or through the tax system. Therefore, whether or not the authority is using its resources efficiently is one (and relatively the most innovative) of the relevant questions addressed in this work:

**Q1:** Are (were) Italian water authorities efficient?

The second point is related to the large number of OTAAs created in the country, which constituted an Italian peculiarity, and to the fact that after OTAAs abolition the regulation activity has been (at least partially) attributed to a single entity. In this context, a quite natural question is whether or not OTAAs were relevantly under-dimensioned, thus providing arguments in favor or against the policy makers’ aggregation choice. Then, the second issue considered here is:

**Q2:** Were OTAAs operating at a sub-optimal scale size?

**BACKGROUND**

Italian OTAAs, as implemented by Galli’s Act, are regulatory authorities in charge of controlling the activity of the firms providing the service over the Optimal Territorial Areas. Originally it was thought as a crucial aspect of the reform that the provider should have been unique in each OTA, but in practice there have been some cases in which the regional law has allowed the presence of multiple operators (whose number was, however, limited). Neglecting these exceptions, however, we can think about a one-to-one relationship between the authority and the firm.

Authorities are small entities, either in the sense that they operate at local level and because they are small offices: on average OTAAs employ 6 people, and in general not more than 16, with some cases

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