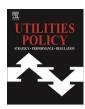


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# The effects of ownership, board size and board composition on the performance of Italian water utilities



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#### ABSTRACT

This article analyses the effects of ownership, board size and composition on the performance of 72 Italian water utilities. Information about the utilities' 335 directors was collected. Our main findings indicate that private or mixed-ownership utilities show higher profitability than entirely publicly-owned firms, even if the latter are less debt-dependent. Furthermore, our results show that the boards of Italian water utilities are dominated by politically connected directors, who boost access to debt and negatively affect the firms' capital structures. This study also shows that board composition, in terms of the age and educational background of members, influences economic performance, since graduate and senior directors exert a negative influence on profitability.

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#### 1. Introduction

Over the last 25 years the governance of public services has undergone important reforms in many countries. The global water industry in particular has been the focus of debate regarding how best to improve the economic performance, organizational efficiency and financial viability of water utilities. In the last two decades, privatization was often adopted in industries still including core natural monopolistic features and by governments of any political orientation (Florio and Fecher, 2011). Water services have accordingly been privatized in several countries, notwithstanding conflicts between the profit-seeking behavior of private partners and the public objectives of a water service (Hall, 2001). Within Europe the UK, France, Portugal, Spain and Italy have all been involved in privatization processes, with diverse results (for a literature review see Abbott and Cohen, 2009; Berg and Marques, 2011).

In Italy the debate on the privatization of water firms, which were originally held by local governments, and the appointment of their board members is a topical issue (Carrozza, 2010). Italian municipalities have historically provided public services directly

through public administrations, but during the nineties legislation transformed municipal utilities into corporations regulated by private law (Bognetti and Robotti, 2007). Thus, the Italian water industry has been transformed over the last fifteen years by extensive legislative reforms designed to end the direct supply of water and wastewater services by outsourcing these services to independent public, mixed ownership or privately-owned firms. These reforms have fostered both the integration of water services (water supply and wastewater) and industry concentration, making it possible to exploit economies of scale and scope (Guerrini et al. 2011; Carrozza, 2011). As a result, public and private utilities now coexist, operating on different scales. In 2008 the Italian government imposed compulsory tendering and the termination of all direct entrustments where public companies were allowed to participate in bids; according to the new framework, tenders could only be avoided if at least 40% of the shares of incumbent in-house companies were auctioned off to market operators (Massarutto and Ermano, 2013). However, in 2011, following a referendum, this decision was reversed and it once again became possible to entrust water services not only to mixed or wholly privately owned firms but also to public companies (Massarutto et al. 2013). The close connection between Italian utilities and local government causes the dominance of politically connected directors on the boards of Italian utilities, who exert a negative effect on the firms' performance (Menozzi et al. 2011).

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Building on agency theory (Jensen and Meckling, 1976), this paper seeks to add to the existing literature on water utility management by investigating whether the board size and composition and the ownership of Italian water utilities affect firms' decisions, and how they ultimately impact performance. Despite the relevance of this issue, the water industry literature to date has focused mainly on the ownership/performance linkage and lacks empirical studies investigating the relationship between performance and board size and composition.

This article is structured as follows. The next section offers a brief overview of the regulatory framework of the Italian water industry. Then, in the third section a review of the literature on the links between ownership, board size and composition, and firm performance is provided. The fourth section describes the research method and the process of data collection and analysis. The fifth and sixth sections outline the key findings of our empirical research and discuss the main implications.

## 2. A brief overview of the regulatory framework for the Italian water industry: the impact on performance and board characteristics

To better understand the results obtained with the current research it is worthwhile to describe the regulatory framework of the Italian water industry that was in force until 2011, the year to which the empirical data relate. The performance of utilities operating in regulated sectors can be explained not only in terms of efficiency, quality of human and technical resources, or a firm's market strategy: the method chosen to determine tariffs and the contractual model arranged with the local authority represent two further factors affecting profitability (Reynaud and Thomas, 2013).

In Italy historically, municipalities are the main authorities responsible for the water and wastewater services provision. Although regulation of the water sector began in 1865 with the Law 2248 that aimed at planning water usage (see, for an excursus of the water regulation, Marques, 2010) the most comprehensive reform of the water industry began in 1994 with the so-called Galli law (law n. 36 of 1994). This law had a number of purposes: to integrate water services (water supply and wastewater); to merge water utilities and permit the entry of private shareholders to increase the scale of the industry (i.e., Bognetti and Robotti, 2007); to ensure that tariffs covered both current and capital costs; and to end the in-house supply of services by municipalities by franchising the provision of water services to independent operators (Massarutto et al., 2013; Guerrini et al., 2011; Carrozza, 2011; Danesi et al., 2007). In addition, the Galli law required each Italian region to define "optimal management areas" (Ambiti Territoriali Ottimali or ATO), both to ensure geographic division on the basis of natural water basins and also to avoid the excessive fragmentation of services. The activities of each water utility operating within an ATO were to be regulated and audited by a local regulatory authority (Autorità di Ambito Territoriale Ottimale or AATO). Each AATO had three main objectives. The first was to define a technical, financial and operating plan, assigning specific objectives to individual water utilities in terms of investments, quality of services, revenues, profits and tariffs. The second was to outsource the management of the water supply and sanitation system to one or more concessionaires, who were required to sign an agreement defining the forms of supervision and control used by the local authority. Finally, the third objective was to monitor the implementation of planned strategic objectives and actual results obtained by the utilities through detailed analysis of reports (Guerrini et al., 2011).

As a result of the Galli law, in 1996 a new system for setting water tariffs known as the "normalized method" (MTN) was introduced (by ministerial decree, DM 01/08/1996). This method

(which was modified in 2012) was based on the "average real tariff" and was effectively a form of revenue-cap regulation applied indistinctly to entirely publicly-owned companies, public-private partnerships and private companies (Marques, 2010; Carrozza, 2011). Costs were determined considering a mandatory efficiency gain, estimated as the gap between planned costs and costs resulting from an econometric model provided by the regulation. The planned costs curve must not exceed the modeled costs curve plus a 30% mark-up, otherwise it will be authorized by the former national regulatory authority (CO.N.Vi.Ri) (Marques, 2010; Carrozza, 2011). If the planned costs were higher than the modeled costs plus a 20% mark-up, then an efficiency rate (i.e., mandatory cost-reduction rate) of 2% became applicable to planned costs annually; if the planned costs were lower than the modeled costs plus a 20% mark-up, a 1% efficiency rate was applicable. Finally, if the planned costs were lower than the modeled costs, the efficiency rate applicable was 0.5%. Revenues were obtained by summing adjusted costs, depreciation and amortization and a 7% standard rate of return on planned investments. The average tariff was obtained by dividing the total allowed revenues by the planned cubic meters of water sold (Guerrini and Romano, 2013).

With MTN firms may improve performance by maintaining high efficiency and improving the spread between the 7% standard rate on investments and the cost of bank loans. However, contracts arranged with AATOs are often poorly detailed and vague with respect to the procedures for tariff revision and cost pass-through; consequently, operators could easily justify higher costs than those planned by citing fortuitous events not included in the plan. In this case performance could be improved or at least not worsened by reducing investments until a tariff revision (Massarutto and Ermano, 2013). Contracts often provided for penalties for underinvestment, even if AATOs do not always applied them. The opposite situation could occur, when AATO postpones or refuses the plan revision, and forces the utilities to collect revenues based on underestimated costs.

Similarly to their performance, the characteristics of water utilities' boards also are conditioned by specific legal provisions. Fully publicly-owned utilities can appoint no more than 5 board members, according to Law 78 (2010). In contrast, mixed owned utilities have no limitations concerning board size: a restriction is provided only for the number of members appointed by the public shareholders, which must be no more than 5 (Law 296 of 2006). For both kinds of firms, Law 138 (2011) banned the appointment of any politicians who operated in the previous three years as administrators of the local authority owning the utility. Finally, there are no restrictions related to the different size of the firms.

#### 3. Literature review

Ownership and boards of directors play central roles in the governance of firms. Some authors argue that state-owned enterprises (SOEs) – i.e., corporate entities established to pursue public policy and commercial objectives, which are wholly owned either by the State or a local government – will perform less efficiently and less profitably than privately-owned ones (Shleifer and Vishny, 1994; Boycho et al., 1996) and that ownership, together with competition, is important in promoting efficiency (Boardman and Vining, 1989; Bozec and Dia 2007).

Studies have provided conflicting results regarding the impact of privatization on economic efficiency and profitability (Bakker, 2003; García-Sánchez, 2006; Lobina and Hall, 2007; Marques, 2008; Carrozza, 2011), as well as on investment and financial structure (Shaoul, 1997; Vinnari and Hukka, 2007; Romano et al., 2013). With reference to the Italian context, Guerrini et al. (2011) find that privately-owned utilities are more oriented toward

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