Board Composition and Performance in State-Owned Enterprises: Evidence from the Italian Public Utilities Sector

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Abstract

State-Owned enterprises are likely to suffer more severe agency problems than other firms. First, they undergo a "double agency" problem because an agent, who will usually be a politician with his own agenda, will represent the state's interests in the company. Second, they also suffer a "common agency" problem, because they are overseen by several levels of government, or by both the state and minority shareholders with potentially conflicting interests, which may be inconsistent with profit maximization. To make matters worst, they usually operate in non-competitive industries and therefore they do not benefit from the discipline of market pressure in case of underperformance. All of these problems imply that good corporate governance can make a great difference for these firms. This paper analyzes the effect of board composition on the behavior of the Italian public utilities. We use a newly collected panel of 114 Italian public utilities including data on their 1630 directors during the period 1994-2004. This period is particularly interesting because of the legal changes that forced many of these firms to alter their juridical form and allow the entrance of private investors. We investigate whether the changes in board composition were accompanied by changes in decisions about employment and analyze their ultimate effect on performance. Our main findings indicate that politically connected directors, most of them representing the state or the local municipality's ownership, dominate boards of directors in the Italian public utilities all throughout the period. The presence of politicians on the boards of these companies seems to have a positive and significant effect on employment but this is not reflected in differences in performance. Independent directors have an ambiguous role thus suggesting the need for a further specification of the directors' profile or a tighter definition of independence.

Keywords: corporate governance, politically connected firms, public utilities, independent directors, government shareholding
EFM classification: 150, 790, 110, 750

Acknowledgments

We are grateful to the research centers Ceris-CNR and Hermes in Moncalieri (Italy) for providing the initial database and to Giuseppe Civati, Antongiulio Giove, AGSM Verona (in the person of GianPietro Leoni), ASEC Catania (in the person of Giuseppe Pisano), AEM Milano, IRIDE for the information on board composition.

1. Introduction

Board composition is a highly studied topic in relation to private firms but have received little attention in the context of State-owned enterprises (SOEs). One reason is that the debate on corporate governance has traditionally concerned widely held firms operating in market economies while firms with concentrated and well identified ownership, such as SOEs and family firms, or firms operating in non-competitive environments, like in developing countries, have been set aside. Another reason is that the traditional dichotomy between atomic shareholders and controlling managers does not apply to SOEs where executives are nominated by a public entity who usually holds a great enough stake to ensure real control rights and establish absolut priorities. Nevertheless, SOEs are likely to suffer more severe agency problems than private firms. They are affected by a "common agency" problem when they are overseen by several levels of government, for example by a local government which owns them and the sovereign state, or by both the state and minority shareholders with potentially conflicting interests. SOEs might also encounter a "double agency" problem for the divergencies that might arise between managers and controlling body, on one hand, and between politicians and the ultimate owners of the firm, the citizens, on the other. Recent studies on transition and developing economies has paid dedicated attention to the corporate governance issues and the same approach has been embraced at the institutional level: the World Bank (2006) says that "fundamental problems in the governance of SOEs explain much of the poor performance of SOEs (page 3)" and the OECD (2005) that "the boards of state-owned enterprises should have the necessary authority, competencies and objectivity to carry out their function of strategic guidance and monitoring of management", thus recognizing to board composition a role. In this paper we ask three main questions: does board composition matter in firms with con-

centrated ownership? What do SOEs directors maximize? What is the role of independent directors?

We investigate the relationship between board composition and employment, on the one hand, and board composition and performance, on the other, by means of a newly created dataset of 114 Italian public utilities during the period 1994-2004. During this decade, in analogy to what happened in the traditionally state-dominated sectors in many OECD countries, a deep transformation of the institutional and industrial environment took place in the Italy. Public utilities was interested by a legislative change implying the progressive separation of public welfare and policy functions from the commercial ones, the introduction of competition elements in the retail segment and the regulation of the access to the market segments requiring significant investments by means of auctions. At the same time, public utilities have been accompanied throughout a transformation in their juridical form toward institutional designs consistent with the participation of private investors and with the functional separation of operations from direction. From the initial status of "Azienda Municipalizzata", autonomous legal entity emanating de facto from the sovereign government, with a board of directors directly nominated by the state owner and called "Commission", firms have sometimes changed into a transitional juridical form called "Azienda Speciale" whose management enjoyed a greater control over the firm strategy. Firms could have directly transformed into limited companies with a proper board of directors where both public and private entities can invest. Today limited companies represent the absolute majority of Italian public utilities but they are still controlled by state entities and their boards dominated by politicians.

Paragraph 2 illustrates the criteria adopted to define board composition. Paragraph 3 describes the data set. Paragraphs 4 presents the econometric

methodology adopted to test the relevance of board composition for firm level employment and reports the results Paragraph 5 does the same for profitability. Paragraph 6 concludes.

2. Definitions

We define board composition based on the political affiliation of directors, their independence, the status of insider or outsider and their role. Politically-connected directors may be identified by their present or past activity in the political arena, as represented by a political charge, the membership to a political party, the candidacy for election. A director could be involved in the political arena even when none of the previous conditions is met (through relatives, for example). Faccio (2002) says directors are politically connected when they are member of parliament, heads of state, associated or close to a political party or when their relatives or close friends are. We consider as politically connected directors holding a seat in the parliament or in the Municipal, Province or Regional government at the same time as a seat in the board or before, directors affiliated to a political party and whose relationship with political parties is well-known. The reason for considering political connections at a lower level than in Faccio (2002) is twofold: first, a public utility's stakeholders are generally located in a restricted geographic area, so that connections are important at a very local level; second, our focus is on board components and their objective function so that we want to capture all possible sources of influence and motivation. Other types of political affiliation might exist, for example through the director's primary occupation or the director's academic background (like in Agrawal and Knoeber (2001), where directors are considered as politically connected if they hold a degree in Law, for their utility in case the firm is sued by shareholders). We do not include in the political connection the director's

family or friends' connection, because the territorial range of operations of sample firms and their directors makes the information difficult to find and to prove. We also exclude the director's degree, because it does not seem an important variable in the Italian context. We include well documented but unofficial connections and, on the contrary of Faccio (2002), we do not distinguish them from the connections identified by more objective criteria, because the directors falling in this category are only few and in general they have previously covered executive positions in other SOEs.

We define as outsiders directors who are not current employees of the firm, so that they might also be one of the top officers, tipically the President, if they have no executive powers. In general, in public utilities the Presidency is the investiture of a person of known experience and authority or otherwise an honorary charge given to a civil servant as a recognition of his past service who might (or might not) exert the appropriate monitoring and advisory functions within the board. In consequence independence is not excluded by the officer position in the firm as it would be by strictly applying the definition of outsiders as directors in non-executive positions. For independence, we rely on the "Codice di autodisciplina" (2006) issued by the Committee for corporate governance of listed firms of the Italian Stock Exchange[3]: "A convenient proportion of non-executive directors is represented by independent directors, who must not be involved in any economic relationship with the firm, its executive directors and its shareholders, cannot execute control or relevant influence over the firm and are not relatives of anyone in such a positions (page 21)." The definition is consistent with Fields and Keys (2003) for whom directors are independent in "absence of any supplier, customer, interlocking, or potential competitor rela-

[3]Our definition of outsiders is also consistent with the "Codice di autodisciplina", for which independent directors must be non-executives and the President is not independent if he has managerial or strategic power. We also correctly have that independent directors cannot be insiders.

tionships" with the firm. Listed companies in the sample declare their directors independent or not according to the "Codice di autodisciplina" and some non-listed companies do the same in the comments to their balance sheet or in the chart. We fill the gaps for non-listed companies by classifying their directors accordingly to the same criterion. Some firms say their directors are independent even if they have served as officers in the public entity controlling the firm. In these cases we preserve the firm indication and say the director is (politically connected and) independent. Outside directors are not qualified on the basis of their inside stock ownership because most of the Italian public utilities are totally owned by a local or central government and the category is irrelevant. Eventually, inside ownership concerns family firms and the directors' affiliation to the owner make them not independent while the inside or outside attribute depends on their role.

3. Data set and summary statistics

The data set includes economic, technical and governance variables of 114 Italian public utilities surveyed annually in 1994-2004. The sample firms operate at local and national level in the gas, electricity and water production, distribution and sale and they are representatives of the sector for number, geographical distribution and dimension. Some of them are active in more than one industry, then being "multiutilities" and 9 out of 114 firms are listed at the Italian Stock Exchange. Federutility, the Italian federation of local water and energy utilities, lists 515 associates[4] but the number includes the operating firms, their affiliates, the entrepreneurial shareholders, the local governments and the engineering enterprises involved in the sector of activity. The data set is unbalanced, for a total of 838 firm-year observations and 1630 board direc-

[4]Data at November 2007 from the Federutility's website.

tors. One reason for the unbalanced nature of the dataset are the corporate finance operations, namely mergers or alienations, that have made some firms to disappear and others to appear at a point in time, another reason is the lack of primary source of information, the balance sheets. The completion of the data set has spread over several years. The research centers Ceris-CNR and HERMES in Moncalieri (Italy) provided the initial data set, including technical and economic data retrieved from the paper balance sheets and from questionnaires sent to the firms. When missing, the economic information was searched for in the electronic databases AIDA and Osiris or the original balance sheets requested to the Court where they were supposedly deposited for legal and fiscal requirements: unluckily, this search has permitted to fill much but not all the missing values. Nevertheless, the data set is not strongly unbalanced, and, most important for the validity of results, the missing values are randomly distributed.

Information on governance was not included in the original datasets and makes this dataset unique. It includes: the juridical form, the biggest three shareholders' identity, the percentage of equity they own, the name of directors, their charge in the board, their political connection, if any, their position as inside, outside or independent directors as declared in the firm chart or deducted from their role and curriculum. For most of the companies being unlisted, the main source of information was the paper balance sheets but for some details, such as the directors independence, or when the balance sheets were not available, alternative sources helped: AIDA, Osiris, the firms' websites, the firms themselves, through interviews, and the Internet. Two additional sources were useful for listed companies: Consob (Commissione Nazionale per le Società e la Borsa, the public authority responsible for regulating the Italian securities market) and the Italian Stock Exchange's websites. Companies with the "Azienda

Municipalizzata" juridical form do not have a proper board of directors but an "administrative commission" nominated by the local government who controls it, and the board components were not always reported in the balance sheets. Despite these difficulties, only 17 out of 838 board-year data, corresponding to the boards of six different firms, are missing.

In order to identify the politically connected directors, we proceeded by steps, by addressing the sources of information from the least to the most sensitive. In principle, in Italy the membership to a political party and the extra-parliament political charges are public information. We contacted some Italian political parties and asked for the list of their affiliates but received no help, for the declared reason that there is no available database with those records. We run the biographical research on the electronic databases FACTIVA, LEXIS-NEXIS, ABI Inform (press release) and the Who's Who in Italy. Even if directors in the list showed up in those databases, there was almost no useful information about their political affiliation. We kept in touch with ANSA, the most important press agency in Italy, who did not have the information either. Then, we considered interviewing the board members and sent a meeting request to a small sample of 12 firms, selected from the biggest ones. Four of them answered[5]. This made us lay down the idea to send questionnaires to the firms asking for their directors' political connection. The last resort was Internet, where we found most of the information. By putting the information together, we can tell the political connection of all the 1630 directors with a high degree of confidence.

Table 1 summarizes some descriptive statistics for the profit ratios, the di-

[5]They are AGSM Verona, AEM Milano, IRIDE (born from the integration of AEM Torino and AMGA Genova), ASEC Catania.

Variable	*25%*	*Median*	*75%*	*Mean*	*St.Dev*
ROA	0.014	0.034	0.057	0.037	0.037
ROE	0.026	0.088	0.156	0.120	0.172
ROI	0.021	0.051	0.090	0.069	0.097
assets ('000 euro)	24,225	65,325	187,077	264,619	668,351
n	54	168	413	505.7	1294.3
sales ('000 euro)	11,625	27,571	85,907	96,910	221,688
board	5	7	7	6.28	2.72
polit	4	6	7	5.66	2.55
indep	0	0	2	1.44	2.13
out	4	6	6	5.13	2.64

Table 1: Descriptive statistics

ROA is the return on assets, *ROI* is the return on invested capital, *ROE* is the return on equity, *assets* represents the firm total assets, *n* the number of employees, *sales* the revenues, *board* is the board size, *indep* is the number of independent directors, *polit* is the number of politically connected directors, *out* is the number of outside directors.

	board	*polit*	*indep*	*out*	*%polit*	*%indep*	*%out*
board	1.0000						
polit	0.9151 *0.0000*	1.0000					
indep	0.3960 *0.0000*	0.2699 *0.0000*	1.0000				
out	0.9700 *0.0000*	0.9129 *0.0000*	0.3644 *0.0000*	1.0000			
%polit	-0.0475 *0.1736*	0.3379 *0.0000*	-0.2025 *0.0000*	-0.0015 *0.9659*	1.0000		
%indep	0.1981 *0.0000*	0.0878 *0.0118*	0.9168 *0.0000*	0.1893 *0.0000*	-0.2148 *0.0000*	1.0000	
%out	0.6226 *0.0000*	0.5907 *0.0000*	0.2081 *0.0000*	0.7159 *0.0000*	-0.0479 *0.1706*	0.2127 *0.0000*	1.0000

Table 2: Correlation matrix for board composition

Pearson correlations between board characteristics: *board* is the board size, *polit* is the number of politically connected directors, *indep* is the number of independent directors, *out* is the number of outside directors, *%polit* is the fraction of politically connected directors, *%indep* is the fraction of independent directors, *%out* is the fraction of outside directors. P-values in italic.

	ROA	*ROE*	*ROI*	*assets*	*n*	*sales*
board	0.0081	-0.0257	-0.0785	0.1343	0.1153	0.0948
	0.8159	*0.4620*	*0.0246*	*0.0001*	*0.0009*	*0.0066*
polit	-0.0653	-0.0569	-0.1550	0.0678	0.0510	0.0427
	0.0613	*0.1032*	*0.0000*	0.0523	*0.1442*	*0.2216*
indep	0.0393	-0.0618	-0.0219	0.3052	0.2590	0.2416
	0.2611	*0.0769*	0.5315	*0.0000*	*0.0000*	*0.0000*
out	-0.0421	-0.0353	-0.1156	0.1542	0.1341	0.1187
	0.2283	*0.3118*	*0.0009*	*0.0000*	*0.0001*	*0.0007*
%polit	-0.2135	-0.1487	-0.2920	-0.1153	-0.1255	-0.0848
	0.0000	*0.0000*	*0.0000*	*0.0009*	*0.0003*	*0.0151*
%indep	0.0181	-0.0545	-0.0346	0.2753	0.2411	0.2085
	0.6043	*0.1188*	*0.3218*	*0.0000*	*0.0000*	*0.0000*
%out	-0.0250	0.0268	-0.0777	0.1127	0.1035	0.1167
	0.4739	*0.4436*	*0.0260*	*0.0012*	*0.0030*	*0.0008*

Table 3: Correlation matrix for firm characteristics

Pearson correlations between profit ratios, measure of firm dimension and board characteristics: ROA is the return on assets, ROI is the return on invested capital, ROE is the return on equity, $assets$ represents the firm total assets, n the number of employees, $sales$ the revenues, $board$ is the board size, $indep$ is the number of independent directors, $polit$ is the number of politically connected directors, out is the number of outside directors, $\%polit$ is the fraction of politically connected directors, $\%indep$ is the fraction of independent directors, $\%out$ is the fraction of outside directors. P-values in italic.

mensional variables and board composition. *ROA* is computed as EBIT, earning before interest and tax expenses, equivalent to the operating profit, to total assets ratio, *ROE* as the proportion of Net Income over equity and ROI as the ratio of EBIT over capital invested as the sum of equity and financial debt. On average, board are composed by less than six persons, and sometimes all of them are politicians. Outside directors are as common as politicians, but most of them are not independent. Table 2 attests the dominance of politicians in the board but their incidence decreases when the number of independent in the board goes up. Table 3 shows a positive correlation between board size and firm dimension, consistently with the institutional features of the firms. The incidence of politicians in the board negatively affects the profit ratios and the dimensional variables *assets*, *n*, *sales*. On the contrary, the percentage and the level of independent and outside directors is positively correlated with the dimension of the firm which is somehow puzzling. We will test these relations in the followings paragraphs.

4. Firm-level employment and board of directors in the Italian public utilities

The political view of SOEs (Shapiro and Willig, 1990; Shleifer and Vishny, 1994) have legitimated the idea that SOEs are over-staffed and burocrats do not pursue any social objectives but consensus solely. We investigate this hypothesis by studying the relation between board dimension and composition, on one hand, and the number of employees in the firms, on the other. The level of employment in firms controlled by a political body who holds effective control like in the Italian public utilities might expand for political reasons. The trend might be stronger if the board is dominated by politicians representing various

stakeholders and interests. In a profit-maximizing firm independent directors would be expected to contrast the expansion of employment when it is pursued at the expense of profitability. In a context where board objectives and the profile of directors are not clear the same is not necessarily true.

4.1. Board dimension

The first hypothesis we want to test concerns the nature of the relationship between board size and labor demand. The direct correlation between the two variables might suggests a positive effect of board size on employment, which might nevertheless include an indirect effect working through firm dimension. In case the positive effect persists after controlling for firm size, the direction of causality must be assessed. Firms with large headcount might need dedicated policies and expertises to be represented in the board, and big firms are more closely monitored by the shareholders through the board, so that board size does depend on employment. We therefore treat board dimension as potentially endogenous.

We apply the "bounding procedure" (Bond, 2002) to the following model:

$$n_{it} = \alpha_1 n_{it-1} + \beta_1 w_{it} + \beta_2 w_{it-1} + \beta_3 k_{it} + \beta_4 k_{it-1} + \beta_5 board_{it} + \lambda_t + \eta_i + \upsilon_{it} \quad (1)$$

where $n_{i.}$ is the logarithm of employment in company i at the end of corresponding year, $\omega_{i.}$ is the logarithm of average wage, $k_{i.}$ is the logarithm of firm gross capital (as the sum of total financial dept and equity), $board_{it}$ is the number of directors sitting in the board at time t, λ_t is a time effect common to all firms, η_i is a permanent but non-observable firm specific effect, and υ_{it} is the error term. Variables $k_{i.}$ and $\omega_{i.}$ are treated as endogenous, as well as

$board_{it}$. A theoretical interpretation for the model in 1, without the governance variable, is in Arellano, Bond (1991). With the inclusion of $k_{i.}$ in the model we isolate the effect of firm size on employment so that the positive correlation between board and firm dimension displayed in Table 3 is taken away. Table 4 shows the results[6].

The first specification is an OLS estimate in which both the dependent and the independent variables are in levels (column (1)). The problem in applying OLS to 1 is that the lagged employment, n_{it-1} is endogenous to the fixed effects in the error term, thus violating the assumption necessary for the consistency of OLS and generating the "dynamic panel bias". As a consequence, the lagged employment's coefficient (equal to 0.954) is overestimated because it appropriates predictive power that actually belongs to the firm fixed effect accounted for in the error term. Column (2) in Table 4 shows the Fixed Effect estimates obtained by applying OLS to the 1 where each variable is transformed into the corresponding deviation from the mean to overcome the endogeneity problem. The lagged employment coefficient falls from 0.954 to 0.763: as Bond (2002) points out, this is the interval where the estimate of the true parameter should fall. Since the Within Group transformation does not remove the dynamic panel bias (Nickell, 1981; Bond, 2002), column (3) in Table 4 includes the "GMM-system" estimates where the predetermined and endogenous variables in first-differences are instrumented with suitable lags of their own levels and the predetermined and endogenous variables in levels are instrumented with suitable lags of their own first differences. The coefficient of the lagged employment equals 0.821 and falls between the OLS and the Within-Group estimates; the Arellano-Bond test for autocorrelation correctly fails to reject the null hypothesis that the error terms in the first difference regression exhibit no second order

[6] All estimates are performed using the xtabond2 procedure in Stata developed by Roodman (2005). In all cases the two step estimates are reported with the finite sample correction of the variance covariance matrix suggested by Windmeijer (2005).

Independent variables	(1) OLS	(2) Within Group	(3) GMM-sys	(4) GMM-sys2
n_{it-1}	0.954***	0.763***	0.821***	0.826***
	0.0131	0.0152	0.0612	0.0658
	0.000	*0.000*	*0.000*	*0.000*
w_{it}	-0.621***	-0.645***	-0.798***	-0.876**
	0.1372	0.1355	0.1667	0.1409
	0.000	*0.000*	*0.000*	*0.000*
w_{it-1}	0.576***	0.459***	0.611***	0.626***
	0.0892	0.0626	0.0928	0.1348
	0.000	*0.000*	*0.000*	*0.000*
k_{it}	0.153***	0.132***	0.206***	0.201**
	0.0418	0.0383	0.0751	0.0913
	0.000	*0.001*	*0.006*	*0.028*
k_{it-1}	-0.105***	-0.0397**	-0.076	-0.080
	0.0353	0.0823	0.0525	0.0575
	0.002	*0.032*	*0.147*	*0.166*
$board_{it}$	-0.000	0.018***	0.033***	0.030**
	0.0032	0.0057	0.0120	0.0139
	0.819	*0.002*	*0.006*	*0.032*
AR(2)			-1.70	-1.642
AR(2) p-value			0.088	0.101
Hansen Pr $> \chi^2$			1.000	1.000
Hansen df			139	110
Difference Hansen Pr $> \chi^2$			0.815	0.796
No. observations	699	699	699	699
Time dummies	yes			
Sample period	1994-2004			
No. firms	114			

Table 4: Employment and board dimension

serial correlation; the Sargan tests fails to reject the null hypothesis that all instruments are exogenous at the 5% level; the difference-in-Hansen test fails to rejects the hypothesis that the additional moment conditions are valid. The two-step GMM-sys estimate with correction for heteroskedasticity, in column (4) of Table 4, basically confirms the first-step findings that the lagged employment and the contemporaneous and lagged wage are the main determinants of the present employment. The coefficient of $board_{it}$ is positive and significant at a 5% level, thus assigning a positive effect of board dimension onto the level of employment.

4.2. Board composition

We think that politically connected directors have a word in deciding a public utility's employment and we want to test the effect of their decisions on the strategy of firms that are different for juridical form and sector. Table 5 shows the bounding procedure applied to the model in 1, where the variable $board_{it}$ has been substituted for $polit_{it}$, the number of politicians sitting on the board at time t. The number of politicians sitting on the board may depend on the firm size, its juridical form, ownership structure and industry. We stay open to the possibility that the variable $polit_{it}$ is endogenous to the mechanism governing employment and we apply the bounding procedure in analogy to what we did with board size. We estimate the model:

$$n_{it} = \alpha_1 n_{it-1} + \beta_1 w_{it} + \beta_2 w_{it-1} + \beta_3 k_{it} + \beta_4 k_{it-1} + \beta_5 polit_{it} + \lambda_t + \eta_i + \upsilon_{it} \quad (2)$$

The number of politicians sitting on the board of firm i at time t, $polit_{it}$, has a positive impact on the level of employment and it is significant at a 5% level, after controlling for the lagged employment and for wage, capital and their first lags. The Arellano-Bond test for second-order autocorrelation in the residual

Independent variables	(1) OLS	(2) Within Group	(3) GMM-sys	(4) GMM-sys2
n_{it-1}	0.954***	0.762***	0.821***	0.827***
	0.0132	0.0150	0.0777	0.0797
	0.000	*0.000*	*0.000*	*0.000*
w_{it}	-0.621***	-0.647***	-0.880***	-0.931***
	0.1370	0.1350	0.1544	0.1501
	0.000	*0.000*	*0.000*	*0.000*
w_{it-1}	0.576***	0.456***	0.622***	0.638***
	0.0891	0.0633	0.0937	0.1024
	0.000	*0.000*	*0.000*	*0.000*
k_{it}	0.145***	0.128***	0.215**	0.209**
	0.0418	0.0386	0.0865	0.1059
	0.001	*0.001*	*0.013*	*0.049*
k_{it-1}	-0.105***	-0.085**	-0.093	-0.093
	0.0352	0.0397	0.0596	0.0672
	0.003	*0.034*	*0.120*	*0.167*
$polit_{it}$	0.000	0.016***	0.028**	0.027**
	0.0028	0.0058	0.0135	0.0112
	0.889	*0.006*	*0.041*	*0.016*
AR(2)			-1.709	-1.647
AR(2) p-value			0.087	0.100
Hansen Pr $> \chi^2$			0.998	0.998
Hansen df			110	110
Difference Hansen Pr $> \chi^2$			0.673	0.673
No. observations		576	699	699
Time dummies	yes			
Sample period	1994-2004			
No. firms	114			

Table 5: Employment and politicians

fails to reject the absence of second order autocorrelation, the difference-in-Hansen test fails to reject that the instrumental variables (time dummies and appropriate lags for the regressors) are exogenous. The model is well specified and confirm our hypothesis on the influence of politicians over firm level of employment.

We verify whether the same is true for the number of independent and outside directors, then testing the alternative models:

$$n_{it} = \alpha_1 n_{it-1} + \beta_1 w_{it} + \beta_2 w_{it-1} + \beta_3 k_{it} + \beta_4 k_{it-1} + \beta_5 indep_{it} + \lambda_t + \eta_i + \upsilon_{it} \quad (3)$$

$$n_{it} = \alpha_1 n_{it-1} + \beta_1 w_{it} + \beta_2 w_{it-1} + \beta_3 k_{it} + \beta_4 k_{it-1} + \beta_5 out_{it} + \lambda_t + \eta_i + \upsilon_{it} \quad (4)$$

where the governance variables $indep_{it}$ and out_{it} are treated as endogenous for the reasons previously exposed. Table 6 compares column (4) in Table 5, the two-step GMM-sys estimate in which the governance variable is $polit_{it}$, with the two-step GMM-sys estimate for model 3 and 4.

The variables of interest, $indep_{it}$ and out_{it} are both significant at a 5% level, with a positive sign. The interpretation of the sign is not obvious. In firms with disperse, private ownership, the presence of independent and outside directors are expected to signal strong governance, for the monitoring role exerted by those directors on the management. NYSE (since 1978) and the NASDAQ (since 1989) require companies whose stock is traded on their exchanges to have at least two outside directors on their corporate boards. This requirement suggests that some unaffiliated monitoring is considered necessary to safeguard or advance shareholders' interests. According to the Italian "Codice di Autodisci-

Independent variables	(4) GMM-sys2	(5) GMM-sys2	(6) GMM-sys2
n_{it-1}	0.827***	0.855***	0.883***
	0.0797	0.0873	0.0553
	0.000	0.000	*0.000*
w_{it}	-0.931***	-0.974***	-0.686***
	0.1501	0.1063	0.1499
	0.000	0.000	0.000
w_{it-1}	0.638***	0.689***	0.752***
	0.1024	0.0819	0.1397
	0.000	*0.000*	*0.000*
k_{it}	0.209**	0.164**	0.137*
	0.1059	0.0715	0.0701
	0.049	*0.022*	*0.051*
k_{it-1}	-0.093	-0.068	-0.051
	0.0672	0.0692	0.0571
	0.167	*0.324*	*0.371*
$polit_{it}$	0.027**		
	0.0112		
	0.016		
$indep_{it}$		0.025**	
		0.0112	
		0.025	
out_{it}			0.0324**
			0.0143
			0.023
AR(2)	-1.647	-1.54	-1.62
AR(2) p-value	0.100	0.124	0.105
Hansen Pr $> \chi^2$	0.998	0.989	0.498
Hansen df	110	88	85
Difference Hansen Pr $> \chi^2$	0.673	0.980	0.233
No. observations	699	699	699
Time dummies	yes		
Sample period	1994-2003		
No. firms	114		

Table 6: Employment and politicians, independent and outside directors

plina" for listed companies, outside directors should be relevant for the board decisions by virtue of their number and authority. Their opinion is particularly important when the executives' interests are not aligned with the shareholder's, because they are external to the firm daily management. In firms with concentrated ownership, some directors should be independent from the blockholder, in order to guarantee the board autonomy with respect to the controlling shareholders. The transformation of Italian public utilities from municipal firms into special firms before and into limited companies afterwards has given to the board increasing power, at least nominally. Since board composition and function varies across juridical form, it is worth testing whether $polit_{it}$, out_{it} and $indep_{it}$ are still significantly related to n_{it} when the juridical form is taken into consideration. In the next section we will investigate the impact of board composition and juridical form on profitability, so as to clarify the board objective function. We first test the following models:

$$n_{it} = \alpha_1 n_{it-1} + \beta_1 w_{it} + \beta_2 w_{it-1} + \beta_3 k_{it} + \beta_4 k_{it-1} + \beta_5 polit_{it} + jurform_{it} + \lambda_t + \eta_i + \upsilon_{it} \tag{5}$$

$$n_{it} = \alpha_1 n_{it-1} + \beta_1 w_{it} + \beta_2 w_{it-1} + \beta_3 k_{it} + \beta_4 k_{it-1} + \beta_5 indep_{it} + jurform_{it} + \lambda_t + \eta_i + \upsilon_{it} \tag{6}$$

$$n_{it} = \alpha_1 n_{it-1} + \beta_1 w_{it} + \beta_2 w_{it-1} + \beta_3 k_{it} + \beta_4 k_{it-1} + \beta_5 out_{it} + jurform_{it} + \lambda_t + \eta_i + \upsilon_{it} \tag{7}$$

where $jurform_{it} = \beta_6 AzMun_{it} + \beta_7 AzSpec_{it} + \beta_8 SocK_{it}$ and $AzMun_{it}$, $AzSpec_{it}$, $SocK_{it}$ stand for municipal firm, "special" firm and limited firm re-

spectively, and they are considered exogenous. In the estimate, one juridical form is dropped because of collinearity. Results of the two-step GMM-sys estimate are presented in Table 7.

When we control for the juridical form, $polit_{it}$, $indep_{it}$ and out_{it} are still positive and significant at 10% (the first two) and 5% (the latter) level. The Arellano-Bond test fails to reject the absence of second order autocorrelation in all the three specifications and the difference-in-Hansen test for the exogeneity of the instruments attests that the model is correctly specified. Juridical form is never significative: we obtain that in Italian public utilities employment increases with the number of politically connected, independent, outside directors sitting on the board, regardless the constraints and obligations imposed by the juridical form. As far as politically connected directors are concerned, the result is an important confirmation of a stylized fact about the behavior of state firms, traditionally over-employed, as argued by Boycko et al. (1996). The positive effect of independent and outside directors over employment is more puzzling. Shleifer and Vishny (1994) explain that the political control of firms (as brought by a politically-dominated board) leads to a less efficient resource allocation than managerial control. Government-owned firms are thought to forgo maximum profit in the search for social and political objectives such as wealth distribution and employment. The OECD (2005) claims that an effective governance, including a well balanced board of directors, should be aimed to prevent it. We therefore suspend the interpretation of the influence of independent and outside directors on employment and investigate their impact on firm profitability.

5. Board composition and firm value

We ask whether board dimension and composition affect firm value in the

Independent variables	(1) GMM-sys2	(2) GMM-sys2	(3) GMM-sys2
n_{it-1}	0.831***	0.851***	0.886***
	0.0825	0.0906	0.0536
	0.000	*0.000*	*0.000*
w_{it}	-0.909***	-0.9389**	-0.695***
	0.1795	0.1237	0.1446
	0.000	*0.000*	*0.000*
w_{it-1}	0.622***	0.690***	0.733***
	0.1099	0.0900	0.1318
	0.000	*0.000*	*0.000*
k_{it}	0.206**	0.178	0.129*
	0.1034	0.1161	0.0705
	0.047	*0.125*	*0.068*
k_{it-1}	-0.091	-0.072	-0.048
	0.0643	0.0709	0.0605
	0.159	0.309	*0.429*
$polit_{it}$	0.025*		
	0.0130		
	0.051		
$indep_{it}$		0.022*	
		0.0115	
		0.058	
out_{it}			0.033**
			0.0145
			0.025
$AzMun_{it}$	-0.0727	-0.021	-0.045
	0.0481	0.0508	0.0293
	0.131	*0.685*	*0.129*
$AzSpec_{it}$	-0.0409	0.0044	-0.0155
	0.0372	0.0277	0.0329
	0.272	*0.873*	*0.637*
AR(2)	-1.63	-1.55	-1.62
AR(2) p-value	0.104	0.120	0.105
Hansen Pr $> \chi^2$	0.996	0.970	0.620
Hansen df	110	88	85
Difference Hansen Pr $> \chi^2$	0.592	0.496	0.398
No. observations	699	699	699
Time dummies	yes		
Sample period	1994-2004		
No. firms	114		

Table 7: Employment, board composition and juridical form

Italian public utilities. The question is relevant in general and particularly in the Italian institutional context. The progressive transformation of public utilities from the "Azienda Municipalizzata" into the "Società per azioni" juridical form has put the bases for their strategic independence and signalled the legislator's intention to make firms automous in their expense plans and financing capacity. The prospective proficiency of state-controlled firms is essential for the actual entrance of private investors into their ownership structure as claimed by Coltorti et al. (2006) and Sapelli (2006) in reference to the Italian public utilities sector.

Corporate finance literature usually explains the relationship between governance and profitability by means of a dynamic linear model in which one or more lags of the dependent variable (stock return or accounting index) are used as regressor, like in the seminal work of Yermack (1996). Unless employment level, which is a stock variable accumulated over time, profitability is usually measured by flows, such as stock price or return on assets. We therefore study the effect of board dimension and composition on the operating performance of Italian public utilities by estimating the following static linear model:

$$y_{it} = \beta_1 G_{it} + \beta_2 X_{it} + \lambda_t + \eta_i + \upsilon_{it} \tag{8}$$

where y_{it} is a performance indicator, G_{it} is a governance variable, like juridical form, board dimension or composition, X_{it} are control variable, like sector or firm dimension, λ_t is a time dummy, η_i an individual, time invariant variable and υ_{it} the error term. Only 10 out of 114 firms in our sample are listed, so that the firm value will be assessed by accounting measures, namely ROI and ROE. ROA has been excluded as a dependent variable for two reasons: first, ROA is quite stable during the sample period and across firms then little informative about differences among the sample units; second, most Italian firms

finance their total assets through account payables more than financial debt, so that ROA does not properly reflect the capital profitability, which is our main concern.

5.1. Board dimension

We estimate the model:

$$y_{it} = \beta_1 board_{it} + \beta_2 X_{it} + \lambda_t + \eta_i + \upsilon_{it} \tag{9}$$

where y_{it} is ROI or ROE, $board_{it}$ is the number of directors at time t and X_{it} represents a set of control variables that we alternatively use in order to check the robustness of our results. In particular, X_{it} includes firm dimension and the industrial sector. Employment and total assets, in levels or logarithm, are popular measures for firm size, and we try them all. We also separate the firms into three groups, small, medium and big, including companies whose total assets are below the 33th percentile, between the 33th and the 66th percentile and above the 66th percentile respectively. We consider the governance variable $board_{it}$ as endogenous consistently with the previous analyses on employment. Table 8 presents the results, with ROI as dependent variable.

We confirm for Italian public utilities the results that Yermack (1996) finds for US, listed, private firms with dispersed ownership: board dimension is negatively correlated with profitability. Bigger boards pursuit higher headcount at the expense of economic value. The result is evident across industry and purged of any possible size effect. Firms in the gas industry show the tendency to a higher ROI, though the industry dummy is not significant when firm size is measured by the logarithm of total assets. In Table 9 the dependent variable is ROE.

Independent variables	Dependent variables: ROI				
$board_{it}$	-0.006**	-0.004*	-0.004*	-0.006**	-0.006**
	0.0027	0.0024	0.0025	0.0027	0.0026
	0.024	*0.074*	*0.056*	*0.023*	*0.020*
$small_{it}$		0.035**			
		0.0161			
		0.028			
$medium_{it}$		-0.0022			
		0.007			
		0.775			
$size_{it}$			-0.010		
			0.0060		
			0.112		
$Assets_{it}$				0.000	
				0.000	
				0.931	
n_{it}					0.000
					0.000
					0.545
$water_{it}$	-0.028	-0.0242	-0.0308*	-0.028	-0.029*
	0.0172	0.0158	0.0165	0.0174	0.0169
	0.102	*0.126*	*0.062*	*0.108*	*0.085*
gas_{it}	0.054*	0.049*	0.04	0.054*	0.053*
	0.0294	0.0294	0.0272	0.0299	0.0289
	0.066	*0.095*	*0.140*	*0.069*	*0.067*
$electr_{it}$	-0.006	-0.0132	-0.008	-0.006	-0.008
	0.0164	0.0157	0.0152	0.0165	0.0158
	0.674	*0.399*	*0.583*	*0.721*	*0.620*
AR(2)	0.13	-0.09	0.12	0.13	0.15
AR(2) p-value	0.894	0.927	0.901	0.895	0.878
Hansen Pr $> \chi^2$	0.301	0.507	0.448	0.298	0.310
Hansen df	64	64	64	64	64
Difference Hansen Pr $> \chi^2$	0.517	0.339	0.387	0.584	0.526
No. observations	821	821	821	821	821
Time dummies	yes				
Sample period	1994-2004				
No. firms	114				

Table 8: Governance and economic performance: ROI

Independent variables	Dependent variables: ROE				
$board_{it}$	-0.006**	-0.007**	-0.006*	-0.008***	-0.007**
	0.0028	0.0030	0.0036	0.0030	0.0029
	0.012	*0.016*	*0.090*	*0.006*	*0.012*
$small_{it}$		0.026			
		0.0169			
		0.123			
$medium_{it}$		-0.015			
		0.0106			
		0.171			
$size_{it}$			-0.006		
			0.0065		
			0.399		
$Assets_{it}$				0.000	
				0.000	
				0.206	
n_{it}					0.000
					0.000
					0.863
$water_{it}$	-0.044***	-0.045***	-0.047***	-0.04***	-0.0416***
	0.0118	0.0136	0.0143	0.0120	0.0122
	0.000	*0.001*	*0.001*	*0.001*	*0.001*
gas_{it}	0.038	0.029	0.024	0.042	0.038
	0.0353	0.0312	0.0374	0.0348	0.0357
	0.289	*0.352*	*0.515*	*0.219*	*0.283*
$electr_{it}$	0.004	-0.001	-0.011	-0.001	0.005
	0.0210	0.0226	0.0273	0.0209	0.0229
	0.855	*0.955*	*0.968*	*0.962*	*0.820*
AR(2)	-1.30	-1.15	-1.25	-1.31	-1.30
AR(2) p-value	0.195	0.250	0.210	0.190	0.194
Hansen Pr $> \chi^2$	0.936	0.908	0.815	0.962	0.936
Hansen df	53	53	53	53	53
Difference Hansen Pr $> \chi^2$	0.524	0.542	0.207	0.750	0.597
No. observations	821	821	821	821	821
Time dummies	yes				
Sample period	1994-2004				
No. firms	114				

Table 9: Governance and economic performance: ROE

Using ROE as dependent variable confirms the results obtained with ROI that the impact of bigger board on firm profitability is negative. The effect is more pronounced when the firm belongs to the water industry, while the positive impact the gas industry had on ROI is now neutralized.

5.2. Board composition

We first study the relationship between the number of politicians sitting on the board and firm profitability, by estimating the static model:

$$y_{it} = \beta_1 polit_{it} + \beta_2 X_{it} + \lambda_t + \eta_i + \upsilon_{it} \tag{10}$$

where $polit_{it}$ is the number of politicians sitting on the board of firm i at time t. We report the estimates for y_{it} equal to ROI in Table 10 but the results are confirmed with ROE.

On the contrary of what happens when the employment is the dependent variable, the number of politicians sitting on the board has a negative effect on profitability. Politically-connected directors seem to concentrate on increasing the headcount more than the firm economic performance.

We finally test the joint effect of board size, the percentage of political, outside and independent directors on firm performance. Results are exposed in Table 11, where $board_{it}$, $\%indep_{it}$ and $\%polit_{it}$ are the relevant regressors and firms are classified into the three groups "small", "medium", "big" depending on their total assets.

The proportion of politically connected directors has a negative effect on firm performance. More important, their coefficients are still negative and significant when we add board size as a regressor, thus confirming that board composition is more important than board size in influencing firm performance. The propor-

Independent variables	Dependent variables: ROI				
$polit_{it}$	-0.006*	-0.008*	-0.008**	-0.009**	-0.008**
	0.0037	0.0044	0.0040	0.0043	0.0041
	0.086	*0.066*	*0.037*	*0.034*	0.038
$small_{it}$		0.027			
		0.0201			
		0.181			
$medium_{it}$		-0.003			
		0.0099			
		0.771			
$size_{it}$			-0.004		
			0.0060		
			0.463		
$Assets_{it}$				0.000	
				0.000	
				0.906	
n_{it}					0.000
					0.000
					0.555
$water_{it}$	-0.031*	-0.032*	-0.034*	-0.031*	-0.033*
	0.0161	0.0171	0.0178	0.0181	0.0174
	0.055	*0.060*	*0.057*	*0.084*	*0.057*
gas_{it}	0.029	0.027	0.028	0.033	0.032
	0.0336	0.0320	0.0331	0.0329	0.330
	0.388	*0.396*	*0.405*	*0.311*	*0.338*
$electr_{it}$	0.0012	-0.018	-0.010	-0.008	-0.010
	0.0186	0.0164	0.0131	0.0130	0.0128
	0.945	*0.271*	*0.454*	*0.523*	*0.418*
AR(2)	0.06	-0.02	0.11	0.10	0.13
AR(2) p-value	0.953	0.985	0.911	0.917	0.896
Hansen Pr $> \chi^2$	0.454	0.393	0.455	0.432	0.437
Hansen df	53	43	43	43	43
Difference Hansen Pr $> \chi^2$	0.265	0.118	0.220	0.284	0.147
No. observations	821	821	821	821	821
Time dummies	yes				
Sample period	1994-2004				
No. firms	114				

Table 10: Politically connected directors and economic performance

Independent variables	Dependent variables: ROI					
$\%polit_{it}$	-0.1026*			-0.103*	-0.108**	-0.096*
	0.0537			0.0618	0.0464	0.0526
	0.056			*0.096*	*0.020*	*0.068*
$\%indep_{it}$		-0.056*		-0.087***	-0.078**	-0.084***
		0.0329		0.0287	0.0334	0.028
		0.089		*0.002*	*0.020*	*0.003*
$\%out_{it}$			-0.503		0.20	
			0.5656		0.0459	
			0.374		*0.668*	
$board_{it}$						0.000
						0.0028
						0.883
$small_{it}$	0.028*	0.026	0.022	0.022	0.027	0.025
	0.0166	0.0185	0.028	0.0171	0.0170	0.0164
	0.081	*0.166*	*0.437*	*0.206*	*0.113*	*0.131*
$medium_{it}$	0.001	–0.014	-0.034	-0.004	-0.003	-0.004
	0.0088	0.0104	0.0356	0.009	0.0094	0.008
	0.854	*0.172*	*0.346*	*0.663*	*0.765*	*0.605*
$water_{it}$	-0.031**	-0.0121	-0.054	-0.019	-0.0239	-0.021
	0.0125	0.0164	0.051	0.0187	0.0158	0.0173
	0.011	*0.463*	*0.289*	*0.298*	*0.132*	*0.214*
gas_{it}	0.026	0.0647**	-0.054	0.057	0.0597*	0.055*
	0.0340	0.0264	0.1568	0.0358	0.0329	0.0288
	0.449	*0.014*	*0.730*	*0.112*	*0.070*	*0.056*
$electr_{it}$	–0.004	0.002	-0.0155	0.010	0.005	0.012
	0.0130	0.0205	0.0254	0.019	0.0213	0.0184
	0.755	*0.915*	*0.542*	*0.618*	*0.824*	*0.511*
AR(2)	-0.09	-0.14	0.15	0.04	0.02	0.02
AR(2) p-value	0.931	0.888	0.882	0.970	0.980	0.985
Hansen Pr $> \chi^2$	0.486	0.901	0.850	0.999	1.00	1.000
Hansen df	13	64	4	128	192	192
Difference Hansen Pr $> \chi^2$	0.358	0.433	0.811	0.136	0.273	0.996
No. observations	821	821	821	821	821	821
Time dummies	yes					
Sample period	1994-2004					
No. firms	114					

Table 11: Board composition and economic performance

tion of outside directors is not significant, while the incidence of independent directors is negative. As far as independent directors are concerned, the result is doubtful and seems to reinforce the idea that the objective of independent directors is not quite what we would expect from their profile: they seem to mimic the politicians in favoring more employment at the expense of profitability. This might be due to the fact that directors independence, as declared by the firm chart, is perhaps disconnected from what emerges from their biography: some directors, whom we have recognised as politically connected to the blockholder without being public officers, thus strictly not politicians, are said to be independent, but they may in fact maximize the same objective function as politicians. In this case, the status of independent is not informative and the interpretation of their impact in economic terms difficult.

6. Conclusions

This paper contributes to both the literature on board of directors and the literature on SOEs. We address three main issues: board composition in firms with concentrated ownership, the objective function of directors in SOEs and the role of independent directors. Despite their persistence and dissemination in most non-US countries, firms with concentrated, possibly state ownership are the focus of a recent literature with mixed results. For instance, in reference to family-controlled firms, Claessens et al. (2002) find that firm value increases with the cash flow ownership of the largest shareholder but decreases as the wedge between control and ownership increases. They suggest that in family-controlled firms the blockholder is more prone to the extraction of private benefits than in widely held or financial firms. In such a situation the board is expected to exert its mediation effort toward controlling and minority shareholders. Yeh and Woidtke (2005) show that the board affiliation to the

controlling family is associated to strong, negative entrenchment effects and find that the (relative) firm value is negatively related to the board affiliation. In SOEs board may be shape as a "parliament" where representatives of different stakeholders (citizens, political parties, controlling government body, etc.) sit without exerting a real monitoring or advising function, then being bypassed by the controlling shareholder who can "directly" manage the firm. This was the typical situation in the European public utilities at least until the '90s, when the sector has been interested by a large privatization process as a part of a broader reform of the role of the state in the economy (Stiglitz, 1993). One of the declared objectives of the privatization movement was changing the corporate governance environment of SOEs and improving their productive efficiency and overall performance. While empirical studies on efficiency have been extensive, the attention to the performance indicators was only lukewarm.

This paper addresses this open question by means of a newly collected sample of 114 Italian public utilities during the period 1994-2004. The analysis on profitability and employment suggests that board composition matters even in State-owned firms with concentrated ownership and public blockholder. The inflationary effect that board size and the presence of politically connected directors have on the number of employees confirms the general opinion that State-owned firms are over-employed and employment-maximizing. Big boards might present coordination problems just like in privately held firms as theorized by Jensen (1993) and confirmed by Yermack (1996). A larger number of directors might also indicate the presence of several stakeholders, such as citizens or creditors, each represented into the board and with a potential interest in that the employment increases. The board size's negative effect on profitability does not exclude possible gains in efficiency, a question deserving further investigation. At the same time, the increase in employment does not prevent directors

from pursuing strategies whose impact on welfare si positive. Although the identification of a correct theoretical welfare measure and its empirical computation is a controversial issue (Becht 1995), we might in future take advantage of the richness of the data set to infer welfare concerns through the analysis of firm strategies in terms of wages, prices, quality and service coverage.

Politically connected directors have a negative effect on the profitability of Italian public utilities and the same applies to independent directors. In the existing theoretical literature outside directors are an undifferentiated group opposed to insiders. Hermalin and Weisbach (1998) consider the possibility that in widely held companies boards are captured by the CEO and independent directors dismissed as advisors and monitors. Morck (2004) relies on a social psychology argument of "loyalty, trust, and duty" to motivate the existence of directors only nominally independent from the CEOs. By distinguishing outsiders who are politically connected and outsiders declared as independent we introduce a further differentiation and investigate the objectives pursued by directors within the board. In the Italian public utilities, the position of independent directors is ambiguous: they imitate politicians by negatively affecting the firm value and positively influencing employment. Beyond their status independent directors might hide an indirect affiliation to the politicians or even aim to the same objectives, without necessarily enjoying any political connection, provided that the absence of incentives gives them the chance to follow their own goals. In SOEs the directors nomination is regulated by the controlling government more often than by the manager so that deference toward the constituted power similar to the loyalty avowed by Morck (2004) might make those directors only nominally independent.

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