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Structuring supervisory board for an anti-corruption strategy: a new application of a compliance system

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Purpose

The aim of this paper is to examine a relevant innovation in terms of how corporate supervisory boards are structured for an effective measure of anti-corruption, that concerns a new application of Italian Legislative Decree No. 231/2001 in compliance with the obligations set out by OECD Convention of 17 September 1997 on the fight against corruption.

Design/methodology/approach

The research hypotheses which lead our study are based on an empirical analysis of 119 nursing homes with the aim of investigating the state-of-the art of this innovative application especially regarding the composition, effectiveness and functioning of the supervisory board, in the unique case when this compliance system becomes compulsory.

Findings

The results show how, even though a certain level of uncertainty and ambiguity have led to great variance in the ways the compliance system is drafted, was possible to identify a positive relation

between supervisory board composition and performance – that is the effectiveness of anti-corruption system - , and a negative relation between board size and performance. Finally, our results suggest the relevance of supervisory board in fostering knowledge as mediating role.

Research limitations/implications

We believe that future work using inter-temporal modelling could build upon and extend the insights presented here. A second area arises from those contrasts in board characteristics that are present across countries and/or across company's size, SMEs or multinational companies, and/or across industrial sectors.

Practical implications

We offer a more nuanced understanding of the linkages between corporate governance and anti-corruption. In particular, the article suggests that for an effective anti-corruption strategy larger supervisory board sizes are associated with weaker performance, and a greater external composition is preferable to an internal one.

Originality/value

The article depicts a first and relevant step towards the identification of best practices of corporate governance as anti-corruption system, relating to an innovative and unique – to the date - application of a compliance system based on the supervisory board.

1 Introduction

Corruption and fraud against public administration in Italy are endemic, as reported in the Transparency International rankings: in 2015 Italy is ranked 61° (69° in 2013 and 2014, 72° in 2012) out of the 168 observed countries on a corruption perception index, which measures the perceived levels of public sector corruption. The Italian Court of Audit has pointed out that the total direct cost of corruption amounts to 60 billion euro each year (equivalent to approximately 4% of GDP). Since 2012 the president of the Court of Audit has reiterated his concerns every year as to the impact of corruption on the national economy.

Most recently in Annex 1 to the EU Anti-Corruption Report of the 3rd of February 2014 the European Commission said *"however, despite considerable efforts by the Court of Audit, law enforcement bodies, prosecution services and the judiciary, corruption remains a serious challenge in Italy. [...] Overall, further efforts need to be made to ensure effective implementation and monitoring of the anti-corruption legal framework, including the legislative decrees, to secure a sustainable impact on the ground"*.

It was in reaction to this situation, which is endemic and grounded in Italian economic system, that Legislative Decree no. 231 was issued in 2001 to implement article 11 of Enabling Act no. 300 of 29 September 2000, whereby the Government was delegated to define a penalties system for the

administrative liability of bodies in compliance with the obligations set out by a number of important international acts: the Convention on the protection of the European Communities' financial interests of 26 July 1995, the Convention on the fight against corruption involving officials of the European Communities or officials of Member States of the European Union approved in Brussels on 26 May 1997, and the OECD Convention of 17 September 1997 on the fight against corruption involving foreign public officials in international economic transactions.

This has led to a change in the Italian regulatory system: the Decree provides a new form of liability, which the legislator describes as "administrative", independent from the liability of the individual who has actually committed the crime. Whence it follows that the organisation is not liable if the individual who committed the crime acted solely in his/her own interest or in the interests of third parties, or in the event that the organisation may not be charged with "corporate criminal liability". In fact, under articles 6 and 7 of the Decree, the company body may be exempted from liability if it can prove it has adopted and effectively implemented some measures to prevent corruption and frauds, as the followings:

a) the Board of Directors adopted and efficiently enacted, prior to commission of the act, organisational and management models which are capable of preventing offences of the type occurring;

b) the task of overseeing such operations, compliance with the models and seeing to updating of same has been delegated to a Supervisory board vested with powers to act on its own initiative and conduct monitoring;

c) the persons committed the offence by fraudulently circumventing the organisational and management models;

d) there has been no omission or insufficient oversight on the part of the Supervisory board referred to in subparagraph b).

Therefore, the supervisory board becomes a fundamental *conditio sine qua non* if the company wants to prevent corruption and frauds and also to take advantage of the form of exemption from liability. However problems may arise from its vague definition. In particular, the norm requires only that the supervisory board has been vested with autonomous powers of initiative and control and is able to supervise the functioning and enforcement of organisation, management and control models suitable for preventing the perpetration of the criminal offences specified in the Decree.

Considering that this supervisory board has a very specific nature, there are few studies about it. Alfiero and Secinaro (2010) conducted a research on a sample of 282 Italian holding companies focusing the attention on the implementation of the compliance program pursuant to Decree 231/01, and the influences that the same may have on the regulation of infragroup relations. Gandini e Gennari (2009) observed the conformation and functions of the supervisory Body through the analysis of the Internet sites of the 29 banks quoted in the four segments of the Italian Stock Exchange, finding that in order to ensure the greatest possible effectiveness of the system, the supervisory body should be set up as a structure with clear role in comparison with other forms of internal control. Miglietta, Anaclerio and Bettinelli (2007) analyzed how Italian firms comply with the legislative decree 231 through a research on 21 companies listed on the S&P/MIB, and they showed the features of internal audit system required by the Decree and how risk assessment and internal audit could serve as corporate governance instruments. So we decided to fill this gap and since our case, as a typical case of soft law, is based on an alternative approach of comply-or-explain principles, it appears relevant reasoning on the effective nature of the application of decree 231: do we assist to a rhetorical exercise or real compliance? Zbaracki (1998) suggests that this kind of compliance - indeed this is true for other practices such as total quality management as well – can imply a technical intervention that can become both ambiguous and sometimes dubious. Thus, a crucial question raises: is the supervisory

board designed in an effective way to prevent corruption? Following such research line, the specific research issues that our study addressed is to understand under which characteristics the supervisory board becomes effective, so we decided to investigate hypothesis concerning the composition of the supervisory board and its relationship with the performance intended as efficacy of the compliance system to prevent corruption. The rest of the paper is organized as follows: in section 2 we review the literature and define our hypotheses. In sections 3 we motivate our research and methodology. In section 4, we test our hypotheses. We provide concluding remarks in section 5.

The valued added of our work consists in a better understanding of the relationships between corporate governance and anti-corruption, that is a subject relatively new and lacking of a deep theoretical and research exploration. In particular, it allows to identify some best practices in terms of supervisor board's functioning and how it should be structured to perform an effective anti-corruption strategy.

2 Hypotheses development

As discussed above, international conventions set a relationship between corporate governance and anti-corruption strategy, leading to the establishment of a new board called supervisory board/unit. More recently the EU Council through the recommendation for further combating bribery of foreign public officials in international business transactions (2009) recommended as good practice the creation of monitoring bodies, independent of management, such as audit committees of boards of directors or of supervisory boards with an adequate level of autonomy from management, resources, and authority.

Typically, these reforms and conventions were introduced as a reaction to the collapse of global financial markets and corruption scandals, such as Enron, Arthur Andersen, Worldcom, Lehman Brothers and Parmalat. These attempts are based on the idea that good governance mechanisms

could contribute to limiting management misconduct, avoiding accounting scandals and reducing the risk of frauds and corruption (Adegbite and Nakajima, 2011; Cooper et al. 2013a, b).

Although the practice of corruption is ancient, theoretical exploration of the subject is relatively new, and the academic literature still has a long way to go in exploring the relationship between governance and corruption (Di Pietra and Melis, 2015). According to Transparency International (2009) despite the benefits of corporate governance, insufficient work has been done to realise its potential as a bulwark against abuses and for preventing and managing a company's corruption risks. Wu (2005) argued that corporate governance is among the important factors determining the level of corruption. Using a cross-country dataset, he tested hypotheses that explicitly link various measures of corporate governance to the level of corruption, showing that corporate governance standards can have profound impacts on the effectiveness of the global anti-corruption campaign. Clarke and Xu (2002) found that an independent and competent corporate board limits the firm's ability to pay bribe and can actually boost the bargaining power of the managers in dealing with corrupt officials. According to Sullivan (2009) compliance with internal policies, guidelines and regulations, simply adopting a code of ethics or a code of corporate governance with a companion code of ethics is not sufficient. Hence, the role of the board of directors is seen as central to establishing and maintaining a corporate ethics program. Melis (2005) argued how Parmalat's corporate governance structure failed to comply with some of the key corporate governance standards of best practice, such as the presence of independent directors and the composition of the internal control committee.

As we can see, in dealing with corruption there are no simple answers. In our interpretation corporate governance can well become a critical ingredient to break a vicious cycle of bribery and corruption. Hence, our aim is to study the linkage between corporate governance and anti-corruption practices, with particular focus on the structuring and functioning of the supervisory board. Since it does not exist a specific literature about this kind of supervisory board, we focused our attention on an analogous literature concerning the board of directors. At the same time and as discussed above it

does not exist a specific literature on the relationship between board of directors and the company's capacity to perform anti-corruption measures. Hence we analysed by analogy the literature concerning corporate board structure and composition, its determinants and its impact on company's performance that are ones of the most discussed and well known issues in management literature today. Finally, we also considered the board continuity as proxy for board performance. Vafeas (1999) examined the number of board meetings in a sample of 307 firms over the period from 1990 to 1994 and he found that board activity measured by board meeting frequency is an important dimension of board operations and that there is a positive relation between the representation of outside directors in the board and the level of board activity. According to the author, if higher board activity facilitates better board monitoring, outside directors are likely to demand more board meetings to enhance their ability to monitor management. If Vafeas was the first scholar to use the level of board meetings as a metric of board activity, successively Adams (2005) expands the use of board meetings by incorporating the number of meetings held by the various board committees for 352 companies in 1998. Brick and Chidambaran (2010) extended these studies by examining meeting frequency based monitoring proxies over a broad sample of firms over the period from 1999 to 2005.

The impact of supervisory board size and composition on performance

Yermack (1996) investigates the impact of board size on firm value for a sample of large US industrial corporations between 1984 and 1991 and finds an inverse relation between firm value (measured by Tobin's Q) and the number of directors. In contrast, the meta-analysis presented in Dalton et al. (1999), which draws on the results from a number of prior US studies, indicates a positive relationship between board size and firm performance. Conyon and Peck (1998) find a negative relationship between return on equity and board size for a sample of European firms. De Andres et al. (2005) report a negative association between firm value and board size in 10 OECD countries. Cheng's study (2008) provides empirical evidence that firms with larger boards have lower variability

of corporate performance. O'Connell and Cramer (2010) conducted an analysis of a sample of 44 firms listed on the Irish Stock Exchange and found evidence that board size exhibits a significant negative association with firm performance and a positive and significant association between firm performance and the percentage of non-executives on the board. As we can see, there are contrasting findings about the relationship between board size and performance, even if as suggested by Bennedsen et al. (2008) it seems prevalent a negative association, and this suggests that there may be advantages as well as disadvantages to larger boards.

These discussions lead to the following hypothesis:

Hypothesis 1: it exists a relationship between supervisory board size and performance

Regarding the board composition, our attention goes to the relevant presence of outside directors, which is one of the most important characteristics of good governance as suggested by the codes of good governance in many countries (e.g. US, UK, Australia, German, Japan, Italy, India, and Brazil) which call for more independent directors in boards. The agency theory tradition suggests that a higher proportion of outside directors should be associated with stronger financial performance (Stiles and Taylor, 2001), and empirical work also reveals that firms with a higher proportion of outside directors have a smaller likelihood of experiencing financial distress (Elloumi and Gueyie, 2001). Upadhyay et al. (2014) provide evidence that larger and independent boards organized in multiple committees may be positively associated with firm performance. According to Brick and Chidambaran (2010) the independence of the directors on the board can be an important determinant of board activity that increases as a board becomes more independent. The authors stated that there is a positive relationship between board monitoring and Tobin Q implying that firm value increases with the level of board activity. Nonetheless, also in this case there is not a unique interpretation in literature. Some scholars found that there is no relation between the proportion of non-executive

directors and firm performance (Hermalin and Weisbach, 1991; Vafeas and Theodorou, 1998; Dulewicz and Herbert, 2004; De Andres et al., 2005). De Andres and Vallelado (2008) find an inverted U-shaped relationship between board size and performance, as well as between the proportion of outsiders and performance for a sample of 69 large international commercial banks from six OECD countries in 1995–2005. So, it becomes very useful the contribution by Guest (2008) that argued that the determinants of board structure will depend on the specific function of boards, if it has an advisory or a monitoring role. If we focus on the latter, outsider directors are more likely to be independent and objective in this task than insider directors, since they wish to signal their competence to other potential employers and frequently already have monitoring experience (Fama and Jensen, 1983). In contrast, insiders' are less independent because their careers within the firm depend on the CEO (Zajac and Westphal, 1994). Also according to Johansen (2014) there is a trade-off decision between the monitoring (independence) and advisory (information) functions of the board. In our case, since the supervisory board has a relevant function of monitoring, it is probably that it will be more efficient with a larger proportion of outsiders (Lehn et al., 2009).

These discussions lead to the following hypothesis:

Hypothesis 2: it exists a positive relationship between supervisory board composition (and the proportion of external components) and performance

The influence of firm size on supervisory board composition

Aguilera et al. (2008) suggested an organizational approach to corporate governance, outlining the relevance of a contingency approach in contrast to closed systems approaches. According to the

authors, organizational factors such as firm size and task interdependencies are very useful in analyzing the effectiveness of corporate governance in diverse organizational environment.

Linck, Netter and Yang (2007) found that large firms tend to have larger and more independent boards, and boards are relatively flat for small and medium-sized firms. Lehn et al. (2009) found that board size and outsider proportion are positively related to firm size and complexity, the latter measured by age, leverage, or industrial diversification. Boone et al. (2007) demonstrated that firm size, firm age, and the number of the firm's business segments are positively related to both board size and the proportion of independent outsiders in the board. This indicates that as companies grow, boards grow in response to the increasing net benefits of monitoring and specialization by board members. These results is also consistent with arguments made by Coles, Daniel, and Naveen (2007) that a firm growing into new product lines or new geographical territory will seek new board members to help oversee managers' performance. So larger firms demand more outside directors because their large size gives rise to more significant agency problems (Denis and Sarin, 1999; Yermack, 1996). Using a similar argument, Anderson, Bates, Bizjak and Lemmon (2000) argue that diversified firms deploy more independent directors to monitor their wider scope of operations. The research conducted by Germain et al. (2014) shows that board size grows in response to firm's scale and complexity. The proportions of independent directors also show a significant positive relationship with the measures in the scope-of-operations hypothesis. Coles et al. (2008) argue that complex firms, such as those that are diversified, those that are large, and those that rely more on debt financing have greater advising requirements, because larger boards potentially bring more experience and knowledge and offer better advice complex firms should have larger boards, and in particular more outsiders in the board who then serve to provide advice and expertise to the CEO. In our case, even if prior research on the relationship between corporate governance and firm size provides mixed evidence on whether or not larger firms tend to have better corporate governance structures (Drobetz et al., 2004; Ariff et al., 2007), there are strong reasons to suspect that the costs of complying with

the normative (such as Sarbanes–Oxley act of 2002 in the US or legislative decree 231 in Italy) are proportionately greater for smaller firms (Klapper and Love, 2003; Chhaochharia and Grinstein, 2007). That is, large firms with sufficient resources can more easily buffer these systemic costs, while smaller firms with greater resource constraints may be unable to comply (Aguilera et al., 2008).

These discussions lead to the following hypothesis:

Hp3: it exists a positive relationship between company's size and supervisory board size

Hp4: it exists a positive relationship between company's size and supervisory board composition

3 Research model and sample

Due to the nature of the study, the research strategy was a multiple-case design with 119 nursing homes– selected from our research directory that contains about 300 nursing homes (out of 600 in the Lombardy Region) - that have declared a deep interest on the relationship between corporate governance and anti-corruption tool. The rational for the multiple case design was that the focus can be directed to understanding the dynamics and complexities present within each case study, these being the structuring, functioning and performance of the supervisory board. Since the area of anti-corruption is a new area of research in Italy, the case study approach provided the means for in-depth analysis of our research object. Data collection was done through semi-structured interviews submitted to the general management of the nursing homes. Open-ended questions were used throughout the interviews. The questionnaire was composed of 3 parts, each with a different focus: company demographics, assessment of supervisory board and performance.

Our research model (figure 1) explores the following dimensions. The first characteristic to be analysed is the supervisory board composition through the following items:

- Number of members;

- Provenance of members, identifying supervisory unit with external members, in-house members or a mixed composition

The second characteristic is the performance. Since it is not realistic to think that this type of supervisory board can lead to a significant impact on company's financial performance, here it seems to be more appropriate and coherent with supervisory board's mission pursuant to Decree 231 to consider the performance intended as efficacy of the compliance system, analysing as perceived effectiveness by top management and as continuity of the board. The first measured through the followings questions:

- compliance with decree 231 is useful to a better definition of managerial control (here after **Control**) ;

- compliance with decree 231 implies a better definition of roles and responsibilities (here after **Role definition**);

- compliance with decree 231 is useful to avoid fines (hereafter **Efficacy)**;

- compliance with decree 231 leads to a positive impact on organisation (hereafter **Impact)**.

As discussed above the frequency of board meetings is also an important board performance indicator (here after **continuity)**.

Finally, according to contingency theory (Pugh et al., 1968; Pugh, 1973; Hall, 1991) and the organizational approach to corporate governance, the last characteristic analysed in our model is the **size** of the company measured as annual revenue.

Figure 1 Research model

We also inserted in our research model the level of knowledge of decree 231 demonstrated by board of directors (hereafter Knowledge), since we think that supervisory board plays an important role in facilitating organizational learning around regulatory obligations, enhancing the compliance capability of firms. This appears particularly relevant in sectors dominated by small and medium-sized enterprises that generally face resource constraints limiting their ability to investigate and consider innovative responses to regulatory requirements, due to their lack of expertise and significant depth of experience in dealing with compliance requirements (Haines, 1997). In this context, supervisory board can often play a mediating role, translating and explaining regulatory requirements and demand on firms and also communicating to the regulator a firm's willingness and ability to comply. The board can work as an interactive moderator, facilitating the exchange of information rather than just acting as an independent verifier. Without this "greasing of the wheels" it is likely that external regulation would be both less normatively acceptable and less effective (Walker 2014). Thus, we think that the composition and size of the supervisory board can impact on the specific knowledge of the board of directors and this can lead to better performance In our case, we suggest that knowledge should not be treated simply as a control variable. In order to evaluate the validity of the hypothesis listed above, we have applied several multiple regression models according to the following general structures:

$$Performance = \beta_0 + \beta_1\ Supervisory\ Board\ + \varepsilon_t \quad \text{(Eq.1)}$$

$$Supervisory\ Board = \beta_0 + \beta_1\ CompanySize + \varepsilon_t \quad \text{(Eq.2)}$$

$$Supervisory\ Board = \beta_0 + \beta_1\ Composition + D * CompanySize + \varepsilon_t \quad \text{(Eq. 2 bis)}$$

The choice of a linear regression model appears natural in this context, since we want to establish whether and how each input variable impact on the described output variables according to the research model in Figure 1. Such linear model allows us to interpret numerically both in direction (positive or negative) and magnitude the effect of the input variables on the output ones, moreover we can easily understand if some linear relations are not statistically significant by means of t-test, F-test and R-square figures (James et al., 2013).

According to model in Eq. 1 each variable measuring performance is considered as possible relevant output variable, in particular we considered 4 performance indicators: **Control**, **Role definition**, **Efficacy**, **Impact.** Each variable is regressed on each of the two indicators of Supervisory Board: **Size** and **Composition** as a proportion between internal and external members**.**

On the other hand, according to Eq. 2 and 2bis, each indicator of the Supervisory Board dimension, that is **Size** and **Composition,** is regressed according to company size dimension, measures in terms of **annual revenue** and annual revenue due to Public Administration. To test for the importance of company size, we considered two different approaches:

1) the annual revenue is evaluated on the original continuous scale (Eq. 2);

2) we rank companies on the basis of total annual revenue at the year-end (Chhaochharia and Grinstein, 2007). We then assigned a dummy variable D that takes a value of 1 if a company has an annual revenue greater than the median and zero otherwise (Eq. 2bis).

Finally, ε_t in (1), (2) and (2bis) represent the error term. Tests of the four hypotheses are based on OLS estimates of Eq. (1) and (2) and the relative results are summarised in the Empirical finding section.

The data reported in this article are the results of a research based on an empirical analysis of 119 nursing homes in Lombardy Region. This choice was made due to the fact that since the end of 2011

Lombardy is the only Italian Region which has established the organisational model pursuant to Legislative Decree 231 as compulsory for the accreditation of nursing homes and health care organisations which host more than 80 patients. It is important to specify that the Decree does not require the compulsory adoption of a supervisory board, so its application has been fragmented till now (Previtali, 2015). Hence, we decided to study the unique case when this compliance system becomes compulsory. Figure 2 shows the composition of the sample by the annual revenue.

Figure 2 Composition of the sample by annual revenue (in Euro)

4 Findings and discussion

The first round of elaborations was based on descriptive statistics and highlights the state-of-the art of the compliance with Decree 231. Concerning the number of members in the supervisory board, Table 1 shows that 28 companies have a supervisory board with a monocratic composition, 15 with 2 members, 70 with 3 members, 4 with four member and 2 companies with 5 members.

Table 1 Composition of supervisory board by number of members

Concerning the board composition in relation to the provenance of its members from inside or outside the company, just 1 of the nursing homes used an in-house body that coincided with an existing function; 54 prefer a mix between internal and external members; and 64 adopt a composition made up of external members (table 2).

Table 2 Composition of supervisory board by provenence of members

As we said above a fundamental characteristic is the supervisory board continuity, measured as the frequency with which the members meet together. Table 3 shows 6 companies meet more than 9 times a year, 61 companies from 4 to 6 times, 10 companies from 4 to 6 times a year, and there were a substantial number of boards (44) which meet less than 4 times a year. This analysis depicts a low continuity in about half of the sample.

Table 3 Number of meetings of the supervisory board a year

This controversial situation is confirmed by the analysis of the performance, measured as value and effectiveness of the compliance. Here, half of the sample declared that compliance is of value to the company, while the remainder saw compliance as not useful to a better definition of managerial control, roles and responsibilities, and low effective impact on organization. Summarising, a large part of the sample declared that the value for the company de facto is the possibility to avoid fines under the responsibility of legal entities (table 4).

Table 4 Value of the compliance with Decree 231

These elaborations highlight a state-of-the art of the compliance with Decree 231 that seems to be very controversial, in a sort of intermediate-state. This can be amazing if we think that the decree was issued in 2001. Nevertheless, we have to remember that the compliance model under art. 6 of the

Decree is not compulsory, so it's natural that many companies have not adopted it. Hence, we focused our analysis on a sample for which the compliance with the decree is compulsory.

Nevertheless, on one hand we found companies with high level of performance and perceived value of the compliance systems as effective measure to prevent corruption; on the other hand there are companies, which seem to refuse complying with the Decree. Hence, it is important to define circumstances and characteristics under which the supervisory board becomes effective.

Coming to the research hypotheses, which lead our study, we start from the first hypothesis:

Hp1: it exists a relationship between board size and performance

From the application of Eq. (1) we got a significant negative linear relation between **Continuity** (Y) and **Board Size** (X), obtaining a parameter estimate equal to -0.14 with a significant associated p-value equal to 0.079 . As said above, considering the continuity as performance indicator, our results are statistically significant and of a negative sign.

At the same time, we found a positive and significant relation between **Role definition** (Y) (compliance with decree 231 implies a better definition of roles and responsibilities and **Board Size** (X) with a parameter estimate equal to 0.18 and an associated p-value of 0.11 (such value is on the edge of significance level, however we consider it an information about a possible trend that we will confirm further in the following analysis)

These results confirm the contrasting findings in literature about the relationship between board size and performance, indeed according to our results smaller supervisory board seem to have better performances than larger board especially in small companies, as we will argue after.

The other relations between board size and performance are not statistically significant in fact, all the p-values are highly above a reasonable threshold of 0.10 and even the overall significance of the estimated regression models measured according to a classical F test has to be rejected. Thus, we

conclude that there is no enough statistical evidence of relations between the others variables of performance and the board size. Both large than small supervisory boards seem to be the same impact on the capacity of the company to prevent corruption.

Coming to *Hp2:*

it exists a positive relationship between board composition (and the proportion of external components) and performance

From the estimation of Eq. (1) we obtained that the **Composition** variable has an estimated parameter equal to 0.69 with an associated p-value of 0.005 leading to a conclusion of significant and positive relation between **Composition** (X) and **Efficacy (Y)**. The overall model is significant as well and the associated adjusted R-square is equal to 0.05.

Thus our results confirm a positive and statistically significant relation between the outsider proportion of supervisory board, and performance measured as "compliance with decree 231 is useful to avoid fines", here called efficacy. This highlights the relevant presence of outsider directors as one of the most important characteristics of good governance as suggested by the codes of good governance in many countries and by large part of the literature. More independent supervisory boards lead to higher performance, especially concerning the value of the compliance as "protection from legal and administrative responsibility". And this supports also the hypothesis that the determinants of board structure will depend on the specific function of boards, if it is an advisory or a monitoring role. In our case, the focus is on the monitoring role as suggested by legislative decree 231, so according to this interpretation the relation between the supervisory board composition and the value of the compliance to avoid fines and administrative responsibility assumes a very relevant meaning. Here we can state a relevant finding: an increasing of the outside composition of the supervisory board is a very effective best practice to prevent corruption.

Finally, even our hypothesis about the relevance of knowledge, intended as the level of knowledge of decree 231 demonstrated by the board of directors, supports the interpretation that a high quota of outsider in the supervisory board can facilitate the role of integrator between the two boards, allowing a dissemination of best practices and knowledge. Indeed, the supervisory board can play a relevant role in easing organizational learning, in enhancing the compliance capability of firms, especially in small and medium-sized enterprises such as the ones analysed in our research. Such enterprises are typically characterized by limited budget to allocate for regulatory requirements compliance, so a supervisory board with high competencies and different experiences can support and sustain the decisions of the board of directors. In fact if we estimate a model with Efficacy (Y) and composition (X1) and knowledge (X2) we obtain a significant positive linear regression with estimate parameters equal to 0.54 for X1 (p-value of 0.023) and 0.29 for X2 (p-value of 0.009). The overall model is significant as well according to the F test (p-value close to 0) and the adjusted R square (0.10). The reader can notice that the introduction of the knowledge variable leads to an improvement of the adjusted R square index, and the significance is confirmed by the anova analysis as well. According to these results, we found that corporate governance is a system of interdependent elements (Aguilera and Jackson, 2003; Schmidt and Spindler; 2004), where corporate governance practices become effective only in particular combinations and interactions rather than isolated. In our model this multiplicative effect in boosting the relationship between supervisory board's composition and performance was played by knowledge.

The other relations between board composition and performance are not statistically significant in fact, all the p-values are highly above a reasonable threshold of 0.10 and even the overall significance of the estimated regression models measured according to a classical F test has to be rejected. Thus, we conclude that there is no enough statistical evidence of relations between the others variables of performance dimension and the board composition.

Finally, concerning the relations between company's size and supervisory board size and composition (HP 3 and HP 4) we didn't find any statistically significant correlations. This should imply the rejection of the contingency approach, that is, the board is not designed according to the company size. However, to be exhaustive, we have investigated if a dummy variable on the company's size built considering the mean value of the variable itself (i.e. '0' companies below the mean, '1' companies above the mean) can improve the performance of Eq. 1 and Eq. 2. After having estimated Eq. 2bis we found out that the positive relation between composition (X) and role definition (Y) improves if we consider company's size dummy variable. In particular, results show that large companies tends to have a significant positive impact of board composition with a parameter equal to 0.19 and a p-value equal to 0.10. Hence we found an important confirmation of the organizational approach to corporate governance, outlining the relevance of a contingency approach in contrast to closed systems approaches. In particular, this is true if we consider the interdependency between organizational factors such as firm size and the effectiveness of corporate governance in terms of better definition of roles and responsibilities.

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Table 5 summaries the results from the application of the regression models.

Table 5 results from regression models (Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.')

5 Conclusion

Core findings

Our paper offers an analysis of a relevant innovation in anti-corruption systems that implies the introduction of a new supervisory board in the corporate governance architecture. This application is due to the Italian Legislative Decree No. 231/2001 in compliance with the obligations set out by OECD Convention of 17 September 1997 on the fight against corruption involving foreign public officials in international economic transactions. We found a very significant relationship between the characteristics of the governance structure and the capacity of the firm to prevent corruption. Hence, it becomes relevant the flexibility for firms to adapt or mix various practices under soft law which may help them to tailor corporate governance to diverse organizational environments. In particular our attention goes to the composition and functioning of the supervisory board and its relationship with the performance.

Our first hypothesis concerned the relationship between board size and performance. From our data, we got a significant negative linear relation between the continuity of the board and board size. At the same time, we found a positive and significant relation between the organisational impact (as better definition of roles and responsibilities) implied by the compliance with decree 231 and board size. Thus, our research confirms the contrasting findings in literature about the relationship between board size and performance and the impossibility to indicate a best practice concerning the optimal sizing of the supervisory board.

Concerning the board composition, here intended as the relevant presence of outside directors, the literature is rather univocal indicating more independent directors in boards as a practice of good governance, in particular for board with a monitoring function such as the ones observed in our analysis. Here outside directors are more likely to be independent and objective in this task than inside members. This discussion led to our second hypothesis regarding the relationship between board

composition (as proportion of external components) and performance. Our results confirm a positive and statistically significant relation between the outsider proportion of supervisory board and its performance measured as the efficacy to avoid fines due to the administrative responsibilities.

Finally, we analysed if there is an influence of firm size on board composition, also considering that the costs of complying with the normative - such as in our case - are proportionately greater for smaller firms. In literature it seems to be prevalent that large firms tend to have larger and more independent boards, and boards are relatively flat for small and medium-sized firms, hence our third and fourth hypothesis concerning the relationship between company's size and supervisory board size and composition. Here the results are not so clear, however we can argue that we found an important confirmation of the organizational approach to corporate governance, focusing on the interdependency between firm size and the effectiveness of corporate governance in terms of better definition of roles and responsibilities.

Managerial implications

The empirical findings reported above suggest a very important managerial implication related to supervisory board composition, bridging anti-corruption and corporate governance. We found that a greater external composition is preferable to an internal one, maybe due to the specific function and monitoring role of these supervisory board.

Thus, an entrepreneur or a manager which has to comply with a law that implies a better internal control and wants to prevent corruption, needs to design the supervisory board with specific monitoring and control roles paying attention to its composition.

Here, it becomes very important the level of knowledge of decree 231 demonstrated by board of directors, linked to the role that supervisory board can play in facilitating organizational learning around regulatory obligations. In this context, supervisory board can often play a mediating role, translating and explaining regulatory requirements and communicating to the regulator a firm's

willingness and ability to comply as well. In fact, we estimated a model with efficacy, board composition and knowledge, and we obtained a significant positive linear regression. In our opinion, board of directors training and internal communication diffused by the supervisory board, are best practices for a good governance. This can make a real difference to a company's capacity to prevent corruption, boosting the company's capabilities to comply with the law, to obtain the maximum effect of protection of the company from administrative liabilities and related fines, avoiding the increase of internal bureaucracy with no benefit for the organisation.

Avenues for future research and limitations

Our study points to a number of potentially fruitful avenues for future research. First, we believe that future work using inter-temporal modelling could build upon and extend the insights presented here. A second area for future work arises from those contrasts in board characteristics that are present across countries and/or across company's size, SMEs or multinational companies, and/or across industrial sectors. Third, the researchers in this field should analyse the determinants of the relation between board characteristics and performance, such as company's growth opportunities, R&D expenditures and type of ownership. Fourth, it is important to study other relevant board characteristics such as gender, age, level of specific education, specialisation of board members. Finally, it becomes crucial for this kind of board, analysing the relation between operational/ organizational performance – that is in our case the organisational impact – and the financial performance.

The major limitations of this study are related to the sample. Observing only one year as sample period could affect our findings. We can not generalize to other years and we can not even avoid the bias due to the choice of a specific year. Moreover the sample size is relatively small even if representative of the Italian scenario thus we could not consider the opportunity of running meaningful industry or sector comparison or cross country analysis. Thus, the collection of data for

at least one more year can be profitable employed to compare and evaluate the robustness of our results and to check the trends and possible evolution in the adoption of the decree 231/2001.

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